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Date: Wed, 04 Sep 2002 16:27:17 -0500
From: UW-Madison news <releases@news.wisc.edu>
Subject: UW-Madison News Release--Overture Course Starts Friday
To: Kerri Canepa <kacanepa@wisc.edu>
Reply-to: UW-Madison news <releases@news.wisc.edu>

Wisconsin Idea

FOR IMMEDIATE RELEASE
9/4/02

CONTACT: George Austin, (608) 294-9000; Tino Balio, (608) 263-2350

ARTS INSTITUTE, OVERTURE FOUNDATION LAUNCH UW COURSE

MADISON -- A first-time, hands-on course will allow University of Wisconsin-Madison students to study, during its construction, what will be one of the major public buildings of Madison and Wisconsin, the Overture Center for the Arts.

The University of Wisconsin-Madison Arts Institute and the Overture Foundation will launch the course together Friday, Sept. 6.

"This is a fantastic and rare opportunity for our students to get the chance to learn from some of the top cultural arts facility designers and professionals in the world," says Tino Balio, professor of communication arts and executive director of the Arts Institute.

"Given our commitment to having the Overture Project serve as a learning laboratory for area students, we're thrilled to be working with the University of Wisconsin on this unique collaboration," says George Austin, president of the Overture Development Corp., the nonprofit entity that is developing the visual and performing arts facilities in downtown Madison.

"We see this as 'The Wisconsin Idea' in action, and we hope the course will help train our country's next crop of leading arts management and design professionals," adds Austin.

Austin will kick-off "Overture: The Art and Design of a Cultural Arts Center," an interdisciplinary studies in the arts course, with an opening overview session, noon-2 p.m., Friday, Sept. 6, 4070 Vilas Hall. Members of the media are welcome.

The course will augment Overture's educational collaboration with the Madison Metropolitan School District, "Building Madison's Future." This effort, using aspects of the Overture Project as a case study, is introducing area high school students to careers in construction, architecture and engineering.

During the 12-week UW course, about 60 upper-level undergraduate and graduate students will tour the work site and have presentations from international members of the design team and local experts in addition to Austin including:

-- Architects from Cesar Pelli & Associates, the design architect.

-- The theater design consultant from Theatre Projects Consultants

-- The lead project acoustician from Kirkegaard Associates.

-- The lighting designer from Cline Bettridge Bernstein Lighting Design, Inc.

-- The lead graphics and signage consultant from Pentagram Design.

Others include Russell Panczenko, director of the Elvehjem Museum of Art; Steve Fleischmann, director of the Madison Art Center; Bob D'Angelo, director of the Madison Civic Center; Andrew Taylor, director of the UW Bolz Center for Arts Administration; Michael Goldberg, director of the Wisconsin Union Theater; Ralph Jackson of the local design team of Potter Lawson & Flad, LLC; and Larry Thomas of J.H. Findorff & Son, Inc., construction manager.

Additional faculty from various UW-Madison departments, including Theatre and Drama, Art, Environment, Textiles and Design and the School of Music, will participate in the course.

"We're very grateful that the speakers will be donating their time and we thank Overture's leaders, especially Ralph Jackson, executive architect at Potter Lawson & Flad, for their hard work in making this a reality," adds Balio.

The Overture Center for the Arts is the result of a major civic gift by Jerome Frautschi, given to stimulate Madison's downtown renaissance through excellence in the arts. Phase I is scheduled for completion in 2004 with Phase II to follow in 2005.
# # #

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Wisconsin Idea

THE UNIVERSITY of WISCONSIN MADISON

UNIVERSITY COMMUNICATIONS
NEWS RELEASES

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4/10/02

CONTACT: John Wiley (608) 262-9946, jdwiley@facstaff.wisc.edu; Martin Cadwallader (608) 262-1044, cadwallader@mail.bascom.wisc.edu; Steven C. Price (608) 263-2840, scprice@facstaff.wisc.edu; Philip Z. Sobocinski (608) 263-7949, pzsoboci@facstaff.wisc.edu
For inquiries about WARF or its activities: Andy Cohn (608) 263-2821, apcohn@facstaff.wisc.edu

REPORT PUTS UW-MADISON AT HEAD OF ECONOMIC CLASS

MADISON - When it comes to fostering state and regional economic development, the University of Wisconsin-Madison is near the top of its class, according to a new report assessing the role of American universities in regional and state economic growth.

The report, issued by the Southern Growth Policies Board and funded by the National Science Foundation, places UW-Madison in the top 12 among all U.S. universities that seek to invigorate state economies through technology transfer and the development of companies born of university research.

According to the book-length report dubbed "Innovation U.," over the past 15 years some American universities have undergone a fundamental transformation, creating "a new model for the American university as a partner in its regional and state economy."

The report evaluates university involvement in 10 types of activities, from entrepreneurship to technology transfer and industry-research partnerships. It describes UW-Madison as "a story of an extraordinarily successful research university that has also nurtured a long-standing mission of service to its state, while at the same time creating a very entrepreneurial culture and some novel approaches to technology transfer."

UW-Madison Chancellor John Wiley says the report underscores the importance of Wisconsin's long history of innovative technology transfer: "Technology transfer and faculty entrepreneurship are avenues for us to make research accessible to the larger world. The payoff is new products and new sources of high-paying jobs."

Graduate School Dean Martin Cadwallader, the university's chief research officer, says the Southern Growth Policies Board study provides independent confirmation that UW-Madison research is a key influence on the state's fiscal well being. "This study demonstrates a very important return to taxpayers as a result of their investment in public higher education. It recognizes and documents the roles we play in growing Wisconsin's economy."

The universities cited in the study were selected through a nomination process that identified those institutions "that systematically understand and are comprehensively addressing their role in regional economic development." Selections were made by a panel of 55 nationally recognized experts in the areas of economic development, regional economics and organizational innovation. With the exception of Georgia Tech, which was rated as the best in the nation, the 12 universities were not ranked.

The panel, according to the report, came to one unexpected conclusion: "A small group of institutions were notably effective and innovative across performance and practice domains. We kept seeing the same universities among those that were best in class and engaging in novel practices or policies." UW-Madison was among those cited.

Institutions were evaluated based on activity in these key areas:

-- Industry research partnerships.

-- Technology transfer.

-- Industrial extension and technical assistance.

-- Entrepreneurial development.

-- Industry education and training partnerships.

-- Career services and placement.

-- Formal partnerships with economic development organizations.

-- Industry/university advisory boards and councils.

-- Faculty culture and rewards.

-- Leadership/structures, policies and institutionalization.

Instrumental to UW-Madison's success, according to the report, is a century-old tradition of community service embodied in the Wisconsin Idea. It cites UW-Madison's triad of technology transfer entities -- the Office of University-Industry Relations, University Research Park and the Wisconsin Alumni Research Foundation -- as central to the university's role in helping bolster the state's economy.

Steven Price, director of UIR, says UW-Madison's ranking as a technology transfer leader is the result of decades of effort by faculty researchers and campus leaders. He cites the establishment of WARF, founded in 1925 and now the world's oldest and best established university intellectual property organization, as a keystone event. The development of University Research Park beginning in the 1980s and now home to nearly 100 companies was also central to helping shift the university's culture to one that was more accepting of entrepreneurship and partnering with business and industry.

UIR itself, established in the early 1960s, was one of the first offices of its kind at any university and has played an instrumental role in organizing industrial research consortia and administering programs designed to facilitate connections between UW-Madison research and business and industry.

Among the UIR-administered programs cited in the report is the state-funded Industrial and Economic Development Research program. The I&EDR program distributes about $900,000 annually in small grants to campus researchers in support of early-stage applied research that's been identified as having high potential to benefit Wisconsin's economy. Over a 10-year period and with an investment of about $2.5 million, the program has spawned nearly 45 patents, nine spin-off companies and an 8-to-1 leverage ratio of subsequent outside funding.

Ironically, the I&EDR Program, which was slated for a significant boost in funding under the state's Madison Initiative, may lose up to $260,000 in funding under various proposed cuts to help offset the state's billion dollar-plus budget deficit.

"We've made a commitment to promoting economic development in the state," says Philip Sobocinski, associate director of UIR and a recognized expert on spin-off companies and technology transfer and whose work is cited in the report. Sobocinski estimates that UW-Madison has had varying levels of involvement in creating at least 225 technology-based companies in Wisconsin. Ninety-eight of those have been created since 1995, he says.

"These firms constitute a major biological and physical science-based industrial cluster capable of creating thousands of high-quality jobs," Sobocinski notes.

All of the key pieces to the research university-driven economic development puzzle are in place for Wisconsin, says Sobocinski. He cites faculty buy-in to the idea of transforming research into products, and a long-standing commitment from UW-Madison chancellors dating back at least 20 years to Irving Shain, who promoted the development of University Research Park.

Other recent developments, such as WARF's involvement in facilitating start-up ventures, and an entrepreneurial-friendly campus promoted by successive chancellors, have contributed to making the Madison campus a key player in the state's effort to build a high-technology industry base.

Using data from the 1999 Association of University Technology Managers survey, the report places WARF and UW-Madison in the 94th percentile for income derived from licenses on patents, and in the 89th percentile for return on investment for royalty income reported by the 142 academic institutions that participated in the survey.

The Southern Growth Policies Board report notes, as well, the $220 million in WARF support for UW-Madison research over the 15-year period from 1984-99.
The report also notes a relatively new WARF tactic of assuming an equity stake in new companies in lieu of up-front fees. That activity, done in tandem with traditional licensing

arrangements for UW-Madison start-ups, permits "spin-offs to gain quicker access to their intellectual property and get a head start on business development and capitalization," according to the report.

Cadwallader says the Southern Growth Policies Board study provides the university and state policymakers with a timely measuring stick of UW-Madison performance in terms of state economic development.

"We are at a point, obviously, where some independent measures are needed to assess performance and our actual contribution to the economic health of Wisconsin. This report is one such measure and indicates, so far, that UW-Madison has lived up to its economic development commitments."

The authors of the Southern Growth Policies Board report are Louis G. Tornatzky, a senior fellow of the Southern Technology Council; Paul G. Waugaman, also a senior fellow at the Southern Technology Council; and Denis O. Gray a North Carolina State University professor affiliated with the Psychology in the Public Interest Program.

The report is available online: http://www.southern.org/pubs/stc/stcpubs.shtml.
# # #
-- Terry Devitt (608) 262-8282, trdevitt@facstaff.wisc.edu
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Wisconsin Idea Endowment

Endowment to expand Wisconsin Idea outreach

M.K. Anderson

A $21.7 million gift from the estate of Ira and Ineva Reilly Baldwin will create the Wisconsin Idea Endowment.

Projects under consideration include partnerships with community service programs for undergraduates, grants for faculty and staff to undertake research on societal issues, alumni service programs involving employers, grants to develop learning opportunities for public audiences on community issues, blue ribbon conferences and research publications.

"Both Ira and Ineva believed in intellectual challenge in pursuit of the public good," says Chancellor John Wiley. "Their generous legacy gives us the opportunity to continue this idea."

Ira Baldwin, professor emeritus of bacteriology and former dean of the College of Agricultural and Life Sciences, died in 1999 at age 103. Wife Ineva, former assistant dean of women for the College of Letters and Science, died last year in Tucson, Ariz., at age 96. Throughout their long and honor-filled lives, Ira and Ineva Baldwin were deeply committed to the university as a source of education, research and service for the benefit of the world community.

A central theme in the university's mission for more than 100 years, the Wisconsin Idea calls for the resources of the university to serve the people of the state, the country and beyond. The Baldwin endowment will help fund new service-learning programs for students, research projects focusing on critical issues in society and alumni sabbaticals for community service.

During their many years of support for UW-Madison, the Baldwins provided funding for professorships, fellowships, graduate student recruitment and scholarships. Among the beneficiaries of their generosity are the Arboretum, Allen Gardens, Southeast Asia Center, University Club and the Clinical Cancer Center. Ineva served on the advisory council of the Elvehjem Museum of Art to which she donated selected pieces from her collection of Lalique crystal. In 1981, the Baldwins were jointly honored with the Wisconsin Alumni Association Distinguished Service Award. ■

University Communications

News Releases

UNIVERSITY OF WISCONSIN MADISON

Wisconsin Idea

FOR IMMEDIATE RELEASE
8/20/01
CONTACT: Roger Maclean, associate dean, Division of Continuing Studies, (608) 262-5847; Peyton Smith, assistant vice chancellor for extended programs, (608) 262-8214

SERIES BRINGS POPULAR SCIENCE SHOWS TO THE COMMUNITY

MADISON -- The University of Wisconsin-Madison will bring its most popular on-campus science presentations to the community in several free public events this fall.

The Wisconsin Idea Explorations in Science will provide an opportunity for members of the community to learn about the world of science through a series of fun and informative demonstrations designed for the entire family.

The free programs, which are great for "kids of all ages," will be presented Wednesdays, 7-8:30 p.m., in the auditorium of the BioPharmaceutical Technology Center Institute, 5445 East Cheryl Parkway, just off South Fish Hatchery Road in Fitchburg Center.

The programs are presented in partnership with the UW-Madison Division of Continuing Studies, Promega Corporation and the BioPharmaceutical Technology Center Institute. The presentations are:

-- Science is Fun! Wednesday, Sept. 19: This science-oriented "magic" show features Bassam Shakhashiri, professor of chemistry and the newly appointed William T. Evjue Distinguished Chair for the Wisconsin Idea. Shakhashiri has presented before sold-out audiences in Madison and elsewhere and on public television for more than 30 years, which makes this one of the university's longest running and most popular public service programs. The presentation reveals the joy of science to kids of all ages while increasing their understanding and appreciation of its promises and perils.

-- Discover the Nanoworld, the World of Atoms! Wednesday, Oct. 17: In this presentation, Arthur Ellis, Meloche-Bascom Professor of chemistry, delves into the tiny world of atoms. His program, which includes a number of hands-on demonstrations, investigates the frontiers of the nanoworld by showing the tools that let us "see" and manipulate atoms. The presentation teaches about creating materials that act like trampolines, metals that remember their shape, fluids that respond to magnets and semiconductors that give off blue light. Ellis also coordinates the outreach activities of the Materials Research Science and Engineering Center on Nanostructured Materials and Interfaces.

-- The Wonders of Physics, Wednesday, Nov. 14: This program showcases Clint Sprott, professor of physics and recipient of the Van Hise Outreach Award. This is a fast-paced presentation of physics demonstrations that are equally entertaining and educational. Since 1984, this program has helped clarify and generate interest in physics and science for more than 50,000 people on campus and more on public television.

These programs will continue the tradition of the Wisconsin Idea established 100 years ago by university president Charles Van Hise, who believed it was the university's responsibility to extend its resources and make them available to every home in the state.

Wisconsin Idea Explorations in Science tickets are offered free on a first-come first-served basis. To reserve your free tickets (limit of five per family), please call (608) 262-4566 by Wednesday, Sept. 12. Seating is limited to the 290 people. Free parking is available. When offered on campus these programs always sell out, so call today to ensure your seat. Walk-in traffic will be allowed to enter the auditorium beginning at 6:50 p.m. if any seats remain.
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UNIVERSITY OF WISCONSIN MADISON

FOR IMMEDIATE RELEASE
6/6/01
CONTACT: LaMarr Billups, (608) 263-5510

UNIVERSITY RECOGNIZES COMMUNITY PARTNERS

MADISON -- The Wisconsin Idea is taking new forms in Dane County through innovative partnerships between the University of Wisconsin-Madison and area community groups.

The university will celebrate some of those best efforts during its Fifth Annual University and Community Partnerships event Wednesday, June 13, 5-7 p.m., at Olin House, 130 N. Prospect Ave.

Chancellor John Wiley will recognize individuals behind 18 different civic improvement projects in which university employees partner with city, county, state and private leaders. These 18 projects represent a cross-section of hundreds of similar partnerships campuswide.

The programs cover a range of interests, including reducing high-risk drinking, helping new parents, and encouraging people to explore life science. About 200 invited guests are expected for the event, 5-7 p.m.

"University-Community partnerships bring our good neighbor policy to life," says LaMarr Billups, special assistant to the chancellor for community relations. "These vibrant connections to real people and institutions across the Madison and Dane County area help to build and sustain healthy families, educate and prepare youth for the future, stimulate economic development and celebrate our diverse cultural experiences."

The university-community partnerships being recognized include:

RWJ High-Risk Drinking Project; T.S. 528, Basic Professional Practice in Occupational Therapy: A Service-Learning Course; Center for Quick Response Manufacturing; American Red Cross Hemophilia Treatment Center; School Readiness Project: Allied/Dunn's Marsh School Community Project; Service Learning for First-Year Professional Pharmacy Students; Shape Tutoring Program: Students Helping in Achievement in Public Education; Parenting the First Year; PEOPLE (Pre-college Enrichment Opportunity Program for Learning Excellence); Business Counseling and Small Business Access Line; SMHFC - Harambee Center; BioTrek: Biotechnology Center Outreach Education Program; Bridges to Work; Wisconsin Health Alert Network; Dane County Hunger Prevention Council; Expanding the Humanities; Arts Institute/Wisconsin Film Festival; and Madison Professional Development School Partnership.

For more information, contact LaMarr Billups, (608) 263-5510.
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University Communications
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FOR IMMEDIATE RELEASE
July 18, 2000
CONTACT: John Wiley, (608) 262-1304; Howard Martin, (608) 262-5821

UW INITIATIVE GIVES 'WISCONSIN IDEA' A HIGHER PROFILE

MADISON -- A new initiative at the University of Wisconsin-Madison will provide a forward-looking boost to one of the university's most cherished principles, the century-old Wisconsin Idea.

The initiative begins this month with three related developments designed to promote the university's mission of statewide service. The effort includes:

* A realignment of the university's outreach administration and the creation of an associate vice chancellor's position to steer university-wide service efforts. Howard Martin, dean of the Division of Continuing Studies, will lead the effort as the new associate vice chancellor for extended programs.

* The creation of a Wisconsin Idea Endowed Professorship, a faculty position supported with a $1.25 million endowment from the Evjue Foundation. The professorship will be named in honor of William T. Evjue and will recognize outstanding contributions to outreach and service. The person will further the legacy of the Wisconsin Idea, which holds that the boundaries of the university are the boundaries of the state and beyond.

* The creation of the Wisconsin Idea Fellowships, funded by an endowment through the UW Foundation with an ultimate goal of raising $20 million. Earnings from the endowment, roughly $1 million per year, will be used to support dozens of student-directed service projects across the state.

UW-Madison Provost John Wiley said the increased attention to service is timely. Enhancing the Wisconsin Idea emerged as one of the priorities in the university's strategic plan developed in the late 1990s, but until now had not received a concerted boost.

"Following our successes in the past decade in improving undergraduate education, we wanted to devote renewed attention to the Wisconsin Idea," Wiley said. "Public service is a core priority that touches every academic unit at the university. This initiative will help us take a stronger, more visible approach to our service mission."

The cornerstone of the administrative change is to move staff from the Office of Outreach Development to connect more directly with campus-wide outreach activities. Wiley said the 10 staff members from the office will now work "closer to the action" in distinct units on campus rather than being housed in a central administrative office.

Former outreach development staff positions have been reassigned to the Division of Continuing Studies; the Graduate School; the College of Letters and Sciences, and the School of Education.

Peyton Smith, director of marketing for University Communications, will work directly with Martin as an assistant vice chancellor for extended programs. Smith will work to enhance the university's outreach function and visibility, and in developing continuing education and extended programs. Previously, he developed a series of statewide programs as the institution's sesquicentennial coordinator and worked in continuing education and outreach development.

"This realignment will create the opportunity to enhance and expand the nationally recognized concept of the Wisconsin Idea," said Martin. "And it will help us continue to serve the changing needs of citizens of this state and alumni throughout the country."

Martin added that the change will encourage more collaboration among campus professionals and make it easier for the general public to tap into campus resources.

Wiley said the endowed professorship will be a valued addition to the list of endowed chair competitions on campus, most of which are awarded strictly on the basis of scholarly accomplishments. "This one will be given to directly recognize service, through applying the results of research to the important needs of society," he said.

The student service endowment will likely be modeled after the highly successful Hilldale Undergraduate Research Awards, which provide stipends of up to $4,000 for more than 100

student projects annually. Wiley said this program would be open to undergraduates at any grade level.

Service is a basic expectation of faculty and staff on campus. It comes in myriad forms, from solving problems on farms or in small businesses, to applying new learning principles in Wisconsin public schools, and to continuing education in its many forms.
###
Brian Mattmiller, 608/262-9772, bsmattmi@facstaff.wisc.edu

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Wisc Idea

University Communications

News Releases

UNIVERSITY OF WISCONSIN MADISON

June 9, 2000

TO: Editors, news directors
FROM: Brian Mattmiller, 608/262-9772
RE: Honoring town and gown partnerships

The Wisconsin Idea is taking new forms in Dane County through hundreds of innovative partnerships between the University of Wisconsin-Madison and area community groups.

On Wednesday, June 14, the university will celebrate some of the best efforts during its fourth annual University & Community Partnerships event at Olin House, 130 N. Prospect Ave. Reporters are welcome to attend.

This year, the event honors 13 programs over a range of interests, including protecting wildlife, serving special-needs kids, teaching space science to middle-schoolers, and promoting poetry in daily life.

"These programs are quietly improving our quality of life and proving that the Wisconsin Idea is alive and well," said Chancellor David Ward, who founded the recognition event. "The volunteers involved deserve our thanks and encouragement."

More than 100 people are expected for the reception, which will run from 5 p.m. to 7 p.m. The university-community partnerships being recognized include:

International Crane Foundation Cooperative Training; Earth Knowledge Acquired by Middle-Schoolers; Southern Regional Center for Children with Special Health Care Needs; Science is Fun for Middle School Students; Wisconsin's Native American Journalism Project; the Technology Enterprise Cooperative; Community Poetry Reading; Women and Mental Health Study Site of Dane County; the Wisconsin Advisory Committee of Independent Living; Service Learning for First-Year Pharmacy Students; Community-Based Nursing; the University Information Station at Borders East Bookshop; and Nuestra Educacion, Nuestra Futuro.

For more information about the program, contact LaMarr Billups, special assistant to the chancellor for community relations, at (608) 263-5510. Reporters interested in attending may contact Brian Mattmiller, (608) 262-9772.
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in addressing the conference at the Monona Terrace Convention Center.

Keeling is also executive editor of the Journal of American College Health and a member of the National Conference for Higher Education and the Health of Youth. He will speak at 9:15 a.m.

Kuhl is a nationally recognized researcher who spoke at the April 1997 White House Conference on "Early Learning and the Brain." She will address a luncheon session.

To register, call (800) 871-7176. Fee: $25 includes a continental breakfast, lunch and all sessions. Information: Deborah Still, 833-8545.

School reformer headlines event

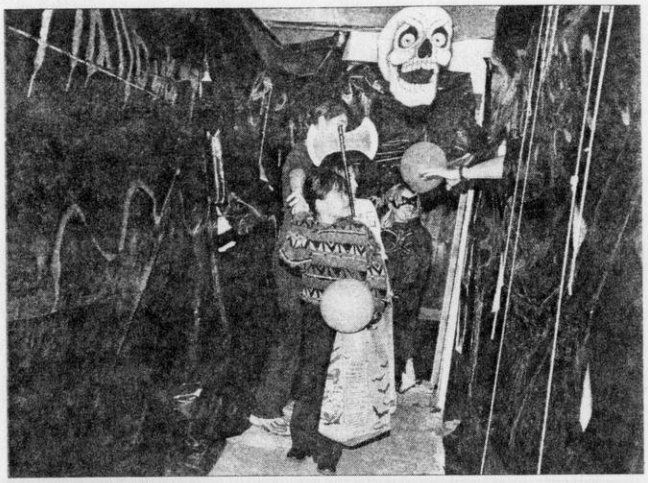
A speech by school reformer James Comer, a professor of child psychiatry at Yale University, will cap American Education Week activities sponsored by the School of Education.

Comer will speak on "Waiting for a Miracle: Why Schools Alone Can't Solve Our Problems and How We Can" in Memorial Union Theater at 7:30 p.m. Thursday, Nov. 18.

An expert on reforming troubled schools, Comer originated the "Comer Process," which is based on the idea that all stakeholders in a school, including parents, should have a say in how it is run. The process has been adopted by more than 250 schools in 18 states and has been credited with helping to raise test scores, increase school attendance and reduce disciplinary problems.

In his latest book, "Waiting for a Miracle," Comer shares his belief that the problems facing American schools reflect the entire culture and society. He maintains that "rampant individualism and racism" have created a social failure to commit to families, communities and educational institutions.

Other UW-Madison American Education Week activities Nov. 15-19 include a luncheon address on community-based arts education, an evening discussion of popular children's book-series character Harry Potter and an instructional technology fair. Information: 262-0054.



Spookable Greeks

Seemingly disembodied hands reach out for children from area community centers in a haunted house at the Sigma Phi Eps on Halloween, this past Halloween weekend. The community event was sponsored by the Panhellenic Council and other Greek system student organizations. Photo: Jeff Miller

MILESTONES

George W. Sledge dies at 71

George W. Sledge, 71, a longtime administrator in the College of Agricultural and Life Sciences died of cancer Oct. 20. A funeral was held Oct. 26.

Sledge joined the dean's office at CALS in 1960. From 1966 until his retirement in 1993, he served as associate dean of academic student affairs.

Under his guidance, and with the help of faculty and staff, the college initiated honors degree and internship programs for students, and expanded its scholarship program, personal advising program, and career advising and placement service.

Ling memorial scheduled

The Association of Asian American Graduate Students is sponsoring a memorial to Amy Ling, professor of Asian American studies and English, who died in August after a long struggle with breast cancer. "Remembering Amy Ling: Writer, Scholar, Activist Pioneer Between Two Worlds" will recall the founder of the first Asian American studies program in the Midwest and a national pioneer in the field. The event is planned in the On Wisconsin Room, Red Gym, 4 p.m. on Friday, Nov. 5, in the On Wisconsin Room at the Red Gym. A potluck will follow.

GOVERNANCE

Group questions Launder review

The contract review of Jim Launder, former university men's soccer coach, was a special case and should have been handled differently, according to a committee.

The report from the Ad Hoc Committee to Review Athletic Board Relationships says the Athletic Department's process for evaluating and retaining coaches "generally works well." But special cases such as Launder's "call for special procedures."

"This was apparently recognized by those involved, but was not adequately implemented," says the report, which was presented to the Faculty Senate Monday.

After Launder's contract was not renewed by the Athletic Board in February 1997, the Faculty Senate voted to establish the ad hoc committee when several senators and others called for further review of the situation. The ad hoc committee spent more than two years examining a number of issues related to the Athletic Board.

Ad Hoc Committee Chair Norman Fost, professor of pediatrics, says the ad hoc panel specifically examined the process that led to Launder's removal, and not the decision itself.

The ad hoc committee also recommended that an appeals process for special cases of non-renewal should be considered; that long-term contracts for coaches of non-income sports should be allowed; and that the way student evaluations are used in retention decisions should be reconsidered.

The committee also questioned the Athletic Board's original decision to include the "non-disparagement" clause in the Reebok contract, which was later dropped.

The University Committee has already begun its review of the recommendations and will report back to the senate.

Recent sightings by Jeff Miller: Up a tree

Spencer Cronk, a university sophomore, goes out on a limb near one of the lakeshore residence halls on a recent late autumn day. Students may still be just hanging around as November wears on, but sweats will replace those shorts as temperatures dip.

ALMANAC

Almanac lists facts, figures, resources and miscellany of campus interest. Know something or want to know? Call us: 262-3846, or e-mail: wisweek@news.wisc.edu.

Guesswork: Pumpkin nets $60

They finally wrestled that great pumpkin on display at Helen C. White College Library onto the freight scale at Memorial Union. The gargantuan gourd tipped the scales at 223 6 pounds. Security Officer **J.D. Rosandick** grew the pumpkin at his home in northwestern Dane County, and brought it to campus for a contest to guess the weight. Student **John Springer**, who guessed 221.9 pounds, won the "Great Pumpkin Scholarship" of $60 donated by College Library staff. Eighty-six students took a guess at the weight, and Library Services Assistant **Bruce Broker** says most of them were "way off." So much for higher education.

Services: Free flu shots

University Health Services will administer free flu shots to students, faculty and staff at the Union South satellite clinic 11 a.m.-5 p.m. Monday, Nov. 8, and Tuesday, Nov. 9.

Despite all the benefits of getting a flu shot, some people are reluctant to get immunized because they believe the immunization could make them sicker than the illness. "You cannot get influenza from the vaccine," says **Craig Roberts**, UHS community health director. "This is the middle of 'cold season' though, so lots of people will be getting respiratory infections during a time when they also get a flu shot. Sometimes people blame it on the shot, but it's only coincidence."

Janet Johnson, a registered nurse at UHS, says many people think the flu is a stomach illness, when it really is a highly contagious respiratory illness. Symptoms include fever, chills, cough, sore throat, headache and muscle aches.

Most people experience no serious problems from the shots.

Calendar: Trust fund hearing

The UW System Board of Regents holds its annual hearing on trust fund investments Thursday, Nov. 4, from 3:30-6 p.m. in Room 21 of the Human Ecology Building, 1300 Linden Drive.

Professional development: Wisconsin Idea seminar

One of the ways for faculty and staff to listen and learn from the citizens throughout the state is through the Wisconsin Idea Seminar. Begun in 1984, the Wisconsin Idea Seminar is a five-day study tour of Wisconsin, designed to introduce and promote the Wisconsin Idea, the commitment to use university expertise and resources to solve the problems of the state. Now in its 16th year, more than 500 faculty and staff have participated in this traveling seminar.

The next Wisconsin Idea seminar will take place Monday-Friday, May 22-26. Nominations may be made by colleagues, department chairs and directors through their dean's office until March 15. Information: Miriam Simmons, Outreach Development, 262-9970; msimmons@mail.bascom.wisc.edu.

Backward glance

From Wisconsin Week, Nov. 1, 1989: Faculty may be asked next month to decide whether or not to expel ROTC from campus because it bars gay men and lesbians from service. ... The Genetics Computer Group will soon sever its university ties to become a private company. ... The Athletic Board has named a special committee to conduct a broad-ranging review of the football program.

Quotable

"I'm surprised that other scientists aren't more personally aware of their own actions."

— **Jonathan Foley**, on his personal effort to cut carbon dioxide emissions

(for more, see page 4)

Conservator to describe Abe's cleaning

Cameron Wilson, a professional conservator from New York City, will give the well-known statue of Abraham Lincoln a gentle cleaning Sept. 21-25, and he'll lead an informal on-site discussion of his work at noon Thursday, Sept. 23.

The Elvehjem Museum of Art will sponsor the free talk. The statue is about to be cleaned for the first time because the bronzed likeness of Lincoln is coated with a patina of corrosion that's very bad for its long-term survival.

Wilson was asked by the university to save Abe from eventual disfigurement. The statue is minutely corroding away with each drop of acid rain. If left to its own devices — and how many of those does a statue have? — Abe will start to lose his features to the predations of pollution.

"Maintenance of the Lincoln statue is part of our stewardship as its owners," says Russell Panczenko, director of the Elvehjem Museum.

Evacuation drills scheduled

Evacuation drills will be conducted on campus Sept. 14, 15 and 16. Exact times will not be announced.

Safety Department personnel and the Madison Fire Department will act as monitors on each floor of a building, and it will be necessary to run evacuations throughout class periods.

At the time of the evacuation, faculty members should direct students to an alternate exit, assuming the generally used exit is blocked because of fire or smoke.

"When the fire alarm sounds, we expect, and will appreciate, as complete an evacuation as possible, subject to the proper security of experiments in progress," says Rhonda Lenerz, Safety Department.

Building occupants should move at least 100 feet from their building and remain there until an all-clear signal is given. The total exercise should not take more than 10 minutes, Lenerz says.

UPDATE

Speakers hit the road

The Speakers Bureau, starting its first full school year of operation, has already given new voice to the Wisconsin Idea.

Based in the Chancellor's Office, the Speakers Bureau began last semester to send university speakers across the state. They have spoken to service clubs and other organizations of all kinds.

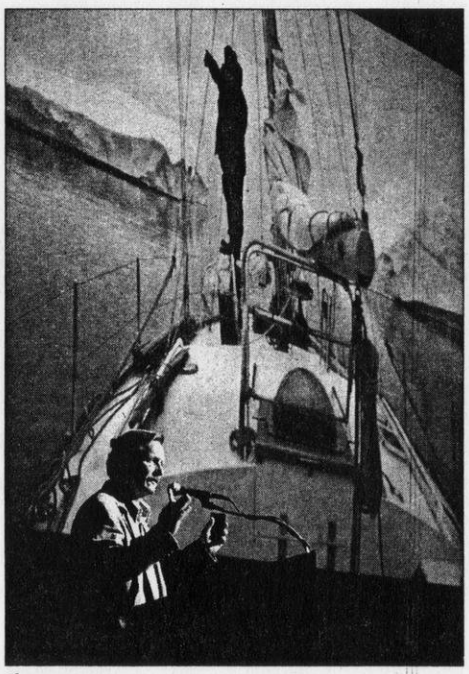
"We've selected a cadre of speakers on a host of topics," says Susan Stein, director of the Speakers Bureau. "The one thing they all have in common is their commitment to UW-Madison and its role in Wisconsin as a resource for a lifetime."

Venues so far have been diverse, including the Geological Society in Racine, the Brown County Bar Association in Green Bay and the Appleton Evening Lions Club. The topics vary with the speakers, but a consistent message has been the value of UW-Madison to the state.

Stein says the feedback from groups has been very positive: In fact, several clubs have sent second and third requests to the Speakers Bureau.

Other benefits of speaker placement, says Stein, have been positive local press coverage and a strengthening of the university's ties to community leaders.

Participants in the Speakers Bureau since its inception in January include: David Armstrong, Stephen Barclay, Pat Berry, Will Bleam, Bob Bock, John Bollinger, Bradford Brown, Nick Cahill, Kevin Check, J. Frank Cook, Ken Davis, Werner De Bondt, Joy Dohr, Pete Dorner, Eugene Farley, Linda Farley, Susan Farmer, Phil Farrell, Betty Ferris, Laura Hartman, Marcy Heim, Dianne McAfee Hopkins, Charles Hoslet, Art Hove, David Jarrard, John Kaminski, Phil Keillor, George Kliminski, Beth Knetter, Tim Kratz, Jim Leary, Roger Maclean, John Mathis, Mike Moss, Bruce Murray, Ron Numbers, Linda Oakley, Jean O'Leary, Ruth Olson, Steve Price, Bob Pricer, Noel Radomski, Charles Read, Ann Schensky, Megan Schliesman, Don Schutt, Rob Seltzer, Bill Sonzogni, Noel Stanton, Bill Strang, Monica Theis, Joe Von Elbe, David Ward, Klaus Westphal, Eric Wilcots, John Wiley, Ann Zanzig and Tom Zinnen.



Simon says

With a slide of his 36-foot sailboat displayed behind him, Arctic explorer Alvah Simon delivers the Chancellor's Convocation address to new students and others Sept. 1 at the Kohl Center. Simon, author of "North to the Night: A Year in the Arctic Ice," discussed his experiences surviving five months of isolation high above the Arctic Circle. The slides come from images made by his wife, Diana White Simon. Photo: Jeff Miller

Biotechnology training renewed

A National Institutes of Health grant that promotes graduate training in biotechnology has been renewed for an additional five years, says bacteriologist Timothy Donohue, who directs the program.

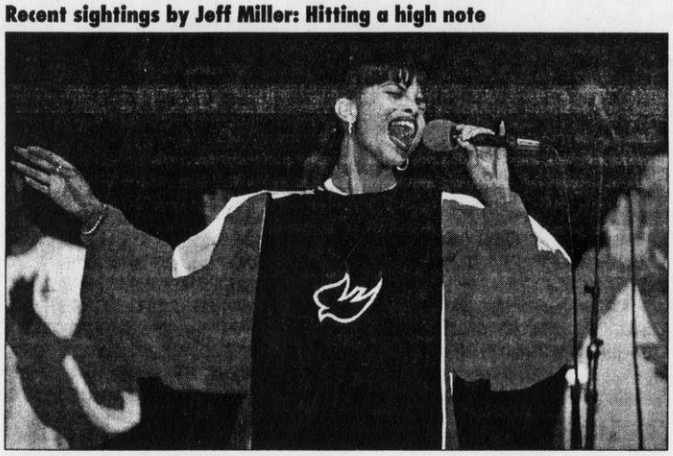
At more than $980,000 per year, the UW-Madison grant is the largest program of its kind in the country. Funded by the National Institute of General Medical Sciences, the program supports 33 graduate students each year. Those students come from the College of Agricultural and Life Sciences, the College of Engineering, the Graduate School, the College of Letters and Science, and the Medical School. The UW-Madison Graduate School provides matching support to help administer the training program.

"The program's objective is to develop a new cadre of scientists and engineers whose training and experience cross traditional academic boundaries," Donohue says. "As we enter the 21st century, there is an increasing need for cross-disciplinary teams of scientists and engineers to work closely on biomedical and agricultural problems. This program prepares students to function at the interface between the biological and physical sciences."

Graduate School Dean Virginia Hinshaw said the program is "highly successful in many dimensions," including its cross-disciplinary emphasis, strong partnerships with industry, diversity, enthusiastic leadership and research.

During the past 10 years, more than 120 UW-Madison doctoral students from more than 20 different graduate programs have been trained by the program.

Recent sightings by Jeff Miller: Hitting a high note



Cathy Ross and the UW Gospel Choir led the audience "to church" and a standing ovation at the Multicultural Orientation and Reception last week at the Wisconsin Union Theater. The annual event, sponsored by the Multicultural Student Center, welcomes students of color to campus.

ALMANAC

Almanac lists facts, figures and miscellany of campus interest. Know something or want to know? Call us: 262-3846, or e-mail: wisweek@news.wisc.edu.

How we stack up

The university heads a national list of institutions recognized for efforts to create a "disability-friendly" atmosphere for their students, visitors and staff. WE magazine (July-August 1999, page 91) cites UW-Madison for "superior services and facilities (paratransit vans, accessible and well-lit lecture halls, TDD pay phones), avid students in the School of Engineering (who) have designated assistive listening devices for fellow students in the community, home to the McBurney Disability Resource Center."

How we don't stack up

The university, once the nation's No. 2 "party school" as ranked by the Princeton Review, didn't even crack the top 10 this year. Florida universities rule the top two spots.

Help for tech problems

Reading the paper because your computer crashed again? The Division of Information Technology now answers to your computing questions four ways:

- http://www.wisc.edu/helpdesk/ offers online assistance 24 hours a day, seven days a week. You can search the DoIT knowledge base for solutions.
- E-mail help@doit.wisc.edu. Someone will get back to you by the next weekday.
- Walk over to 1210 W. Dayton St., where the techies work.
- Call 264-HELP anytime with questions about e-mail, Internet access, modems, getting connected and using your computers. But be aware that DoIT gets up to 1,000 calls a day in September, so you might want to try an alternate method first.

Mark your calendars

Run, don't walk, to register for the Homecoming Charity 5K Run/3K Walk set for Sunday, Oct. 10, at noon, starting on Library Mall. The entry fee is $12 until Friday, Oct. 1, and $15 from Oct. 1 to the day of the event. A T-shirt is guaranteed with pre-registration. For information or an entry form, call 265-2731 or stop in at the Below Alumni Center, 650 N. Lake St. All proceeds from Homecoming events go to the Dean of Students Crisis Fund.

Did you know?

Youngblood, Room 302, Union South, is the only permanent Red Cross blood donation center on any campus in the country. The All-Campus Blood Drive runs Thursdays and Fridays while classes are in session, from 10 a.m. - 4 p.m. Jennifer Suemnicht, donor recruitment representative, says about 3,000 blood donations are given at the campus center each year. Red blood cells only last 42 days and platelets only five days, so the Red Cross needs a constant flow of blood donors to ensure the availability of life-giving fluids to hospital patients. Appointments: 227-1357.

Backward glance

From Wisconsin Week, Sept. 13, 1989: Scholars Ted Finman and Gordon Baldwin say new UW System student conduct rules present no threat to free speech because the rules focus on behavior, not talk. ... Distance education gets a boost with the debut of a satellite system that will link students and UW Extension instructors. ... In her State of the University speech, Chancellor Donna Shalala says research into bovine growth hormone has been caught up in a "web of political, economic and social controversy," but says only further research will prove its feasibility.

Quotable

"There are lots of implications."
Richard Weindruch, professor of medicine, on research that identifies specific genetic changes in the aging process.
(See page 6).

Wisc Idea

Wisc Idea

NEWS

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UNIVERSITY OF WISCONSIN–MADISON

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28 Bascom Hall • 500 Lincoln Drive
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Phone: 608/262–3571
Fax: 608/262–2331

FOR IMMEDIATE RELEASE 9/10/99

NEWS BRIEFS FROM THE UNIVERSITY OF WISCONSIN-MADISON
-- University speakers hitting the road
-- Memorial planned for noted UW scientist and leader
-- Adviser to Tony Blair to speak on campus
-- Roundtable lunch series set for fall
-- Volunteer opportunities highlighted

UNIVERSITY SPEAKERS HITTING THE ROAD

CONTACT: Susan Stein. (608) 262-3880

MADISON -- The University of Wisconsin-Madison Speakers Bureau, starting its first full school year of operation, has already given new voice to the Wisconsin Idea.

Based in the Chancellor's Office, the Speakers Bureau began last semester to send university speakers across the state. They have spoken to service clubs and other organizations of all kinds.

"We've selected a cadre of speakers on a host of topics," says Susan Stein, director of the Speakers Bureau. "The one thing they all have in common is their commitment to UW-Madison and its role in Wisconsin as a resource for a lifetime."

Venues so far have been diverse, including the Geological Society in Racine, the Brown County Bar Association in Green Bay and the Appleton Evening Lions Club. The topics vary with the speakers, but a consistent message has been the value of UW-Madison to the state.

Stein said the feedback from groups has been very positive: "One hundred percent of them said they would like to have another UW-Madison speaker come again in the future." In fact, several clubs have sent second and third requests to the Speakers Bureau.

Other benefits of speaker placement, said Stein, have been positive local press coverage and a strengthening of the university's ties to community leaders.

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MEMORIAL PLANNED FOR NOTED UW SCIENTIST AND LEADER

MADISON -- A memorial is planned in Madison for Ira L. Baldwin, 104, a retired scientist and administrator at the University of Wisconsin-Madison who died last month in Tucson, Ariz.

The memorial will be held at First Congregational Church at 1 p.m. Sunday, Sept. 26.

Baldwin, professor emeritus of bacteriology and former dean of the College of Agricultural and Life Sciences, helped discover bacteria that improved crop yields. A World War I veteran, he held several top posts at the University of Wisconsin during a career on campus that spanned four decades.

Baldwin lived in Tucson, Ariz., with his wife of 45 years, Ineva Reilly Meyer Baldwin. His wife was assistant to the dean of women at the university in 1941-42, and assistant dean of the College of Letters and Science during 1946-54.

The family asks that memorials be made to the University of Wisconsin Foundation-Ira Baldwin Memorial, P.O. Box 8860, Madison, Wis. 53708-8860; or the Ira-Ineva Baldwin "Best Should Teach" Fund, P.O. Box 1140, Boulder, Colo. 80306.

ADVISER TO TONY BLAIR TO SPEAK ON CAMPUS

CONTACT: Ronnie Hess, (608) 262-5590 or rlhess@facstaff.wisc.edu

MADISON – Internationally known macro-economist and industrial relations expert David Soskice will give a series of talks this month at the University of Wisconsin-Madison on employment and economic change in Europe and the United Kingdom.

Soskice is director of the Employment and Economic Change Unit, Social Science Research Center (Wissenschaftszentrum), Berlin, and emeritus fellow in Economics, University College, Oxford.

In addition to research, Soskice has been coordinating the development of long-term strategy on post-compulsory education and training (ages 16-18) for Prime Minister Tony Blair's New Labour Government. He is the author of "Macroeconomics and the Wage Bargain: A Modern Approach to Employment, Inflation, and the Exchange Rate," as well as numerous articles on education, training, and innovation

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in Europe and the United States.

He is visiting UW-Madison as a Marshall-Monnet Scholar-in-Residence at the European Union Center, which is co-sponsoring his talks with the Center on Wisconsin Strategy, the Center on World Affairs and the Global Economy, the La Follette Institute of Public Affairs and the Center on Education and Work.

The public lectures are:

-- Wednesday, Sept. 22: "Economic and Monetary Union and the Future of the European Social Model," 3:30 p.m., Room 206 Ingraham Hall, 1155 Observatory Drive.

A reception inaugurating the second season of the European Union Center follows the talk.

--Thursday, Sept. 23, Professor Soskice gives his "take" on "The Fine Art of Policy Making at No. 10 Downing St.," noon, conference room, La Follette Institute of Public Affairs, 1225 Observatory Drive.

-- Friday, Sept. 24: "British Education and Training Policy," noon, Room 253, Educational Sciences building, 1025 W. Johnson St.

ROUNDTABLE LUNCH SERIES PROGRAM SET FOR FALL

CONTACT: Heather Rhodes, (608) 262-2511

MADISON -- The 1999 UW Roundtable faculty/staff luncheon series will focus on a broad range of topics, kicking off with an address Sept. 21 by UW System President Katharine Lyall.

Co-chairs for this year's series are Tino Balio, executive director, UW Arts Institute, and chair of the Department of Communication Arts; and Jane Tylus, Associate Dean for Humanities in the College of Letters and Science and professor of Comparative Literature.

Roundtable reservations should be sent to Heather Rhodes, 418 Memorial Union, or made via email, roundtable@macc.wisc.edu.

The cost for the lunches is $10.50. Reservations must be received by 4 p.m. the Thursday before each presentation. To make reservations by voice mail, call 265-2447; e-mail: roundtable@macc.wisc.edu

All events last from 11:45 a.m.-1 p.m. Location: Memorial Union.

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Here is the lineup for the Roundtable series:

-- Sept. 21: Tripp Commons, Memorial Union, Katharine Lyall, UW System, "Moving towards the Millennium."

-- Oct. 12: Russell Panczenko, director, Elvehjem Museum of Art, "The LVM: Growing Pains of a University Art Museum."

-- Oct. 26: Sonya Clark, assistant professor, Department of Environment, Textiles and Design, School of Human Ecology, "The Roots and Routes of My Work: Art Inspired by the African Diaspora."

-- Nov. 9: Jeffery B. Bartell, Quarles & Brady, member of the Overture Project Board of Directors, "The Arts (and the Overture Project) Are for Everyone."

-- Dec. 14: Wisconsin Brass Quintet, School Of Music, featuring John Aley and Alan Campbell, trumpets; Douglas Hill, horn; William Richardson, trombone and John Stevens, tuba, "Seasonal and Other Music."

VOLUNTEER OPPORTUNITIES HIGHLIGHTED

Want to help, but don't know where to begin? The Morgridge Center for Public Service hosts a fall volunteer fair Tuesday, September 21, featuring representatives from more than 100 campus and community organizations.

Match your skills and interests with hundreds of volunteer prospects including tutoring, mentoring, environmental issues, youth programs, health care, public information and advocacy, services for older adults and programs serving individuals with physical, cognitive and emotional disabilities.

The Fall Volunteer Fair makes it easy for you to get involved. The fair will be 11 a.m. 4 p.m. in Great Hall, Memorial Union, 800 Langdon St.

Information: 253-2532,; e-mail morgridge@macc.wisc.edu.

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Wisc. Idea

Updating the Wisconsin Idea

The University of Wisconsin-Madison in Partnership with the Community

March 1999, Number 6

Supplement to Wisconsin Week, March 31, 1999

Partners in Improving the Environment

Manitowoc County wetlands study

Graduate students learn while serving the community in a Water Resources Practicum

For nearly 30 years, graduate students in the UW-Madison's Water Resources Management Practicum have worked with Wisconsin communities, state agencies and nonprofit organizations on real-world water-management problems.

Last summer 18 students in the practicum traveled to Manitowoc County on the coast of Lake Michigan to collaborate with the Manitowoc County Parks and Planning Department on an inventory and assessment of coastal wetlands. The students also conducted a more extensive study of the biology, geology, hydrology and cultural history of the wetlands in Fischer Creek Conservation Park and the surrounding watershed.

The few remaining wetlands along the coast of Lake Michigan are at risk due to increased development and recreational use of the coastline. "They have a real treasure up there," said Quentin Carpenter, Institute for Environmental Studies lecturer and one of the two faculty advisors for last year's practicum. "The findings can help with preservation efforts."

As a first step to protecting Manitowoc wetlands, the students organized the information they collected, wrote up general recommendations and provided data to the county in digital form. "The county now has field-based data that it couldn't have acquired on its own," said Carpenter.

UW-Madison graduate students Casandra Osborn and Jeff Chaplin assess Manitowoc County's coastal wetlands as part of a continuing effort to protect some of the last remaining wetlands on Lake Michigan.

Public agencies in the county can use this new information to make informed planning decisions regarding management, protection or public acquisition of the wetlands. "With the help of these data, Manitowoc County can move from identifying threats to developing plans that will provide watershed protection," Carpenter added.

Carpenter believes that University involvement in projects such as the one in Manitowoc County is vital because many counties lack the resources, time or expertise to undertake these projects on their own. Practicum projects bring in additional funds and a wide range of expertise. In the Manitowoc project, funding came in part from the Wisconsin Coastal Management Program. The students — with their diverse backgrounds in such areas as wetland ecosystems, hydrology, urban and regional planning, environmental law and limnology — provided the expertise.

Mike Demski, director of the Manitowoc County Parks and Planning Department, said the counties appreciate the help. "Working with the students was a first-class experience." Since conducting their fieldwork last summer, Demski added, many students have continued their relationship with Manitowoc County by giving presentations at town meetings. "The county is currently in the midst of formulating town plans. The information students provide helps the towns make informed decisions about where development should occur."

Carpenter hopes that other coastal counties will be able to use the Manitowoc study as a model. Towards that end, the students developed a Coastal Wetland Rapid Assessment and Inventory form and a user guide for that form.

One hallmark of the annual practicum is student learning in a cooperative setting. Before they start their fieldwork, the students spend a year gathering information and planning their study as a group. "Consensus building is a valuable skill to take into the workforce," said Chad Cook, former practicum participant and currently a technician with the Wisconsin DNR. "We learned how to come up with solutions as a team."

"Providing the students with real-world experience and practical skills are key elements of the practicum," said Jean Bahr, professor of geology and geophysics and chair of the Water Resources Management program. The students in last year's practicum are now applying these skills in jobs around the country for employers such as the U.S. Geological Society, the Metropolitan Council in Minnesota, the U.S. House of Representatives, the Oregon Department of Environmental Quality and the River Alliance of Wisconsin.

> *"Providing the students with real-world experience and practical skills are key elements of the practicum."*

Students in the 1999 practicum are designing a public outreach program aimed at involving citizens in the long-term protection and rehabilitation of the Lake Wingra watershed.

For more information, contact:
Jean Bahr, phone: 262-5513
http://www.ies.wisc.edu/research/urm98

Inside...

"Environmental degradation affects us all because it impacts the basic elements on which all life depends – from the water we drink, to the food we eat, to the air we breathe, to the natural areas we cherish. University of Wisconsin researchers are working to uncover the causes and consequences of environmental problems. We join with partners in government, industry and communities to enhance our research and take practical steps to improve the world in which we live."

Tom Yuill, director, UW-Madison's Institute of Environmental Studies

Inserts are posted electronically at:
www.cals.wisc.edu/wfsp/uwi.html

Protecting forests in China

Yunnan study could impact millions in Southeast Asia

In the mountainous forested regions of the Chinese province of Yunnan live a number of wildlife species that don't exist anywhere else in the world. Once they are gone, they are gone forever. Alongside these species live millions of China's very poor ethnic minorities who rely on the forest for their food and health needs. With malnourished children at home, many don't think twice about hunting endangered species.

"Working at the community level provides an opportunity to achieve a balance between scientific knowledge and indigenous knowledge."

"We need to meet the challenge of conserving biodiversity in Yunnan while working with the rural poor to ensure their food security through sustainable forest management and agricultural practices," said Lin Compton, UW-Madison professor of forest ecology and management.

The province is key to the environment of Southeast Asia and the livelihood of nearly a billion people because six major rivers run through its mountainous regions. Excessive deforestation in the mountains of Yunnan is increasing the rate of erosion and causing these rivers to fill with silt at an above-normal rate. The silting has led to flooding, which causes immense economic damage and has led to the deaths of hundreds of thousands of people.

Compton first evaluated the impact of human influences on the forests in the Yunnan province five years ago. Along with Tom Yuill, professor of veterinary medicine and director of the Institute for Environmental Studies, and Tim Moermond, professor of zoology and chair of the Conservation Biology and Sustainable Development program in IES, Compton then started working to enhance the environment and economy of Yunnan's upland ecosystems.

Now Compton and his UW-Madison colleagues are designing, testing and promoting models and strategies to enable people to use the resources in the area while also sustaining them. One problem, Compton said, is the current practice of grazing farm animals in the forest, which can destroy biodiversity. "Farm animals are an important source of nutrition and income to the rural poor. We need to work with people in the community to develop alternative means of livestock management, such as finding different sources for fodder."

Now is an ideal time for a project like this because the World Bank is investing $300 million for forestry projects in the Yunnan and Sichuan provinces. "Our project, as it evolves, may involve many UW-Madison faculty including forest ecologists, soil scientists, social scientists, botanists, agronomists and water resource management specialists," said Compton.

Xian Yi, social scientist at the Institute of Rural Economy of the Yunnan Academy of Social Science and Lin Compton, UW-Madison professor of forest ecology and management, interview villagers about their knowledge and use of plants, trees, insects and wildlife in the nearby forested region.

This is a great opportunity for the university to play a role in environmental rehabilitation of a large part of the world and to improve the lives of nearly a billion people.

One key to the project's future success is ensuring that the programs developed are owned and operated by the local communities.

"Working at the community level provides an opportunity to achieve a balance between scientific knowledge and indigenous knowledge," said Compton. "When we work strictly in a university environment, we sometimes forget that scientists don't have all the answers."

Compton began working with the rural poor in Asia as a Peace Corps volunteer in 1962. Over the past 37 years he has continued helping these populations through projects with such partners as the World Bank, USAID, national ministries, private foundations and community organizations.

"On a personal level, this project brings together in the best way possible my diverse professional interests — from forestry to alleviating rural poverty," Compton added. "On the university level, it presents a great opportunity for the UW-Madison to play a role in the environmental rehabilitation of a large part of the world and to improve the lives of nearly a billion people."

For more information, contact:
Lin Compton, phone: 263-2082
Email: lcompton@facstaff.wisc.edu

Answering calls on policy

UW-Madison professor helps shape environmental legislation

Government officials, industry leaders, nonprofit agencies and other organizations often call upon university experts to help them make informed decisions and develop new policies. For more than 25 years Erhard Joeres, UW-Madison professor of civil and environmental engineering, has been answering those calls, contributing to significant environmental legislation at the state and national levels and helping the electrical utilities industry map out its environmental research agenda.

"We, as University people, are highly respected and thought to be unbiased in the way we approach problems," said Joeres. "Being asked to help with policy issues gives us a fantastic opportunity to work on problems that matter to everyone."

Joeres has been deeply involved in two major environmental policy issues in Wisconsin. In the late 1970s, he and Martin David, UW-Madison professor of economics, worked with water planners at the Wisconsin Department of Natural Resources to help Wisconsin industries comply with the 1972 amendments to the Federal Water Pollution Control Act, which set the basic structures for regulating discharges of pollutants into waters of the United States.

Joeres and David proposed setting up economic markets where companies could buy and sell "discharge permits." In this system, companies that can't meet government discharge standards can pay other companies to treat more of their own waste. "Both companies benefit from this arrangement," said Joeres. "The company with the excess pollution is given an option that doesn't involve closing down or making a massive capital investment. The other company is rewarded by being able to recover some of its initial investment in the clean technology as well as its operating costs." Their solution, endorsed by the DNR, was eventually written into Wisconsin law.

"Being asked to help with policy issues gives us a fantastic opportunity to work on problems that matter to everyone."

continued on page 3...

continued from page 2...

Joeres also worked on the implementation of the 1986 Wisconsin acid rain law, the first major example of such a law in the country. Acid rain is caused primarily by emissions of nitrogen oxides and sulfur dioxide. Eighty percent of the sulfur dioxide emissions in Wisconsin come from coal-burning electric utility plants. The 1986 law required the electric utilities to reduce their sulfur dioxide emissions to half the 1980 level by 1992.

The Council uses a highly cooperative effort to maintain the balance between economic and environmental health.

In addition, the utility industry was assessed $400,000 per year for 10 years for research and monitoring of acid rain in Wisconsin. The law created the Acid Deposition Research Council to oversee those funds and to ensure that research into the effects of acid rain was carried out in a scientific manner. Joeres represents the UW System on the Council, which includes one representative each from the environmental community, the electric utilities, the paper industry, the Public Service Commission and the DNR.

"Over the years, the Council has led the effort to promote and support research into the effects of acid rain on human health, fish and wildlife, forests, soils, lakes and streams and visibility," said Joeres. "We have also been successful getting research funds from the federal government and private institutions to match those we received from the utilities and the state government."

Nathaniel Robinson, of the Department of Administration and current Council chair, said, "The Council uses a highly cooperative joint effort among many diverse interests to maintain the delicate balance between economic and environmental health. The public/private partnerships created by the Council are models of cooperation that enable utilities, government and the University to provide measurable benefits to the people of Wisconsin."

The work Joeres has done at the state level has influenced national policy. Portions of the federal 1990 amendments to the Clean Air Act are modeled after Wisconsin's acid rain law. These amendments also incorporate the market-based approaches to controlling pollution originally developed by Joeres and David in the 1970s.

The people of Wisconsin benefit from the partnerships created by the Council.

Through his work on acid rain, Joeres learned that the DNR was concerned with the lack of trained air-quality-management professionals. To address this concern, Joeres worked with the DNR in 1993 to develop the UW-Madison graduate Air Resources Management Certificate Program.

"Many students in the program intern at the DNR's Bureau of Air Management, conducting research on issues of concern to the DNR," said Joeres. "The students' learning is enhanced by working on real-world problems."

For more information, contact:
Erhard Joeres, phone: 263-1796
Email: efjoeres@facstaff.wisc.edu

Erhard Joeres, UW-Madison professor of civil and environmental engineering, right, and Lloyd Eagen, director of the Bureau of Air Management with the Wisconsin DNR, discuss air quality issues.

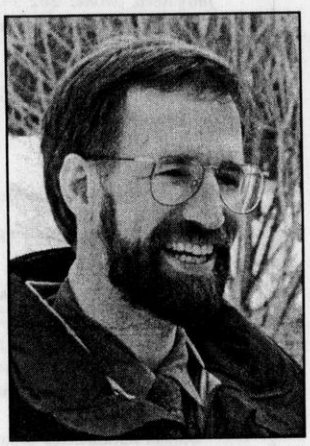
History lessons come alive

Using the past to inform people about contemporary environmental issues

Histories not only help us understand our past, they can inform the way we think about issues in the present and help us change the future, according to Bill Cronon, UW-Madison professor of history, geography and environmental studies.

Cronon informs public debate on environmental issues through his work as a professor, author, public speaker and board member of various nonprofit organizations such as The Wilderness Society. His research focuses on how human communities modify the landscapes in which they live and how people are in turn affected by changing geological, climatological, epidemiological and ecological conditions.

"Environmental history can profoundly inform public understanding of contemporary environmental issues by placing those issues in a broader historical context," said Cronon.



UW-Madison Professor Bill Cronon shares lessons on environmental history with civic clubs, faculty and staff.

Environmental historians should try to reach a wide range of audiences, including policymakers, activists and the general public, Cronon believes. "If our histories are to help change the world, they must reach beyond the walls of the academy to affect the views of people who do more than just study the past."

When environmental historians study issues that relate to current environmental problems, policymakers may turn to them for insights on how to deal with these problems. "By challenging us to focus our research on very concrete modern problems," said Cronon, "policymakers suggest that our insights may actually influence the course of events in the real world."

The work of environmental historians may have a similar influence on environmental activists. "When we write about the successes and failures of past organizing efforts," said Cronon, "it's nice to think that our work might empower contemporary movements, helping them avoid past mistakes by focusing on efforts and initiatives that seem most likely to produce positive environmental change."

If our histories are to help change the world, they must reach beyond the walls of the academy.

By targeting their work towards what Cronon calls the holy grail of crossover academic writing — the general public — environmental historians can reinvigorate public interest in history and demonstrate the relevance of the past to the present. "Scholarship that remains in the sealed world of the academy runs the risk of being sterile," he said. "When academics produce scholarship in the service of a larger public, the entire enterprise is enriched."

For more information, contact:
Bill Cronon, phone: 265-6023
Email: cronon@macc.wisc.edu

Others working to improve the environment

Center for Climatic Research seeks to understand the impact of climate on ecosystems. The Center's research goals are to diagnose and model the behavior of past and present climates and to strengthen the ties between climate science and earth system science.

Phone: 262-2839
Web: plum.meteor.wisc.edu/

Center for Integrated Agricultural Systems brings together farmers, researchers, policymakers and others to study farming practices, farm profitability, the environment and rural vitality.

Phone: 262-5200
Web: www.wisc.edu/cias/

Center for Limnology conducts and facilitates freshwater research and aims to apply that research to resource management and environmental issues.

Phone: 262-3014
Web: limnology.wisc.edu/

Climate, People and Environment Program collaborates with scientists across the globe to study current global challenges that stem from the intricate links among human activities, global climate and ecological systems and the Earth's natural resources.

Phone: 262-2839
Web: rainforest.meteor.wisc.edu

Environmental Remote Sensing Center applies remote sensing and geographic information system (GIS) methods to landscape analysis, environmental monitoring and natural resource assessment activities.

Phone: 262-1585
Web: www.ersc.wisc.edu/ERSC

Environmental Toxicology Center promotes research on suspected and known environmental toxicants; facilitates the exchange of information relating to environmental toxicology; and provides scientific input to help legislators and government agencies formulate and enforce legislation that addresses environmental agents released by human activity.

Phone: 263-4580
Web: www.wisc.edu/etc

Kickapoo River Valley Project in the School of Natural Resources features multifaceted research and service programs designed to help valley residents achieve sustainable development. Highlights include Wisconsin's first solar village, an action plan for a sustainable regional economy, forest regeneration and water conservation research and a geographic information system and computerized economic modeling system tailored to the valley.

Phone: 262-6968
Web: www.cals.wisc.edu/sm/kick.html

Partnership for Environmental Stewardship is a tri-national collaboration among the Universities of Wisconsin-Madison, Guelph, Canada and Guadalajara, Mexico. Current research and action-oriented projects focus on the Sierra de Manatlán Biosphere Reserve in Mexico.

Phone: 265-5296
Web: www.ies.wisc.edu/part-eng.htm

Small Scale Waste Management Project is an interdisciplinary research group that develops methods to treat and dispose of wastewater in unsewered areas.

Phone: 265-6595
Web: www.wisc.edu/ssswmp

Solar Energy Lab seeks to educate students through research experiences in solar and conventional energy use and to remain on the competitive edge of new developments in solar heating and cooling, photovoltaics, desiccant and absorption cooling, control of HVAC systems, air quality in buildings, thermal storage and food processing.

Phone: 263-1589
Web: sel.me.wisc.edu/

University of Wisconsin Sea Grant Program is a statewide program of basic and applied research, education and technology transfer dedicated to the wise stewardship and sustainable use of the Great Lakes and ocean resources.

Phone: 262-0905
Web: www.seagrant.wisc.edu/index.html

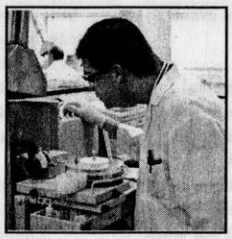
Water Resources Center has developed a broadly-based research, training, communications and public service program that carries out its mission of finding solutions for present and emerging water resource problems.

Phone: 262-3577
Web: www.wri.wisc.edu

Wisconsin Public Utility Institute advances understanding of public policy issues in the electricity, gas and telecommunications industries by providing information, communication programs, education and other services that aid in examining and developing appropriate public policies for those industries.

Phone: 263-4180
Web: wiscinfo.doit.wisc.edu/bschool/wpui/index.html

Wisconsin State Laboratory of Hygiene (WSLH) has served as the state's public and environmental health laboratory since 1903. Working with public and private-sector partners, the WSLH conducts research, performs analytical services and leads outreach programs that benefit the citizens and environment of Wisconsin, the nation and the world.



Phone: 262-1293
Web: www.slh.wisc.edu

Workshop for Native American Students is a precollege program offered each summer by the Institute for Environmental Studies. The program consists of an intensive two-week exploration of nature and the environment for young Native Americans from Wisconsin and elsewhere.

Phone: 263-4373
Web: www.ies.wisc.edu/outreach.htm#precollege

Updating the Wisconsin Idea

March 1999, Number 6

This publication tells stories of faculty and staff who are working in partnerships with businesses, civic organizations, government agencies, schools and other community-based groups to improve our state, nation and world. We hope these stories motivate other faculty and staff to seek community partners to create knowledge that will benefit society in the 21st century.

Updating the Wisconsin Idea is a joint effort between UW-Madison's Office of Outreach Development in the Office of the Provost and the Wisconsin Food System Partnership funded by the Kellogg Foundation and administered by the College of Agricultural and Life Sciences.

Future inserts will focus on the following topics: new technology, the humanities, child and family welfare and government. To share story ideas or to comment on this issue, contact:

Judy Reed, phone: 262-5421
Email: jcreed@facstaff.wisc.edu

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Courtesy of Water Resources Mgmt., p 1
Courtesy of Lin Compton, China, p 2
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Courtesy of CIAS, CIAS
William Karasov, Sea Grant Program
Jan Schneider, WSLH
Courtesy of IES, Native Americans

March 1999, Number 6
Supplement to Wisconsin Week
March 31, 1999

Wisc Idea

April 1, 1999

TO: Reporters, editors, news directors
FROM: Tim Kelley, Office of News and Public Affairs, (608) 265-9870
RE: Community service in university learning

One of the hottest national trends in higher education is the current effort to supplement academic study with community service. The University of Wisconsin-Madison, already a focal point for such efforts, will host a three-day national conference April 7-9 that will examine the public service mission of universities and colleges.

For your background, the UW System has a long commitment to providing public service: It is the foundation of the Wisconsin Idea, the concept extending UW expertise and resources beyond the boundaries of the campus to the state, nation, and world.

Service learning, as the current movement is called, fosters partnerships between the community and the university. Here are some sources who can shed light on this trend and describe UW-Madison's involvement in this area of higher education.

Service Learning: What it is and what students do

Mary Rouse, (608) 263-5702, dean of students. Rouse has just been named an assistant vice chancellor in charge of strengthening and expanding programs that connect classroom and service learning.

Roger Howard, associate dean of students, (608) 263-5704. Howard can discuss the national trend of service learning and explain how it enhances undergraduate education.

Susan VandeHei Dibbell, (608) 263-4009, acting director of the Morgridge Center for Public Service, a clearinghouse that links students and others with volunteer opportunities. Dibbell can discuss the spirit of community service already motivates a substantial segment of university students and give examples of current volunteer opportunities.

Community perspectives

Nan Cnare, executive vice president, United Way of Dane County, (608) 246-4353. Cnare is a Morgridge Advisory Board member who can talk about the important of linking classroom learning and community service.

Steve Braunginn, Urban League of Greater Madison, (608) 251-8550. The Urban League is interested expanding community service initiatives involving the university.

Student perspectives

UW-Madison senior Jesse Fisher, (608) 263-2432, is a peer advisor for the Morgridge Center for Public Service. Fisher helps place students with Dane County agencies, makes presentations on community service to student groups, and helps organize service projects.

UW-Madison senior Casey Klofstad, (608) 238-9060, serving a fourth year on the Dean of Students Advisory Board, has been involved in philanthropic activities as a member of an honor society and for the past two years has conducted real-world research -- an analysis of public opinion data -- with a political science professor.

Adminstration perspective

Phillip R. Certain, dean of the College of Letters and Science, (608) 263-2303. The university's largest college has launched a living-learning experiment, the Chadbourne Residential College, that has boosted academic performance of its students.

Faculty perspectives

William Cronon, professor of history, (608) 265-6023 or crononw@macc.wisc.edu, has been heavily involved with informal service learning associated with community service and other non-curricular activities. He's also scheduled to be a conference participant.

Bernice Durand, physics professor and past Distinguished Teaching Award recipient, (608) 262-3827, sees service learning activities as a possible way to encourage a more diverse and welcoming campus. Durand is co-chair of a committee developing a new 10-year diversity plan for the campus.

Wisc. Idea

FOR IMMEDIATE RELEASE 3/17/99
CONTACT: Yvonne Fangmeyer, (608) 265-2407

NATIONAL CONFERENCE TO HIGHLIGHT PUBLIC SERVICE

MADISON -- The University of Wisconsin-Madison will host a three-day national conference April 7-9 that will examine the public service mission of land grant institutions.

Yvonne Fangmeyer, of the UW-Madison Dean of Students Office, says that the national conference, "Envisioning Public Service in the 21st Century," will help redefine the public service mission of land grant colleges and universities for the next century.

Guest speakers include William C. Richardson, president and chief executive officer of the Kellogg Foundation; Judith Ramaley, president of the University of Vermont; Pierre Sauvage, Los Angeles filmmaker; William Cronon, UW-Madison history professor; Ed Skloot, executive director of the Surdna Foundation; and UW-Madison Chancellor David Ward.

The UW System has a rich history in its commitment to providing public service, Fangmeyer notes. Public service is the foundation of the Wisconsin Idea, a commitment made early this century to extend UW expertise and resources beyond the boundaries of the campus to the people of the state, the nation, and the world.

Service learning integrates service to the community with academic study. Partnerships between the community and the university provide opportunities which foster student learning. Fangmeyer says that it's time to revitalize the land grant service mission: Land grant institutions have a responsibility to educate students in becoming good citizens, committed to lifelong service.

The large number of UW-Madison students who elect to join the Peace Corps and other service organizations attest to the emphasis that UW-Madison places on volunteerism. The University's Morgridge Center for Public Service has extended UW-Madison's commitment to linking students with community service opportunities.

Ten workshops are also available to participants. The conference will be held at the UW-Madison Memorial Union April 7-9 and is open to anyone, including students, staff, faculty and the community. Registration is due Monday, March 22. Registration is $200; day rates of $100 are available.

For more information, visit:
http://wiscinfo.doit.wisc.edu/calsoutreach/morgridge or contact Fangmeyer, (608) 265-2407; TTY (608) 263-2400,; fax (608) 265-8184, or fangmeyer@redgym.wisc.edu.

The Morgridge Center for Public Service serves as a focal point for information on local, national and international public service opportunities, promoting collaboration between the community and UW students, faculty, staff and alumni. The center, located in the Red Gym, 716 Langdon St., is open 8:30 a.m.-5 p.m. Monday through Friday.
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Updating the Wisconsin Idea

The University of Wisconsin-Madison in Partnership with the Community

February 1999, Number 5

Partners in Health Care

From the Ukraine to India

UW-Madison health professionals serve a global community

The breakup of the former Soviet Union has left the health care systems of the newly independent countries in shambles: hospitals lack the money to purchase medical equipment and supplies; rural hospitals may go for weeks without electricity because they can't afford to pay their bills; and families have to bring food to their loved ones staying in the hospital.

"You can't believe how bad things are there until you see how the people suffer and see how little they have," said Dr. John Doyle, professor and chief of dental services for the Division of Plastic and Reconstructive Surgery at the University of Wisconsin-Madison Medical School.

You can't believe how bad things are there until you see how the people suffer and how little they have.

Dr. Doyle and colleagues at UW-Madison, along with volunteers from the Lutheran Church, are working in cooperation with health administrators and professionals in the Ukraine, Kazakhstan and Kyrgyzstan, to give people in those countries access to quality health care.

Dr. John Doyle (right), UW-Madison professor, explains the use of new dental supplies to Kazakh dentists.

Started with a grant from the Schwann Foundation and the Lutheran Church Missouri Synod, the project provides rural residents with dental care, pediatric care, treatment for sexually transmitted diseases and other services.

The project funds fully equipped trailers, staffed by local health professionals, which travel throughout the three countries, stopping in different villages for a few weeks at a time. The volunteers provide services seven days a week, February through November, but must stop during December and January when many of the roads are impassable and the pipes in the trailers freeze. When possible, UW-Madison medical faculty join them. In addition, UW-Madison volunteers provide training, technical assistance and resources to health professionals in these countries.

Dr. Doyle began working in the former Soviet Union about 10 years ago as a consultant in the Medical/Dental Clinic on Wheels for Victims of Chernobyl. Since then, he has persuaded more than 20 of his colleagues at UW-Madison to assist in these international efforts, including Dr. John Stephenson, professor emeritus of pediatrics, Dr. Stephen Hardy, assistant professor of surgery, Dr. Rjurik Golubjatnikov, emeritus assistant professor, State Lab of Hygiene, and Dr. Aaron Friedman, professor and chair of pediatrics.

"Working in Kazakhstan has allowed me to help people on an individual and public health level," said Dr. Friedman. "Through this project I've met new people, learned about a different culture and built relationships with colleagues both here and overseas. I believe we have a responsibility to offer assistance beyond the borders of our state when provided with the opportunity."

Dr. Suresh Chandra, a UW-Madison professor of ophthalmology, shares Dr. Friedman's belief that the University should be an active participant in the global community. "Those who have should share with those who have not," he said. "How much the University gives to the local community, to the nation and to the world matters."

Dr. Chandra contributes to the global community through Combat Blindness Foundation, an organization he founded to help eliminate curable or preventable blindness in developing nations, where three-fourths of the world's blind people live.

We have a responsibility to offer assistance beyond the borders of our state.

According to Dr. Chandra, eighty percent of blindness in those nations is curable or preventable. One form that can be cured is cataracts; a simple surgical procedure, costing $10, cures cataract blindness.

To combat cataracts, the Foundation has set up mobile eye-care clinics in cooperation with local health care personnel. The clinics, staffed by volunteer doctors from the host country and around the world, offer free cataract surgery for all the afflicted in the area.

The Foundation has also set up suture and intraocular lens factories in India. Before the factory was built, the lenses cost $80-$100 apiece.

continued on page 2...

Inside...

"Our faculty and staff play an extremely important role in providing health care to people in Wisconsin, across the nation and throughout the world. Their knowledge and objectivity have helped form important public policies. As partners with physicians, pharmacists, nurses and other health care professionals in the prevention and treatment of disease, our researchers and clinicians exemplify the Wisconsin Idea."

John Wiley, Provost, UW-Madison

Inserts are posted electronically at: www.cals.wisc.edu/wfsp/uwi.html

New technologies enhance health care and health education

UW-Madison faculty and staff are at the forefront of designing programs that use new media technologies to improve health care and health education for consumers and health professionals:

■ Patricia Flatley Brennan (Nursing, Industrial Engineering), David Gustafson (IE), Barrett Caldwell (IE) and Mary Ellen Murray (Nursing), received a $1 million grant from the National Library of Medicine and the National Institute of Nursing to design and evaluate HeartCare, an Internet-based support system headquartered at UW-Madison that assists patients recovering at home from heart surgery. HeartCare customizes Web pages for each patient and updates the pages as recovery continues.

For more information, phone: 263-5251
Email: pbrennan@ie.engr.wisc.edu

■ Vivian Littlefield, dean of the School of Nursing, is closely involved in WisTREC (Wisconsin program for Training Regionally Employed Care providers), which provides distance education to nurse practitioners, nurse midwives, and physician assistants, and encourages them to practice in their own communities.

"With inner-city Milwaukee and many small towns and rural areas facing critical shortages of medical personnel, WisTREC is one important way we can halt the flow of medical practitioners out of underserved communities," says Dean Littlefield.

For more information, phone: 263-5155
Email: vmlittle@facstaff.wisc.edu

■ Donald Harkness, professor emeritus in the School of Medicine, directs Continuing Medical Education (CME), now in its 36th year of keeping Wisconsin physicians up to date via the Educational Teleconference Network and WisLine. Popular programs include the weekly Updates for Primary Physicians and regular series on geriatrics, pediatrics, medical technology and nutrition.

For more information, phone: 263-2860
Email: ncvilbrandt@facstaff.wisc.edu

Wendy Miller of Stevens Point used the Collaborative Nursing Program's Internet classes to complete her bachelor's degree in nursing.

■ Robert Breslow, clinical assistant professor in the School of Pharmacy, coordinates the Nontraditional Doctor of Pharmacy Program. This program uses CD-ROMs, the Internet, and other technologies to enable licensed pharmacists to complete their Doctor of Pharmacy degree in non-campus settings.

For more information, phone: 262-5365
Email: rmbreslow@pharmacy.wisc.edu

■ Sharon Nellis, student services coordinator at the School of Nursing, works with the Collaborative Nursing Program. This consortium of five UW nursing programs across Wisconsin allows practicing nurses to complete a bachelor of science degree in nursing at distance-education sites around the state. Several hundred nurses have already benefited.

For more information, phone: 262-0566
Email: srnellis@facstaff.wisc.edu

■ Dr. Armond Start (Family Medicine) works to develop "telemedicine" links between the UW-Madison campus and the state prison system. With the help of sophisticated video systems, a doctor at UW Hospital can diagnose an inmate hundreds of miles away, facilitating treatment without the expenses of time and money involved in bringing the inmate all the way to Madison.

"Telemedicine isn't just a solution to the problem of prison medical care, it can be extrapolated to any community in the state of Wisconsin," Dr. Start said. "You can do anything with it except touch the patient, and once you have established a patient-physician alliance, many medical concerns can be addressed without the doctor ever needing to touch the patient."

For more information, phone: 263-1326
Email: astart@fammed.wisc.edu

■ The Health Sciences Library makes information accessible to medical personnel and consumers via the World Wide Web, according to Karen Dahlen, director of the library. Resources include full-text and citation databases of medical literature; user guides and customizable search services; and access to dozens of other on- and off-campus websites related to health care and health education.

For more information, phone: 262-5943
Email: chslib@doit.wisc.edu

The Ukraine to India *continued...*

The factory makes them for about $8 and supplies them at cost to nonprofit organizations in 75 countries. The suture factory has reduced the price of sutures from $15 to about $1.50.

Dr. Suresh Chandra, UW-Madison professor of ophthalmology, examines the eye of a woman in India during his annual month-long service at mobile eye clinics he conducts in cooperation with local health care personnel.

Another major preventable cause of blindness is nutritional blindness or xerophthalmia. This type of blindness, which is caused by vitamin A deficiency, strikes young children. "If xerophthalmia is not treated early, children will go permanently blind," said Dr. Chandra.

Foundation teams identify rural areas with high rates of vitamin A deficiency and then visit them on a regular basis, educating villagers about the importance of vitamin A, giving children high doses of vitamin A, and providing residents with seeds to grow vegetables rich in the vitamin.

Dr. Chandra spends one month each year working on Foundation projects in India, the second most populous country in the world and one of the poorest. Dr. Chandra started his work in India because he wanted to give something back to his native country, which provided him with free medical education when he was starting out.

...helping others gives strength to our hearts.

Dr. Chandra also recognizes other benefits to helping those less fortunate: "We are selfish because helping others gives strength to our hearts. It makes us feel good about life."

For more information, contact:
Dr. John Doyle, phone: 263-4807
Dr. Suresh Chandra, phone: 263-9338

Taking medicine on the road

Programs provide health services to Native American children

Poverty, rural isolation and cultural differences often prevent Native Americans from receiving adequate health care. These barriers are particularly troublesome for children: Native Americans generally have higher rates of infant mortality, of late entry into prenatal care, and of sudden infant death syndrome than the general population of the United States.

Murray Katcher, professor of pediatric and family medicine and director of community outreach at the UW Medical School, became concerned about these conditions, which led him to help begin the Wisconsin Inter-Tribal Children's Health Project.

We will be better able to prepare our medical students and residents for future service.

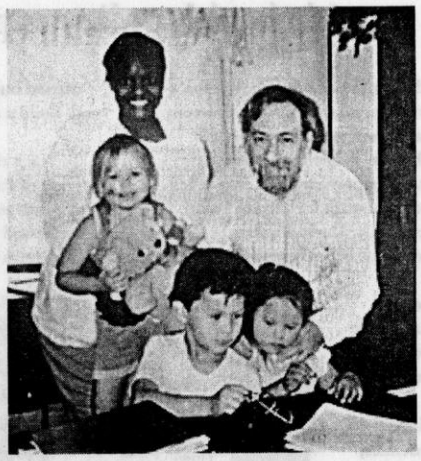
Funded by the Great Lakes Intertribal Council, the Robert Wood Johnson Foundation, and the Wisconsin Chapter of the American Academy of Pediatrics, the project breaks down barriers to health care for Native American children. As part of the project, UW-Madison faculty and students deliver health care to tribal members and educational programs to tribal health care professionals.

Each visit to an Indian reservation is tailored to the particular needs of that tribe. Some tribes express interest in well-child care while others request assistance with acute care and pediatric consultations. Various continuing education seminars are also provided, depending on the interests of tribal members.

Katcher said his experience with this project has been professionally rewarding. "By evaluating the problems we saw and the services provided, we will be better able to prepare our medical students and residents for future service on Indian reservations in Wisconsin."

In addition to providing residents and students with work experience and training, this project offers them the opportunity to learn about tribal history and culture. "This exposure allows them to be more sensitive as they deliver health care to diverse populations," said Katcher.

This is not the first time Katcher, a recipient of the Robert Heideman Award for Excellence in Public Service, has encouraged students to serve in the community and learn from experience. As medical director of the Salvation Army Homeless Shelter Clinic, he helped get hundreds of students and faculty in medicine, nursing, pharmacy, and health services administration involved in that program. These individuals have provided quality health care to over 3,000 homeless women and children. The clinic recently received the national Ambulatory Pediatric Association's Health Care Delivery Award.



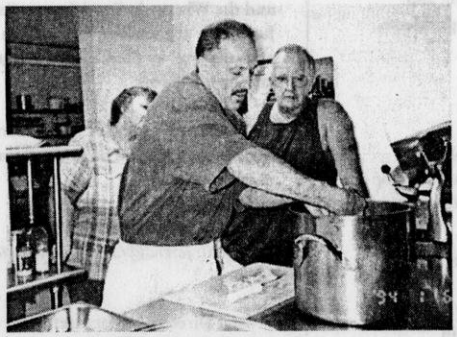
Evette Kingcaid, a UW-Madison medical student, and Dr. Murray Katcher, a UW-Madison professor of pediatrics, work with children at the Sokaogon Mole Lake Tribal Health Center in Crandon, Wisconsin.

For more information, contact:
Murray Katcher, phone: 262-8416
Email: mkatcher@facstaff.wisc.edu

Planting seeds for good food and friendship

When the volunteers arrived with their shovels at a home in Waunakee early one morning last spring, they were met by two young women with developmental disabilities who were sitting in lawn chairs, right in the center of the back yard. Within two hours they all had built two 4' x 8' raised garden beds and sowed enough seeds for a mini cornucopia.

Two months later, a thank-you note arrived at the University of Wisconsin-Madison's Health Promotion Project office. Enclosed was a signed photo of the two proud gardeners, sitting in front of a trellis full of beanstalks and more tomatoes than they could eat. Their host, the owner of the adult family home, had sent along a jar of tomato jam and said she had registered them all for cooking lessons in the fall.



Trained at the Culinary Institute of America, Rafe Montello teaches cooking techniques to people with disabilities and their support providers.

The gardens were part of a special outreach effort of the Health Promotion Project for People With Developmental Disabilities. "We wanted to get down to basics," said project director Rick Brooks of the Division of Continuing Studies. "So we focused on food—how to grow it, buy it, prepare it, serve it and enjoy it with someone. Our goal was to promote good nutrition and something more—healthy ways to share friendship and socialize around food."

To make that happen, community consultant Audrey Lesondak arranged for local chefs to teach five cooking classes to staff and clients of local residential service agencies. Together they prepared and ate healthy and savory salads, quesadillas, pasta sauce, desserts and snacks.

Project volunteers built eight home gardens, feeding 31 people. "The gardens are an opportunity for people with developmental disabilities to give and receive," said Theresa Fishler, from Avenues to Community, an outreach program of the Waisman Center.

Fishler, one of the project volunteers, added, "The people I worked with have said they enjoyed working in their garden, they loved the food, and they thought it was neat to be able to share what they grew."

"One of the exciting parts of this project is seeing the ideas it generates catch on," said Brooks. "We have made connections with forty to fifty community agencies, many of which are continuing this kind of work on their own."

The project also sponsored UW-Extension Food and Nutrition Program courses in Wausau, Beloit and Madison. Mary Kay Blint and Kay Deupree of the Rock County Extension Office shared tips for teaching better food habits. Denise Neath of 4-H and Mary Sykes of the Community Action Coalition showed how to "puree with pizzazz."

Our goal was to promote good nutrition and healthy ways to share friendship and socialize around food.

All these activities grew out of a mini-grant from the Wisconsin Food System Partnership, through the College of Agriculture and Life Sciences. The home gardening project was so successful that more volunteers will be needed this spring.

For more information, contact:
Rick Brooks, phone: 265-4077
Web: www.dcs.wisc.edu/pda/hhi/hpp/index.html

In Wisconsin Week

Faculty provide health policy expertise to policymakers

When stakeholders in the health policy arena — employers, provider organizations, government officials and health care consumers — need expertise in such areas as health economics, sociology, ethics and administration, they often call the Wisconsin Network for Health Policy Research, headed by Dr. David Kindig, UW-Madison professor of preventative medicine.

The network seeks to make expertise available to all stakeholders in the health policy arena.

"We want to bridge the gaps among academics, legislators and corporate policymakers by bringing together people and data focused on health policy issues of importance to all state constituents," said Kindig. "In other states, this function is carried out by schools of public health. We hope to build a school without walls."

Medical School Dean Philip Farrell, David Kindig, director, and Nancy Cross Dunham, former deputy director, Wisconsin Network for Health Policy Research, promote the work of the network.

To reach this goal, the network and the Department of Preventative Medicine cosponsor policy seminar series. Experts at past seminars have addressed such issues as redesigning Wisconsin's long-term care system and how the public sector can help reduce inequalities in health care access and utilization.

The network has also partnered with the Center for Health Statistics and the Office of Health Care Information to construct a web database that enhances electronic access to information on Wisconsin's health. Additional network efforts include papers and conferences examining key issues in health care policy such as "Ethical Issues in Managed Care," "Promoting the Health of Wisconsin Employee Populations," and "Nurse Practitioners, Certified Nurse Midwives, and Physician Assistants in Wisconsin."

Another way in which the network serves as a bridge is by creating partnerships of inquiry between health policy researchers and the users of this research in Wisconsin.

"These partnerships not only bring the expertise of the university to the community, they also bring the expertise of the community to the university," said Trudy Carlson, a senior scientist at the network. "This helps ensure that research at the university remains relevant to real-world policy issues."

For more information, contact:
David Kindig, phone: 263-6294
Web: www.medsch.wisc.edu/prevmed/network/

Others working in health care

Center for Health Systems Research and Analysis develops and evaluates decision support systems with health care applications; health information systems and databases for use in policy analysis and epidemiologic studies; and decision support and information systems for health education and promotion programs.

Phone: 263-5722
Web: chsra.wisc.edu

Center for Leadership in Pediatric Occupational Therapy in the School of Education has an outreach program that helps battered women and pregnant adolescents in Dane County develop better nutrition, healthier behaviors and improved life skills.

Phone: 265-5118
Web: www.soemadison.wisc.edu/kinesiology/mch/index.html

The ***Comprehensive Cancer Center*** is a multidisciplinary center that conducts research on the biology of cancer, translates the findings to clinical applications, completes epidemiologic studies, fosters cancer control activities, and educates students, professionals and the public about cancer. Two of its most active outreach efforts are the Wisconsin Cancer Council and the Tobacco Free Wisconsin Coalition.

Phone: 263-8600
Web: www.medsch.wisc.edu/cancer

LOCUS (Leadership Opportunities with Communities, the medically Underserved and Special populations) combines leadership training and mentoring with hands-on experience through community projects for UW-Madison students with an interest in Family Medicine.

Phone: 263-1214
Web: www.fammed.wisc.edu/education/locus/

Maternal and Child Health Education and Training Institute is a consortium of multidisciplinary providers and consumers that works with organizations involved in maternal and child health education and training to improve the health of Wisconsin children, families and communities.

Phone: 263-6394
Web: www.medsch.wisc.edu/ahec/mchi.html

Professional Development and Applied Studies, a unit in the Division of Continuing Studies, offers workshops and conferences dealing with health and human issues topics, including: aging and long-term care, alcohol and other drug problems, mental health, and women's health.

Phone: 263-2088
Web: www.dcs.wisc.edu/pda/hhi/

Waisman Center is dedicated to knowledge advancement on human development and developmental disabilities through research and practice.

Phone: 263-5776
Web: waisman.wisc.edu/waisman.html

Wisconsin Area Health Education Center System works to improve access to health care in Wisconsin's underserved communities through the development of community-based, culturally relevant, collaborative health-professions education programs.

Phone: 263-4927
Web: www.mcw.edu/ahec/

Wisconsin Alumni Research Foundation's primary activities include attracting innovative ideas, managing patents, licensing technologies to generate income, managing investments and supporting basic research.

Phone: 263-2500
Web: www.wisc.edu/warf

Updating the Wisconsin Idea
February 1999, Number 5

This publication tells stories of faculty and staff who are working in partnerships with businesses, civic organizations, government agencies, schools, and other community-based groups to improve our state, nation and world. We hope these stories motivate other faculty and staff to seek community partners to create knowledge that will benefit society in the 21st century.

Updating the Wisconsin Idea is a joint effort between UW-Madison's Office of Outreach Development in the Office of the Provost and the Wisconsin Food System Partnership funded by the Kellogg Foundation and administered by the College of Agricultural and Life Sciences.

The next insert focuses on the environment. To share story ideas or to comment on this issue, contact:

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Bob Rashid, Kazakh dentists, p 1
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Health Promotion Project, p 3
Health Policy Network, p 4

 In Wisconsin Week

Wisc. Idea

FOR IMMEDIATE RELEASE 3/17/99
CONTACT: Yvonne Fangmeyer, (608) 265-2407

NATIONAL CONFERENCE TO HIGHLIGHT PUBLIC SERVICE

MADISON -- The University of Wisconsin-Madison will host a three-day national conference April 7-9 that will examine the public service mission of land grant institutions.

Yvonne Fangmeyer, of the UW-Madison Dean of Students Office, says that the national conference, "Envisioning Public Service in the 21st Century," will help redefine the public service mission of land grant colleges and universities for the next century.

Guest speakers include William C. Richardson, president and chief executive officer of the Kellogg Foundation; Judith Ramaley, president of the University of Vermont; Pierre Sauvage, Los Angeles filmmaker; William Cronon, UW-Madison history professor; Ed Skloot, executive director of the Surdna Foundation; and UW-Madison Chancellor David Ward.

The UW System has a rich history in its commitment to providing public service, Fangmeyer notes. Public service is the foundation of the Wisconsin Idea, a commitment made early this century to extend UW expertise and resources beyond the boundaries of the campus to the people of the state, the nation, and the world.

Service learning integrates service to the community with academic study. Partnerships between the community and the university provide opportunities which foster student learning. Fangmeyer says that it's time to revitalize the land grant service mission: Land grant institutions have a responsibility to educate students in becoming good citizens, committed to lifelong service.

The large number of UW-Madison students who elect to join the Peace Corps and other service organizations attest to the emphasis that UW-Madison places on volunteerism. The University's Morgridge Center for Public Service has extended UW-Madison's commitment to linking students with community service opportunities.

Ten workshops are also available to participants. The conference will be held at the UW-Madison Memorial Union April 7-9 and is open to anyone, including students, staff, faculty and the community. Registration is due Monday, March 22. Registration is $200; day rates of $100 are available.

For more information, visit:
http://wiscinfo.doit.wisc.edu/calsoutreach/morgridge or contact Fangmeyer, (608) 265-2407; TTY (608) 263-2400,; fax (608) 265-8184, or fangmeyer@redgym.wisc.edu.

The Morgridge Center for Public Service serves as a focal point for information on local, national and international public service opportunities, promoting collaboration between the community and UW students, faculty, staff and alumni. The center, located in the Red Gym, 716 Langdon St., is open 8:30 a.m.-5 p.m. Monday through Friday.
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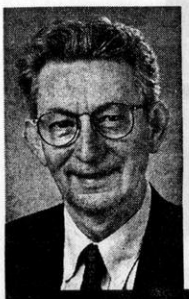


A progress report on our priorities

A VISION FOR OUR FUTURE • CHANCELLOR DAVID WARD

THIS is a critical and exciting time at the University of Wisconsin-Madison. We are celebrating the university's 150-year anniversary, an occasion that offers an ideal time to admire our rich legacy, mark our achievements and begin our encounter with the next century. As a student, faculty or staff member, an alumnus or a Wisconsin citizen, you have reason to feel a strong connection to UW-Madison.

I hope you are engaged with the current challenges at UW-Madison. Those challenges are in large part defined by our commitment to continually review our mission "to create, integrate, transfer and apply knowledge." It is through this process of self-study that we can learn from each other and, together, find creative approaches to both long-standing traditions and new opportunities.

This report briefly summarizes the progress we have made during our most recent effort to implement new approaches. In 1995, I introduced *A Vision for the Future*, a document that connected as a vision and a set of priorities an earlier set of proposals based upon the self-study and various responses to the accreditation review of 1989. At that time, I said, "We have a tradition of excellence upon which to build and much to preserve, but I believe it is time for the university to start doing some things differently, not just doing the same things better."

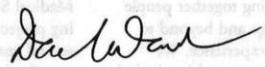
I am pleased to report that our schools and colleges embraced this idea, examined their current environments and identified how they might do things differently. During the past few years, dozens of innovative ideas have been introduced, discussed, revised and implemented. Some of the results of these grassroots efforts are summarized here. The summary, while by no means comprehensive, demonstrates the level of commitment and innovation that pervades the campus today.

But even as we move forward, we are ever mindful of our fiscal challenges. UW-Madison has always provided a margin of excellence from endowment resources and from the success of faculty in obtaining extramural funding. The key to our future is finding a way to guarantee a level of basic support from state appropriations and tuition that, at minimum, equals the average of our peer institutions. At the present time — despite our academic ranking along with the University of Michigan as one of the best of the Big Ten — our funding from state and tuition is last in that group.

To preserve the "leverage" of federal funding and the commitment of alumni and friends to private funding, the combined share of tuition and state support will necessarily have to be closer to that of our academic competition. In the absence of this commitment, we stand to lose the margin of excellence that defines the national and international stature of UW-Madison. These issues can be resolved successfully, but only if state policymakers, students, parents, alumni and Wisconsin citizens accept the necessity of a threshold level of basic support.

Our vision and priorities reinforce our intention to preserve UW-Madison's distinguished academic reputation, along with the effects of that stature on the welfare and growth of the state. These priorities represent our willingness to be creative and flexible as we face an uncertain future.

When I think back to the early state lawmakers who established a university in Wisconsin's newly settled wilderness, I realize that they taught us a valuable lesson about expectations. If we learn from their example, we will continue to push the limits of what is possible and yet, at the same time, recognize and celebrate our long tradition of learning.



— Chancellor David Ward
January 1999

The strategic planning process

During the past several years the University of Wisconsin-Madison has reviewed its mission, identified campuswide priorities and introduced some of the most comprehensive initiatives in the 150-year history of the campus.

A strategic planning process began in 1988 (see diagram this page) when a campuswide committee developed Future Directions, a document that outlined priorities identified during the university's reaccreditation, an extensive self-study that takes place at most universities and colleges every 10 years. UW-Madison, however, took an unusual step during its reaccreditation process: With the permission of the regional accreditation agency, the committee not only chronicled past accomplishments, it also focused on the university's future. During the next few years, Chancellor Ward, who was then serving as provost, led the implementation of Future Directions, which focused on improving the way in which the university carried out its mission.

A Vision for the Future: Priorities for UW-Madison in the Next Decade was issued in 1995. This document outlined UW-Madison's mission and the campus priorities for change. These priorities provided a greater focus and new challenges for the campus community: identifying ways to do things differently.

Following extensive communication about the priorities with key internal and external constituencies, campus departments developed specific action items to implement the priorities. The Provost's Office created a system for supporting and coordinating these activities. The campus budget was directed and redirected to support and advance the priorities.

A Vision for the Future served as the central framework for individual initiatives. The document began with a central concept of "learning":

Throughout the 20th century, major advancements in knowledge have been achieved by an almost continuous increase in the division of intellectual labor. Because we are so comprehensive in our programs and services, we must agree upon how to fabricate some unifying interrelationships among our highly specialized activities. Our familiar refrain is that we perform teaching, research and public service, as we typically view those as distinct and separate activities. In reality, they are creatively connected as "learning."

"Learning" was defined as three broad themes that overlap to create a strong, unified concept — called the vision themes (see diagram next page):

- The learning experience: Enhancing education inside and outside the classroom
- The learning community: Aligning and realigning to meet our goals
- The learning environment: Providing facilities and technology to support and enhance learning

The vision themes are then articulated as nine priorities:

- Maintaining our research preeminence
- Reconceptualizing undergraduate education
- Joining the global community
- Updating the Wisconsin Idea
- Maximizing our human resources: employees
- Maximizing our human resources: students
- Rethinking our organization and encouraging collaboration
- Using technology wisely
- Renewing our physical environment

The following paragraphs summarize key efforts undertaken in support of each priority.

Progress on our priorities

■ Maintaining Our Research Preeminence

Constant dedication to research excellence is essential to maintaining our international reputation. Recruitment and retention of outstanding faculty is a continuous emphasis, as we compete with our peers in the national arena.

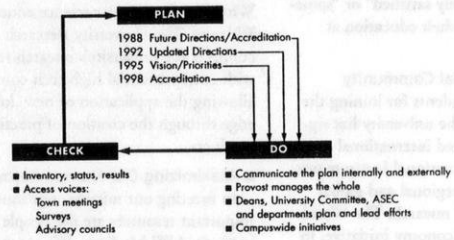
Interdisciplinary hiring initiatives have resulted in 20 new faculty positions targeted at interdisciplinary research areas. A strategic hiring initiative has resulted in more than 50 new faculty members targeted for specific research areas and has emphasized the recruitment of women in science and underrepresented groups. Strategic development of new research areas such as genomics, developmental biology, neuroscience and biophotonics are advancing UW-Madison's global leadership in the life sciences and generating economic development opportunities for the state. Through review and consolidation, research areas such as microbiology, pharmacy, human ecology and international studies have been strengthened. The research infrastructure has been improved through new building projects and additional equipment. Research and educational experiences for graduate students are being enhanced through increased research opportunities, new degree offerings and a new initiative (the Wisconsin Distinguished Graduate Fellowship Program) to endow support for students and improved programs. An electronic system for grant information and submission is helping to advance and support research initiatives.

■ Reconceptualizing Undergraduate Education

New approaches to undergraduate education initially focused on the freshman year. With nearly 6,000 freshmen — most of whom have not chosen a major — coming to our campus each year, the freshman year was identified as a focal point for student success. Today advising is provided across colleges for those who have not yet determined their majors, and the campus is strengthening the provision of both academic and career advising for undergraduates. General education requirements in quantitative and qualitative skills have been established to ensure undergraduate excellence in these fundamental areas. More than 900 students (compared to none in 1995) now live in residential learning communities, where learning is integrated with the living environment, and where faculty and staff learn together

continues on page eight

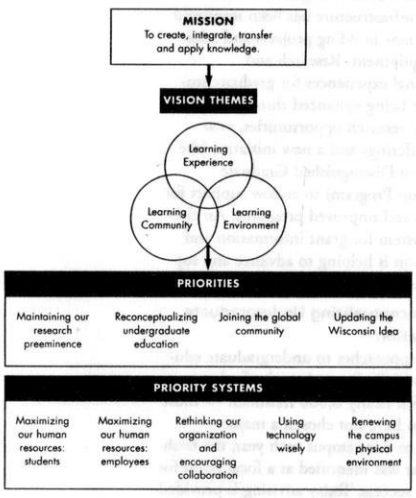
UNIVERSITY OF WISCONSIN-MADISON STRATEGIC PLANNING 1988-1998



When I think back to the early state lawmakers who established a university in Wisconsin's newly settled wilderness, I realize that they taught us a valuable lesson about expectations. If we learn from their example, we will continue to push the limits of what is possible and yet, at the same time, recognize and celebrate our long tradition of learning.

with students in informal settings. Each year more than 175 undergraduates are involved in campus-sponsored research projects, and a new research award program for first- and second-year students was created in 1998-99. Important discussions continue to make interdisciplinary teaching and learning an even larger part of the undergraduate experience. Connections between the student body and community groups (a group of programs and courses that feature service learning) are being expanded, in part through the updated Wisconsin Idea fellowship program for undergraduates. In addition, more resources have been committed to programs that encourage faculty and staff to review their thinking about teaching and the methods used to transmit knowledge. The Teaching Academy strives to enhance the quality of education by bringing together faculty members who have a special interest in enriching the university's learning environment. An annual survey of undergraduates has found consistently that approximately 90 percent of students are "extremely satisfied" or "somewhat satisfied" with their education at UW-Madison.

UNIVERSITY OF WISCONSIN-MADISON MISSION, VISION AND PRIORITIES



■ Joining the Global Community

To prepare our students for joining the global community, the university has significantly strengthened international education. The International Institute was created to integrate regional and global studies teaching and research. The World Affairs and Global Economy initiative, in collaboration with the Center for International Business Education and Research, was launched to help meet state and business needs that are tied to economic globalization. Undergraduate international studies grew dramatically through expanded overseas linkages in most fields, notably in the professional schools; study abroad participation doubled over the course of a decade. Curricula are being revised to comprise an international studies major and new international master's degrees, and an electronic Global Gateway has been made available online to improve international studies advising. To share our knowledge with the community, the International Institute is inaugurating an International Showcase, a new series of public outreach events on foreign affairs and international public policy, and, in collaboration with UW-Milwaukee, has formed the Wisconsin International Outreach Consortium to serve the needs of K-12 teachers and the state.

■ Updating the Wisconsin Idea

The citizens of Wisconsin and the world are benefactors of the continued advancement and updating of the Wisconsin Idea. Through research, teaching and service, our faculty members are engaged with community leaders and practitioners in the critical issues that face Wisconsin today. From criminal justice to health care delivery, from arts development to technology transfer, from global competition to welfare reform, we are partners in building for the 21st century. Knowledge is being shaped and shared globally through innovative partnerships with public and private institutions. Partnerships with K-12 schools include more than 100 initiatives in the Madison area alone, as well as national leadership provided by our faculty in the development of math and science education in the primary and secondary classrooms. Divisional committees reexamined tenure criteria to be sure they give appropriate credit for outreach activities. Research is being shared and applied in ways that benefit economic development and society through distance learning, opportunities to convert new knowledge into commercial opportunities and public communication programs such as "The Why Files," a popular science education Web site. The University Research Park connects the university's research resources with entrepreneurial high-tech companies, allowing the application of new knowledge through the creation of practical products.

■ Maximizing Our Human Resources

In meeting our mission, our most important resources are the people who comprise UW-Madison. We are committed to providing all students, faculty and staff with a welcoming, rich and diverse environment for their learning and work. Diversity and excellence among our faculty, staff and students have increased as a result of concentrated recruitment, hiring, development and retention efforts. A new system of learning opportunities helps faculty and staff members do their best work. Future leaders, including women and minorities, are being prepared through a variety of offerings, including a new leadership institute. Units across campus are advancing their missions through effective planning and improvement efforts, including actively reaching out to learn the needs of those they serve. Student diversity has been enhanced through comprehensive recruitment, retention and development initiatives. UW-Madison Plan 2008 challenges our campus to "foster and promote excellence for everyone in the community" and outlines an aggressive plan for advancing that goal.

■ Rethinking Our Organization and Encouraging Collaboration

Collaboration across traditional boundaries has served as a fundamental theme to guide each of the other priorities. Examples of this collaboration range from interdisciplinary hiring that fosters the creation of new knowledge, to providing more than 120 precollege programs for K-12 schools. Several collaborations and new structures, such as the creation of an Arts Institute to integrate campus arts programs and the reconfiguration of the biological sciences, have enhanced learning and resources. The development of residential learning communities has been instrumental in bringing together people from across the campus and beyond to enhance the learning experience. We strengthened external partnerships, including such initiatives as HealthStar, and most significantly the current state budget initiative that establishes an interactive partnership with the state. These and other external relations are developed and fostered by a new University Relations Team. As a campus, we are collaborating with other universities to maximize library resources and advance distance-learning opportunities. The medical school, hospital and clinics, and physician practice plan are working together to provide a comprehensive environment for medical teaching and research and the delivery of health care services.

■ Using Technology Wisely

We recognize that technology, used wisely, is a powerful tool that can transform our traditional approaches to teaching, learning and conducting research. Our data networks, which provide faculty, staff and students a means to communicate with each other and the world, have been vastly improved in their scope and speed. Campus technology courses enable faculty and staff to use technology effectively. UW Housing residents enjoy full connectivity to the campus network through ResNet, BadgerNet and WiscNet, which provide high-speed access to the state and the world. Internet2 is enhancing connections to our research partners. Faculty, staff and students access the vast array of information available via the Internet using a suite of software called WiscWorld. They use the largest library in the world outside the Library of Congress — the CIC Virtual Electronic Library. Technology facilitates learning outside the classroom through Web-based learning and computer-mediated communications. Working adults have new opportunities to participate in education at UW-Madison via distance learning. On campus, students have access to computers through 16 public computer labs called InfoLabs that offer more than 1,100 computers, and they take courses in classrooms equipped with modern teaching technology.

■ Renewing Our Physical Environment

In December 1996, the university completed a Campus Master Plan that is intended to guide physical development for the next 20 to 30 years. An important aspect of the planning process was the broad involvement of internal and external constituents and experts. The plan, which defines a framework of opportunities for the campus, was developed to be flexible and responsive to change. Building projects completed or begun on the UW-Madison campus between 1995 and 1998 total more than $342 million. Several key projects include the renovation of the Red Gym, a new addition to the Biochemistry Building, construction of the Kohl Center, additions to the Chemistry Building and the Waisman Center, construction of the Fluno Center and a three-module research addition for the Medical School. The largest of new building projects to begin within the next several years include the construction of a new Engineering Centers Building, the Health Sciences Learning Center and the development of Murray Mall. A major effort is under way to improve the instructional environment. Dozens of classrooms have been renovated to include technology and enhance the learning environment. A partnership between the Division of Information Technology and UW Housing provides a full campus network (ResNet) to all students in residence halls. The six-year, $210 million HealthStar initiative was enumerated in the 1997-99 Capital Budget. This program will raise funds to build and improve medical structures.

Next steps

The progress that has been made to implement the campus vision and priorities is being used as the foundation for the most recent reaccreditation planning effort, New Directions, which started in 1998. As in 1988, the reaccreditation committee is both reviewing the university's past and exploring its future. The committee will issue a new reaccreditation report in February 1999.

Following that report, Chancellor Ward will seek comment from the campus and beyond. These comments will help to shape an updated version of the vision and priorities, which will be reflected in a new report. As found in *A Vision for the Future*, the report will outline a framework for action beginning in 1999.

As demonstrated by this continuous process of review, planning and action, UW-Madison is committed to identifying the needs of those it serves, channeling resources to meet those needs and continuously improving its effectiveness as one of the world's premier universities.

Transcending 1999

PRESIDENT'S REPORT

TAKING THE

WISCONSIN IDEA

INTO THE

NEXT CENTURY

Photo by Sam Castro, UW-Milwaukee

Katharine C. Lyall has served as president of the University of Wisconsin System since April 1992. During her 17 years with the UW System, she has also served as vice president for academic affairs, executive vice president and, on two occasions, acting president. She is a tenured professor of economics at UW-Madison and currently teaches a Public Program Evaluation course for the La Follette Institute of Public Affairs.

Dr. Lyall received B.A. and Ph.D. degrees in economics from Cornell University, and an M.B.A. degree from New York University. Her career includes serving as Deputy Assistant Secretary for Economic Affairs at the U.S. Department of Housing and Urban Development.

Currently, Dr. Lyall is chair of the Board of Directors of the Carnegie Foundation for the Advancement of Teaching. In 1996, she chaired the Governor's Blue Ribbon Commission on 21st Century Jobs.

As president of the UW System, Dr. Lyall heads one of the largest agencies of Wisconsin state government and leads the eighth largest system of higher education in the country, composed of 26 campuses, statewide Extension, more than 150,000 students, 26,000 faculty and staff, and an annual budget of over $2.7 billion.

GLOBAL POSITIONING

EXPANDING OUR BOUNDARIES INTERNATIONALLY

Wisconsin Idea

The University of Wisconsin System has long applied the Wisconsin Idea that the boundaries of the UW System are the boundaries of the state in making the resources of the University available to people all across the state, not just within the University.

Public higher education in Wisconsin has made major contributions in helping our state develop a prosperous economy, a quality environment and a safe and civil society. As members of the global community, the opportunity to expand the Wisconsin Idea to the international arena will position our students and business partners as effective participants in the global marketplace.

Our programs are continuously evolving to meet the demands of students and the Wisconsin economy. UW System institutions extend opportunities that encourage young people to reach their highest potential and offer continuing education for working adults who are returning to school to update or learn new skills as their jobs demand.

Distance education and collaborative programs allow students to participate in courses that are offered at other UW System institutions. These efforts extend opportunities for students to receive a quality education at an affordable price.

"ENTRUST THIS UNIVERSITY WITH YOUR EDUCATION, AND WE WILL GIVE BACK TO YOU, AS A GRADUATE, A READINESS FOR ANYTHING THE WORLD HAS TO OFFER."

– PRESIDENT LYALL

Our partnerships with businesses extend beyond providing a work force that is prepared to meet the challenges of the future. Research conducted at UW System institutions spawns new Wisconsin businesses, cures disease and boosts industrial and economic development.

Companies based in Wisconsin and their employees are increasingly dependent on growing world markets. International study programs for students, as well as faculty and student research projects, provide opportunities to build critical thinking skills and linguistic competency enabling our graduates to be active partners in the global community.

In this annual report you will see how expanding our boundaries, both geographically and technologically, is instrumental in keeping the UW System a world class learning institution and equipping our graduates to contribute importantly to the next century.

OUR VISION

PROVIDING AN EDUCATION TO MAKE PEOPLE'S DREAMS COME TRUE

Millennium

Truly great institutions, like the University of Wisconsin System, transcend time.

As we approach the next millennium, it is appropriate to look back at our accomplishments and achievements, not just of the past year, but throughout the University of Wisconsin's existence. It is also appropriate to look to the future and what we hope to achieve.

While I will not make predictions as to what will happen, I can talk about the UW System's vision of how we can continue to meet the educational needs of life-long learners and build on our partnerships both in the state and globally.

UW historians Merle Curti and Vernon Carstensen note that "the founders [of the University] assumed in the first place that provision for higher education is a vital function of society necessary for its preservation and development."

We can take pride in our contributions to society through the research and teaching conducted throughout the UW System. Among those contributions that will carry through into the next century are:

- Aldo Leopold's conservation philosophy of managing our wildlife resources wisely and saving endangered species.

- Animal physiology research that includes revolutionary techniques for

artificial insemination, cattle embryo transfer, cloning and gene transfer.

- Stem cell research breakthroughs that open the door for the cultivation of human tissue for transplantation.

- Wireless radio broadcasting started at the University in 1917. The call letters WHA were assigned in1922 to "the oldest station in the nation," and emphasis evolved from the science of signal transmission to using the instrument to take the University to the people.

- WHA television, added in 1954, plans to convert to digital format to enhance distance education programs. The digital format provides a high definition picture, permits the broadcast of four programs simultaneously and allows data to be transmitted to home computers 700 times faster than through the Internet.

- Nobel Prize winner Howard Temin's discovery of how genetic information flows in cells, which is integral to our understanding of cancer, made it possible to find the AIDS virus and spawned technologies central to modern biotechnology.

One of our greatest contributions, however, is educating over 25,000 graduates a year who contribute to society. We accomplish this not only by offering courses that are the basis of a well-rounded education, but also by identifying and meeting the educational and research needs of emerging industries.

For example, UW-Extension and the Society for Nonprofit Organizations have collaborated to develop the Learning Institute for Nonprofit Organizations. This program has become one of the world's leading providers of high quality, technology-based, professional development programs for everyone involved in the far-reaching nonprofit sector.

The Learning Institute meets the long-standing need of nonprofit organizations for quality education that is affordable, accessible and relevant.

By working with businesses and customizing courses we can ensure that students will receive the education and training they need to compete in the marketplace.

MOVING FORWARD TO MEET THE NEEDS OF LEARNERS EVERYWHERE

Students

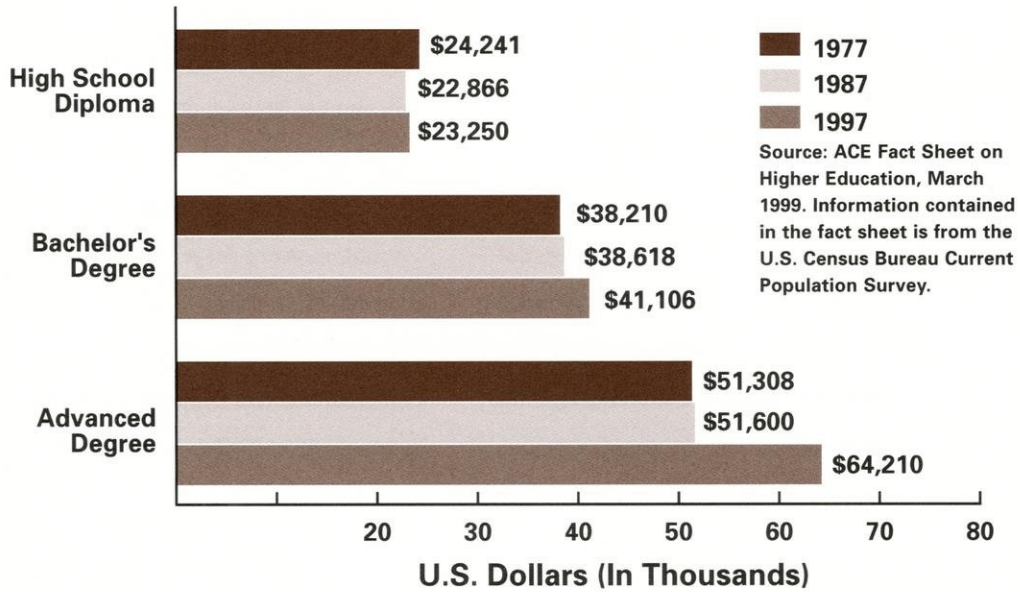
The University of Wisconsin System is proud of its diverse community of students. Our students truly represent the imperative of life-long learning, ranging from young people attending college immediately after high school to working adults returning for professional development. We have a history of providing quality, affordable education that prepares our students to become well-educated, competitive, informed citizens.

In 1849, 20 students were enrolled in the first preparatory classes offered at our flagship campus. The curriculum for these early students consisted of ancient and modern geography, English grammar, and Latin and Greek. In 1862, the Morrill Act, which created land-grant colleges and universities, also required the curriculum to include the instruction of agricultural and mechanical arts.

By 1998, the number of students enrolled in the 15 institutions that comprise the UW System had risen to nearly 153,000. Today's students have the option of choosing coursework from over 300 majors. International study also adds an important dimension to a university education with a variety of programs in Europe, Latin America, the Middle East and Australia.

Increasingly, a college education is the bridge from economic stagnation to economic prosperity in this country.

AVERAGE EARNINGS OF WORKERS 18 YEARS AND OLDER, BY EDUCATIONAL ATTAINMENT



Safe passage from one side to the other is difficult without a degree or other learning credential. In 1997, bachelor's degree recipients on average earned 77 percent more than high school graduates ($41,106 vs. $23,250 in constant 1998 dollars).

This opportunity must reach to all sectors of our society. The UW System Board of Regents, in 1999, adopted Plan 2008, a strategy to ensure the UW System serves all the people of the state, including all racial and ethnic groups, by expanding educational opportunity. The plan builds partnerships between UW System institutions, K-12 schools, Wisconsin businesses, students, parents and communities throughout the state to bring participation and graduation rates for youth of color in line with the student body as a whole.

Expanded pre-college programs work with students at an early age to raise their aspirations and preparation for education beyond high school. Closing the gap in educational achievement for students of color will foster academic success and greater success in life for all students.

Overcoming barriers caused by distance is another way UW System institutions increase access. Providing students with access to courses through distance technology allows them the flexibility to pursue an education without having to relocate or travel great distances to a campus. For example, the Collaborative Nursing Program meets the needs of registered nurse students who want a Bachelor of Science degree in nursing, but have limited access to a campus offering that degree. The program, which received a Teleconferencing Excellence Award, is available statewide through the joint efforts of the nursing programs at five UW System campuses.

The UW System's ability to respond to market conditions and demands for specific programs is evidenced by the continuing education courses for professional development and customized programs we provide. Examples of customized programs include the Allied Health Programs at UW-La Crosse and UW-Milwaukee, the customized master's in engineering at UW-Madison and technical training programs at UW-Stout.

For 150 years, public higher education in Wisconsin has made major contributions in helping people's dreams for progress and improvement come true. We will continue to move forward to meet the needs of the state and learners everywhere — keeping in mind the UW System mission that "basic to every purpose of the System is the search for truth."

12-13% ANNUAL RETURN FOR EVERY DOLLAR INVESTED IN A COLLEGE EDUCATION

– FROM *THE ECONOMIC VALUE OF HIGHER EDUCATION,* LESLIE AND BRINKMAN

WORKING TOGETHER TO MEET THE NEEDS OF THE STATE

Business Partnerships

Wisconsin has won the jobs battle, but is losing the incomes war.

Despite nearly a decade of the lowest unemployment rates in the nation, the per capita income in Wisconsin of $25,079 remains below the national per capita income of $26,412. To understand what this means, consider that if the per capita income of Wisconsinites simply equaled the national per capita income, there would be $7 billion more buying power in the state.

To raise incomes, we need to create an economic environment that is attractive to college graduates — both our "home grown" grads and those from outside Wisconsin. This "brain gain" strategy would make use of talented UW System graduates, many of whom are now drawn to careers with higher salaries outside the state.

The state's job base must be rebalanced with jobs in businesses such as biotechnology and Internet businesses that produce more value-added goods and services and, therefore, offer higher levels of pay. Fortuitously, these are industries that use the talent coming out of UW System institutions.

Our partnerships with businesses play an important role in the increase of start up and spin-off companies in the biotechnology and pharmaceutical industries, in astro science, nanotechnology, water resources and other rapidly growing fields.

Recent start-up examples include:

- Tomotherapy, Inc., which uses radiotherapy to treat tumors with targeted radiation, causing less damage to normal tissue.

- The Mirus Corp., which has developed new types of chemical compounds that are essential ingredients in finding treatments for genetic disease.

- Gala Design L.L.C., which is developing genetically engineered proteins in cow's milk to create vaccines and preventative drugs.

- PIEZOMAX Technologies, Inc., which uses high speed precision motion and positioning devices with nanometer resolution, for applications in surface metrology, optics, biological imaging and precision machining.

The higher-skill, higher wage jobs in these industries will help keep the UW System's best and brightest graduates in Wisconsin and will attract more college graduates to the state.

Research conducted at UW System institutions advances university-industry relationships, technology transfer, and industrial and economic development. Throughout the state, campuses are affiliated with research parks that act as incubators for businesses.

UW-Madison's University Research Park is home to 72 companies employing 2,100 people. In March 1999, space was added for about 20 small businesses. Of the 27 new companies originating at the center, 90 percent are still operating.

The Stout Technology Park is currently home to 18 businesses. In 1999, the Stout Technology Park was selected as the new expansion site for Andersen Corporation, which manufactures windows.

The park, owned by UW-Stout, the city of Menomonie and Northern States Power Co., provides a tremendous economic impact for the area including: employing 500 people with an estimated payroll of $12 million — providing the region with an estimated recirculation impact of $48 million on an annual basis.

To provide ready access to experts and information for Wisconsin businesses, the UW System Directory of Expertise, an online database, was launched this year. This e-database allows businesses access to over 3,000 UW System faculty and staff experts in nearly every academic discipline. Wisconsin businesses, large or small, will find the directory useful for many purposes, including:

- identifying prospective collaborators,
- leveraging existing research and development efforts,
- keeping up to date with basic science and academic research,
- communicating directly with researchers who possess the expertise they need, and
- developing business and strategic marketing plans.

Wisconsin's economy and the UW System both benefit when we work together to meet the needs of the state.

Winning Races Around the World

Our 15-year relationship with Trek Bicycle Corporation is a mutual success story. Trek Bicycle Corporation is a member of the Quick Response Manufacturing Consortium directed by Rajan Suri of the UW-Madison Mechanical Engineering Department. The consortium is a forum to learn QRM theory and practice, discuss

common pitfalls and obstacles encountered during implementation, and help in the transition from the theoretical to the practical.

Initially, UW-Madison Engineering faculty worked on projects focusing on producing bonded aluminum bicycle frames. Bonding of aluminum with epoxy adhesives allows the frames to be produced quickly and without the added cost, time and equipment necessary to heat-treat a welded aluminum frame.

Subsequent projects have led to advancements in frame fabrication, wheel rim modeling and testing for optimum design, and extensive work on components such as wheel quick release mechanisms. Other applications allow engineers to accurately measure the strain and stress put on a frame in everyday riding. Finite element frame modeling, for example, allows engineers an inside look at these stresses and aids their design work toward a stronger, safer bicycle frame.

A spin-off company, Thermal Spray Technologies, collaborated in the development of a ceramic coating for bicycle rims, which greatly enhances braking performance. The coating particularly protects braking power when the rims are wet. These coated rims are currently used by many racers including Paula Pezo, the Atlanta Olympic games mountain bike gold medalist and Lance Armstrong, the 1999 Tour de France champion.

PREPARING TO THINK AND ACT GLOBALLY

Global Learning

Tomorrow's citizens must be culturally aware and linguistically capable. Overseas learning, through study abroad and internships, not only allows students to build critical thinking skills and linguistic competency, but also helps them build confidence and competence to work effectively in the global marketplace.

UW System students will be prepared to think and act globally through collaborative efforts to improve available international education and outreach.

- The Institute for Global Studies (IGS) involves all UW System institutions and other state, national and international partners. An IGS initiative helps faculty develop curricula that will infuse global studies within and across disciplines and campuses to help students become globally literate. UW-Milwaukee is developing a bachelor's degree in global policy and business studies with courses from business, communication, economics, geography, languages, political science and sociology.

- The Collaborative Language Program, sponsored by the Letters and Sciences deans, coordinates the teaching of foreign languages systemwide. The program expands language education opportunities of less commonly taught languages such as Chinese, Japanese, Russian, Arabic and Portuguese, through the use of distance technology.

- The Madison Alliance for Global Investment and Commerce (MAGIC) links the Center for International Business, Education and Research (CIBER), the World Affairs and Global Economy Center (WAGE) and the international public affairs program in the La Follette Institute. This initiative mobilizes resources from several disciplines to study pressing global economic problems, trains students to operate in a globalizing economy and fosters sharing of expertise with state government and business.

- Instructional technologies are being used to close the distance between Wisconsin and the world. This past year, distance video was used to teach classes in Wisconsin, the United States and the world and to bring experts from overseas to state classrooms and outreach programs. Our faculty have developed CD-ROMS and web-based methods to teach everything from foreign languages to dairy cattle breeding and maintenance.

Students participating in these global learning programs will not only be technically knowledgeable, but will be able to study and work effectively with individuals whose history, cultures and languages are different than their own.

In the next two years, we will strive to double the number of UW System students who have a study abroad experience.

UW System study abroad programs are located in these and other countries:

Africa
Australia
Austria
Bangladesh
Belgium
Canada
Chile
China
Costa Rica
Cuba
Czech Republic
Denmark
Dominican Republic
Ecuador
El Salvador
England
Egypt
France
Germany
Ghana
Greece
Guatemala
Hungary
India
Indonesia
Ireland
Israel
Italy
Japan
Kazakhstan
Kenya
Latvia
Mexico
Nepal
The Netherlands
Northern Ireland
Norway
Philippines
Poland
Portugal
Puerto Rico
Russia
Scotland
Senegal
Spain
Sweden
Thailand
Turkey
Vietnam
Wales

QUALITY EDUCATION AT AN AFFORDABLE PRICE

Accountability

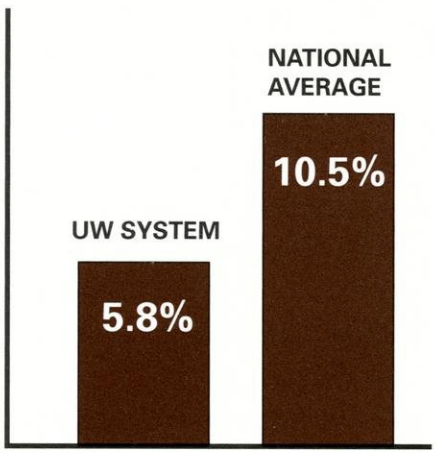
The challenge of providing a quality education at an affordable cost is one that the UW System works at continuously. One way we are able to do this is by maintaining low administrative costs. The UW System spends only 5.8 percent of its operating budget on administrative costs. Our peers nationally average 10.5 percent.

We successfully hold down administrative costs by the use of best business practices including capturing economies of scale, coordinating infrastructure and program collaboration among our institutions.

UW System institutions are working together to develop new academic and administrative systems in areas such as web-based course development and delivery, library automation, student information, financial services, and payroll.

UW System institutions are further reducing costs by developing common systems that allow for sharing of expertise and purchasing systemwide software licenses at significant savings for students, faculty and staff. The UW System Office of Procurement has been working on various systemwide contracts for licenses in support of

PERCENT OF OPERATING BUDGET SPENT ON ADMINISTRATION



UW System efforts to build an information technology infrastructure. For less than the UW System was already paying to buy software in a piecemeal fashion, an "Enterprise" contract with Microsoft now provides a systematic way of supplying an almost universally used set of productivity tools for all faculty, staff and students systemwide.

In efforts to maintain low administrative costs, the UW System will continue to pursue strategies that reduce administrative costs and leverage our buying power.

73% URGE MORE STATE SUPPORT FOR UW SYSTEM

In a December 1998 poll conducted by the Friends of the UW System, 73 percent of respondents agree with the statement that the University of Wisconsin System is a critical part of Wisconsin's economy/quality of life and should receive additional state support.

BALANCING RESOURCES AND QUALITY

The Upcoming Year

The coming year holds a number of challenges for the UW System.

Recruiting and retaining the best possible faculty to replace the quarter of our current faculty who will retire in the next several years. To compete with other states for this scarce talent we must work hard as Wisconsin currently ranks below average in faculty compensation.

Establishing enrollment planning guidelines for the next decade that balance resources to serve all student populations. Extending service to working adults is a critical part of this effort.

Focusing and restructuring financial aid to better meet the changing needs of students.

Keeping administrative costs low through coordinated purchasing, infrastructure planning, and management flexibilities.

Contributing to a state economic development strategy by helping create jobs that lift incomes and retain UW System graduates. In a labor-shortage economy, our graduates are an increasingly valuable state asset.

Recommitting ourselves to maintaining educational quality that is the hallmark of the UW System. We will further demonstrate that each dollar invested in public higher education repays Wisconsin and its people many times over.

It is my sincere hope that the citizens of Wisconsin continue to communicate to our institutions and to their state elected officials the value the UW System brings to their lives and careers.

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Updating the Wisconsin Idea

The University of Wisconsin-Madison in Partnership with the Community

September 1998, Number 4

Partners in K-12 Education

Wisconsin Center for Education Research

University researchers and K-12 teachers partner to improve learning

"At the Wisconsin Center for Education Research, the interplay between research and practice leads to promising new directions for both," said Andy Porter, UW-Madison professor of education and director of the Center.

Founded in 1964, WCER is one of the oldest, largest, most productive education research centers in the world. Faculty and staff conduct research in all areas of education - teaching, learning, curriculum, assessment and organizational issues.

The focus is on research that will improve education.

WCER currently includes nearly 30 research centers and projects that range from looking at the effects of infant child care to studying how adults use literacy skills in graduate education programs.

"With its focus on research to produce new understandings of how education can be improved, WCER draws faculty from 15 departments in six different colleges across the campus," said Porter. Personnel from the various projects in the Center work with schools to put research into practice. From teaching reading skills to improving kids' ability to learn math, programs developed at the Center are used in classrooms around the country.

Mazie Jenkins, CGI resource teacher for the Madison Metropolitan School District, works with two elementary school students. "Students in CGI classrooms construct their own understanding of math," said Jenkins.

One program currently used in schools throughout the United States, Israel and South Africa, is Cognitively Guided Instruction (CGI). Developed in the 1980s by UW-Madison faculty members Thomas Carpenter and Elizabeth Fennema and their colleagues at WCER, CGI is a powerful program that changes the way teachers teach math in grades K-3.

In a traditional math program, children are introduced to formal notions of addition, subtraction, multiplication and division and they are expected to memorize tables and fill out worksheets.

In a CGI classroom, the teachers give the children word problems before presenting formal computational principles. Children decide themselves how to solve each problem and often use blocks, their fingers, pencils or other items to model the actions and relationships posed in those problems.

"CGI is built upon the notion that children should not be asked to do something they don't understand," said Fennema. "Children solve problems in their own way and then explain to the teacher and their classmates how they obtained their answer. This makes them feel that what they are doing is important and worthwhile."

CGI workshops help teachers understand how children think, but they don't prescribe a scope and sequence for teaching math. "CGI is a philosophy versus a recipe," said Mazie Jenkins, a former first grade teacher and the current CGI resource teacher for the Madison Metropolitan School District.

"As a teacher you have to take the knowledge that CGI is about problem types, solution strategies, and how children develop cognitively and you have to apply that to your own teaching style."

One measure of the program's success is that teachers who use CGI are now running workshops and helping others learn about the method. "Teachers are enthusiastic about the program because they see the exciting things that the children are doing," said Fennema.

WCER staff work with schools to put research into practice.

Involving K-12 teachers in education research and respecting their input is one of the reasons programs like CGI succeed, according to Ken Zeichner, Hoefs-Bascom professor of education and a WCER researcher. "We have to use both academic- and teacher-generated knowledge in improving learning in schools. Attempting to

continued on page 2...

Inside...

"It is vital to us, as a leading school of education, not only to discover new knowledge about how children learn, but then to take the next step, testing the implications of that knowledge in today's classrooms, in partnership with teachers. We try to build on the strengths of the University, from science, math, and technology to the language arts and humanities."

Charles Read, School of Education Dean

Inserts are posted electronically at: http://www.cals.wisc.edu/wfsp

WCER *continued...*

reform schools without respecting teachers' knowledge and capabilities as professionals will not work."

Zeichner's current WCER project, "Teacher Research as a Source of Teacher Learning," continues his work to promote and support action research, in which teachers analyze and modify their own classroom practice with guidance from fellow teachers and academic researchers.

In action research, teachers interact with academic researchers and influence their work.

The action research professional development program in the Madison Metropolitan School District, which began in 1990, has involved nearly 400 staff conducting research in areas that range from enhancing Hmong parental involvement in school to incorporating spreadsheets into the elementary math curriculum. Teachers formulate a research question and carry out their inquiry over the course of a school year. Each month the teachers meet in small groups to discuss their research progress.

"Action research is not somebody sitting off somewhere making policy," said Nan Youngerman, a teacher at Cherokee Middle School in Madison. **"In action research teachers interact with academic researchers, and we influence their work."**

Zeichner, who provides technical assistance to schools that want to start a teacher research program, helped organize the Madison Area Action Research Network several years ago to make action research more visible and to help participants exchange the insights gained through their research. The network includes teachers, researchers, teacher educators, administrators and student teachers throughout Wisconsin.

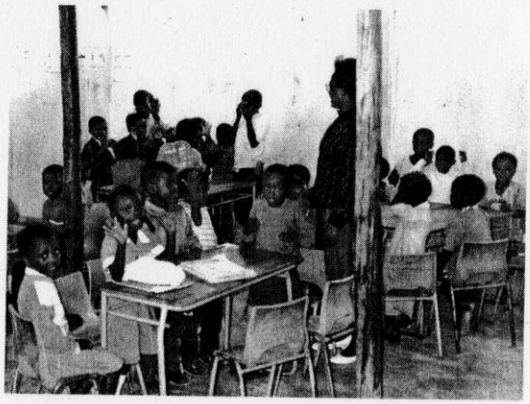
Zeichner's current WCER project is looking at what conditions support or impede teacher research, how this form of professional development affects teachers' practice, and what are the best ways to disseminate teacher-produced knowledge to other teacher and academic communities.

The project is part of the National Partnership for Excellence and Accountability in Teaching, which brings together national organizations and researchers from several universities and professional associations to improve public schooling across America.

In order to help achieve this goal, Zeichner will be working closely with the National Education Association to share what is learned about teacher research with schools around the country.

"The work of Zeichner, Fennema and Carpenter illustrates WCER's mission of conducting interdisciplinary research with practitioners that contributes both to advances in theory and improvements in practice," said Porter.

For more information:
phone: (608) 263-4200
web site: http://www.wcer.wisc.edu



Through a linkage agreement between UW-Madison and Umea University in Sweden, professor Ken Zeichner is helping educators in Namibia implement their own form of action research called "critical practitioner inquiry." Namibian educators want to use critical practitioner inquiry to help them move from authoritarian teacher-centered classrooms, which existed before Namibia gained independence from South Africa in 1990, to learner-centered ones based on the principles of access, equity, quality and democracy.

Cake & Culture uses performing arts to invigorate curriculum

Madison-area teachers are discovering new ways to enhance students' learning by infusing the performing arts into all areas of the curriculum.

Through a partnership between UW-Madison and the Madison Civic Center, K-12 teachers can attend a series of lecture-demonstrations at the Civic Center on music, dance and theater. The presentations, led by UW faculty and staff, have covered such topics as using jazz to teach American history, turning the classroom into a theater, and dance from different cultures.

UW-Madison professor Claudia Melrose teaching "Is dance art or a rite of passage?"

"The goal of this after-school dessert series, called 'Cake & Culture,' is to use the performing arts to drive learning across all subject areas," said Linda Shriberg, program manager in the Office of Education Outreach.

The collaboration began when Susan Crofton, director of development and outreach at the Civic Center, approached Shriberg to see if they could find ways to work together that would advance both of their missions. Since then, they have developed a number of programs that use the arts to motivate, excite and strengthen classroom learning. Crofton and Shriberg, along with Mariel Wozniak of the Madison Metropolitan School District, comprise the only Wisconsin team of the John F. Kennedy Center's Performing Arts Centers and Schools: Partners in Education program.

"Bringing arts into the classroom is not only a fabulous tool for teachers and a self-esteem builder for kids," said Crofton, "it also helps develop new audiences for the Civic Center."

The "Cake & Culture" series has received high marks from teachers. "The program shows you how to breathe new life into the curriculum," said Cheryl Chanos, a teacher in the Madison area.

Chanos learned how to incorporate simple ideas of movement in her classroom. "For example, I had the children act out word definitions instead of simply looking them up," said Chanos. "By becoming more involved in the learning process, the children improved their memory."

Les Thimmig, professor of composition, woodwinds, and jazz studies, said the series is a win-win situation for all participants. "Each person has a unique perspective. Teachers in the workshop pose questions I wouldn't hear from university students, fellow professors, and musicians," said Thimmig.

Performing arts are used to drive learning across disciplines.

Thimmig, who led a workshop last February on using jazz to teach American history, sociology, and culture, said people can get gun-shy around musicians because of the specialized terminology they use. "This series breaks down fears of dealing with music," said Thimmig, "and makes learning more enjoyable for youngsters."

Thimmig's positive experience with "Cake & Culture" led to a repeat performance with the Wisconsin Presenters' Network and an upcoming workshop for teachers that will kick off Madison's Isthmus Jazz Festival on October 2nd. The "Cake & Culture" series is offered each year on select afternoons during the winter-spring semester.

For more information contact:
Linda Shriberg, phone: 262-4477

Education to employment

SEED project creates pathways for underserved youth

Some students at Mendota Elementary School are staying after school these days to do hands-on science-based activities that also help them learn about careers in science.

The Science Club emerged from the SEED (Science Education and Employment Development) program, a UW-Madison partnership with three Madison schools as well as Turtle School, an Oneida Nation school. SEED is coordinated by the Center for Biology Education and supported by the Wisconsin Food System Partnership.

"The goal of the SEED program is to create pathways to careers in science-related fields for children in underserved communities," said Kevin Niemi, the project coordinator from the Center for Biology Education.

The goal is to provide continuous opportunities in science education for underserved children.

The Science Club is one of many SEED projects at Mendota Elementary. To learn about basic science principles, agriculture and nutrition, the children also help plant and care for gardens. "The gardens help kids get in touch with nature and learn how our existence depends on the environment," said Niemi. Another project involves taking field trips, many to the UW-Madison campus, to see first-hand what scientists do and where they work.

According to Sandy Gunderson, principal of Mendota Elementary, "The field trips get the children excited about the possibility of becoming a doctor or a biologist. When they return to school, they use the Internet to further research these career opportunities."

SEED staff have created resource materials for Mendota teachers, helped in the school assessment, and participated in the school-wide curriculum planning effort.

"Our University partners have shown a tremendous commitment to help us strengthen science in our curriculum and to help children discover career opportunities in science-related fields," said Gunderson.

"The future of the partnership is limitless," she added. Plans for SEED projects at Mendota next year include expanding the Science Club with help from a UW-Madison student in the Community Scholars Program, a Science Night in the fall where students and parents can participate in activities coordinated by SEED staff in cooperation with UW-Madison professors, and a Science Fair in the spring where students can present their own projects.

Seed leaders plan to increase their efforts in Sherman Middle School and East High School over the next few years. "The goal is to provide continuous opportunities in science education for underserved students from elementary school through high school and beyond," said Niemi.

UW-Madison professor Jack Kloppenburg and two university students work with Mendota School children as they plant and care for their gardens.

SEED has already helped start gardens at Sherman School to use in the science curriculum and is working with teachers at both Sherman and East to increase awareness of summer opportunities for middle and high school students on the UW-Madison campus.

Future plans include hosting science-focused Career Days in the schools and working with businesses to create summer internships that will give high school students hands-on experience and help them choose their career paths.

For more information contact:
Kevin Niemi, phone: 262-5480
http://www.cals.wisc.edu/wfsp/seed.html

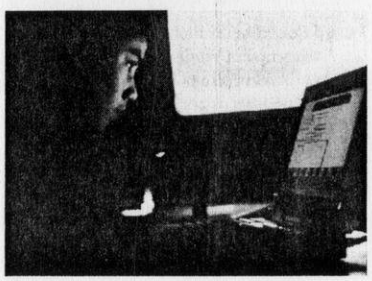
Madison JASON integrates science, education and technology

" 'Can't we do JASON all day?' This question was asked of me last spring by a student who had very emphatically informed me the first day of school that she 'detested' science. The JASON Project is so exciting and fun that even reluctant learners dive right into all the activities and beg for more!" wrote Jackie Bacher, a teacher at Glenn Stephens School.
"Letters like this one let us know that Madison JASON is truly making a difference in our community," said Mary Lou Reeb, education coordinator for the University of Wisconsin Sea Grant Institute. UW Sea Grant hosts Madison JASON on behalf of more than 3,000 fourth-through ninth-grade Madison-area students and their teachers.

The JASON Project is an international, interdisciplinary science education program that uses state-of-the-art technology to enable students to see and talk with scientists and researchers doing field work in remote locations of the world.

Madison JASON is a community partnership involving UW Sea Grant, the Madison Metropolitan School District, the Electronic Data Systems Corporation (EDS), the BioPharmaceutical Technology Center Institute and the Promega Corporation, as well as 12 other local public, private and nonprofit organizations.

"Working with the Madison JASON Project gives our staff a hands-on opportunity to help promote education in our community," said Christian Rosenstock, EDS marketing specialist.



As part of Madison JASON, EDS staff help teach children about the Internet and other communication technologies.

In the Madison-area, more than 3,000 fourth- through ninth-grade students and their teachers are involved.

The Madison JASON Website, winner of three gold medals from the national Council for the Advancement and Support of Education and an Addy award, features audio clips, interactive fish and bird quizzes, guides to teacher resources, and student art and other projects. Its audience has proven to be truly global, with visitors from all 50 states and 25 nations. The project has been praised as a national model by JASON Project organizers.

For more information contact:
Mary Lou Reeb, phone: 263-3296
http://www.seagrant.wisc.edu/madisonjason

Others working in K-12 Education

College Access Program encourages and supports middle and high school students from under-represented groups to pursue higher education. Each summer the program offers these students an opportunity to spend two to three weeks on campus to get acquainted with college life, explore academic and career opportunities, and learn about prerequisites for college admission.

Phone: 262-7415
Web: http://www.soemadison.wisc.edu/cap

Comprehensive Regional Assistance Center Consortium, Region VI serves six Midwestern states, offering research-based information concerning school improvement, educational change, content standards, innovative classroom and instructional practices, and student cognition.

Phone: 263-4220
Web: http://www.wcer.wisc.edu/ccvi

Earth Partnership Program, sponsored by the UW-Madison Arboretum, aims to increase awareness of the natural world and explore the idea that human beings can have a positive relationship with nature through restoration of native biological communities. The program includes teacher training, work with school children of all ages, community action projects and family workshops.

Phone: 262-9925
Web: http://wiscinfo.doit.wisc.edu/arboretum/eductrs/earthpartprog/earthpartnership.htm

Educational & Psychological Training Center provides services to children and their families that include evaluations of intellectual and academic skill, assessment and remediation of learning difficulties, social-emotional evaluations, parent counseling and education, individual and group therapy, services for talented and gifted students, and assessment of preschoolers.

Phone: 265-6120
Web: http://www.soemadison.wisc.edu/eptc

K-12 Outreach Program in the College of Engineering sends undergraduate students to area schools to talk about careers and training in technology and science while demonstrating some ways in which engineers are changing our world. The purpose of the program is to improve science and engineering literacy, to engage and interest school children and their teachers, to expose undergraduate students to outreach, and to make science and technology fun.

Phone: 262-5172
Web: http://darkstar.engr.wisc.edu/zwickel/Outreach/wi.html

Lapham School Math and Science Program, facilitated by the UW-Madison Office of Outreach Development, uses gardening to integrate various disciplines with science, math, health and nutrition, environmental aesthetics, and design while developing year-round clinical opportunities for education students. This program, a partnership between the University and the Lapham Elementary School community, provides educational opportunities for children in grades K-2.

Phone: 262-9970

Morgridge Center for Public Service places UW-Madison students in volunteer settings and serves as a clearinghouse for students to do one-on-one tutoring with Madison area K-12 students.

Phone: 263-2432
Web: http://www.wisc.edu/union/wud/morgrid/morg.html

National Center for Improving Student Learning and Achievement in Mathematics and Science develops, tests, and then disseminates a set of principles for the design of classrooms that promote understanding in K-12 mathematics and science.

Phone: 265-6240
Web: http://www.wcer.wisc.edu/ncisla

National Institute for Science Education provides research and evaluations to help systemic reform become more effective for decades to come; seeks to reconceptualize professional development and pre-service teacher education; and is helping to design an emerging field of education research and development or college-level science, mathematics, engineering and technology education.

Phone: 263-9250
Web: http://www.wcer.wisc.edu/nise

Upward Bound helps first-generation college bound, low-income students develop the skills to begin and complete post-secondary education. The program offers students in grades 9-12 after-school academic support, personal counseling, academic and career advising, and study and social skills development.

Phone: 263-4200
Web: http://www.wcer.wisc.edu/upward/index.htm

UW Space Place offers K-8 workshops, lectures, children's activities, special events, demonstrations, a summer camp, and hands-on activities related to space science.

Phone: 262-4779
Web: http://www.sal.wisc.edu/SpacePlace/index.html

Wisconsin Career Information System at the Center on Education and Work develops career education materials and software used in over 70% of the K-12 schools statewide. WCIS also partners with the UW System, Wisconsin Technical College System, Department of Workforce Development, Career Centers, other public and private agencies to promote career development for all citizens.

Phone: 263-3696
Web: http://www.cew.wisc.edu/wcis

To learn more about others working to improve K-12 education, see the School Partnership Programs web page.

Web: http://www.wisc.edu/news/schools/index.html

Updating the Wisconsin Idea
September 1998, Number 4

This publication tells stories of faculty and staff who are working in partnerships with businesses, civic organizations, government agencies, schools, and other community-based groups to improve our state, nation and world. We hope these stories motivate other faculty and staff to seek community partners to create knowledge that will benefit society in the 21st century.

Updating the Wisconsin Idea is a joint effort between UW-Madison's Office of Outreach Development in the Office of the Provost and the Wisconsin Food System Partnership funded by the Kellogg Foundation and administered by the College of Agricultural and Life Sciences.

Future inserts will focus on health care and the environment. To share story ideas or to comment on this issue, contact:

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Photos:
Jeff Miller, WCER project, p1
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Wisc. Idea

FOR IMMEDIATE RELEASE 9/6/98
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UW ART STUDENTS HONOR UNIVERSITY'S CONTRIBUTIONS WITH EXHIBIT

MADISON - Can't repeat the past? Why, of course you can!

At the very least, you can shape and frame it, as two classes of University of Wisconsin-Madison design students discovered when they put together the Wisconsin Idea Sesquicentennial Exhibit, a celebration in photos and captions of university's contributions to the people of Wisconsin and the world.

The display, 63 images strong, will be unveiled Sept. 10 at 5 p.m. in the Elvehjem Museum of Art's Mayer Gallery. The exhibit will remain on view there until Sept. 13; the exhibition then will travel throughout Madison and Wisconsin, making stops in Milwaukee, Green Bay and Janesville. It also will be shown at alumni and donor events across the country.

Eighteen students in associate art professor John Rieben's Advanced Graphic Design and Special Topics in Design courses developed and assembled the exhibition as a research exercise.

"I wanted to create an opportunity for student involvement in the sesquicentennial and to showcase their talent," Rieben says. "Academically, I wanted to develop teamwork among students and show them how important research is."

One of those students is Kathy Klingemann, a senior concentrating in graphic design. "I must have looked at 10,000 photos," she says.

About 40 percent of the exhibition has been drawn from campus information offices, 40 percent from the University Archives and 20 percent from private collections,

Klingemann says. Clustered around five themes - "Enhancing Health," "Advancing Knowledge," "Expanding Views," "Building Pride" and "Shaping Marketplaces" - the photos will be grouped on unique display cubes designed by the students

"We have photos ranging from classes in the dance program to the early days of WHA radio to cranberry bogs," Klingemann says. "We have a particularly striking shot of surgery in progress at UW Hospital."

Klingemann says this experience has enhanced her own education immeasurably. "The project taught me more about computer applications in graphic design," she says. In addition, she was able to expand her appreciation for the university's history and its role in the state's development.

"I learned so much about what the university does - I expect taxpayers who come to this exhibition will leave with a greater appreciation for the benefits of UW-Madison research," Klingemann says.

The project was funded by Firstar, one of the community sponsors of the UW-Madison Sesquicentennial.

###

- Barbara Wolff, (608) 262-8292

Wisc. Idea

Let the festivities begin

UW-Madison sesquicentennial events kick off Sept.10

Erik Christianson

Celebrations like this don't come along very often. UW-Madison will commemorate its 150th anniversary and 15 decades of service to Wisconsin and its citizens starting next month. The creation of the university in 1848 — less than two months after Wisconsin became a state — will be highlighted during the UW Sesquicentennial Inauguration Sept. 10-12.

"I am amazed at the foresight of early state lawmakers to establish a university in Wisconsin's newly settled wilderness, and we are thriving 150 years later because of that vision," said Chancellor David Ward. "It is exciting to consider what developments and breakthroughs will come forth from this institution in the next 150 years."

The festivities will start with a state proclamation to officially begin the UW sesquicentennial. The university will paint the state red – and white – through six other signature events through 1999 that are designed to recognize UW-Madison's achievements over the past 150 years and look forward to its future.

"It is significant that the fourth act approved by the first Wisconsin Legislature created a public institution of higher education for the state and its citizens," said Charles Hoslet, special assistant to the chancellor for state relations and chair of the opening weekend event.

"This weekend is designed to commemorate that pioneering act, to celebrate the university's history and impact on Wisconsin, and to look ahead at how we can effectively serve the state in the next millennium."

The State Sesquicentennial Commission and the UW System join UW-Madison in sponsoring the Sesquicentennial Inauguration.

"This event, and all the UW sesquicentennial events, will showcase how this world-class university has been and still is one of Wisconsin's greatest resources," said UW System President Katharine Lyall.

Major events of the sesquicentennial kickoff are:

- The proclamation ceremony, part of the Wisconsin State Sesquicentennial Celebration, begins Sept. 10 at 4 p.m. by the Abraham Lincoln statue on Bascom Hill. The alternate site in case of inclement weather is Music Hall. Gov. Tommy Thompson has been invited to sign the proclamation declaring September 1998-December 1999 the official UW Sesquicentennial Celebration.
- An evening reception from 5-7 p.m. at the Elvehjem Museum of Art follows the proclamation ceremony and will commemorate the UW's charter legislation. The Wisconsin Idea Sesquicentennial Exhibit will also be unveiled at the reception. (See related story.)
- A WHA-TV "Weekend" feature will air Sept. 11.
- A commemoration ceremony will be held during halftime of the Sept. 12 Wisconsin-Ohio University football game at Camp Randall Stadium.

The UW Sesquicentennial Celebration is a partnership between the university, its schools and colleges and a 47-member Sesquicentennial Council, said Peyton Smith, UW sesquicentennial coordinator. That partnership is extended through several community and university sponsors, Smith added.

Community sponsors are American Family Insurance, The Evjue Foundation, Firstar, University Bookstore, UW Credit Union, the Wisconsin State Journal and The Capital Times. Specific university sponsors are the UW Foundation, Department of Intercollegiate Athletics, UW Health and the Wisconsin Alumni Association.

No state funds are paying for the UW sesquicentennial events. Donations from sponsors and gifts to the university are covering the costs. ■

This detail from the act creating the University of Wisconsin is part of an original document preserved at the State Historical Society of Wisconsin. One hundred fifty years ago, the fourth act approved by the first Wisconsin Legislature created a public institution of higher education for the state and its citizens. The September 1998-December 1999 UW Sesquicentennial Celebration begins with a proclamation ceremony at 4 p.m. Sept. 10 at the Abraham Lincoln statue on Bascom Hill. The alternate site in case of inclement weather is Music Hall. A reception is planned from 5-7 p.m. at the Elvehjem Museum of Art.

Bascom Hill to have 'banner' sesquicentennial

New computer printing technology will afford travelers up and down Bascom Hill different visual experiences each trip.

Twenty-seven new banners, commemorating the university's dynamic character, will be on display as part of UW-Madison's sesquicentennial celebration starting Sept. 10. According to project coordinator Diane Sheehan, professor of environment, textile and design, the banners are innovations in both design and production. Two images per banner have been printed on special mesh fabric. Factors including the cloud cover, time of day and the viewing angle will determine what one sees on the banners at any given moment, Sheehan says.

Graduate students Carolyn Kallenborn and Julie Moehn designed the banners. A half-million dollar electronic printer did the actual printing. Because of the unfamiliar technology used to make the banners, Sheehan says they will be "test driven" on the hill in coming days. After they are officially installed Sept. 10, they will be on display on and off during the year.

UW art students honor university's contributions with traveling exhibit

Barbara Wolff

Can't repeat the past? Why, of course you can! At the very least, you can shape and frame it, as two classes of UW-Madison design students discovered when they put together the Wisconsin Idea Sesquicentennial Exhibit, a celebration in photos and captions of the university's contributions to the people of Wisconsin and the world.

The display, 63 images strong, will be unveiled Sept. 10 at 5 p.m. in the Elvehjem Museum of Art's Mayer Gallery. The exhibit will remain on view there until Sept. 13; the exhibition then will travel throughout Madison and Wisconsin, making stops in Milwaukee, Green Bay and Janesville. It also will be shown at alumni and donor events across the country.

Eighteen students in associate art professor John Rieben's Advanced Graphic Design and Special Topics in Design courses developed and assembled the exhibition as a research exercise.

"I wanted to create an opportunity for student involvement in the sesquicentennial and to showcase their talent," Rieben says. "Academically, I wanted to develop teamwork among students and show them how important research is."

One of those students is Kathy Klingemann, a senior concentrating in graphic design. "I must have looked at 10,000 photos," she says.

About 40 percent of the exhibition has been drawn from campus information offices, 40 percent from the University Archives and 20 percent from private collections, Klingemann says. Clustered around five themes — "Enhancing Health," "Advancing Knowledge," "Expanding Views," "Building Pride" and "Shaping Marketplaces" — the photos will be grouped on unique display cubes designed by the students.

"We have photos ranging from classes in the dance program to the early days of WHA radio to cranberry bogs," Klingemann says. "We have a particularly striking shot of surgery in progress at UW Hospital."

Klingemann says this experience has enhanced immeasurably her own education. "The project taught me more about computer applications in graphic design," she says. In addition, she was able to expand her appreciation for the university's history and its role in the state's development.

"I learned so much about what the university does — I expect taxpayers who come to this exhibition will leave with a greater appreciation for the benefits of UW-Madison research," Klingemann says. ■

Wisc. Idea

UPDATED 1/25/99

TO: Editors, news directors
FROM: UW-Madison Office of News and Public Affairs
RE: SESQUICENTENNIAL CELEBRATION

Here's an early look that may help as you plan your Feb. 8-12 coverage of sesquicentennial events and activities at the University of Wisconsin-Madison. The university will mark the week of the first UW classes 150 years ago with a series of events tied to the theme "Building On Excellence: Creating Our Future."

For more information on any of the events listed, contact the Office of Quality Improvement, (608) 262-6843. Or you can check the university's sesquicentennial Web site: http://www.uw150.wisc.edu.

For help arranging coverage, call the Office of News and Public Affairs, (608) 262-3571.

Friday, Feb. 5

STAMPED CARD UNVEILED: UW-Madison and U.S. Postal Service officials unveil a sesquicentennial postal card. 6:15 p.m., Nicholas-Johnson Pavilion, Kohl Center, before to the womenís basketball game.

Saturday, Feb.6

SCHOLARSHIP GALA: UW-Madison's Sesquicentennial Scholarship Gala will feature original performances, fine dining and dancing until midnight. Tickets for the black-tie-optional gala are $150 per person; $85 is tax-deductible. Proceeds go to the Sesquicentennial Undergraduate Scholarship Fund. 6 p.m.-midnight, Monona Terrace Community and Convention Center. CONTACT: Catherine Gray, (608) 262-4315.

Sunday, Feb. 7

ANNIVERSARY CONCERT: A concert organized by the School of Music features more than 500 students in a musical tribute to the university. 1-3 p.m., Kohl Center. CONTACT: Michael Pare, facilities manager, School of Music, (608) 263-1893.

Monday, Feb. 8

THE FUTURE OF WORK: Campus workers will be able to discuss "The Future of Work: Your Job in the Next Decade" at sessions throughout the week. Topics will include: The Effects of New Technology and Change; The Organizational Climate of the Future; Work/Family Issues; and Career Development. Feb. 8-12, Memorial Union/Union South. Check the sesquicentennial web site or "Today in the Union" for schedule information.

MEDIA CHANGE, CULTURE CHANGE: "Looking Backward (and Forward): The Future
of Popular Culture." Professor Henry Jenkins, MIT. Will the "digital revolution" be a cultural revolution or only a technological revolution? Drawing examples from a range of media, including comic books, video games, popular music, film, television, and the World Wide Web, this talk will make the case that cultural and social changes in the way we relate to media content are paving the way for "technological convergence." 3:30 p.m., Elvehjem Museum of Art.

STEM CELL RESEARCH, POLITICS: Professor James Thomson will talk about recent breakthroughs in human embryonic stem cell research and the potential for curing life-threatening illnesses. Professor Alta Charo will discuss the bioethical issues related to stem cell research and embryonic research politics. 3 p.m.-4:30 p.m., Grainger Hall, Room 4151.

Tuesday, Feb. 9

WISCONSIN IDEA: "The Future of the Wisconsin Idea." Donald Kettl, director, Robert M. La Follette Institute of Public Affairs, charts five big issues on which the state and the university will be linked over the next generation. Part of the Roundtable luncheon series. Discussion period will follow. 11:30 a.m.-1 p.m. Roundtable room, Memorial Union.

CAMPUS LANDSCAPE: "Evolution of the Campus Landscape: Terrestrial Ecology and Limnology." Professors Evelyn Howell, landscape architecture/environmental studies, and John Magnuson, zoology/environmental studies, and director of the Center for Limnology, will speak on the evolution of the campus landscape. Noon-1:30 p.m., Union South (check TITU for the room assignment).

FASTER, FASTER: "Connecting Faster & Faster in the Future." Professor Larry Landweber, computer science, will describe how new technologies will make it possible to communicate faster and more effectively, thereby impacting on many facets of society. 3:30 p.m. to 4:30 p.m., Grainger Hall, Room 4151.

Wednesday, Feb. 10

TEACHING AND LEARNING SHOWCASE: This event features displays and discussions highlighting some of the innovative and exciting teaching and learning activities across campus. 10 a.m. to 3 p.m., Great Hall, Memorial Union. CONTACT: Robert Skloot, associate vice chancellor for academic affairs, (608) 262-5246.

UNDERGRADUATE RESEARCH SYMPOSIUM: The symposium highlights undergraduate
student achievement and creativity across a broad range of studies. From art to scientific research, from musical composition to engineering marvels, this event will showcase independent student projects in science, humanities and social studies. 10 a.m. to 3 p.m., Great Hall, Memorial Union. CONTACT: Robert Skloot, associate vice chancellor for academic

affairs, (608) 262-5246.

FUTURECAR DISPLAY: The UW-Madison FutureCar, developed by undergraduate engineering students, will be on display in front of Memorial Union. The car is super fuel-efficient, environmentally friendly and similar to today's mid-sized sedan.

Thursday, Feb. 11

JOURNALISM DISCUSSION: "The Future of Journalism Symposium." Moderated by CNN's Jeff Greenfield, Jill Geisler of the Poynter Institute and Rem Rieder, editor of American Journalism Review. This day-long event focuses on important trends in the profession. Each forum will have an extended question-and-answer session. One forum will focus on the tools of the journalist in the next century. A second forum will explore new questions about the changing nature of news. 10 a.m.-noon and 1-3 p.m., Wisconsin Union Theater.

EDISON DAY: What are the inventors and entrepreneurs of the future cooking up? Find out by checking out the College of Engineering's annual student invention competition. Student contestants will be presenting their inventions to a panel of judges. Plus, the college's historic Edison Generator, just off the Engineering Hall lobby, will be fired up in the afternoon. 9 a.m.-1 p.m., Room 1600, Engineering Hall.

Friday, Feb. 12

ATHLETES DISCUSSION: "The Student Athlete in the 21st Century." Should student athletes get paid? Should they be required to maintain standard academic progress? These and other pressing issues facing student athletes in the future will be addressed by a panel of current coaches and student athletes. Audience interaction, questions and opinions will add to this lively debate. 11:30 a.m.-1 p.m. Union South (Check 'Today in the Union' for room).

THE IMPORTANCE OF STORIES: "The Future of Storytelling." Professor Harold Scheub, African Languages & Literature. Scheub describes how storytellers are our guides and our historians, our past and our present, and how they provide us with models for the future. 1:30-2:30 p.m., State Historical Society Theater.

# # #

WI Idea

The University in Partnership with Wisconsin

Building on a Tradition of Excellence ~ Part II

Chancellor David Ward
University of Wisconsin-Madison

Contents

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Photos by Wolfgang Hoffmann (page 5) and Jeff Miller (pages 9, 15, 19, 20, 24)

■ Based on the most recent statistics, UW-Madison's economic impact on the state in 1990 was $3.4 billion in direct and indirect spending (which results when money recirculates and is re-spent in the community).

■ Some 61 percent of the business executives interviewed in a February 1995 state-wide poll say the UW System is very important to the economy, up from 51 percent in 1991.

■ UW-Madison ranked third among the nation's universities in research-and-development spending in fiscal year 1993-94, with a total of $372.4 million, most of which is spent locally.

■ The Wisconsin Alumni Research Foundation has obtained 900 patents, resulting in gifts totalling $316 million to the university, since its founding in 1925. Some 3,275 discoveries have been directed to WARF in that time.

■ At least 64 technology-based Wisconsin companies have their origins rooted in UW-Madison.

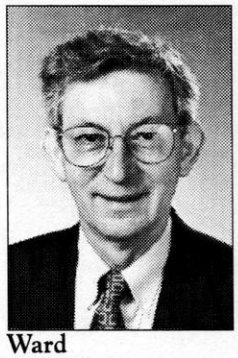
■ More than 141,000 people participated in 2,300 continuing education courses and workshops in 1994.

■ Some 100,000 Wisconsin citizens outside the university community use UW-Madison libraries each year.

■ Each year, 18,000 patients are cared for at UW Hospital and Clinics.

Updating the Wisconsin Idea

Throughout this century, the university has maintained its status as a preeminent teaching and research institution, and we are dedicated to ensuring the university's future success. Over the past few years, for example, we have made major efforts both to reconceptualize undergraduate education and to remodel and expand our research facilities.


Ward

But our priorities have also concentrated on revitalizing and redefining our partnership with Wisconsin and its citizens, for this bond is an integral component of our mission to create, integrate, transfer and apply knowledge. In this report, we feature many examples of this partnership in order to illustrate how we are striving to share our knowledge, collaborate with and learn from the people of Wisconsin.

The university's partnership with the state began nearly 150 years ago and was bolstered by the land-grant institution designation in 1866. The Wisconsin Idea, the philosophical framework for this partnership, became a national model. Some of the university's earliest efforts became a part of the national fabric — the drafting of national legislation for social security and unemployment compensation, for example, and the breakthrough development of a method to irradiate vitamin D to fortify foods and prevent rickets.

Our commitment to the citizens of Wisconsin is stronger than ever as we approach the 21st century. Today we are building new relationships and creating different connections. We are striving to encourage joint efforts with a variety of public and private institutions and to enhance our use of information technology on behalf of a variety of customers. Many of these linkages and activities grow out of partnerships with state and national funding agencies, the University of Wisconsin-Extension, and private business and industry.

Our efforts to make contributions span all disciplines. The multidisciplinary nature of these activities demonstrates the collaborative response we have developed to confront issues that face Wisconsin. When our faculty, staff and students sense a need within the Wisconsin community, or they are faced with a challenge that does not fit neatly within one discipline, they show their willingness to cross departmental boundaries to apply their knowledge. (Because of this collaborative effort, many of the activities highlighted in this report could fit into several categories.)

In addition to campus-based learning for more than 40,000 students (most from Wisconsin), we also serve thousands of the state's citizens through our many and varied outreach programs. We share new technologies and areas of expertise to improve Wisconsin's economy, environment, agricultural and industrial base, health care, businesses and schools — in short, Wisconsin's quality of life. Every year, faculty, staff and students are engaged in individual public service activities as well as formal UW-Madison programs designed to serve the state.

The significance of our partnership activities is illustrated by a survey conducted in February for the University of Wisconsin System. The survey found that the importance of access to university technical and research services to Wisconsin businesses has increased from 34 to 61 percent in the past three years.

Our activities, be they in the classroom, laboratory, field, or communities across the State, are becoming increasingly integrated and overlapping. As faculty and staff apply basic research concepts to new problems, not only do they serve as a valuable resource to the state, but they further their own research knowledge. Our undergraduate and graduate students benefit from the experience of information transfer. As we engage in these partnerships, we listen to and learn from the state's citizens, their elected officials, our alumni, and our many friends throughout Wisconsin.

This overview provides a sampling of the university's partnership activities. Consider it an introduction to some of the many ways that UW-Madison contributes to and benefits from the people of Wisconsin. I know you will be impressed with the breadth and depth of these partnerships and how we hope they reflect a beginning of a new and more dynamic expression of the Wisconsin Idea.

■ Americans now get one-third of their vitamin A — an essential nutrient — from carrots. The level of beta-carotene, the precursor of vitamin A, in carrots has doubled over the last 30 years, thanks largely to carrot breeding lines developed in the College of Agricultural and Life Sciences' horticulture department.

■ Sweet corn breeders at the College of Agricultural and Life Sciences aim to get Midwesterners their first ears of the summer a bit sooner. They have developed a half-dozen commercial varieties of super-sweet corn and are now working to develop varieties that tolerate cold weather better and can be planted earlier in Wisconsin.

■ The now familiar images of weather patterns that we see on television weather reports result from the spin-scan camera, an invention developed at the Space Science and Engineering Center. The center continues to design and build advanced instruments for weather satellites.

■ A Wisconsin firm is supplying red dye from beets to the food industry, with help from College of Agricultural and Life Sciences research. The natural dye, used in a wide variety of meat, bakery, gelatin and related products, is an alternative to synthetic food colorants. The Wisconsin plant that grows the beets is the primary producer of beet dyes in the United States.

■ People with disabilities find professional success

Trace Center develops technology and makes products more accessible to people with mental or physical challenges.

Cathy has cerebral palsy. She also has a resale clothing business in southeastern Wisconsin. A software innovation, developed for IBM by the Trace Research and Development Center at UW-Madison, allows Cathy to computerize her orders and inventory.

She enters her data with a stick gripped in one hand, thanks to a program that allows her to control keys — including the all-important "shift" key — that ordinarily require two hands to operate. A similar feature from Trace, StickyKeys, is now built into all Macintosh computers and costs virtually nothing to incorporate.

Cathy is not alone in reaping the technological benefits originating at Trace. Since 1971, the center has opened new economic and professional avenues for thousands of people with disabilities nationwide.

A joint project of UW-Madison's Waisman Center and Department of Industrial Engineering, the center began by addressing communication needs of nonvocal, severely disabled children and adults. However, in the late 1970s, the mission expanded to include the goal of making information technology more accessible to people with physical or mental challenges.

Today, Trace distributes a CD-ROM listing thousands of assistive products, services and publications. The center also operates clinical services to help people choose and design communications systems best suited to each individual need.

AccessDOS, the low-cost software tool that Cathy uses for her business, is already available and has even been translated into Japanese. Currently, the center is working on helping people with disabilities gain access to the Internet. In addition, Trace works directly with such computer firms as Apple, IBM, Digital Equipment Corp., Honeywell and Microsoft to adapt their products for people with disabilities.

According to Gregg C. Vanderheiden, director of the Trace Center, companies have proved most receptive to the potential Trace can realize. "Industry is willing to build accessibility into its standard product," he says. "The incorporation of these access features into standard products has had a profound effect on the lives of people with disabilities, and provides benefits to individuals without disabilities as well."

■ Water test helps local officials detect lethal toxins

UW-Madison scientist contributes his services to help communities find out if naturally occurring toxins are in their drinking water.

Some of the most dangerous poisons in the environment have nothing to do with giant factories or artificial chemicals. Instead, they are natural compounds produced by algae in lakes and ponds, and by molds that grow on crops.

Detecting low levels of these toxins in Wisconsin's water supply and in farm crops has proved difficult for scientists and regulatory agencies.

But the Department of Natural Resources (DNR) and Department of Agriculture, Trade and Consumer Protection — which must deal with these environmental toxins — have found a ready ally in Fun Sun Chu, a professor in the College of Agricultural and Life Sciences' Department of Food Microbiology and Toxicology.

As an environmental toxicologist for 25 years, Chu has developed internationally recognized tests that allow scientists to detect extremely low levels of natural toxins in foods, plant and animal tissues, and environmental samples.

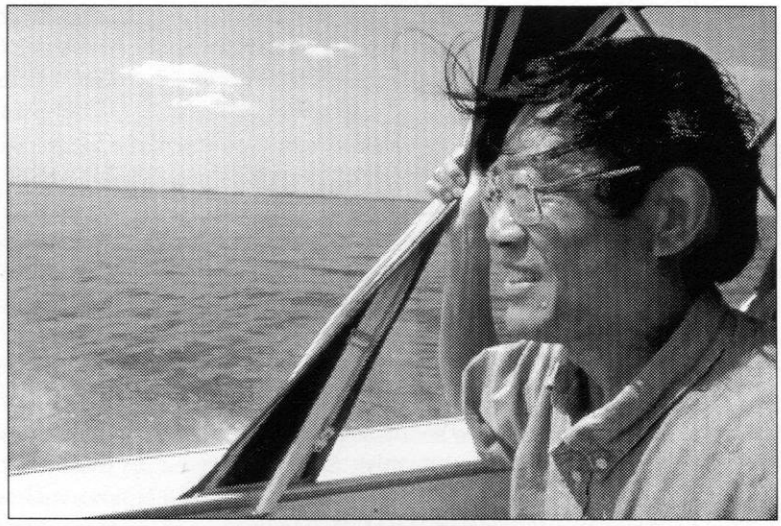
During the past decade, Chu's work has resulted in a string of new tests for compounds such as aflatoxin — a mold toxin on corn and peanuts thought to be the world's most potent carcinogen — and microcystins — algal toxins that also promote cancer and that are, ounce for ounce, more lethal than strychnine.

In 1993, Chu cooperated with the DNR and local water utility officials in Appleton, Oshkosh, Neenah and Menasha, by screening for microcystins in the water they draw from Lake Winnebago. Chu's tests found that the treated drinking water had very low levels of toxins despite the presence of higher levels before treatment. While there are no federal

■ With the help of the Wisconsin Center for Space Automation and Robotics in the College of Engineering, Quantum Devices Inc., a company in Barneveld, Wis., now produces arrays of LEDs that emit the exact wavelength of light that plants use in photosynthesis. Quickly becoming standard equipment in botany labs and tested in the space shuttle Discovery, these high-density, low-cost LEDs are now replacing expensive lasers in devices designed to fight cancer.

■ Through the General Library System, UW-Madison faculty and faculty at 16 other universities have access to an organic chemistry database. Crossfire allows chemists to do their own structure searches of 6.5 million organic chemicals, their properties and literature references. This is the first use of client/server technology to share a single database over the Internet among university libraries in Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Pennsylvania and Wisconsin.

■ Scientists in the College of Agricultural and Life Sciences developed a workshop to deliver the latest DNA technologies directly from the research lab to the livestock breeding industry. Participants learned to use DNA technology to identify an animal's genes for performance, disease resistance and production.



Fun Sun Chu, professor of food microbiology and toxicology, has developed internationally recognized tests that allow scientists to detect low levels of natural toxins in foods, plants and animal tissues, and environment samples. His tests were used to identify low levels of toxins in Wisconsin's Lake Winnebago.

or state safety standards for microcystins, the tests assured local officials that their treatment plants greatly reduced microcystin levels. "It's unlikely that such low levels of microcystin in drinking water affect people's health in the short term," Chu says.

As is often the case with new methods for unanticipated emergencies, state agencies have had little money to support Chu's efforts. He usually contributes his services and those of his laboratory technicians at no cost, while the state reimburses him for chemical reagents.

Despite the costs, Chu views his association with state agencies as an opportunity to apply the techniques he has developed to the problems government agencies and citizens face. "Every scientist wants to expand what we know about the world and how it works, but I'm especially proud to see that my research has real practical value," Chu says.

■ Solar Energy Laboratory collaborates with businesses

From aluminum hot dogs to solar water heaters, this engineering lab develops a range of answers to industry's high-tech problems.

A hot dog made of aluminum — it doesn't sound appetizing, but it is actually helping researchers at the Oscar Mayer plant in Madison improve the quality of their most popular product.

In 1991, Oscar Mayer officials approached mechanical engineering professors William Beckman, John Mitchell and Sanford Klein at UW-Madison's Solar Energy Lab. The Oscar Mayer Foods Division of Kraft Foods wanted to apply engineering principles to the processing of hot dogs and bologna, which accounts for millions of pounds of production at the Madison plant each year.

Jerry Marra, senior research engineer at Oscar Mayer, says the company needed a more sophisticated look at what was happening on its production line. For his master's degree, James Spielbauer developed an aluminum hot dog to help write a software model of the cooking process. He hooked up the hot dog replica to a small, heat-tolerant data-collector, and placed the devices on the tray of a huge convection oven at the Madison plant. A few minutes later, when the "cooked" dog emerged from the oven, he downloaded information on cooking conditions into a computer.

The results from that computer model, Marra says, have "shortened some of our cooking cycles ... and that translates to increased throughput, and increased efficiency." When used by Oscar Mayer's R&D department, the software Spielbauer developed helps the designers "speed the transition from product concept to production process," he adds.

UW-Madison's Solar Energy Laboratory has carried out a variety of intriguing collaborations with Wisconsin businesses over the past few years. The lab helped evaluate equipment for Carnes, Inc., a Verona manufacturer of heating and ventilating equipment. And it helped increase output at the world's largest solar water-heating system, operated by

■ Faculty and students in the Nuclear Engineering and Engineering Physics Department adapted computer software for Wisconsin's nuclear plants at Kewaunee and Point Beach in order to simulate crises and problems. The software allows the plants to train workers to handle such problems without actually experimenting on their expensive, complex nuclear machines.

■ Each quarter, a College of Agricultural and Life Sciences research demographer provides the state Department of Corrections with revised forecasts of the state's prison population and people on parole and probation. The forecasts help corrections officials anticipate the need for prison space and to budget for prison staff and services.

■ For many small and medium-sized businesses, finding time to improve quality beyond solving the "do or die" everyday problems is difficult at best. But the College of Engineering's Center for Quality and Productivity Improvement provides advice to such firms on fine-tuning their operations. The center, for example, worked with Freedom Plastics, Inc., of Janesville, Wis. to solve problems it was having in PVC pipe-making operations.

Packerland Solar System in Green Bay.

Lab engineers are now writing software to assess how the large-scale installation of solar water heaters would affect Wisconsin Electric Power Co., the state's largest utility. The goal, says Beckman, director of the Solar Energy Laboratory, is to "evaluate what would happen if a utility aggressively promoted the installation of solar water heaters by its customers—not a few dozen, but maybe 100,000 heaters. What would be the impact on utility demand and pollution?"

Working with UW-Madison students and researchers offers companies the chance to apply cutting-edge technology to real-world problems, Marra says. The UW-Madison engineers "bring a fresh perspective, not biased by accepted wisdom. Scientifically, it's a more fundamental approach. It brings a level of mathematical sophistication that wouldn't be cost effective for us to provide."

■ And the forecast for tomorrow is ...

McIDAS guides weather forecasters and enhances education.

Whether you're listening to a tornado warning or ozone alert on the radio, watching the path of a hurricane or a space shuttle launch on television, McIDAS is the system that brings these important weather and space pictures to you.

UW-Madison's Space Science and Engineering Center designs McIDAS, the Man computer Interactive Data Access System, which receives signals from satellites 22,000 miles above the Earth and changes them into recognizable pictures of the Earth and its weather. Adding weather information gathered from around the world, forecasters and researchers use McIDAS to display and analyze weather patterns in real time, as the events happen.

The National Severe Storms Forecast Center in Kansas City uses McIDAS to decide when to issue severe weather warnings. The National Hurricane Center and U.S. weather forecasting centers for the space shuttle use McIDAS to display and analyze meteorological information.

Smaller agencies inside Wisconsin also use McIDAS. For example, Weather Central, Inc. — which forecasts weather for the Dane County area over TV Channel 27, UW-Madison's Soil Science Department and Wisconsin's Department of Natural Resources (DNR) all rely on the information provided by McIDAS.

At the DNR's Bureau of Air Management, Bill Adamski uses McIDAS to monitor ozone close to the Earth. He gives ozone alerts mostly during the summer when the threat is highest.

By watching satellite pictures combined with other weather information on his McIDAS workstation, Adamski spots the weather conditions that herald increased ozone close to the ground: cloudless hazy days, temperatures above 80 degrees, high pressure centers to the southeast and weak southwesterly winds.

McIDAS makes it easier to alert Wisconsin residents and learn about the conditions contributing to ozone, he says. Space Science adapted McIDAS for Adamski's specific needs: "Space Science wrote special software for us that allowed us to overlay ozone information on the satellite image itself," he says.

In the state-of-the-art Watertown High School, teachers Ron Graewin and Lee Buescher use McIDAS to prepare students for a technical world. The Space Science and Engineering Center provides a computer and McIDAS software while students access real-time images over the Internet.

Chad Kreblin, now a freshman at UW-Madison majoring in meteorology, was a junior at Watertown High School when McIDAS was introduced. Watching weather patterns on McIDAS, Kreblin was awed "by the amount of power the Earth and atmosphere can generate," he says. On McIDAS, he says, "I could teach myself about the things I was curious about."

■ UIR partnerships serve as key contacts for industry

University-Industry Relations program promotes research consortia, linking university experts with industry's needs.

A Madison company developing novel approaches to preventing infectious disease credits its start to the aid of the University-Industry Relations (UIR) program, the university's conduit for technology transfer.

■ A College of Agricultural and Life Sciences wildlife ecologist has developed successful techniques for restoring wild populations of peregrine falcons, whooping cranes and California condors. Currently, he is studying the causes of the declines among Wisconsin's songbirds and leading research on how to reintroduce trumpeter swans to Wisconsin at places such as Crex Meadows.

■ Botanists in the College of Letters and Science are researching the ecology of groundlayer vegetation in Wisconsin's oak savannas. Their results are aiding efforts to restore and manage these imperilled ecosystems in Wisconsin and throughout the Midwest. These researchers are collaborating with the UW Arboretum, the Wisconsin Department of Natural Resources, the U.S. Army, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, the Nature Conservancy and other conservation groups.

■ The UW Sea Grant Institute has led the state, regional and national response to the zebra mussel invasion over the last five years. Control of zebra mussels — which are freshwater mollusks that attach themselves to solid submerged objects, including water intake pipes, boat hulls and dock pilings — is expected to cost billions of dollars over the next 5-10 years in the Great Lakes Region alone. Sea Grant has set up an early warning Lake Michigan harbor sampling program and has provided training in identifying the mussel and its larvae for the Department of Natural Resources, the power industry, municipal waterworks, lake district, and locks and dam personnel.

What is Ophidian Pharmaceuticals today began several years ago in the laboratory of Sean Carroll, a UW-Madison molecular biology and genetics professor. UIR gave the young researcher a seed grant to develop a method of creating refined, high-quality snakebite antivenoms. The research proved successful, and led to a patent and the creation of Ophidian based on a novel technology that could be applied to a wide range of therapeutic and diagnostic products.

Since its founding in 1989, Ophidian has gone on to research and develop drugs aimed at a number of emerging pathogens, such as the *E. coli* bacteria that spreads through contaminated food and can cause life-threatening kidney disease. Douglas Stafford, the president of Ophidian, says the original UIR grant was a critical first step in the company's creation.

UIR has also given the company guidance on finding federal small business grants and other UW-Madison resources for developing new products and helped review grants before they were submitted, says Stafford. The company recently completed a major grant from the federal Small Business Innovation Research program to develop antidotes to different biological poisons.

"UIR has helped us a great deal in identifying ways to access these funds. For a small business, these grants have been crucial to validating our technology and providing R&D capital," he says.

Since 1963, UIR has served as industry's first contact in finding expertise at UW-Madison. By compiling a detailed data base of university research in progress, UIR can steer business and industry contacts in the right direction to get their questions addressed.

Those questions can include anything from a perplexing assembly-line malfunction to an inquiry about licensing a technology stemming from UW-Madison research. UIR also can help companies locate specialized laboratories and equipment, and tap into networks of people involved in technology transfer.

One of UIR's growing areas is in promoting university-industry research consortia, of which there are more than two dozen on campus. In these consortia, companies and UW-Madison staff pool their resources to explore specific needs in industry.

UIR Director Steve Price notes that these university-industry partnerships are mutually beneficial. Industry can receive access to some of the latest knowledge driving their fields and benefit from applied research aimed at the needs of business. At the same time, UW-Madison faculty get important perspectives on their research from the private sector and, frequently, financial support for their work.

UIR recently instituted a computerized data base available to the public on the university's Internet connection, WiscINFO. The list includes updated information on the scholarly activity of thousands of UW-Madison faculty.

Companies also can access UIR through the World Wide Web, where they will find information on the latest UW-Madison technologies available for licensing, as well as connections to WARF (http://www.wisc.edu/uir).

■ Road rating system helps locals save money

PASER makes difficult decisions about road repairs easier and more objective for local community officials.

Choosing which roads to repair and selecting the type of improvement can be a tough job for local elected officials. Everyone wants the road in front of their house done first, and it can be difficult to make the best of a tight local budget.

PASER, a simple-to-use, objective system for rating road conditions developed at UW-Madison, has made the job a lot easier. "Using PASER takes the politics out of the decisions," says Bruce Stelzner, highway commissioner in Chippewa County. He and highway committee members drive over approximately 100 miles of road each year.

Using PASER — which stands for Pavement Surface Evaluation and Rating — the highway committee agrees on how each road segment rates. Then Roadware, a companion computer program, uses the information to produce a road repair priority list and budget for the committee. The Chippewa County Highway Department likes the program so well that it encourages all its towns and municipalities to use it too, says Stelzner. Nearly all do.

The PASER system is helping local officials

■ Providing expertise for improving economic performance and living standards in Wisconsin, the Center on Wisconsin Strategy (COWS) in the College of Letters and Science works with business, labor and state officials to build the infrastructure needed to support a high-wage, high-productivity economy in this state. Among its projects, the center has worked to develop high-performance firms in the state and to raise the level of vocational training on the job and in schools.

■ UW-Madison researchers are working with engine manufacturers and suppliers to improve the performance of two- and four-stroke engines, which are being used in an expanding array of devices, from lawn mowers to snow blowers to motor boats. Estimates suggest that the small engine industry and related activities account for 90,000 jobs in Wisconsin, which is home to 19 engine manufacturing companies and many suppliers. Through individual research contracts, as well as through the Wisconsin Small Engine Consortium, the UW-Madison Engineering College's Engine Research Center is working in collaboration with industry on projects to make these small engines run cleanly and more efficiently.

meet federal requirements as well, explains Engineering Professor Don Walker, director of UW's Wisconsin Transportation Information Center and chair of Engineering Professional Development. Pavement management systems are now required for all local roads that receive federal funding, and PASER meets the requirement.

Even before that rule took effect, however, many Wisconsin local officials appreciated having such a good tool for making fair and cost-effective decisions. That's why Walker helped develop PASER in 1987.

Some PASER-based "what-if" projections also helped the supervisors in the Town of New Glarus make an unpopular but cost-saving decision: that all new roads must have a permanent surface before they can be accepted by the public road system. "We looked at the costs of maintenance," says Town Supervisor Craig Galhouse. "We showed that with a double seal-coated road the town would start incurring yearly maintenance costs in five years, where if the developer paved it we wouldn't have to do any major repair for 15 years."

PASER, its related booklets, and training and computer programs are just one of the Transportation Information Center's programs. The center's mission is to give local elected officials and maintenance staffs timely information about how to maintain and improve streets, highways and bridges. The center is a joint project of UW-Madison, UW-Extension, the Wisconsin Department of Transportation, and the Federal Highway Administration.

■ Center engineers reduce manufacturing lead time

The Center for Quick Response Manufacturing works directly with companies to enhance competitiveness, lower production costs and improve customer relations.

Time is money — and increasingly, the currency of competition. That's why reducing lead time to fill orders is so important to manufacturers.

Shorter lead time means a more productive and quality-oriented workforce, and more satisfied customers. The effort can minimize customers' lost production, and lead to lower costs and higher sales and profits.

The College of Engineering's Center for Quick Response Manufacturing works directly with companies to reduce lead time in filling customer orders, saving them money and improving customer relations. The center currently works with some 25 member companies from around Wisconsin and the surrounding region on an ongoing basis, offering workshops, seminars and other short-term projects. Among the Wisconsin firms in the consortium are Marathon Electric of Wausau, Rowe Pottery Works of Cambridge and Trek Bicycle Corporation of Waterloo.

"In the long term, the strategy produces a lean and mean company," says Rajan Suri, professor of industrial engineering and director of the center. He has presented numerous seminars for industry that focus on his theories and case studies. In addition, Suri works directly with companies to customize and implement his ideas.

Beloit Corporation in Beloit, Wis., has worked extensively with Suri to squeeze unnecessary time from the manufacture of huge papermaking machines and replacement parts. When the company began its partnership with the college in 1991, lead time for new machines averaged 16 months while replacement parts required 14 to 16 weeks. Today, after implementing Suri's ideas in many areas, the company has cut lead time by an average of 35 percent for new machines and 66 percent for replacement parts.

"It requires a different way of thinking, and being more responsible in our work environment," explains Jim Schneider, Beloit's manager of materials management. "We shouldn't do things a certain way just because it's the way we've always done them."

Lead-time reduction isn't just a manufacturing issue. It encompasses the whole process, from order receipt to delivery and payment. To align everyone's thinking, Beloit invited Suri to conduct in-house seminars for its workforce of more than 300.

"Our employees now have a set of tools they can apply to any situation related to our lead time," Schneider explains, adding that the seminars have also led to a grassroots effort to implement small and large improvements throughout the company. As a bonus, Beloit Corporation has found that "both quality and costs get better as things move through the system faster," he says.

■ The university is active in 18 industrial consortia organized by UW-Madison faculty to draw together companies with common interests in supporting university research.

■ Forest geneticists in the College of Agricultural and Life Sciences have developed genetically improved pine and spruce trees that are expected to grow 10 to 30 percent faster, and have better stem form and greater disease resistance than trees previously available.

■ Research at the College of Engineering helped open new business avenues for Fisher-Barton, Inc., a lawn mower blade manufacturing firm in Watertown, Wis., and spawned a new company for its owners. Through collaboration with UW engineers, Fisher-Barton moved into the area of plasma spraying, or applying a thin coating of material to the surface of a tool or machine part to make it more resistant to abrasions and heat. As demand for this new process grew rapidly, Thermal Spray Technologies was created, applying its process to machines used in a variety of industries, including papermaking, medical, automotive and small engine.

■ Research Park supports high-tech entrepreneurs

Campus connection has helped birth of 58 businesses in park's first 11 years.

With the scientific resources of UW-Madison at their doorstep, dozens of new science and technology companies have found a productive home at the University Research Park in Madison.

The 11-year-old research park was created with the goal of using UW-Madison's research capability as a magnet in attracting and developing high-technology firms in the city. The effort has paid off in its first decade: the park now has 58 businesses and nearly 1,500 employees, and is generating almost $1 million in property taxes annually for the city.

The park's tenants find the park's best attraction is having access to the people and resources of the university. For a fledgling technology firm, those connections have become invaluable.

"The park is trying to provide an atmosphere where companies can succeed. They're not just a landlord," says Maggie Smith, vice president of Genetics Computer Group.

The company produces software that helps genetics researchers decipher the complex chemical sequences of DNA. The company's products are central to the work of the Human Genome Project, which is attempting to unravel the basic building blocks of human life.

Genetics Computer Group is a spinoff company from the UW-Madison Biotechnology Center. While the company is no longer part of UW-Madison, its connections with campus are crucial to its success, Smith says.

On a weekly basis, the company moves the development versions of its new software to a campus computing center, where researchers can use new enhancements and, in turn, report back any problems they encounter. And Genetics Computer Group is a constant user of the park-provided Internet connection, providing a crucial link to customers. "There are many advantages to being in close proximity to one of the top research universities in the country," she says.

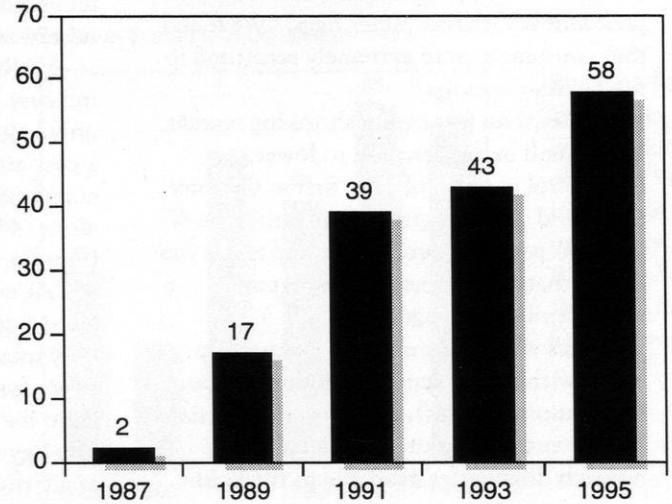
Other companies have found similar benefits from the campus connection. Tetrionics, a pharmaceutical development firm, is using the groundbreaking UW-Madison research on Vitamin D to develop products for the treatment of osteoporosis and cancer. PanVera, which manufactures biological reagents for medicine, has nine consultants at the university advising them on the quality of their products and trends in the field.

The park also houses the MG&E Innovation Center, which gives upstart companies shared access to clerical staff, conference rooms and equipment, and other basic business support. The services help companies concentrate on product development and research.

"The single greatest success of the park," says Park Director Wayne McGown, "is providing a place for new entrepreneurs. We brought that about by encouraging a private sector relationship with the campus."

Already occupying more than 700,000 square feet of space, the park's buildings could

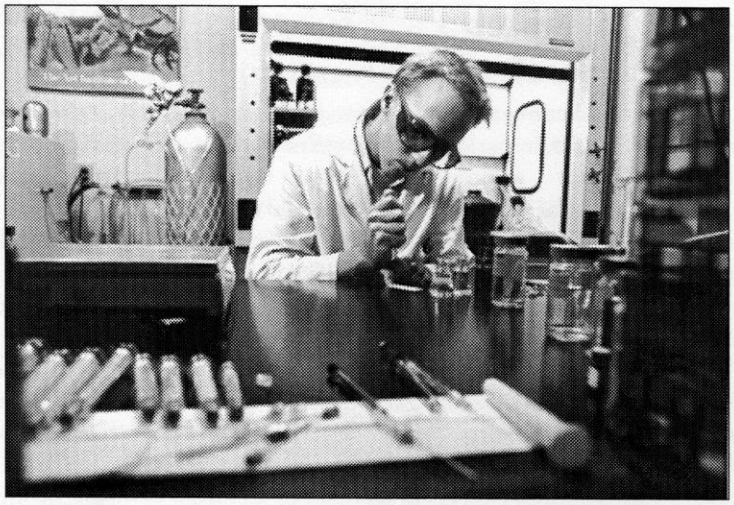
■ Number of companies at the University Research Park



Just over a decade old, the University Research Park has been a magnet in attracting high-technology firms in Madison. The park now has 58 businesses, providing jobs for nearly 1,500 employees. This chart shows the growth in the number of companies in two-year increments.

■ Farmers who apply a fungicide to protect young soybean plants from root rot will soon be able to protect the crop with a biological control agent discovered by College of Agricultural and Life Sciences plant pathologists. The company marketing the new product expects it to cost considerably less than current methods. Based on expected costs, that could amount to a savings of $2 million per year for soybean growers if half of them use it.

■ Specialists at the College of Engineering and UW Extension have created the Solid and Hazardous Waste Education Center to advise state businesses on the economic benefits of pollution prevention and other aspects of environmental regulations. For example, the Newco Fabrication Division of Swing-N-Slide Corp., a Janesville engineering and fabricating firm, is saving an estimated $141,000 annually by using powder coatings instead of spray paints — a move that also reduces pollution. The center worked with 566 Wisconsin companies in 1994 to reduce pollution while saving firms money.



One of the best attractions of University Research Park, tenants find, is having access to the people and resources of the university — an invaluable connection for fledgling high-tech companies. Occupying more than 700,000 square feet of space, the park is ranked in the top one-third of the 140 research parks in the U.S. and Canada in terms of total real estate developed.

double that in coming years as it expands into property west of Whitney Way. The park is ranked in the top one-third of the 140 research parks in the U.S. and Canada in terms of total real estate developed.

■ WARF fosters economic development and research

Royalties from 72 licenses and 51 patents totaled nearly $16 million in 1993, insuring a new generation of discoveries.

With a UW-Madison agronomy degree in hand, John Brunnquell returned to his family's farm in Port Washington ready to lead a major egg production operation. He didn't realize at the time that the tide was changing dramatically for his business.

"In the late 1980s, the egg industry was repeatedly getting beat up over the issue of cholesterol," says Brunnquell, the vice president of Century Acres Eggs. "We found that consumers were extremely sensitized to the health concerns."

Rather than fret over a shrinking market, Brunnquell began research to lower the cholesterol content of eggs, first at Century Acres and also as a graduate student in UW-Madison poultry science. The end result was an egg that had 25 percent less fat and cholesterol on average.

That's where Brunnquell's partnership began with the Wisconsin Alumni Research Foundation (WARF), a non-profit organization devoted to making UW-Madison research discoveries available to the public. The technology behind the eggs was assigned to WARF, which filed for a patent.

In turn, WARF licensed the technology to Century Acre Eggs, of which John Brunquell is one of five owners. They immediately applied it to the Century Acres business. Since starting the "eggstasy™" line of low-fat and low-cholesterol eggs in 1994, Century Acres has sold more than 250,000 dozen eggs, developed exclusive markets in eight states, and started an international company that just formalized a contract with Japan.

"This wouldn't have happened without WARF," he says. "WARF can quickly move technology from the lab to the business world. Few communities can do that effectively."

As both discoverer and entrepreneur, Brunnquell offers a fairly seamless example of how WARF can foster economic development in the state and beyond. With its ability to both patent and license discoveries stemming from UW-Madison research, WARF can make technologies available to industry that would otherwise remain undeveloped.

WARF director Richard Leazer says industry has been relying more than ever on universities as a research and development as a cost-effective way for businesses to stay competitive. In the pharmaceutical industry alone, 44 percent of new products have come from university research, he says.

"At most universities, if faculty members have a discovery with commercial potential, they usually don't have the money or the expertise to pursue a patent," Leazer says. "We have the money to invest in patents, and we also have an infrastructure of people who can make the contacts with industry."

■ Whether it's a Door County orchard owner selecting new apple trees or a farmer picking corn, soybean, oat or alfalfa varieties, Wisconsin growers depend on the plant variety evaluations that College of Agricultural and Life Sciences scientists carry out each year. For example, a recent study showed that almost 60 percent of Wisconsin farmers depend primarily on these evaluations when selecting alfalfa varieties. By harvesting varieties that rank in the top 10 percent rather than varieties that produced an average yield, farmers earned an additional $55 million in 1994.

■ The Wisconsin Center for Urban Land Economics Research at the School of Business has been involved in several real estate development issues as a part of its community service focus. The center, funded in part through real estate licensing fees and research grants, focuses on professional education and outreach to the public. Consulting projects have included working with a southside Madison neighborhood group to redevelop the area, developing strategic plans for the Hilldale Shopping Center and the University Research Park, advising Native American tribes on land use issues and helping the UW Arboretum find a long-sought buyer for a piece of commercially zoned land.

Leazer says 40 percent of the income-produced licenses WARF manages have gone to Wisconsin companies, which has been a significant boon to the state economy. The presence of WARF has also helped accelerate the growth of biotechnology companies in Dane County.

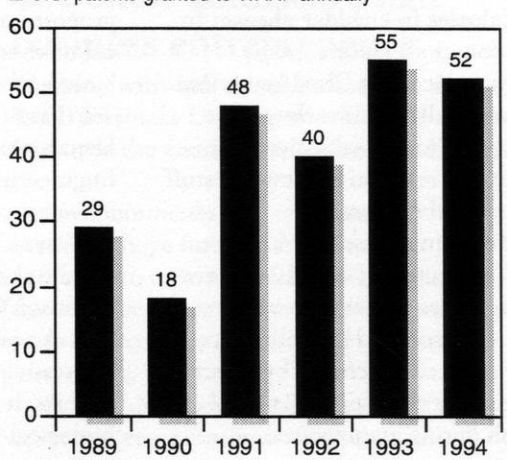
UW-Madison has a long and unique history of making these technology transfer connections work. WARF has been around since 1925, when pioneering UW dairy scientist Harry Steenbock made an important discovery in vitamin D irradiation processes, which could activate Vitamin D in milk and food products. In order to control the standards of this process, Steenbock sought a patent and put the wheels in motion for the creation of WARF.

Steenbock's Vitamin D irradiation process remains one of the greatest testament's to WARF's importance, and led to a complete conquest over once-common diseases such as rickets. Other discoveries protected by WARF patents include UW biologist Karl Paul Link's development in the 1950s of Warfarin, a breakthrough rodenticide that greatly controlled rat populations on farms. The same discovery led to lifesaving drugs that could adjust blood clotting in humans.

For the past three decades, UW biochemist Hector DeLuca's findings related to the medicinal potential of Vitamin D continue to have far-reaching benefits in fighting osteoporosis, chronic kidney disease, psoriasis, cancer and other diseases. DeLuca currently has 63 active U.S. patents and 299 foreign patents. Pharmaceutical companies have developed a number of successful disease-fighting drugs from DeLuca's discoveries, and his patents are currently the top producer of royalties for WARF.

WARF royalties totaled nearly $16 million in 1993 (the latest available yearly data), with income generated from 72 licenses, and it obtained 51 patents. That money is channeled back into the research enterprise at UW-Madison, ensuring a high standard of excellence in research and thus a new generation of discoveries.

■ U.S. patents granted to WARF annually



Since its founding in 1925, the Wisconsin Alumni Research Foundation (WARF) has obtained 900 patents resulting in a gift of $316 million to the university. This chart reflects the patents granted to WARF by the U.S. Patent and Trademark Office over the past six years.

■ Way beyond cheddar

An amazing array of UW research benefits Wisconsin's milk producers and processors.

It seems only natural to form an alliance among UW-Madison dairy researchers, dairy farmers and cheese producers. But the extent to which research conducted at UW-Madison's Wisconsin Center for Dairy Research affects the state spans the Milky Way — from producing useful proteins by genetically improving the cow's udder to finding new uses for the whey that remains after cheesemaking.

Drawing on expertise from across the campus and around the world, the center carries out a multidisciplinary program to develop new uses for milk and milk components. Links with manufacturers are crucial and are a central focus for the center, according to director Rusty Bishop. In addition to the more than 150 publications and presentations in the past two years, the center sponsors up to 35 research projects a year:

• **Specialty cheeses profitable for small companies:** While Wisconsin will continue to

■ In response to a concern expressed by a Wisconsin meat packer about keeping red meat red, animal scientists at the College of Agricultural and Life Sciences discovered that meat from steers fed extra vitamin E stayed fresh-looking up to five days longer in supermarket coolers. The meat will still turn from red to brown before harmful bacteria develop. If adopted nationwide, the practice could save the beef industry nearly $1 billion annually.

■ Long-term research on ways to clean up Green Bay, Lake Michigan, by the UW Sea Grant Institute over the last 20 years, led to the Fox River-Green Bay system being selected by the United States Environmental Protection Agency for a landmark national study. The study identified sources, movement and the ultimate fate of a toxic contaminant (PCBs). UW-Madison scientists conducted research on essential parts of this five-year study, completed in 1993. The study's findings saved the state hundreds of millions of dollars in unnecessary clean-up costs that actually would have been counterproductive to reducing PCB-contamination.

■ Two researchers at the College of Agricultural and Life Sciences have found a way to reduce the amount of feed needed to grow animals. The researchers estimate that Wisconsin's poultry industry could save $1 million each year in production costs, and foresee much larger savings for the cattle and swine industries.

produce Cheddar and other popular cheeses, import-type specialty cheeses have caught the fancy of U.S. consumers over the past 15 years. As the market changes, Wisconsin cheese makers with the help of UW-Madison dairy researchers are right there in the forefront, says Jim Path, a specialty cheese technologist at the center.

Researchers have developed and tested a variety of specialty cheeses, including Wisconsin-Style Havarti™ cheeses, and they are working with Chalet Cheese in Monroe to develop a new Port Salut-style cheese.

"You've got to look ahead or you'll be left in the cold," says Myron Olson, manager of Chalet Cheese, a cooperative wholly owned by the 35 farmers who supply its milk. Olson understands the potential of new cheeses. Thirteen years ago, Chalet Cheese didn't make any Baby Swiss; today, it accounts for about 75 percent of its production.

• **Doing away with whey — cleanly and profitably:** Wisconsin cheese factories churn out nearly 2 billion pounds of products a year. Those curds leave behind about 18 billion pounds of whey, and center researchers are developing new ways to use it. Food scientist Jim Steele is engineering bacteria from whey that produce only L-lactic acid, which can be converted into polylactide polymers. Polymers can be used to make photodegradable and biodegradable films, such as coatings for paper plates and milk cartons.

This research has been applied industrially at the ECOCHEM whey processing plant near Adell. The $20-million facility converts the lactose in whey into lactic acid. The plant is connected by pipeline to the Adell Whey Co., which collects whey from cheese factories throughout east-central Wisconsin.

• **Cutting calories in cheddar cheese:** In today's health-conscious culture, many consumers want reduced-fat Cheddar cheese but they also want full Cheddar flavor. No problem — right? Wrong — drastically reducing the fat can result in bad-tasting stuff with the texture of library paste.

Reducing the fat in cheese by 25 percent is fairly simple, but cutting fat by 50 percent poses a challenge, says center senior scientist Mark Johnson. Johnson and his colleagues produced tasty reduced-fat cheese by selecting starter cultures and skipping the usual cold-water wash during manufacture.

• **No more hazy cheese:** Calcium lactate, a harmless white haze, sometimes forms on Cheddar-type cheeses. The haze won't harm people or cheese flavor, but hazy cheese doesn't sell. Cheese that shoppers reject gets sold for salvage, with an annual loss to the Wisconsin dairy industry that may total nearly $6 million.

Under the direction of Norm Olson, the former director of the center, researchers developed low-cost ways to eliminate haze. In addition, they developed an early warning system that tells packagers if the cheese is likely to develop the haze. Cheese that triggers a warning can be shipped directly to processors that make cheese spreads and other products.

■ Engineers save Madison ratepayers millions

Students and faculty develop a better way for the Madison Metropolitan Sewerage District to solve an expensive problem.

A 1997 deadline to cut discharges of phosphorus into surface waters posed an expensive problem for the Madison Metropolitan Sewerage District — and the 270,000 people it serves. The new requirement threatened to cost a tanker-full — $54 million over 20 years.

Following a tradition that dates to the early 1970s, the district asked UW-Madison engineers to help solve the problem. The solution they developed will save millions of dollars for ratepayers, while still protecting the environment.

The Wisconsin Department of Natural Resources (DNR) imposed the deadline to prevent phosphorous from feeding algae in streams and rivers. The sewerage district proposed an alternative to the DNR's chemical method of phosphorous removal: using biological techniques in the treatment plant. Two graduate students from UW-Madison's Department of Civil and Environmental Engineering built a pilot plant that introduced a bacteria to consume the phosphorous.

Wayne Karlovich of Muskego, Wis., and Todd Rubens of Yakima, Wash., students of Professor William Boyle, ran the pilot plant for almost a year. The data they produced was impressive enough to earn them master's degrees. It also convinced the DNR that biological removal would work, so the

■ The Bureau of Business Research at the School of Business issues long-range economic forecast studies for Wisconsin, including the recent publication of "Wisconsin's Economy in the Year 2000." These studies help industry and government officials plan for the economic future of the state.

■ A comprehensive program to manage potatoes is a national model for growing crops with minimal chemicals. Developed by a College of Agricultural and Life Sciences team, the program saves Midwestern potato growers nearly $1 million each year in pesticide and irrigation costs while improving environmental quality.

■ The Enterprise Center of the School of Business encourages entrepreneurial activity in Wisconsin, including management training to the Ho-Chunk Nation.

■ A potato cultivar named Snowden, developed by a geneticist and breeder at the College of Agricultural and Life Sciences, has brought the potato chip industry back to Wisconsin. Since Snowden was released in 1990, the nation's two largest potato chip manufacturers have been shifting potato contracts to Wisconsin's Central Sands. One Wisconsin grower reports his sales went from $180,000 to $9.5 million in four years, all due to Snowden.

department issued a variance allowing the technique.

"The UW study was critical in getting that variance — we would not have gotten it without the pilot project data," says Jim Nemke, the Madison Metropolitan Sewerage District's chief engineer.

The removal the students engineered will be less expensive — about $19 million over 20 years for modifying aeration tanks so bacteria will eat the phosphorous. So the sewerage district's $60,000 investment in graduate students will save $35 million in present-value dollars. In addition, the district won't need to add 7,000 pounds of alum to its waste stream daily. The benefits extend beyond Madison, since other wastewater dischargers in Wisconsin can now use biological phosphrous removal.

"Originally, the DNR was uncomfortable with biological treatment," Nemke says. "They've taken a 180-degree change — now they're encouraging every plant in the state to look at biological removal of phosphorus first."

Nemke says the district has spent $660,000 on UW-Madison research since 1973 for a simple reason: it's effective. "We get high-grade examination of problems, with high-grade supervision by UW-Madison professors."

For the college, the relationship has been equally gratifying, says Professor P. Mac Berthouex of the Civil and Environmental Engineering department. In the course of funding 40 master's and six doctoral degrees, the district has given students irreplaceable experience in the real world. "Almost all of the research was used to make decisions," Berthouex says.

■ Center counsels small business entrepreneurs

Working with individual businesses, the Small Business Development Center improves the community's economic health.

Small businesses may represent the economic hope for the nation's future, according to economic analysts. National statistics show that the small business sector leads the economy in terms of job growth and innovation.

At UW-Madison's Small Business Development Center, business counselors are fostering this growth by providing expertise, advice and financial guidance.

And for some, the center is making hopes of owning one's own business a reality, as was the case for Nan Thepboriruk who says Small Business Development Center classes helped make her "dream come true" when she opened Sukho Thai Restaurant and Food Center on the UW-Madison campus.

The business development center, located in the School of Business' Grainger Hall, serves a five-county area in and around Madison. This award-winning agency is part of a national Small Business Development Center network.

The agency works with small and medium-sized businesses including manufacturers, high technology professionals, and service and retail operations. They begin with the basics, even offering classes that help people decide whether they should go into business at all. If it's a go, the center staff gets them off to a good start with the business plan, marketing concepts and financial projections. UW-Madison counseling services work with existing businesses to improve marketing, operations, human resources and financial management.

Last year, the center worked with more than 170 businesses on a one-to-one basis, taught over 2,000 individuals in 70 classes and helped more than 1,900 people through its phone information Access Line and database service.

In some cases, the staff works with professionals on sophisticated turnarounds. Take the case of Jim Billian, who took over the Simon Corporation in 1993 after retiring from Hughes Aircraft. The center offered help by bringing marketing and management training to the corporation's 60 employees.

Or, it can help solve problems by linking clients to the university's resources, as was the situation when a Wisconsin play equipment manufacturer needed engineering counseling on the most efficient way to enlarge its plant, or a company needed a Wisconsin machine re-engineered to blanch and cook almonds.

"We are always looking for ways to improve our service to our clients," says Joan Gillman, who has directed the Small Business Development Center for the past seven years. "One of important measures of a community's health is its business climate. We feel that by contributing to success of individual businesses, we are helping create and sustain a more stable and healthy economic climate."

■ With over 16,000 pieces in its permanent collection dating from the 22nd B.C. to the present, the Elvehjem Museum of Art provides a valuable arts resource.The museum serves over 100,000 visitors each year through visits, tours, lectures and educational programs.

■ The School of Business has established the Women in Business Council, which is now working with the Wisconsin Glass Ceiling Commission — the first such commission in the nation — to increase the numbers of women and minorities on the boards of directors of businesses, non-profit organizations and government agencies. The council is creating a database for those interested in board service.

■ The Drug Information and Poison Control Center, staffed by registered pharmacists at the UW Hospital 24 hours a day, handled nearly 33,000 calls in 1994 from throughout Wisconsin and the region. One of only two Wisconsin sites, the hospital's poison control center works to help prevent and treat thousands of accidental poisonings.

■ The UW Hospital and the UW Comprehensive Cancer Center serve as a regional information center for residents of Wisconsin and the region. Counselors at the Cancer Information Service helped 14,000 callers — mostly from Wisconsin — since January 1994.

■ Training and support materials for Library Advocacy Now, a grassroots campaign to increase awareness and support for the nation's libraries sponsored by the American Library Association, were developed by the School of Library and Information Studies Outreach Program. Training sessions with the materials will be held in almost every state.

■ The University of Wisconsin Press publishes many books written by Wisconsin authors or that feature Wisconsin, helping to preserve the state's heritage and increase awareness of Wisconsin issues.

■ Serving as good citizens: Faculty, staff and students share their time, expertise

UW-Madison is bringing new meaning to the word "community."

In addition to their roles as teachers and researchers on campus, each year hundreds of UW-Madison faculty and staff make significant commitments of their time to perform public service activities for the community beyond the campus.

In a recent survey on public service, for example, more than 800 faculty and staff have reported a multi-faceted tapestry of services and projects in which they shared their particular expertise with governmental bodies, industry and citizens in Wisconsin and throughout the world.

Responses to the survey, which focused only on activities faculty and staff performed in their field of expertise, included such activities as advising a U.S. senator on Supreme Court nominations, briefing the Wisconsin legislature on census figures, presenting demographic assessments of growth trends for local communities, teaching seminars at state conferences of cranberry and apple growers, and giving addresses before dozens of civic or professional groups.

Associate Vice Chancellor Joe Corry, whose office encourages the development of outreach activities among faculty and staff, says the survey highlights an important commitment to reach out to the state. "This university provides a rich resource to Wisconsin and the nation, and an excellent way to tell that story is through the individual commitments of our faculty and staff," he says.

Such expertise can often fill a niche for the needs of non-profit organizations, policy makers and citizens of the state. Take the case of Jeanine Mount, associate professor in the School of Pharmacy. Mount studies the quality of nursing home facilities in Wisconsin, and specifically, the over-use of drugs for sedating and restraining residents.

"Chemical restraints in nursing homes can be worse than physical restraints," she says. "Physical restraints can be removed, but it may take days for the body to rid itself of the drugs. As they are used, these drugs often have no therapeutic value, but over-use is a very common occurrence, even though studies have shown they don't have the controlling effect wanted."

Recognizing the need for better information about this problem, the federal government did an extensive study in the late 1980s on whether it could conduct research on drug use in nursing homes, but found the problem too complex to undertake. Instead, it turned to researchers like Mount and Professor Bonnie Svarstad at UW-Madison's School of Pharmacy for the knowledge it needed.

"There are a lot of the common-sense notions about nursing facilities that have been held by the public and by government officials," says Mount, who has both a professional degree in pharmacy and a doctoral degree in organizational sociology. "When we conduct scientific studies, many of those notions turn out not to be accurate. Nursing home quality-of-care issues, and quality of drug use in particular, are far more complicated than we often think. In only a few places, like UW-Madison's School of Pharmacy, is there the critical mass of researchers needed for these kinds of complex studies."

When it came time to revise and implement regulations of drug use, Mount testified before the U.S. Senate's Special Committee on Aging. Mount's public service activities continue: She and Svarstad now are conducting follow-up studies in Wisconsin on the longer-term impact of those policies.

■ Clinics care for poor, uninsured citizens

Students design a creative solution to affordable, accessible medical care.

On Saturday mornings, it's not unusual to see a half dozen people waiting patiently for the doors of the South Side MEDIC Clinic to open. Like its sister clinics at Grace Episcopal Church's shelter for homeless men and the Salvation Army homeless shelter, the facility offers free medical care to Madison's poor, uninsured and underserved citizens.

The clinics are the outgrowth of the MEDIC organization, a program created in 1990 by UW Medical School students inspired by a desire to help people who ordinarily do not have access to basic health care. Today

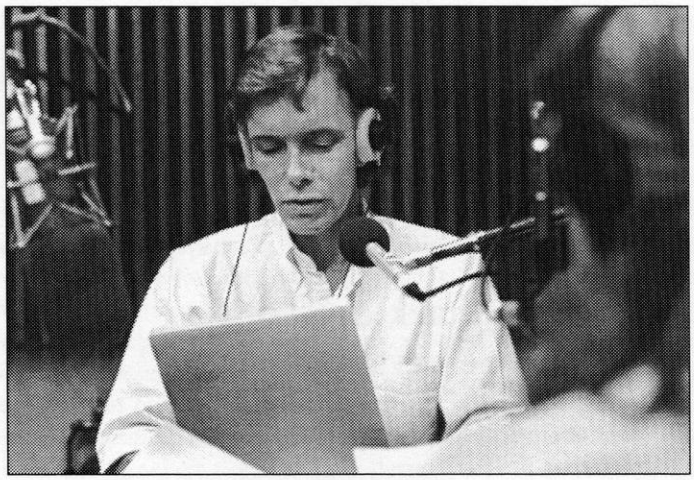
■ Some 125 family practice residents from the Medical School and over 70 faculty provide primary healthcare for over 70,000 people in nine clinics located in Appleton, Eau Claire, greater Madison, Milwaukee and Wausau. In addition, through a growing number of community partnerships, the residents and faculty provide access to medical care for Wisconsin's underserved and special population such as the homeless, elderly, cross cultural groups, prisoners and rural populations all over the state.

■ The La Follette Institute of Public Affairs offers a wide range of programs and publications for government officials. For example, this past year, the Institute held a seminar for 50 local government officials on mandates and a leadership institute for 35 legislators in 11 states from both parties.

■ The Multicolored Mirror Institute for Writers and Artists, provided through the School of Library and Information Studies, brought together unpublished writers and artists with those who have already published in an effort to increase the number of books for children and young adults created by people of color.

■ Students earning master's degrees in arts administration work as project assistants with local arts organizations, providing expertise to these groups. Students play major roles in marketing, fundraising and management of organizations such as the Madison Civic Center and the Wisconsin Arts Board.

■ Cabinet 99, created by the Wisconsin Alumni Association to involve more women in leadership positions in the state and around the nation, provides mentoring programs and continuing education seminars to help women become leaders in the work force and in their communities.



Earthwatch, an award-winning radio show produced by the UW Sea Grant Institute and the UW-Madison Institute for Environmental Studies, has provided science and environmental news reports and contributed to science literacy for some 23 years. Programs are distributed free to about 150 public and commercial radio stations throughout the Great Lakes region. The potential audience is projected to be two million listeners.

physician volunteers and student helpers at the three clinics offer at least 12 hours of free care each week.

For patients suffering from bronchitis, flu, ear infections, hernias, diabetes and other common ailments, the clinics provide sorely needed services. Between eight and 12 patients are seen at each of the three clinics weekly, translating to care for more than 1,500 people yearly. Many of the patients also are directed to other social agencies where they can find help for different kinds of problems.

For medical students and, more recently, nursing, pharmacy and health administration students, the clinics provide a chance to learn clinical skills and observe close-up the challenges of life at the poverty level.

"It was my first hands-on experience in a clinical setting," says Clark Kulig, a second-year medical student. Students interview and examine patients before physicians, who are members of the Medical School faculty and community volunteers, establish a diagnosis and suggest a treatment or referral plan.

The clinics capture the essence of primary care medicine — frontline care that focuses on healing illnesses that afflict most of us. "Working at the south side clinic gave me a good perspective on what it's like to spend time with patients and see them through their problems," says Kulig. "I now know that primary care is the way to go for me."

A council of MEDIC student leaders directs organization of the clinics, including scheduling staffers and ordering supplies. Approximately 200 student volunteers staff the clinics each year.

■ Students reach out beyond the campus

Volunteer work puts students in touch with diverse communities.

This March, some 90 students passed on the chance for a beach-side spring break and instead traveled to seven U.S. locations for a week of community service and learning opportunities as part of the Wisconsin Union Directorate Alternative Breaks Program.

Student volunteers visited and worked with communities as diverse as the homeless in Washington, D.C., an adult day care center in the mountains of Franklin, N.C., and an American Indian reservation freedom school in upstate New York.

Sponsored by Wisconsin Union Directorate student volunteers and the Wisconsin Union Travel Center, Alternative Breaks gives UW students a chance to experience racially and economically diverse populations, to become part of a community and culture that is very different from their own. Since its inception five years ago, hundreds of students have volunteered time to work for organizations such as Habitat for Humanity in New Orleans and Miami, the United Farm Workers in San Juan, Texas, and Martha's Table Soup Kitchen in Washington, D.C.

In another example of student service, at Volunteer Placement Day, held in both fall and spring semester, more than 800 students volunteer for non-profit organizations; some 2,500 contacts are made.

At the School of Business, all MBA students volunteer at homeless shelters and

■ Faculty, staff and students in the schools of Music and Education volunteer for the Madison Bootstraps Program, an after-school program for at-risk students in grades six-12. Tutoring sessions are provided in areas such as math, languages and music.

■ Each year graduate students, under the supervision of UW-Madison faculty and staff, conduct an in-depth study of an actual public water-management problem, formulate recommendations and provide low-cost management plans as a part of the Institute for Environmental Studies' Water Resources Management Workshop.

■ Several of the Wisconsin Alumni Association's 115 alumni clubs have also begun community service initiatives such as the Chicago Club's innovative "Adopt a School" program. The Wisconsin Alumni Volunteer Endeavor (WAVE) annually brings together volunteers from both town and gown sectors to benefit the Madison community.

■ Expanding Visions in the Arts provides art workshops for people who are unlikely to enroll in traditional university classes, such as teenagers in an alternative school, adult survivors of abuse and low-income children. UW-Madison students and local artists spend several hours a week at community agencies, providing workshops tailored to their students' needs.

■ Geography faculty in the College of Letters and Science are working to create a cartographic profile of Wisconsin in order to represent the state's cultural heritage. The "Cultural Map of Wisconsin," which is intended to be a companion to the state highway map, will feature ethnic settlements, historic sites and important buildings. Nine public forums were held around the state to gather input from Wisconsin residents.

low-income neighborhood community centers in Madison as part of a required course in "The Political, Ethical and Legal Environment of Business." Students work one-on-one with those who have low incomes and devise strategies to improve organizations serving the homeless and working poor.

■ WINGS tackles health issues on reservations

Statewide pubic service program focuses on Native American children with special health care needs.

The mixture of poor access to health care, rural conditions and stereotypes about Native Americans has had its negative effects on children who live on the 11 reservations in Wisconsin and have special health care needs.

Countering these difficulties, the Wisconsin Indian Network for Genetic Services (WINGS) focuses on serving the often ignored health care issues of Native American children. The program, created by UW-Madison Medical Genetics Professor Raymond Kessel, provides diagnostic clinics for children and their families. The clinics have been conducted at nine of the state's 11 reservations.

"The spirit of the Wisconsin Idea is to find ways of using the experience and talents of the great research and teaching university to address specific needs of Wisconsin — not only at the university but in the local communities," Kessel says. "My challenge is in helping to build the bridge to the community by identifying the needs, and then by identifying members of the university community to help meet those needs."

In the first day-long clinics sponsored by WINGS, staff got impressions of how underserved and misrepresented these groups were. Kessel says they were told up to half of the children who had mental or behavioral problems were diagnosed with fetal alcohol syndrome. But of the more than 250 children treated at clinics since 1986, Kessel says staff confirmed only a few cases of the condition. Many, he says, often have other conditions not related to perinatal exposure to alcohol.

It was an example, he says, of how stereotypes about Native Americans and poor access to quality health care had to be countered by their program. "A lot of factors that contribute to kids having special needs were not being considered," he says. Those include a high poverty rate, poor nutrition and geographic isolation from everything — including doctors and telephones, making accurate and complete diagnoses difficult to obtain.

"Kids with problems were being ignored," Kessel says. "Many of these kids had been identified with medical and emotional problems, but there was no accurate diagnostic assessment and no follow-up."

WINGS is part of a larger genetics outreach program, which focuses on clinical services and genetics education as part of a statewide genetics services network. Last year physicians and genetics counselors addressed more than 130 groups — ranging from K-12 students to college students, from physicians to public administrators — in an effort to increase awareness and understanding about children with special needs.

Kessel credits the program's success to Tribal Coordinator Arvina Thayer and Project Coordinator Karen Martin, both members of the Ho-Chunk Nation who worked to gain trust and develop local ownership of the project, and to faculty and staff of the UW Clinical Genetics Program who are willing to travel to the tribal communities.

This spring, WINGS received the annual Maternal and Child Health Achievement Award from the Wisconsin Maternal and Child Health Coalition for outreach to minority, low-income and other hard-to-reach populations.

■ La Follette helps new legislators get up to speed

Seminars provide a primer on public policy issues and decision-making.

They have their parking assignments. They know how to apply for per diem allowances. They have been briefed on the state's ethics guidelines. They are learning to find their offices. And they have hired most of their staff.

So the new state legislators, sworn into office just a few days earlier, are eager to get to the real issues as they gather on a cold January day for the biennial La Follette Institute Seminar for New Legislators.

■ The Arts Outreach Program provides cultural service through music education and performance. The program participated in 18 concerts with a combined audience of 3,914. School of Music faculty provided 28 music clinics, school performances and master classes reaching some 2,283 Wisconsin high school students in the 1993-94 academic year.

■ More than 220 students from the School of Social Work provide expertise and specialized knowledge through internships with human service agencies in Dane County and throughout the state. The students, who earn academic credit rather than a salary, work some 16-20 hours per week for one to two years in areas such as mental health, child welfare, aging, health care and education.

■ Parenting the First Year, a program through the School of Family Resources and Consumer Sciences, publishes a free monthly newsletter in English and Spanish that reaches some 50,000 Wisconsin parents during their baby's first year. The publication has been picked up by 15 other states as well. The eight-page newsletter offers easy-to-read information on topics such as health, safety, feeding, child guidance, infant temperament and psychological development.

■ The university makes its expertise available throughout the year by publishing a speakers directory of over 650 faculty and staff willing to talk to community organizations and schools. News media from throughout Wisconsin and the nation receive the Experts List, which makes available the expertise of 1,150 members of the faculty and staff willing to be interviewed by reporters.

■ Some 25,000 visitors toured the Geology Museum last year, including more than 10,000 school children from southern Wisconsin. The museum covers all aspects of geology including a 6-foot-diameter rotating globe, a walk-through model of a limestone cave, minerals, rocks and fossils. Museum highlights include dinosaur skeletons and a Wisconsin mastodon.

There are about a dozen in the class of 1995-97: Republicans and Democrats, men and women, senators and representatives. Like other legislators before them, they are beneficiaries of the teaching, research and outreach components of the La Follette Institute. This year's seminar topics included government reinvention, the Wisconsin economy and economic development.

In a letter sent last fall to the newly elected legislators, Assembly Speaker David Prosser stressed the importance of the seminar for new legislators: "The seminar is one of a number of very useful programs for state policymakers that the La Follette Institute has developed. Participation ... will speed your transition into the legislative role and you will have an excellent opportunity to reflect upon the challenges of the policy making process itself."

Since its establishment by the Legislature in 1984 in the rich tradition of "Fighting Bob" La Follette, the Institute has served thousands of students, public officials, business people, non-profit sector professionals, academicians and citizens in learning to apply sound management principles and tools of policy analysis to public issues.

The seminar is just one of the ways La Follette's faculty and staff have made the Wisconsin Idea come alive for all levels of government through special activities and publications related to issues such as leadership, welfare reform, urban fiscal issues, education policy, governance, corrections, health care and public management.

■ Sports Medicine program assists young athletes

Hundreds at Wisconsin high schools and colleges benefit from knowledge of UW Hospital Sports Medicine certified athletic trainers.

About five minutes into a hotly contested high school soccer game, 16-year-old Lori Gunderson felt a "pop" in her knee and the sensation of water flowing inside her leg from the kneecap to her ankle.

UW athletic trainer Joe Greene, who was covering the game for Madison Memorial High School, had seen the same thing happen to other athletes. He met Gunderson at the bench, quickly evaluated the injury and urged her not to return to the game until a physician could examine the knee.

Gunderson later learned from UW Hospital physicians that she had completely torn her anterior cruciate ligament (ACL), one of four major ligaments that connect the larger bone in the lower leg (the tibia) to the thigh bone (femur). Following two weeks of intensive, exercise therapy, she underwent surgery to reconstruct the ligament and then began daily rehabilitation, under Greene's guidance, to recondition the injured knee.

"If it wasn't for Joe, I don't think my knee would have turned out so well," Gunderson says. "I would recommend him to anyone."

Hundreds of Wisconsin athletes like Gunderson benefit from the athletic training outreach program offered by the UW Hospital Sports Medicine Center. Established in 1982, the program places certified athletic trainers in more than 30 high schools and several colleges, and has served as a model for other programs around the state.

"Between 60 and 70 percent of high school students participate in some athletic activities," notes Dan Campbell, who heads the outreach program. "That means the majority of high school students are at risk for injury. We see ourselves as educators — for coaches and parents as well as students — and I think our services are highly appreciated."

The trainers play several roles: helping prevent injuries through proper conditioning and training; handling emergencies on site as well as making the appropriate recommendations for physician follow-up; and completing the circle with rehabilitation to return injured athletes to full functioning.

They also provide expert guidance on nutrition, drug abuse and general health. The exercise science lab at the Sports Medicine Center works closely with the athletic trainer program to provide young athletes with better ways to train and to recover from injuries.

The various components of the program worked well for Gunderson, who returned to competition for her final two years of high school and competed in the state tournament her senior year. Now in college, she plans a health-related career where she, too, can help young people make the most of their athletic talent.

■ All the schools and colleges on the UW-Madison campus offer at least one partnership with Wisconsin schools. In 1994, UW-Madison partnerships to Wisconsin schools included more than 54 precollege programs serving over 11,000 students; over 40 staff development programs serving hundreds of teachers, staff and administrators; and art, geology, physics, space and arboretum tours serving over 30,000 Wisconsin students per year.

■ Each summer, high school students and teachers participate in the daily work of Earth and atmospheric scientists through a workshop coordinated by the Cooperative Institute for Meteorological Satellite Studies. Participants work with those scientists as well as some at the Institute for Environmental Studies and in the Departments of Geology and Geophysics and Atmospheric and Oceanic Sciences.

■ The Center for Biology Education coordinates a six-week summer program for minority high school students that focuses on science.

■ Through its Satellite Technology Education Program, the Space Science and Engineering Center and its Cooperative Institute provide McIDAS, a system which displays and analyzes the Earth's weather patterns, to Wisconsin high schools. The new Watertown high school and Madison's Edgewood High School have systems in place now. High schools in Appleton and Verona will soon join as well.

■ The Madison Education Extension Programs conducts about 100 workshops and institutes held for 1,800 teachers, school administrators and parents, providing the latest information on a variety of topics, such as conflict resolution, multicultural storytelling and environmental education.

■ Program puts new face on mathematics education

A math program takes a new approach to teaching based upon research done at UW-Madison's School of Education.

In schools all over Wisconsin, children are learning faster than their teachers ever thought they could. And they're more motivated and confident, teachers report.

The reason is Cognitively Guided Instruction, which was developed after years of research by School of Education Professors Thomas Carpenter and Elizabeth Fennema and sponsored by the National Science Foundation. The program adopts an innovative approach to teaching mathematics.

It encourages elementary-school teachers to take what their students already know about mathematics — and then build on that foundation. The program focuses on problem solving, giving children the chance to solve interesting mathematical problems rather than drilling them.

"It teaches them to be problem solvers, not calculators," says Dyanne Van Den Heuvel, a second grade teacher at Northwoods Elementary School in Eau Claire who now teaches workshops on the program to teachers from around the state.

Math problems in the curriculum focus on "story" or word problems that are made relevant to students' lives and can be approached from a variety of strategies that children have already developed by the time they enter school.

The central philosophy behind the program stems from Carpenter's research conducted over 15 years on how children think and how teachers learn to teach. "His research showed quite clearly that children come to school with many, many skills," explains Fennema, who developed the program with Carpenter. "But school math curriculums don't build on that knowledge, and in some cases even wipes it out."

What Cognitively Guided Instruction does, says Fennema, is help teachers understand what knowledge children bring and what problem solving skills they have in order to build on those. The key, says Van Den Heuvel, is that "instead of the teacher telling one way to solve a problem, children discover methods that work for them. And it has allowed me to understand my children's thinking and then know what are the appropriate next steps in helping them learn."

The results of the program have been striking. Students taught from this new approach outperform their peers who learn by more traditional methods; and they seem to be more enthusiastic about the subject, too. Says Van Den Heuvel, "I'm really excited about the program because it changes how you teach and how you can facilitate children's learning. It has taught me about how children think and about how I as a teacher can help them grow as learners. This is powerful information for me and teachers all throughout the state."

The news has spread rapidly, and teachers in all corners of the state are incorporating the approach into their classrooms. In the past five years, workshops on the program have been offered in at least 27 different Wisconsin locations, from Beloit to Ashwaubenon to the Oneida Tribal School. The Madison school district has a professional position devoted to helping teachers implement the program.

"I've seen lots of things come and go in my 22 years of teaching," Van Den Heuvel says. "After eight years of teaching with CGI, I'm just as enthusiastic about it as when I started with it. And I learn math from my students on a daily basis."

■ Workshop teaches enthusiasm for science

The Teacher Enhancement Program brings teachers to campus to learn the latest in scientific breakthroughs.

Michael Anstett, who has been a high school biology teacher in Omro, Wis., for 23 years, says he has never been more enthused about his job than in the last few years.

He gives the UW-Madison Teacher Enhancement Program in Biology much of the credit. "The program helped me be more enthusiastic and more comfortable in the classroom," he says. "Not only were the classes excellent, but I got to visit with other teachers to compare problems and concerns."

Anstett is one of more than 300 elementary and high school teachers from around the nation who visited the Madison campus this summer to study strategies for teaching science. Teachers enroll in up to four of the more than 30 one-to-two-week modules

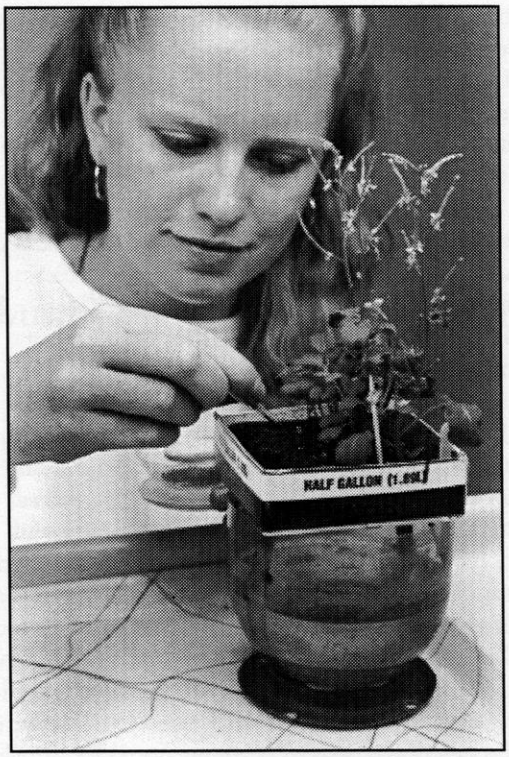
■ The Center on Education and Work is helping people become better prepared for the work force. As one of the oldest and largest centers of its kind, it is at the forefront of a national movement to improve vocational training and career development services. Each year some 350,000 Wisconsin residents use the center's Wisconsin Career Information System, which provides access to career information through state-of-the-art software and other materials.

■ UW-Madison has established the National Institute for Science Education in a partnership with the National Science Foundation and the National Center for Improving Science Education. The one-of-a-kind institute, funded at $2 million a year over five years, will be the nation's premier center of research and development on issues of science, math and engineering education.

■ The newly created BioNET, a statewide sharing network for biology education teachers, brings researchers from universities and industries together with biology teachers.

■ Raising Responsible Teens, a program offered through the UW Hospital, presents a series of seminars to parents and healthcare professionals who work with teens. The program has reached more than 7,200 parents of Wisconsin teens, offering information about topics such as alcohol and drug abuse, depression and suicide, sexuality and teen pregnancy.

■ The Institute for Multicultural Science Education, a two-year program for teachers from Madison and Milwaukee schools, provides 400 hours of training on restructuring the science curriculum for culturally diverse students.



Providing curriculum training nationwide, Wisconsin Fast Plants has trained more than 35,000 grade school and high school teachers to use this unique teaching program. The program focuses on an organism whose life cycle is short enough to fit neatly into a teaching unit. In 1994 alone, some two million students used fast plants to learn about subjects such as physiology, genetics and ecology — the fundamentals of biology.

offered in fields such as human genetics; molecular and cell biology; plant, animal and environmental biology; and elementary science. Teachers earn one or two university credits per module.

The summer biology program is part of a larger teacher enhancement program which involves presenting workshops and programs throughout the academic year and developing curriculum for teachers.

UW-Madison Professor Raymond Kessel, the originator of the 10-year-old biology program and its director, says classes emphasize an inquiry-based, problem-solving approach to science. "Since most elementary teachers had little, if any, science in college, we want to give them some hands-on methods of teaching science so they can go back to their classroom with the tools and the enthusiasm for teaching," Kessel says.

Ann Bauman, an elementary school teacher from Janesville, says she had only one introduction to science in college. In the three years she has attended the program, she has studied genetics, the social implications of genetics, science for head start, preschool and primary grades, and cultural diversity in families of children with special needs. In addition to her new knowledge of science, Bauman says she has learned to integrate science into the whole curriculum and make it more of a hands-on experience

For high school teachers, Kessel says the biology program is designed to update them on the latest information in particular fields and give them some new ideas to make the classroom more exciting.

Instructors for the biology classes come primarily from the science departments on the Madison campus. Most modules also have lead teachers who help plan the class and assist the instructor. Anstett, for example, helped to lead the DNA module this summer.

Kessel hopes all teachers who attend the biology program will in turn "trigger an interest in science within their own students, making them better prepared and willing to tackle science classes in college and consider careers in the sciences."

■ UW Space Place brings space down to earth

College of Letters and Science program offers hands-on learning for school children.

In March, when the Space Shuttle Endeavour made its longest shuttle flight ever, not only was a UW-Madison-built telescope aboard, but school children at UW-Madison's Space Place were beamed right into the center of the action.

Using a new videoconferencing system, the team of 30 Wisconsin scientists, engineers and technicians at the control center in Huntsville, Ala., communicated directly with school groups visiting the Space Place, explained the mission, answered questions and discussed what they saw in space. The students had a direct link to understanding the findings of the unique telescope, known as the Wisconsin Ultraviolet Photo-Polarimeter Experiment (WUPPE for short), and other NASA activities.

■ Working to improve the teaching of science in K-12 schools throughout Wisconsin and the nation, the Institute for Chemical Education (ICE) provides publications for teachers on topics such as acid rain, the ozone hole and how to include science in elementary schools. Some 75 teachers and 150 middle school students attended chemistry education programs on campus this summer. ICE is also working on a major effort to revamp the nation's college chemistry curriculum through a nation-wide program funded by the National Science Foundation.

■ The UW Athletic Department holds annual clinics and sports camps, with more than 2,400 high school coaches attending this year.

■ The Institute for Chemical Education (ICE) has helped to develop a low-cost, easy-to-use kit that gives science and engineering students a three-dimensional handle on extended atomic structures of materials as diverse as table salt and semiconductors. The kits help students connect chemistry with common and high-tech materials.

■ The Instructional Materials Center makes its collection of 53,000 volumes available to educators and school librarians. Many educators use the library to read new school textbooks, examine testing materials and try out the latest instructional software before purchasing the items for their schools. The center offers workshops on using databases and Internet resources in education for educators.

■ College Access, a program offered in the summer through the School of Education, helps introduce teenagers of color to opportunities available on a university campus, improves their academic skills with individualized tutoring in math and writing, and encourages exploration of career goals.

This workshop is just one of the many activities offered at the Space Place, located at 1605 S. Park St. in Madison, for school children and teachers who visit from around the state, including Green Bay, Milwaukee, Madison and its surrounding areas.

Run by the Space Astronomy Laboratory by largely volunteer faculty and staff, the UW Space Place provides hands-on activities and informative lectures, as well as workshops and programs for more than 5,000 teachers, parents and children, and the general public in each of the past two years.

Opened in 1990, Space Place allows community citizens to learn basic scientific principles in fun and exciting ways, and gives teachers the latest resources for teaching math and science, says Kathy J. Stittleburg, assistant director of UW-Madison's Space Astronomy Lab and Space Place founder. "We've been able to use space as a hook to teach students about basic math and science knowledge," she says.

Recently remodeled, the Space Place now houses the prototype of the Orbiting Astronomical Observatory, the first astronomical orbiting satellite in space. Hands-on activities such as a grease-spot photometer, polarization exhibit and spectra display are located in the exhibit hall, along with a full-size mock-up of the aft-flight deck of the shuttle and a Hubble Space Telescope exhibit.

In addition, Stittleburg is now setting up a Space Place World Wide Web home page that will include information for teachers, such as resource materials from NASA. "We want to take those activities that are tried and true and put them on the Web page as a way of reaching out beyond Madison," says Stittleburg.

The center has recently hired a half-time outreach specialist funded by NASA. "With the support of the College of Letters and Science, we've been able to start new projects and increase the number of school visits," she says.

■ Students learn hands-on prairie restoration, science

The Earth Partnership Program forms partnership with schools, Arboretum and the land while rebuilding Wisconsin's ecological resources.

The "land ethic" conservationist Aldo Leopold promoted 50 years ago is alive and thriving today in the back lots of Wisconsin schools, where students are turning barren fields into lush Wisconsin prairie.

The Earth Partnership Program, offered by the UW-Madison Arboretum, helps state teachers develop prairie restoration programs that give students firsthand lessons about the land, wildlife and the human obligations to protect them.

Dennis Panicucci, a science teacher at Central Middle School in Hartford, Wis., says the program has taught him and his students the basic knowledge needed to nudge a prairie to life. "We found out there was a heck of a lot of stuff we didn't know," says Panicucci, whose school is working on creating a restored prairie on a 53-acre outdoor lab students have dubbed "The Wildcat Habitat Preserve," named after the school mascot.

The Earth Partnership Program, funded by a $485,000 grant from the National Science Foundation, helps Wisconsin teachers develop prairie restoration programs that allow students to "adopt" a prairie and learn firsthand lessons about the land, wildlife and the human obligations to protect them. So far, more than 100 teachers in 50 Wisconsin school districts have taken part.

■ The School of Journalism and Mass Communication in 1994 developed ONline WISCONSIN, a multimedia news journal that merges audio, video, graphics and print media into a single information source and is available on the World Wide Web. The Journalism School is exploring partnerships with public schools to introduce students to new forms of online communication and news distribution beyond the traditional newspaper.

■ The Multifunctional Resource Center for Bilingual Education provides training on how to teach students who have limited proficiency in English. The center, which conducts hundreds of workshops that have reached thousands of educators and parents, prepares teachers to create classrooms that are open to students from a range of cultures.

■ Nine programs devoted to the study of world regions provide speakers and performers for K-12 schools to educate students about the changing global community. For example, language faculty have undertaken initiatives to promote the study of Japanese, Russian and Swahili in Wisconsin schools. The area programs also offer summer workshops and maintain resource collections for use by K-12 teachers.

■ High school teachers can participate in a series of summer seminars on teaching advanced placement (AP) courses. Experienced high school AP teachers join UW-Madison faculty to team-teach each seminar.

Through the program, they are learning how to identify different plants, how to analyze the soils that provide the best atmosphere for prairie plants, and how to conduct controlled burns that will insure regeneration.

The program, now in its fifth year, provides not only instruction to get schools started, but curriculum plans on how to integrate science, ecology, history, art and other subjects into the field work.

So far, more than 100 teachers in 50 Wisconsin school districts have taken part in the workshop. The schools need to have a commitment of at least six teachers to adopt the prairie in the lesson plans, spanning different age groups and disciplines. In total, more than 400 teachers will participate in some aspect of the program.

The program, run by a $485,000 grant from the National Science Foundation, also brings students to the Arboretum for special tours and programs. More than 1,500 Earth Partnership students so far have been out to study the Arboretum's mature prairies.

Cheryl Haberman, an educator in the Earth Partnership Program, says a prairie can serve as an educational tool on many levels. As a complete ecosystem of plants, animals and insects, "a prairie brings out all the complex dimensions of human interaction with their environment," she says.

Students also develop a greater attachment to the ecology of the state through this program. Prior to settlement, the state had 2.2 million acres of original prairie spanning the state. Today, less than one-tenth of 1 percent of that prairie remains. More than a hands-on science project, the prairie can become an enduring resource to the school and the community, she says.

■ Upward Bound guides students to college

More than 100 precollege programs introduce children and teens to campus.

Making the transition to college life isn't always easy. That's why for thousands of K-12 students, the opportunity to participate in precollege programs on the UW-Madison campus has an added incentive: a chance to become comfortable with the university setting before they even apply.

UW-Madison's Upward Bound program helps make college a reality for some Madison high school students who are the first in their families to attend college or who come from low-income families.

"Upward Bound is designed to prepare students through the four years of high school with the necessary skills and with the motivation to fulfill their dreams of going to college," says Upward Bound Director Linda Lizana-Moss, who was the first in her family to attend college. "Most of the kids say they want to go to college. But knowing they want to go is one thing and knowing what they need to get there is something else. That's where we come in — we show them the path to college."

Maya Toral, who participated in Madison's Upward Bound program while a student at Madison East High School, says the program made her path to college smoother: The 1994 Upward Bound graduate is now a sophomore at Washington University in St. Louis.

Students like Toral have the potential to do well in college, says, Lizana-Moss, but because they are the first in their generation to consider college a real possibility, they require some extra nurturing and direction. They may not know which preparatory courses to take in high school, for example, or how to arrange college finances.

Beginning in ninth grade, selected students come to the UW-Madison campus after school and on Saturdays to receive tutoring, personal counseling, and academic and career advising, and help with study skills and social development. A computer lab provides up-to-date technical support for their work.

With the training, tutoring and advice they received from the Upward Bound staff, 10 students facing such odds were among the successful ones this year. Eight of Upward Bound's graduating seniors were accepted at UW-Madison, one was accepted at Milwaukee's Alverno College and one at the Madison Area Technical College.

The Upward Bound program was first created in 1964 by the Economic Opportunity Act and receives funding from the U.S. Department of Education's Office of Postsecondary Education.

Over the program's six years at UW-Madison, 16 of the Upward Bound graduates have gone on to attend UW-Madison (14 are currently enrolled) as well as several other campuses in the University of Wisconsin

■ Some 2,500 K-12 students benefited from outreach presentations on plasma and microchips through the Engineering Research Center for Plasma-Aided Manufacturing. Some 89 undergraduates gave hands-on presentations to 73 local-area classrooms, allowing the engineering students to learn the rewards of outreach activities while teaching K-12 students about science and engineering via semiconductor manufacturing.

■ Youth Futures, a federally funded program offered through the School of Family Resources and Consumer Sciences, helps local communities develop programs aimed at preventing alcohol and other drug abuse, teenage pregnancy and other risky behaviors in young people. Youth Futures helps communities tailor these programs to serve the needs of their youth. More than 250 Wisconsin communities have completed the assessment surveys used in the program, and Youth Futures is currently operating in 18 communities.

■ A faculty member in electrical and computer engineering has developed a unique kit that shows students the basics of how computers work. The kit, which is complete with a variety of computer parts — integrated circuits, transistors and other components — unveils the mystery of things like Nintendo games and digital watches by letting the kids take a look inside. Teachers across the country use the kit, which was developed in tandem with Project 2061, a national effort to revamp the way students learn science sponsored by the American Association for the Advancement of Science.

System and around the country.

Upward Bound is one of the 100 organized campus Precollege Programs, which attract more than 11,000 K-12 students to UW-Madison. The programs focus on developing new knowledge and skills in the arts, academics and athletics. They also provide educational and research opportunities and help students correct deficiencies in their backgrounds.

The Badger sports camps for boys and girls prove to be the most popular. The largest non-sports program, the Summer Music Clinics, now in its 66th year, provides musical training for more than 1,100 orchestra, band, chorus and musical-theater students each summer. Another popular program, College for Kids, provides a full range of academic programs for gifted elementary school students.

In essence UW-Madison serves as a "K-12 University" where campus facilities, faculty and coaches work with youth from throughout the state.

■ School-age child care program helps families

With a growing number of children home alone, UW faculty have developed community-based programs to find solutions.

The family with a parent at home to greet children after school is the exception these days. With economic necessity pushing maternal employment rates up dramatically in recent decades, the result has been an increase in the number of latch-key children and "the 3-to-6 syndrome," a situation observed by employers when employed parents are more concerned about their children's safety than about their own work.

Research shows that very young children who supervise themselves are often terrified by the experience and can develop other problems as they grow up, according to David Riley, a professor in the School of Family Resources and Consumer Sciences' Child and Family Studies Department and a UW-Extension specialist.

In response, Riley launched a program seven years ago that has helped many communities address the problem. The School Age Child Care program has recently released a seven-year report that shows its measurable and impressive impacts in communities across Wisconsin.

Riley has found that the research on latch-key children needs to be tailored to the specific needs of Wisconsin communities. "Most research on latch-key children had been conducted elsewhere, often on the East or West Coast, and usually in large cities. People here did not see how the results applied to them and their communities," Riley explains.

So he surveyed Wisconsin communities to identify how employed parents were meeting the challenge of after school child care and then used his survey results to help communities meet their needs. The findings led to local action, including training of families, forming local task forces and establishing new childcare programs.

The program has provided quality care for thousands of Wisconsin children. According to the "Seven Year Impact Report," the School Age Child Care program helped establish 92 new childcare sites and 75 percent of these are still operating. In 1992, some 6,754 children were kept safe and productive in these programs, 16,359 families received face-to-face training from UW Extension agents on child care and self-care for youngsters, and 47,526 families received educational materials from Extension offices.

In a recent follow-up study, school teachers and principals reported they have seen reductions in problem behaviors and improvements in school performance as a result of the program. For example, they credited the program with reducing aggressive behavior, such as hitting and fighting, in one-quarter of the children.

One-third of the children have "become more cooperative with adults, more willing to follow the directions and rules of adults" as a result of the program. The educators reported that more than one-third had improved grades because of the program. They could even name 14 percent of the children in the program who would probably have been retained in grade if not for the program.

These are big impacts, Riley says, both in quality of life improvements and in public monies saved. If the estimates educators made are accurate, then the project is saving taxpayers over $1 million per year by helping children do well enough to avoid having to repeat a year of schooling.

■ Based on the number of people who stayed in university housing, some 20,000 visitors from 85 organizations visited the UW-Madison campus this summer for a variety of educational opportunities.

■ The School of Business offers an Executive MBA program that allows high-potential managers to earn degrees without putting their careers on hold. The program, designed in conjunction with area business leaders, offers classes Friday and Saturday every other week for two academic years.

■ The School of Veterinary Medicine has developed the Dairy Health Management Certificate program to help veterinarians from around the state meet the changing needs of the dairy industry and to broaden their knowledge base. The interdisciplinary program is offered two days during the week over a two-year period so that practicing veterinarians may participate in the program while maintaining ties to their local communities.

■ The university's integrated outreach departments offer more than 2,000 professional and personal enrichment credit and noncredit programs for 160,000 people per year.

■ The Wisconsin Idea Seminar, an annual five-day journey around the state, is designed to introduce new UW-Madison faculty and staff to the outreach opportunities available in Wisconsin and to introduce them to the importance of public service in their roles at the university. Over 300 faculty and staff members have participated in the program since it began in 1984, meeting people from around the state from farmers to public school officials, business leaders to government leaders.

■ Institute helps businesses prepare for 21st century

Offering public and on-site seminars to business professionals around the state and nation, Management Institute provides industry the latest in management training.

Post-capitalist, post-industrial, late-capitalist — whatever trendy phrase you choose to describe the current economic state of society, one thing is certain: If businesses are to survive in the 21st century, they must keep up with the rapid technological changes and increasing global competition of the world economy.

UW-Madison's Management Institute, now a half-century old, reaches out to meet the ever-changing requirements of business by providing the professional development seminars industry needs to survive — and thrive. Management Institute faculty members with strong academic credentials, as well as hands-on experience in business, provide industry professionals with access to the latest management knowledge and technologies.

As a continuing education unit of the UW-Madison School of Business, in cooperation with UW-Extension, the Management Institute annually provides more than 300 public and on-site seminars and workshops to 9,000 business professionals who come from Wisconsin as well as around the world including Mexico, Australia and United Arab Emirates.

Business Week magazine, which ranks the Management Institute as one of the nation's top providers of continuing business education, praises the organization for offering "something for just about every managerial level and interest, from first-line, entry-level positions to senior executives." Comprehensive seminars focus on management skills; marketing, sales and customer service; finance and accounting; manufacturing systems and processes; procurement; and logistics, transportation, warehousing and distribution center management.

TDS Computing Services in Madison, one of the Management Institute's satisfied customers, has sent more than 175 of its employees to seminars since 1989. Marilyn Westmas, manager of professional development at the information systems company, says, "The response from our employees is positive; they consider it a worthwhile use of their time. The instructors are aware of the current business environment, and the programs are very practical."

Sharon Crandall, systems analyst and project leader in the TELCOM Division of TDS Computing Services, says the Basic Management seminars she has taken have helped her develop a management perspective. "I understand that the goal is not just getting the work done," she says. "Now I try to motivate people and look for opportunities for people to grow and learn new skills."

The classes, Crandall says, have helped her strengthen her decision-making proficiency. "I learned that I didn't need so much information, so much detail. Now I take the best information I have at the time and quickly make a decision so we can move forward," she explains. She also learned strategies for scheduling, delegating, motivating and problem solving.

So far, Crandall has taken two of four units required for the Basic Management Certificate. The certificate is designed for first-level managers, supervisors and other business professionals who want to strengthen their management skills. Crandall says that somehow she will squeeze in the remaining two workshops she needs to receive the certificate. She is particularly busy now because, inspired by Management Institute seminars, she has begun to work on a master's degree.

■ Program offers education in a non-traditional mode

The College of Engineering's high-tech outreach program brings classes to the professionals at their worksites.

For some UW-Madison engineering students, going to school does not involve plowing through four feet of Wisconsin snow while trekking to Engineering Hall. In fact, some of the students have never seen snow.

For 120 Engineering Outreach participants, it's not just about keeping their feet and ears warm in the winter. For these practicing engineers, it's about keeping up with the latest technological innovations in the rapidly changing field of engineering.

"Most practicing engineers cannot come to us, so we bring education to them," says

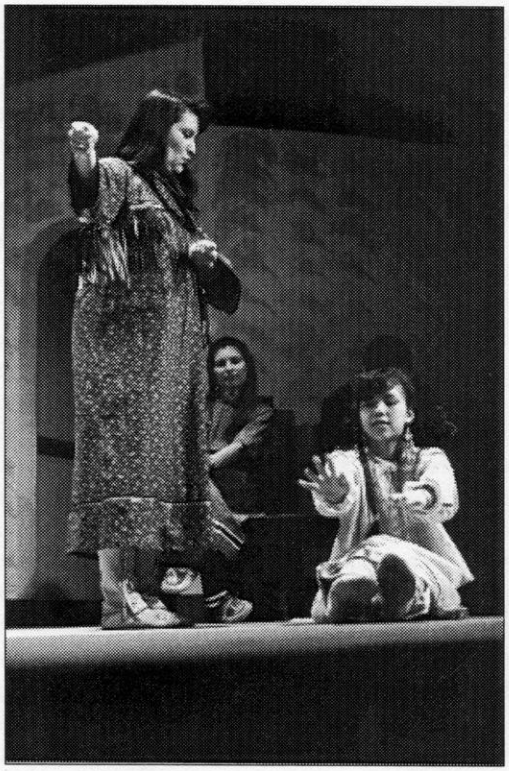
■ The Division of Continuing Studies offers a newly designed noncredit Summer Chatauqua Program for learners in retirement. This summer more than 140 learners enrolled in the annual program, which is offered twice each summer.

■ Audio conferencing equipment and computers linked by phone lines permit interactive instruction in technical Japanese and German simultaneously to students on campus and at various business and educational sites around the country.

■ Windows on the World, a summer course that introduces a world region or country to university and special students, includes an associated program of extracurricular performances, talks and exhibitions.

■ With the goal of developing more effective ways to screen people for heart disease, the UW Medical School is using a $3.5 million grant from the National Heart, Lung and Blood Institute to work with doctors in Wisconsin, Iowa and Minnesota. Medical School faculty will be visiting 156 physicians at 50 primary care sites to develop ways to educate patients about risk and prevention.

■ The Cross Cultural Health Care Initiative in the Department of Family Medicine focuses on teaching healthcare providers in Wausau about the unique cultural needs of the Hmong community, whose population has been growing rapidly there since the mid-1980s. The Bridge Community Health Care Center, which opened in April as a result of the initiative, serves minority, underinsured and underserved populations, the majority of whom are Hmong.



The Wisconsin Indian Story Theatre, the only such theater production in the country, has reached some 35,000 students from 300 schools around the state. Developed through the Department of Continuing Education in the Arts, the theatre combines storytelling with performance to tell tales handed down by generations of Wisconsin's Native American tribes.

Helene Demont, College of Engineering Outreach Program coordinator.

That might mean beaming courses to corporations by satellite uplink, or sending videocassettes to engineers at companies that enroll them in the college's program, or using interactive telephone-based technology to link working engineers with professors who are teaching the same courses to students on campus. Students choose from 32 classes each semester in chemical engineering, electrical and computer engineering, mechanical engineering, materials science and engineering, and nuclear engineering and engineering physics.

The Engineering Outreach Program enables engineers throughout the state, and across the country, to take classes from some of the best educators available without having to quit their jobs or move their families to Madison.

For Kimberly-Clark engineer Greg Rajala, the first outreach student to receive a mechanical engineering degree, the outreach program allowed him to continue his full-time job in Neenah, Wis. while pursuing his master's degree at UW-Madison. "It would be quite a financial burden at this point to have to leave work and become a full-time student and keep my family together in one place," Rajala says. "With the outreach program, I was able to keep up with my studies and work at my own pace, while keeping up with other responsibilities such as my family and my job," he says.

The coursework gave Rajala "new tools and information" to apply to his job. Most recently, he was able to use some of the mathematical skills he learned in developing machinery for a new product line Kimberly-Clark released this summer. "I was able to use information that I had learned in my master's degree to solve problems in the machines," says Rajala, who adds that he is now thinking of going back for his Ph.D. so that he can eventually teach other engineers.

Like Rajala, engineers benefit from the program through specialized training and career advancement. Some turn to the program to fulfill course requirements before applying to graduate school in Wisconsin. Others simply want to enrich their knowledge and need the strict deadlines of school and the expertise of UW-Madison faculty and staff to guide them. Students working toward master's degrees need approximately five years to complete their program.

The Engineering Outreach Program office has seen many changes since its inception. In the 1982-83 school year, only two courses were offered to 20 enrolled students. Today, the figures have grown to include 32 classes and 120 students. Demont is confident that as communication technology progresses, Engineering Outreach will progress right along with it. That means that more engineers in Wisconsin will have access to the courses and knowledge they need in their careers.

■ The School of Veterinary Medicine offered a summer workshop, "Celebrate Diversity: Enhancing the Learning Environment in Veterinary Medicine Education," for 31 veterinary colleges around the United States and Canada.

■ Teachers of all subjects and ages can participate in a summer colloquium on enhancing the quality of teaching. In the colloquium, UW-Madison instructors who have received Distinguished Teaching Awards work with teachers to improve teaching.

■ The newly established Center for International Programs in Government offers short-term programs on governmental policy and processes for governmental officials from foreign countries. Officers of the Budget Bureau of Thailand participated in the center's first program.

■ By broadcasting a class on developmental disabilities on WHA, the School of Social Work makes available this course to a variety of human services agencies, parents and others associated with developmental disabilities. In all, some 12-14 counties have taped this broadcasted course for use in training and education.

■ Engineering Professional Development provides 380 on-campus programs serving 15,000 engineering professionals each year.

■ Through the Center for Public Representation's Clinical Program, which is affiliated with the UW-Madison Law School and staffed by clinical law faculty, law students participate in hands-on internship opportunities while working with Wisconsin residents to provide legal assistance and education. For example, students have been instrumental in assisting low- and moderate-income families to obtain health care financing and access to affordable telephone service.

■ Continuing education helps fulfill the public's trust

Program provides government officials the training and knowledge they need to better serve the state.

Norma DeHaven and Ronald Buchholz are government officials who take their responsibilities as public servants very seriously. One way they've done that is to participate in an in-depth continuing education program for public managers conducted through UW-Madison's Division of Continuing Studies.

Begun just five years ago, the Wisconsin Certified Public Managers Program is attracting many middle and senior government managers from throughout the state who want to better meet the demands of their jobs.

That was why Buchholz, deputy administrator of the Division of Safety and Buildings in the Wisconsin Department of Industry, Labor and Human Relations, enrolled.

"At first I just wanted to take a course on strategic planning," he says. "But most courses taught by consulting firms and other colleges focused on planning as it related to managers in private business. The class at UW-Madison was the only one I found that focused specifically on the needs of workers in public sector management. The class was so good, I decided to enroll for the entire series of management programs."

Each semester the Wisconsin Certified Public Managers Program offers eight to 10 classes in such subjects as leadership, ethics in government, quality improvement, performance evaluation, budgeting, conflict management and risk management. To become nationally certified, participants must attend 300 hours of classes, take several exams and complete outside projects. The entire course of study usually takes three years.

DeHaven, city manager for the city of Fitchburg, says one of the most remarkable aspects of the program is its ability to provide participants with a broader view of their role in government. "One of our common mistakes in government is to get too narrowly focused on our particular job," she says. "The program helped me see that most managers in government have a commonalty of concerns: You aren't the only one struggling with a particular issue or challenge."

More than 200 managers from all levels of state and local government throughout Wisconsin are enrolled in the program. Susan Paddock, director of the program and a UW-Madison assistant professor of governmental affairs, says, "We've been impressed with how many Wisconsin public managers are willing to spend a great deal of their time to study and better understand their roles and responsibilities in government. They are living up to the public trust placed in them."

In addition to the public managers courses, continuing education departments in the Division of Continuing Studies and other UW-Madison schools and colleges offer more than 2,000 classes each year in areas of both professional development and personal enrichment.

The Division of Continuing Studies offers such programs as a weekly evening French class at Lowell Hall, an all-day workshop on using the Internet at the Wisconsin Center, a six-session medieval history class at West High School, an accounting seminar in Grainger Hall, a series on tax law and a class on recent award-winning children's books via Extension's Educational Teleconference Network, a book talk series on American novelists at the Madison Public Library, a three-day conference on distance teaching at a local hotel, and others.

UW-Madison continuing education courses make it possible to share the resources of the university with more than 140,000 citizens of Wisconsin annually as they update their knowledge of their current professions, prepare themselves for new careers, develop new skills, adapt to changes in the workplace, and expand their knowledge and creative interests.

■ Engineering Professional Development developed a course on engineering project management for Johnson Controls Field Service Engineers. The course will be delivered through Internet e-mail and audiographic teleconferencing; a pilot test to 20 students at three Johnson Controls locations was completed this summer.

■ The Great Lakes Indian Law Center, a clinical program at the Law School, serves as a legal resource and offers research expertise for Native American tribes in Wisconsin. The center also provides internships and hands-on legal training for UW law students interested in American Indian legal issues. The center helped the Ho-Chunk Nation of Wisconsin restructure its outdated constitution.

■ School of Library and Information Studies continuing education courses are helping keep hundreds of librarians across the state in the forefront of the electronic age. Through workshops — some of which are accessible to rural areas via distance education — librarians stay current on information technology.

■ The Wisconsin Alumni Association's Spring Day on Campus and the week-long Alumni University provide people from throughout Wisconsin with a chance to visit campus and attend seminars offered by world-class faculty. Course topics range from research breakthroughs to economic issues to the arts.

■ Engineering Professional Development developed a new solid waste management course, which was attended by representatives from eight Native American tribes from across the United States.

■ Classes assist nurses in meeting new state statute

New coursework in distance education program helps health care professionals keep abreast of the latest developments and provide quality health care to Wisconsin.

Two new distance education initiatives involving the Schools of Pharmacy, Nursing and Medicine are paving the way for advanced practice nurses to get the courses they need to prescribe medications under a new state statute.

Effective April 1, 1995, an estimated 2,000 state advanced practice nurses can prescribe medications, provided they have the necessary coursework in areas dealing with drugs, pharmacological preparations and pharmacology.

UW-Madison has stepped in to fill this need by developing a noncredit distance continuing education program to meet the needs of professionals practicing in the field, explains Patricia Lasky, associate dean in the School of Nursing. The program consists of eight two-hour sessions offered weekly in the evenings.

To reach out to students in Platteville, Milwaukee, Madison and other sites, the schools developed a way to offer the courses through two-way video conferencing.

"Video conferencing was very convenient and effective. The short classes offered close to home allowed me to keep my attention focused and observe more than I usually do," says Nancy Swailes, a geriatric nurse practitioner from Memorial Hospital of LaFayette County in Darlington, one of the more than 60 nurses who have taken the course. "There was plenty of time for questions and answers, and the hands-on sessions covered the situations we deal with well."

Swailes' classroom in Platteville allowed for live video and audio interaction between the UW-Madison faculty and students at the sites. "The other option was to drive to Milwaukee or Madison for an eight-hour-long seminar. This option worked better," she says.

The schools also developed a graduate-level credit course and offered it via a two-way interactive compressed video link during 1995 Summer Sessions to some 90 physician assistants and advanced practice nurses at UW-Madison and UW-Oshkosh.

"This distance education project on drug therapy for primary care providers will help advanced practice nurses and physician assistants better meet the health care needs of citizens in rural and urban settings, and underserved areas," says Allan Mailloux, an assistant professor in the School of Pharmacy, who served on a state advisory committee that helped draft the rules allowing nurses to write prescriptions.

Commitments to provide continuing education at a distance are part of a longer-term effort. The School of Nursing has offered courses over the UW-Extension Educational Teleconference Network to community and hospital sites for 30 years. The school is now working with UW-Extension on a collaborative distance education bachelor's degree with UW-Eau Claire, UW-Green Bay, UW-Oshkosh and UW-Milwaukee targeted toward some 9,000 state nurses who have associate degrees. All courses will be available via distance education with the first two offered in January 1996.

The Medical School also offers a master's degree for physicians in hospital administration using distance education, supplemented by two-week visits to campus each year.

And, chances are if you visited your pharmacist recently, he or she is one of the 70,000 pharmacists who takes UW-Madison noncredit courses from Extension Services in Pharmacy each year via self-directed, accredited units in a popular pharmacy journal.

■ Librarians find answers to technical questions

UW-Madison's nationally known research libraries offer up-to-the-minute knowledge to help the state maintain a critical edge in the information age.

A critical stab wound. A terminal illness. Pickle brine waste. Cancer-prevention effects of nutritional additives. Old landfills. And patents — lots of patents.

These are all topics for which businesses, professionals and citizens throughout Wisconsin rely on experts at campus research libraries for up-to-the-minute information in science, technology, agriculture, law and medicine. From Cumberland Memorial Hospital in the northwest section of the state to Rust Environment and Infrastructures in

■ The School of Family Resources and Consumer Sciences held its second week-long Wisconsin Child and Family Advocacy Institute in July 1995. The program was designed to train family specialists working in the field in how to get the information and resources they need to improve the climate for families in their communities.

■ The Wisconsin Family Policy Impact Legislative Seminars teach legislators and other public policy officials about the effects of policies on families. The seminars are a project of the School of Family Resources and Consumer Sciences' Center for Excellence in Family Studies, whose mission is to promote research in family studies and share information with the public.

■ The Legal Assistance to Institutionalized Persons Program provides criminal and civil legal aid to prisoners and mental health patients while giving law students the opportunity to put their legal knowledge and training to good use. Law School students represent clients and patients incarcerated in the Wisconsin Correctional System, the federal prison at Oxford and the Mendota Mental Health Institute.

■ Participatory Learning and Teaching Organization (PLATO), a learning-in-retirement, member-led organization sponsored by the Division of Continuing Studies, Office of University Special and Guest Students, provides learning experiences for people of or nearing retirement age. Over 150 current members participate in programs and receive a bi-monthly newsletter. This summer, for example, activities included two tours of the Olbrich Gardens, a four-session lecture series on the history of Wisconsin, and a five-week series on race relations.

Sheboygan, library outreach services at UW-Madison serve all of Wisconsin's major industries and hundreds of small companies.

Approximately 50,000 requests for information were filled last year by staff at the Medical Library Service and four other library outreach services on campus. These requests, for which the libraries charge a "cost-recovery" fee, came from more than 1,000 clients in 61 Wisconsin counties. Requests are increasing at more than 10 percent per year.

Library information services are an old and venerable component of the Wisconsin Idea. The Medical Library Service, for example, has been helping the state since the 1920s. The primary importance of UW-Madison in providing statewide information was acknowledged by the state legislature in the 1970s when Wisconsin Interlibrary Services was established in campus libraries. Since then the interlibrary service has provided millions of books, journal articles and information searches to citizens through their local public, school, academic and special libraries.

The newer, highly automated information outreach services are an outgrowth of this continuing commitment to share the knowledge resources of the campus.

For Barb Bartkowiak of the Marshfield Clinic, immediate access to the latest medical information is crucial. "Patient care is not something you can plan ahead," she notes. "When a doctor is doing emergency surgery in an hour, he or she needs information immediately."

The clinic, a multi-specialty medical facility serving patients in central Wisconsin, sends requests to the UW's Health Sciences Libraries' Medical Library Service almost daily. "Madison's response is always timely," says Bartkowiak. "They take our needs seriously."

Besides assisting physicians and hospitals, Health Sciences Libraries' experts also deal with individual requests. Because of the librarians' knowledge and sensitivity, the state's Reference and Loan operation refers to the libraries all questions from citizens regarding diseases with poor prognoses or disabling symptoms. The requester receives a prompt, personal response from trained medical librarians.

The services provide searches of specialized databases (available because of the campus's research activities), technical materials not found elsewhere in the state and government documents. Staff are familiar with the universe of information in a given subject in both printed and electronic formats.

Wisconsin TechSearch, an outreach service located in Wendt Engineering Library, is one of the largest. The service provides "untold value," according to Mike Mattes, senior scientist at SSI Technologies, a Janesville automotive sensor corporation with a national market. "Information is vital," says Mattes, who uses TechSearch for literature searches, patent searches and a current awareness service, which lets him know what is newly available in the fields in which he is interested.

The ability to cross-match a number of disciplines is also important, states Jerry O'Dea, director of product and market development at Avonmore Ingredients in Monroe. Avonmore, a developer of new food ingredients and client of the Steenbock Agricultural and Life Sciences Library service, uses information in the agricultural, food science and medical science fields. O'Dea says he would have to spend months in libraries on his own to find what the Steenbock service readily finds for him.

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UNIVERSITY OF
WISCONSIN
MADISON

Greenfield: Progressivism relates to 'Wisconsin Idea'

WI. Idea

By Linda Weimer WI.Week 2/8/89

Jeff Greenfield breathed new life into an old idea at UW–Madison's Founders Day celebration on Feb. 1 in Memorial Union's Great Hall.

Greenfield related modern American progressivism to the "Wisconsin Idea," a notion that obligations go hand-in-hand with rights and responsibilities, and that in this society, there is "always the possibility to change what you do, enrich the life you lead, with practical knowledge or artistic diversion or the pursuit of wisdom for its own sake."

But the 1964 School of Journalism graduate and former *Daily Cardinal* editor said something has gone out of this "vibrant, optimistic tradition of American progressivism.

"If America loses that sense of possibility; if our politics and our culture speak only to a sense of instant gratification and easy diversion; if we lose that sense of hope that this university and this country has nurtured for so many for so long, we will have lost what makes us what we are."

In probing the evolution of the Wisconsin Idea and progressivism in America, Greenfield revealed his affection for his alma mater and the shrewd analytical skills that have made him one of broadcasting's hottest political commentators—now a successful newspaper columnist and a regular on ABC's *Nightline*.

He talked fondly about coming to UW–Madison and "learning lessons that can come in particularly handy to a confident, make that arrogant, make that 'smart assed' New Yorker whose knowledge of books and political theories far outstripped his knowledge of human beings, and himself." He recalled his own idealism and that of his schoolmates, who lined the halls of Memorial Union to sign up for the Peace Corps.

Greenfield said on coming here, he learned of a "tradition, rooted in American experience and culture—a tradition of practical progressivism, fusing excellence and egalitarianism, that this university both exemplified and inspired—the Wisconsin Idea."

This idea implies a blend of rights and obligations, said Greenfield, and a nurturing of hope and possibilities for all members of society, that explain much of why the progressive tradition "worked as well as it did." It is an idea that in recent times, he said, has been much less prevalent in our culture and politics.

"Liberal" even became a term of attack in the recent presidential election, noted Greenfield, suggesting that one reason may be that liberal politicians have shied away from issues like fighting crime, "as if it is unseemly, as if it inevitably suggests a racial dimension to politics, as if it implies insufficient concern about civil liberties."

And yet the right to personal safety, said Greenfield, is at the heart of self-government and a free society.

George Bush won the election, in part, because he did address such issues and they resonated with the American public. Greenfield said Bush also tapped the American sense that privilege does imply obligation with his "thousand points of light" and his reference to "stewardship" in the Inaugural Address.

What's so difficult, asked Greenfield, about funding medical school scholarships for students who could not otherwise afford to go, and then asking them to give three years of service in medically bankrupt areas like the inner city or rural America? What's so fanciful about a Police Corps that would put poor kids in college in return for a few years of service with our police?"

Jeff Greenfield

Greenfield ended on a note of optimism that the "Wisconsin Idea" and progressive traditions will revive: "I know that sense of possibility is real. It happened to me, here, as it happened to countless others . . . and I believe it will be happening 100 years from now; because it is simply too vital to be allowed to die."

The UW–Madison Alumni Club, which sponsored Greenfield's speech, also honored two eminent UW–Madison administrators for their outstanding achievement—Letters & Science Dean E. David Cronon, and former UW Foundation President Robert Rennebohm. They capped the evening with a surprise presentation to Arlie Mucks, retiring director of the Wisconsin Alumni Association, for his distinguished service to the association and UW–Madison. ■

Hang in there, flu may be on last leg

WI.Week 2/8/89

By Patrick Dorn

If you haven't yet been felled by the vicious flu that's been blanketing the community, you may have dodged the viral bullet.

Kathleen Poi, associate director of the UW Health Service, said that because the current flu strains have a short incubation period (24–48 hours), history would suggest we are nearing the downside of the outbreak. She said influenzas with short incubation periods generally run their course within a few weeks.

"People who were susceptible to these strains should have had the flu by now or presently have it," Poi remarked. "I can't be definite, but it should start to slow down."

The health service has averaged more than 2,000 patient visits per week recently, compared to the usual head count of about 1,700 for this time of year, Poi said. Most of the increase is attributed to flu cases.

She explained that three different strains of flu are prevalent in the United States. When there is a shift or change in any of the strains, there is an increase in the number of cases reported.

The symptoms for all three strains are similar, Poi said: a fever of up to 103 or 104 degrees, shaking chills, muscle aches and a significant cough. The worst part of the bug lasts for two to three days, with many people feeling the effects for up to a week after the illness hits.

Poi said the influenzas can be serious for the elderly and very young, and for people who already suffer from chronic diseases such as diabetes. Rest, plenty of fluids and aspirin or acetaminophen are the prescribed steps to recovery for most people.

One thing people should do, Poi said, is prevent the infection of others by staying home from work or, in the case of students, from class.

"About the only good thing about this flu is that you feel so terrible you can't get to class or work even if you want to," Poi said. ■

uw news

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W1. Dells

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50 YEARS AGO THIS WEEK, WISCONSIN'S SOCIAL SECURITY IDEA BECAME LAW

By MARY ELLEN BELL
University News Service

MADISON--Fifty years ago this week, on Aug. 14, 1935, President Franklin D. Roosevelt signed the Social Security Act -- a document rooted in the ideas of a group of University of Wisconsin scholars and authored by a UW economist named Edwin E. Witte.

Early in the summer of 1934, Witte was called to Washington from the campus at Madison by U.S. Secretary of Labor Frances Perkins. Witte became executive director of the President's Committee on Economic Security, charged with drawing up a program to solve the massive social and economic problems of the Depression.

Six months later the Social Security bill, written primarily by Witte, was delivered to Roosevelt, who presented to it Congress in January of 1935.

Although the program was drafted into legislation in only six months, the philosophy behind it had been under discussion at UW-Madison for over a decade.

Witte was part of an informal but highly-influential group of university and government policy planners whose collaboration made Wisconsin one of the most politically progressive states in the early decades of this century. This group was committed to using the university's expertise and scholarship to help solve social problems.

This early "think tank" drafted the nation's first unemployment

-more-

compensation law, passed by the Wisconsin Legislature in 1933. The group also had discussed implementation of some form of economic security plan along the lines of programs already adopted in England and Germany.

The "Wisconsin Idea" about this kind of university-government cooperation became a state tradition, formalized last year with the establishment of the Robert M. La Follette Institute for Public Affairs.

"The La Follette Institute was created to insure the continuation of that tradition of involvement of many university faculty members in policy-making at all levels of government," said Dennis Dresang, institute director.

The institute was named for the Wisconsin governor who encouraged university people contribute to social progress in the 1920s and '30s. Institute researchers work on issues ranging from unemployment compensation reforms to legislative priorities.

Witte was raised on a dairy farm near Watertown, Wis. At Wisconsin, he earned a bachelor's degree in history and a doctorate in economics, and was a student of famed economist John R. Commons.

His career alternated between government service and academic life. He held a number of state positions, including head of the Legislative Reference Library where he wrote many state laws. He also was a UW professor of economics and eventually became chairman of the department.

Witte was one of several Wisconsin contributors to Roosevelt's programs. Many of the ideas of Commons were incorporated into the New Deal. Another of Commons' students, Arthur J. Altmeyer, was summoned to Washington to serve as chairman of the first Social Security Board. Later, he was named a commissioner for Social Security under President Harry Truman.

Witte was selected to head the drafting committee because Roosevelt preferred the Wisconsin proposals for a social security program over several other plans that were being suggested, according to John Witte, who is the grandson of Edwin Witte, a UW-Madison professor of political science and a

member of the La Follette Institute.

"There were a number of competing plans that Roosevelt didn't like," John Witte explained. "One was those was the Townsend Plan, which would have provided a flat grant to everybody. The central idea of the Wisconsin plan was that, since everybody was paying into it, people would not feel they were on the dole."

He said Roosevelt favored the Wisconsin proposal because it was more likely than other proposals to win approval in Congress.

Edwin Young, a student and economics professor during Witte's tenure at UW-Madison and former UW System president, recalls that Witte had "strong feelings that the Social Security Program should be an insurance program, not a welfare program."

Many of those who remember Witte remarked on his amazing memory, his massive files of data, and his uncanny ability to pluck small details from either his mind or his notes and put them together in relevant ways. Young recalled that he seemed never to forget anyone's name.

After World War II, Witte returned to the university, where he continued to mix teaching and research with public service. He retired in 1957 and died in 1960.

A young man who had just earned his bachelor's degree at UW-Madison and accompanied Witte in 1934 as his assistant, Wilbur J. Cohen, remained in Washington. He eventually became Lyndon Johnson's Secretary of Health, Education and Welfare.

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--Mary Ellen Bell (608) 262-8287

FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

RELEASE: At will

WI Idea

WISCONSIN IDEA
University of Wisconsin

(pix available)

University of Wisconsin famed
For Its "Wisconsin Idea"

MADISON, Wis.--Some universities are famous for impressive buildings, unique courses, or winning football teams. The University of Wisconsin--fittingly enough-is best known for its historic "Wisconsin Idea."

What is the "Wisconsin Idea," anyway?

It has two key concepts. They are educational service and academic freedom.

Let's let Vernon W. Carstensen, UW professor of history, explain the development of the "Wisconsin Idea" of service.

He writes:

The Basic Factor

"In 1885 the University Regents inaugurated the famous Short Course in agriculture, a vocational-education device which was to be tremendously successful at Wisconsin and to be imitated throughout the country. It provided merely for a course consisting of two short winter sessions, to which anyone with a common school education would be admitted. The course was devoted exclusively to agricultural subjects.

"More important was a legislative bill providing $5,000 for farmers' institutes to be managed by the Regents of the University. The institutes, which were to be held throughout the state during the winter months, gave the professors a chance to talk to the farmers, and perhaps more importantly, gave the farmers a a chance to talk back.

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"These two innovations gave the University an opportunity to have a direct influence upon farming.

"The farmers' institutes quickly became popular. During the first winter an estimated 50,000 farmers attended. In 1887 the legislature raised the appropriation for this work to $12,000 a year.

"A veritable agricultural revolution took place, greatly assisted, if not inaugurated, by this systematic, popular instruction from the University as the center.

"By the end of the century the farmers' institutes and other popular educational devices of the College of Agriculture were flourishing. A summer school for science teachers had become so successful that it was incorporated into the regular University program. There was no doubt about it; the University was consciously seeking, to use President Thomas C. Chamberlin's words, 'a universal educational influence in the community tributary to it,' and it had found some successful means of extending that influence.

Three Musketeers

"At this juncture several important events occurred. Robert M. LaFollette was elected to the governorship in 1900. A graduate of the University in 1879, he had, by his own statement, been profoundly influenced by President John Bascom, Chamberlin's immediate predecessor.

"In 1901 Charles McCarthy was appointed to a minor post in the Wisconsin Free Library Commission. He later developed the Legislative Reference Library. This was begun when an appropriation was made for the establishment and maintenance of a working library at the Capitol for the use of the Legislature, the executive departments, and citizens. McCarthy expanded the services of the library to make it a uniquely successful legislative reference bureau.

"In 1903 Charles R. Van Hise became president of the University. Van Hise had been a classmate of LaFollette's at the University and was a friend and supporter He, too, had studied under Bascom and had been both student and colleague of Chamberlin.

"In his inaugural address Van Hise proposed that professors be used as technical experts by the state government. He felt that professors had knowledge which might be useful in helping to solve various social and political problems. Nor did he propose in vain. Governor LaFollette had already begun to use them in state positions.

"In 1912 McCarthy listed 46 men who were serving both the University and the state. While it is impossible precisely to measure the influence of the University professors upon legislation and state government, it is clear that some of these men for a time exercised a powerful force.

University Extension

"Equally important was the growth of University extension work. The Legislature of 1907 was asked to make an appropriation of $20,000 for this work and so well had the ground work been laid that the appropriation bill passed both houses by a unanimous vote.

"Thus provision was made for a large program of general University extension work. To direct the new department, Van Hise brought to the University Louis E. Reber, then dean of the college of engineering of Pennsylvania State College. The position, Van Hise told Reber, would be one of 'developing a new line of education in state universities which I believe in the future is likely to become one of very great importance.'

"These various extramural activities of the University--the advising work of professors, the agricultural college extension, and the University Extension Division--were all publicized and stimulated interest on the part of the other institutions.

Soils and Seminar

"All these elements--a large program of legislative reform, the expert work of the professors, the work of a Legislative Reference Library, and the state-wide extension work of the University--were part of the Wisconsin Idea.

"Wisconsin has enjoyed what Professor Hesseltine likes to call a successful wedding of soil and seminar, a fruitful joining of research and reform."

Today the "Wisconsin Idea" of public service has grown and expanded to the point where, in the words of a famous UW slogan, "the boundaries of the campus are the boundaries of the state."

Hand in hand with the development of the "Wisconsin Idea" of service grew the "Wisconsin Idea" of academic freedom.

Of this development, UW History Prof. Merle Curti writes:

Freedom from Tradition

"The most striking effort to realize equality of educational opportunity in Wisconsin was the establishment of the University of Wisconsin in 1848. Its proponents begged for support on the ground that it offered its opportunities to all at minimum cost. Its early mentors believed inequality of classical curriculum prevalent in eastern institutions. Its founders envisioned a university in which not only learned professions were to be provided for, but one in which the sons of agriculture and industry were to find opportunity to equip themselves for their ways of life. In time these objectives were realized.

Freedom from Want

"The steps which have been taken toward the ideal of equality of education opportunity have of necessity rested on financial support.

"It was not easy to establish the principle of state responsibility for the support of the University. The land grants given the state by the federal government for higher education were quickly disposed of, partly to erect the first buildings and partly to supplement available lands for speculators and settlers. Only in the 1870's did the state finally take responsibility for its ward. The support in the 1880s and 1890s was generous, in terms of the resources of the state and in relation to what neighboring commonwealths were doing for their universities. Herein lies the secret of the great strides forward which the University of Wisconsin made.

Add four--Wisconsin Idea

Freedom from Fear

"Closely associated with the problem of financial support of state institutions of higher learning is that of control.

"No problem, perhaps, has been more stubborn or more complex than that of our working relations between the government of the University and the will of the people, as interpreted by the political party in power. Wisconsin has by no means been alone among state universities in having to grapple with this issue.

"We have liked to think that we have been notably successful in realizing the principle of democracy both in the internal aspects of the University and in its relations to the governing authorities and the people of the state.

"Efforts to limit academic freedom have been more frequently overt in the public institutions than in the private ones, some of which, indeed, have apparently been unacquainted with the issue. No commentator on higher education in Wisconsin in the past century can fail to mention the famous Ely trial of 1894. Charged by the superintendent of public instruction, an exofficio member of the Board of Regents, with expressing sympathy for strikers in a Madison labor dispute and with promulgating socialist views, Prof. Richard T. Ely was vindicated by the Regents. More important, the Board, thanks in part to Pres. Charles Kendall Adams, adopted a resolution which is one of the finest statements of the principle of academic freedom to be found:

"Whatever may be the limitations which trammel inquiry elsewhere, we believe that the great state University of Wisconsin should ever encourage that continual and fearless sifting and winnowing by which alone the truth can be found."

Today a plaque bearing this statement is riveted to the facade of Bascom Hall and its philosophy pervades UW functions and policies. In 1957 the plaque was stolen but later recovered and rededicated as the University's "freedom plaque."

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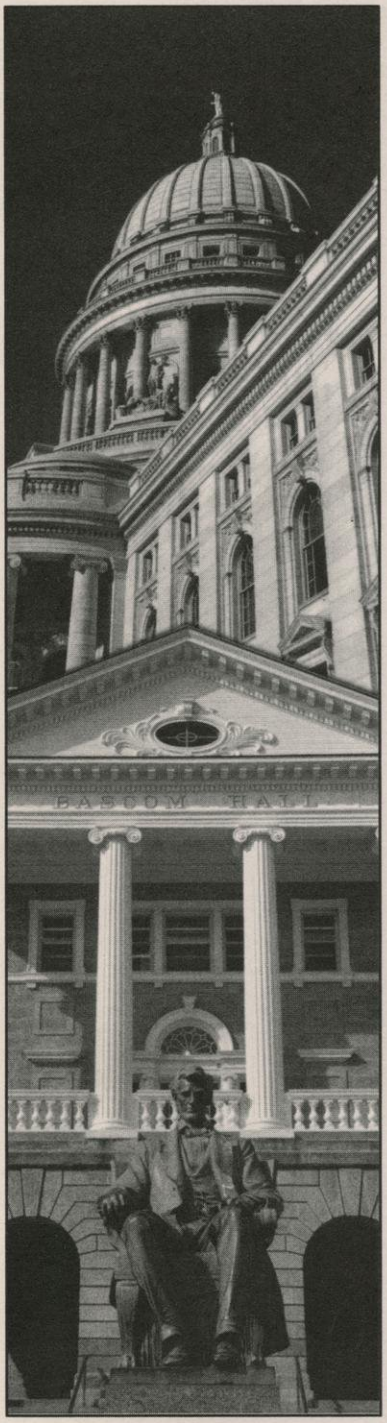

THE WISCONSIN IDEA

THE UNIVERSITY'S SERVICE TO THE STATE

THE WISCONSIN IDEA FOR THE 21ST CENTURY

Cover:
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THE WISCONSIN IDEA: THE UNIVERSITY'S SERVICE TO THE STATE

by

Jack Stark

Legislative Reference Bureau

THE WISCONSIN IDEA FOR THE 21ST CENTURY

by

Alan B. Knox and Joe Corry

The University of Wisconsin-Madison

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THE WISCONSIN IDEA:
THE UNIVERSITY'S SERVICE TO THE STATE

By Jack Stark

Legislative Reference Bureau

> But the Wisconsin tradition meant more than a simple belief in the people. It also meant a faith in the application of intelligence and reason to the problems of society. It meant a deep conviction that the role of government was not to stumble along like a drunkard in the dark, but to light its way by the best torches of knowledge and understanding it could find.
>
> Adlai Stevenson
> Madison, Wisconsin
> October 8, 1952

The Wisconsin Idea is a magical expression for many residents of this state. It stands for something that distinguishes us from residents of other states. However, there is no consensus on its meaning or causes. References to it are scattered in histories, biographies and speeches, but no one has written its own history. A book that appears to be the only detailed analysis of it is really a campaign document and an account of one legislative session. The Wisconsin Idea needs to be clarified, and the history of the phenomenon that it describes needs to be told so that we can better understand ourselves and our state.

1. THE IMPORTANCE OF THE WISCONSIN IDEA

The Wisconsin Idea deserves a lengthy analysis only if it is rare and very important. Eminent scholars and educators who lived during one of the eras when the Idea was particularly strong, the early years of this century, believed that it fulfilled those two criteria. For example, during 1908, President Charles William Eliot of Harvard University, while granting an honorary Doctor of Laws degree to Charles Van Hise, president of the University of Wisconsin, called him the "president of the leading state university."[1] Lincoln Steffins thought that President Eliot made the statement to a large extent because of the University's service to its state; that is, because of the Wisconsin Idea. A few years later, Theodore Roosevelt wrote that "in no other state in the union has any university done the same work for the community that has been done in Wisconsin by the University of Wisconsin."[2] More recent experts concur. Much later, Frederick Rudolph, the author of the standard history of American higher education, claimed that the University was entitled to President Eliot's praise because of "the success with which it incorporated in its rationale two curiously conflicting currents of Progressivism: the resort to an *expertise* in the affairs of state, and the development of popular nontechnical lectures which carried the university to the people."[3] Rudolph also acknowledged the historical significance of the Wisconsin Idea: "in varying degrees other state universities revealed the same spirit, but none came as close as the University of Wisconsin in epitomizing the spirit of Progressivism and the service ideal."[4] The Wisconsin Idea certainly appears to have been important not only to this state but also to the development of American higher education.

2. DEFINITION OF THE WISCONSIN IDEA

One would expect an historical phenomenon that is as important as the Wisconsin Idea appears to be to have a generally agreed upon meaning. Many residents of this state, if they were asked to define the Wisconsin Idea, would respond, "the boundaries of the University are the

boundaries of the state." Oddly enough, the person who coined that expression is not known, although President Van Hise and Dean of Extension Louis Reber made similar remarks. Robert H. Foss, the editor of the University's Press Bureau during the presidencies of Glenn Frank and Clarence Dykstra, has claimed credit for the expression, but his claim cannot be verified.[5] That is a vivid expression but it is a slogan, a bumper sticker, not a useful definition.

One can divide more careful attempts to define the Idea into two categories. One consists of definitions that emphasize the Idea's political dimension, even its partisan political dimension (progressive or liberal politics).[6] The other consists of definitions that emphasize the University's service to the state.[7] The definitions in the second category are more convincing. The political definitions are somewhat appropriate for the early years of this century, but even for that era they leave out important contributions. Moreover, the Idea has changed since that time. As David Cronon and John Jenkins point out, Charles McCarthy, who wrote the only book ostensibly about the Idea (but really about the 1911 Legislature) thought of the Idea as "various ameliorative activities of the Wisconsin progressive movement, including those of the University. After the stalwarts [the conservative wing of the Republican Party, Robert M. La Follette's political opponents] returned to power with the election of Governor Emanuel L. Philipp in 1914, the term increasingly referred more narrowly to University public service."[8] As we have seen, persons who lived outside of Wisconsin, such as Theodore Roosevelt, President Eliot and Frederick Rudolph, thought of the Idea as primarily the University's service to the state. Also, restricting the Idea to its political manifestations would result in ignoring many accomplishments, such as agricultural discoveries and outreach programs, that most persons would consider to be part of the Idea.

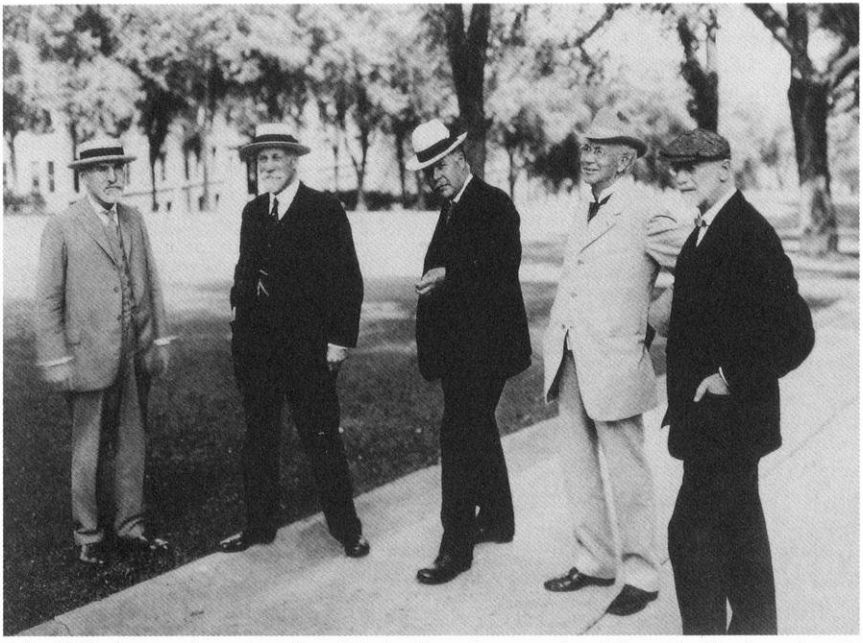
In order to sort effectively through the massive amount of available information about the history of the state and of the University and thus make it possible to write an analysis and history of the phenomenon that is called the Wisconsin Idea, it is necessary to formulate a definition of the Idea that is a bit more inclusive than any of the previous definitions. I propose to define the Wisconsin Idea as the University's direct contributions to the state: to the government in the forms of serving in office, offering advice about public policy, providing information and exercising technical skill, and to the citizens in the forms of doing research directed at solving problems that are important to the state and conducting outreach activities. This article is a history of those types of service. For the sake of brevity, I will use "Wisconsin Idea" more frequently than "the University's service to the state". That is not to say that I am writing a history of an *idea*; I am not writing a history of the changes in the ways that term has been defined.

3. CAUSES OF THE WISCONSIN IDEA

The definition stated in the previous paragraph identifies the subject of this analysis. The most logical first step in the analysis itself is to determine the causes of the Wisconsin Idea, the reasons why the University served the state. In turn, the first place that one should look for them is in the University's charter: the statute that created it. It may be thought that the University has always been required by law to perform the functions that are part of the Idea. That is not the case. The charter imposes a number of duties, primarily on the University's Board of Regents, but it specifies the University's educational functions tersely and indirectly:

> The university shall consist of four departments:
>
> 1. The department of science, literature, and the arts:
> 2. The department of law:
> 3. The department of medicine:
> 4. The department of the theory and practice of elementary instruction.[9]

There is no hint that the University would do research or perform outreach activities. There is no hint that Professor Stephen Babcock would one day invent an easy, cheap test for the butterfat content of milk that would enormously benefit the state's dairy industry; that Professor Frederick Jackson Turner, who in our era would be called the most influential American historian, would travel the dirt roads of late-nineteenth-century Wisconsin to give extension lectures; or that Professor John R. Commons would repeatedly aid in the planning and drafting of legislation that



This 1918 photograph captures five of the leading advocates of the Wisconsin Idea in a relaxed moment on Bascom Hill. Shown from left to right are UW President Charles R. Van Hise, Former UW President Thomas C. Chamberlin, Dean of Agriculture Harry L. Russell, Former Dean of Agriculture William A. Henry and Professor Stephen M. Babcock (photo courtesy of UW-Madison Archives, Neg. #X25 1335).

would make Wisconsin the first state to solve difficult social and economic problems. There is no hint of the Wisconsin Idea.

Unconvincing Statements of the Causes

Perhaps the next place to look for a convincing statement of the causes of the Idea is the first extensive discussion of it, McCarthy's *The Wisconsin Idea*. He identifies two causes, the influence of Professor Richard Ely and the Germanic roots of Wisconsin's residents, but neither is convincing. Ely, a noted economist, was lured from Johns Hopkins University and made director of the UW School of Economics, Political Science, and History. Later he was attacked for his political views and activities by a regent and then exonerated by the board in the oft-quoted "sifting and winnowing" statement.[10] Ely did have some beliefs that lend support to McCarthy's argument. For example, of his experience as a student in Germany he wrote, "[many German professors] occupied public and administrative positions and contributed in this way to the German Empire. My experience in Germany had first brought to my attention the importance of linking book knowledge and practical experience."[11] This experience was one of the influences that led him to Christian Socialism. Shortly after he came to the University he wrote, in a book that was influenced by that doctrine, "one sort of unity of Christians, however, is found in the State. Men of all denominations act together in the administrative, legislative and judicial branches of government for the establishment of righteousness."[12] Both of those statements are compatible with a belief that academics should serve a state. Ely also reported that "when I came to Wisconsin, La Follette greeted me with the remark, 'You have been my teacher!'"[13] La Follette, a major supporter of the Wisconsin Idea, probably did not mean that he was a devoted reader of Ely's publications but that he agreed with some of Ely's positions, such as his support of labor, which was one of the reasons for the later attack on him.

Although La Follette mentioned Ely's influence on him, Ely was a Stalwart before 1903 and began to support the Progressives during that year partly because the Stalwarts had not secured a federal position for him.[14] Ely also admitted that he was never a close personal adviser to La Follette, which would have been the most natural way for him to exemplify the Wisconsin Idea.[15] Moreover, Ely's biographer wrote that "apparently no governor considered Ely as a possible appointee to the several new commissions until, in 1910 and 1911, Governor Francis McGovern asked him to serve on either the tax or railroad commissions. After some criticism by conservatives and after conferral with Van Hise, Ely decided not to accept an appointment."[16] One scholar claimed that Ely was a conservative as early as 1894 and that he believed government should have a very limited role in solving social problems, such as the revitalization of the cutover region of Northern Wisconsin, where logging had devastated the forests.[17] That view of government is the opposite of one of the premises that is held by supporters of the Wisconsin Idea: that government should help to solve social and economic problems. Contrary to McCarthy, Ely's only substantial contribution to the Idea was bringing Commons to the University.

McCarthy also believed that Germany was influential in the development of the Wisconsin Idea. One reason for his belief is that Ely had been significantly influenced by his experience in Germany.[18] McCarthy also argued that Wisconsin was "fundamentally a German state," specifically a state molded by persons who fled from Germany during the political upheavals that occurred during 1848, in which attempts to make the German people more free failed, and who therefore loved liberty and good government.[19] Frederic C. Howe, who, like McCarthy published a book on Wisconsin politics in 1912, agreed about the German influence. Howe wrote that "Wisconsin is making the German idea her own. The University is the fourth department of the state."[20]

One becomes suspicious of McCarthy's claim if one remembers that, unlike the current Legislative Reference Bureau, which is required by statute to be "strictly nonpartisan," McCarthy, as founder of that bureau, made it clear that he was a devoted Progressive. His book was written primarily to aid the Progressives, and there were many German voters in the state, particularly in Milwaukee, where the Socialist Party, with a number of German-Americans as its leaders, was beginning to compete successfully with the Progressives. Praising the influence of Germany and linking it to the Progressives were likely to convince some German-Americans to vote for Progressives.

However, Commons disagreed. He knew more than McCarthy about the political climate of the state outside Madison, especially in Milwaukee, where he had worked with the Bureau of Economy and Efficiency, and he presented a convincing reason to reject McCarthy's theory:

> I sometimes have heard from people of other states that the Wisconsin pioneer success in administering progressive legislation must have come from the large German element in the state who brought with them the traditions of the efficient government of Germany. But the Germans in Wisconsin, although exceeding in numbers any other of its many nationalities, have been the least active, politically, of all.[21]

Finally, common sense suggests that McCarthy considerably overstated his case. If he is correct, either German-American citizens who held certain political views influenced University employes to work for the benefit of the state and influenced governmental officials to encourage that effort or German ideas about the proper relation between the state and the University were generally accepted. Those causal relations are not evident.

A Somewhat More Convincing Statement of a Cause

A distinguished historian recently attributed the Wisconsin Idea in part to such characteristic Midwestern values as decency and egalitarianism, "which come together in a remarkable tradition of clean government (despite occasional problems along the way) and a strong tradition of service and cooperation."[22] This analysis resembles McCarthy's attribution of the Wisconsin Idea in large measure to the influence of Germany and of German-Americans. Again, it is difficult to demonstrate that values led to actions. This statement of the cause of the Idea also resembles a statement made by Frederick Jackson Turner:

> Nothing in our educational history is more striking than the steady pressure of democracy upon its universities to adapt them to the requirements of all the people. From the State Universities of the Middle West, shaped under pioneer ideals, have come the fuller recognition of scientific studies, and especially those of applied science devoted to the conquest of nature.[23]

This claim has an intuitive appeal. Most persons would agree that states have distinctive cultures and that a phenomenon like the Wisconsin Idea would appear in only a few states, nearly all of which are in the Midwest. On the other hand, it may be better to distinguish among Midwestern states; even neighboring states, such as Wisconsin and Illinois, are quite different. In short, there may be something to this analysis, but Midwestern values are at most a minor cause of the Wisconsin Idea, and it is difficult to prove that they are even that.

Causes That Also Apply to Other States

Several of the causes of the Wisconsin Idea operated across the country. One is the ferment in American higher education during the second half of the nineteenth century. Until that time, the curricula in nearly all colleges and universities were similar and emphasized required courses in the Greek and Roman languages and cultures, in some basic sciences and in a few other subjects. After the Civil War, the increasing importance of science; the spread of the elective system, which President Eliot of Harvard did more than anyone else to promote; and the growing popularity of the seminar method of instruction and increased emphasis on research, both of which were imported from Germany, most notably by Johns Hopkins University, caused this ferment and a willingness to experiment.[24] These changes were more likely to have major effects in recently formed universities that were developing their identities during this era, and the University of Wisconsin, which was founded in 1849, was one of them. In other words, the University matured during a time when it was natural for leaders to consider new notions about the ways in which their institutions should operate. It was thus a time when innovations, such as the Wisconsin Idea, were more likely to be accepted.

Another cause of the Wisconsin Idea, in particular of the research designed to solve state problems and the outreach activities of the College of Agriculture and the College of Engineering, that had effects both in Wisconsin and elsewhere was the federal Morrill Act of 1862.[25] It was one of several acts that were passed after the Republicans took control of the federal government during 1861 and that were designed to stimulate economic development. Others include the Homestead Act, a tariff act and an act that granted subsidies to railroads. Before that time, the Democratic Party had controlled the federal government, and, because it was dominated by its Southern wing, that party favored agrarian interests, a static society and a limited role for the federal government in the economy. The Morrill Act was designed to promote economic development by granting to each state 30,000 acres of federal land for each of the state's senators and representatives to Congress. The states were to sell the land and to use the proceeds for the following purposes:

> . . .the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts . . .in order to promote the liberal and practical education of the industrial classes.[26]

Wisconsin met the Morrill Act's deadline for accepting the land grant by enacting Chapter 114, Laws of 1866. That law revised the list of courses of study in the University's charter to reflect the requirements of the Morrill Act that "the college of arts shall embrace courses of instruction in the mathematical, physical and natural sciences, with their applications to the industrial arts, such as agriculture, mechanics and engineering." The Wisconsin act also appropriated to the University the revenue from the sale of the lands that the federal government granted and authorized Dane County to issue bonds to purchase land that it would donate to the University for the site of an experimental farm. Dane County's donation ensured that the proceeds of the Morrill

Act's land grant would strengthen the University rather than establish a new university, and creating the experimental farm was a major effect of that act on the University.

The president of the Board of Regents argued later that statements in the Morrill Act that the colleges to be aided were not to exclude "other scientific and classical studies" and were to aid the industrial classes "in the several pursuits and professions of life" indicated that it was lawful to use the revenue generated by the land sales to aid an existing university rather than to establish a new one.[27] However, the act did state that the "leading object" of the institutions that benefited from the act should be to teach subjects related to agriculture and the mechanic arts, which has never been true of the University of Wisconsin.

In one sense the Morrill Act's effects on the University were less substantial than one would expect, because the land sales were poorly handled. A few years after the University accepted the grant, it admitted that "a judicious management of the liberal grant to the University, would have been productive of treble or quadruple the fund now on hand."[28] In other senses, however, the grant had major effects. Together with Dane County's donation of land for an experimental farm, it ensured that Madison would be the state's center for instruction and research in agriculture. If the Morrill Act had led to the establishment of an agricultural and mechanical university elsewhere in the state, or even if a significant amount of the University's agricultural research had been done elsewhere, the history of the Wisconsin Idea would have been very different. Specifically, the Idea would have been considerably weakened, because a new institution would have had neither the strong foundation that already existed at the University nor the University's easy access to the state government. Also, the act clearly signaled that the federal government considered agricultural and mechanical research and instruction to be important. The University's leaders saw that signal. While president of the University, Fred Harvey Harrington, an authority on American history, recognized the important effect that the Morrill Act had on his insti-

E. L. Luther, who served Oneida County, had the double distinction of being Wisconsin's first county agent and the first county agent in the United States to work under a legislative grant. He is shown at the county courthouse in 1912 with the two-cylinder motorcycle he used to travel to his experimental plots and meetings with farmers (photo courtesy of UW-Madison Archives, Neg. #X25 1323).

tution by beginning an article about the University's relation to the state with a reference to that act and by alluding to it in a speech that he delivered on the Voice of America.[29]

Causes That Are More Specific to Wisconsin

Other causes of the Idea are more specific to Wisconsin. One of them is the fortunate fact that the state and the University matured simultaneously. Wisconsin became a state in 1848, and the University opened its doors during 1849. Thus, neither was frozen into ways of doing things before the other was formed. That allowed for flexibility in their interrelations. Because the University was the only public university in the state for a long time, it naturally developed a close relation to the state government.

In only a few states are the seat of government and the major state university in the same city. It may seem that this would be true in many states, but it is true in only nine. In fact, in some states the capitol and the major state university are far apart. In Wisconsin not only are the capitol and the University in the same city but they also are less than one mile apart. Nearness is a minor factor today, but during the nineteenth century, when transportation was much more primitive, it was a major factor. Professors could influence Wisconsin government partly because it was physically easy to do so. Also, if a group of academics live in the same city where legislators work, social interaction and thus cooperation, mutual respect and exchange of ideas are more likely.

The most exhaustive attempt to identify a cause of the Wisconsin Idea is J. David Hoeveler's 1976 article on the Social Gospel.[30] It deserves careful attention and evaluation. In a nutshell, adherents of the Social Gospel believed the primary goal of Christians ought to be to help build a righteous government. Hoeveler asserted that "the three persons who best articulated the Wisconsin Idea – Ely, Commons, and John Bascom – each found in the new role of the University the logical and critical vehicle of their ideals: the perfection of the Christian state."[31]

We have seen that, for a time, Ely believed in a form of Christian Socialism, which supports Hoeveler's argument as it applies to him. However, we have also seen that for much of his career Ely favored a limited role for government. He believed, for example, that private enterprise, not the state, should solve the problems of the cutover region of Northern Wisconsin. A belief that government should back away from problems is not compatible with the Wisconsin Idea. Also, Ely was only a minor figure in the development of the Wisconsin Idea.

In contrast, as we shall see, Commons played a very substantial role in the evolution of the Wisconsin Idea. In fact, a strong case can be made that he was the most impressive figure in that evolution. In regard to Commons and the Social Gospel, Hoeveler cited, almost in passing, some vague evidence: the influence of his religious mother and of Oberlin College, and some solid evidence: his participation in, and writing for, the prohibitionist movement.[32] However, Commons' prohibitionist activity occurred early in his life. The pamphlet that Hoeveler cited was published during 1894, ten years before Commons came to the University. In his autobiography Commons mentioned that as a young man he briefly was the Secretary of the American Institute of Christian Socialism, but that he quickly became disillusioned with that movement and made other values the bedrock of his ideas about economics.[33]

Evaluating Hoeveler's discussion of University of Wisconsin President John Bascom, to whom most of his article is devoted, is more complicated. First, it should be pointed out that Merle Curti and Vernon Carstensen identified the influence of the Social Gospel on Bascom before Hoeveler did.[34] Hoeveler quoted a number of Bascom's speeches and writings that show his belief in the Social Gospel. Bascom, like many mid-nineteenth-century American college presidents, taught a course in moral philosophy to seniors. Hoeveler made the telling point that in his course Bascom used his own text, the longest section of which was about government and politics.[35] That is, he taught his students that improving government was a major ethical duty. Bascom's belief in the Social Gospel and his teaching of that belief are clear.

Although he probably had some influence on Charles Van Hise, Bascom's connection to the Wisconsin Idea is primarily his influence on Robert M. La Follette, who acknowledged that influence and wrote of Bascom, "It was his teaching, iterated and reiterated, of the obligation of both

the university and the students to the mother state that may be said to have originated the Wisconsin idea in education."[36] Edward Birge, who, because of his long service in important administrative positions at the University, was in a position to know, agreed with La Follette:

> I question whether the history of any great commonwealth can show so intimate a relationship between the forces which have governed its social development and the principles expounded from a teacher's desk as that which exists between Wisconsin and the classroom of John Bascom.[37]

Hoeveler's evidence about Bascom is somewhat impressive, but there is another side to both Bascom's philosophy and his influence on La Follette. In regard to his philosophy, to make an absolutely convincing case that Bascom was important to the Wisconsin Idea one would need to add two more links to the chain. One link would connect Bascom's Social Gospel background to an educational philosophy that fits with the Idea, and another link would connect that background to a conception of the state that would fit with that Idea. However, Bascom was devoted to the classical conception of education, which influenced the curriculum before the ferment in higher education that was mentioned earlier and which is not congenial to the Wisconsin Idea, because it is not based on providing service to the state.[38] In fact, Bascom himself recognized that his spiritual conception of education was opposed to practicality: "The most serious evil, associated with the present tendency in education to special departments, is that the immediate uses of knowledge are allowed to take the place of its widest spiritual ministrations."[39] Those are not the words of a university administrator who would favor research focused on the state's problems and professors serving as experts for the state government or outreach activities. In fact, Bascom was uninterested in two of the early examples of the Wisconsin Idea, the Agricultural Short Course and the Farmers' Institutes.[40] It was his successor, Thomas Chamberlin (1887-1892), who gave them the backing that they needed. Moreover, rather than believing that government should improve the lives of the citizens, as did most of the main adherents to the Wisconsin Idea, Bascom believed that it should protect property rights.[41]

La Follette's relation to Bascom is also more complicated than it first appears. David Thelen's analysis differs considerably from Hoeveler's:

> Bascom's influence seems to have been that of personality, not of a philosophy. Had Bascom's been an intellectual influence, La Follette would not have repeatedly taken stands diametrically opposed to the president's for the next decade. When La Follette introduced Bascom in 1901, he ignored the president's reforming causes, but he said that "the personality of a great teacher is greater than his teaching."[42]

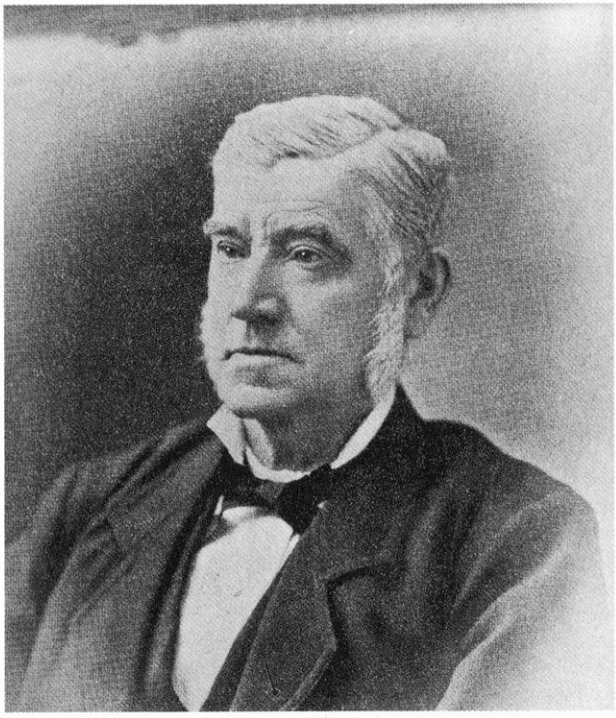
Thelen also mentioned that when the faculty voted about whether to award a degree to La Follette, who was a mediocre student, the result was a tie, which Bascom broke by voting to grant the degree. Had Bascom voted to deny the degree, La Follette's life would have been quite different, as La Follette surely knew, as would the history of this state. Gratitude for Bascom's vote (La Follette probably found out about it) and La Follette's unconscious conception of Bascom as a replacement for his dead father, according to Thelen, may have been reasons for La Follette's attraction to Bascom.

The most powerful early influence on La Follette's politics, or at least on his rhetoric, was not Bascom but Edward G. Ryan, whom La Follette heard speak during 1873, shortly before he became a student at the University. The fiery Ryan vividly warned his audience, including the impressionable La Follette, that "the enterprises of the country are aggregating vast corporate combinations of unexampled capital, boldly marching, not for economic conquests only, but for political power."[43] La Follette wrote of Ryan's speech, "His voice shook with emotion and his prophetic words, which I have never forgotten, conveyed powerfully the feeling of many thoughtful men of that time. I have used them in scores of speeches in my campaigns."[44]

In short, Hoeveler, by expanding on brief remarks in Curti and Carstensen's history of the University, has thoughtfully made a case that the Social Gospel exerted a major influence on the Wisconsin Idea. However, Bascom, although clearly a believer in that form of Christianity, had little effect on the Wisconsin Idea. Ely, who was a less ardent believer, also had little effect.

Commons had an enormous effect, but the Social Gospel was only briefly, and long before he did his important work, an influence on him. Although Hoeveler cast some light on the Wisconsin Idea, he overstated his case.

In contrast, the influence of the Wisconsin dairy industry on the Wisconsin Idea has been established. Some background information on the history of agriculture in Wisconsin is necessary to understand this influence. Wisconsin has not always been a dairy state. Soon after it became a state, wheat was by far its most important crop. Improved railroad transportation and the decline in wheat growing in the Eastern states hastened the increase in wheat farming in this state.



Hiram Smith, who considered himself a "scientific farmer", secured a state subsidy for the farmers institutes held at the UW-Madison in the late 1800s. Thousands of working farmers attended these classes in the winter months. Smith later became a university regent and strong supporter of the College of Agriculture (photo courtesy of UW-Madison Archives, Neg. #X25 1257).

By 1855, however, problems began to arise. Cultivating that crop began to deplete the soil, prices became unstable (for example, often declining sharply during the period from 1855 to 1860, partly due to the Panic of 1857) and diseases and pests, such as the chinch bug, attacked the crop. Although wheat production remained fairly high in Wisconsin throughout the second half of the nineteenth century, more and more farmers became convinced that to stay in business they would have to diversify and that they needed technical help to do so. It also became increasingly clear, partly because of the growth in the demand for dairy products, that the best way to diversify was to convert their farms to dairying or to add dairying to their current cultivation of wheat and other crops. Both new and experienced Wisconsin dairy farmers organized themselves and began looking for help. Despite its small agricultural staff, the logical place for them to turn was the University.

Between 1878 and 1890, Hiram Smith, a dairyman, supported the dairy industry in his position on the University Board of Regents. By late in the 1880s the Wisconsin Dairymen's Association was well organized, vigorous and persistent in its demands that the University help it. *Hoard's Dairyman*, which was edited by William Dempster Hoard, who was the governor for one term beginning in 1889 and later a regent, advocated the dairy farmers' position. These forces combined to exert considerable pressure on the University, where, beginning in 1880, they had an ally, William Henry, who specialized in agriculture and who recognized the need for dairy research and outreach activities. In fact, in 1890 Henry became the president of the Wisconsin Dairymen's Association.

Eric E. Lampard provided a wealth of facts to demonstrate the strong links among the dairy industry, the University and politicians during the 1880s and 1890s.[45] He also showed that these interrelations closely resemble the interrelations among the public, the University and politicians during the first decade and a half of the twentieth century. He seems to be right that: "Nearly two decades before the election of Robert M. La Follette as governor, the Dairymen's Association, the College of Agriculture and elements within the Republican Party developed a process of cooperation which made the state a laboratory for scientific experiment, teaching, and legislation."[46] He also connected the dairy farmers to Robert M. La Follette:

> It was to Hoard's "mugwump" faction [a group of reformers whose national leadership included Theodore Roosevelt] of the Republican Party that [La Follette] turned after his breach with Philetus Sawyer and the party "bosses". In the company of Hoard, Hiram Smith, W. A. Henry and others he was to find an example of that "proper attitude towards public affairs."[47]

Moreover, "Hoard and the dairymen continued to support La Follette within the Republican Party, helped elect him governor in 1900, and endorsed most of the progressive candidates for a number of years thereafter."[48] This political support from a group that strongly advocated the Wisconsin Idea made it more likely that La Follette would support that Idea.

Pressure from the legislature has also advanced the Wisconsin Idea. Perhaps the most important application of pressure, because it occurred early in the University's history, is a statement that a legislative committee made during 1858. That committee wrote, for example:

> For an institution of learning of the highest class, the general government has made a munificent donation to the people of Wisconsin. It is a sacred and inalienable trust, bequeathed to them for their own benefit and that of future generations. They have an unquestioned right to demand that it shall primarily be adapted to popular needs, that its courses of instruction shall be arranged to meet as fully as possible the wants of the greatest number of our citizens.[49]

In a report that he made during 1859, President Lathrop appeared to be responding to that legislative statement: "The processes of instruction, whether intended for the culture of the individual subjectively, or for scientific analysis objectively, are nothing worth, except for the beneficial practical ends to be reached thereby."[50] He went on to express confidence that theoretical study and practical application could be connected, regardless of which of the two was a professor's starting point. More than a century later in 1962, President Harrington recognized that statement's significance by quoting it in a speech about the University's relation to the state.[51] However, it is impossible to determine the extent to which the legislative pressure and the presidents' recognition of it resulted in changes at the University.

State government's support of and interest in the University has probably been a more important factor in the Wisconsin Idea's flourishing than has that government's pressure. That support and interest have been demonstrated by providing adequate funding and by using the University's resources in the legislative process. The legislative and executive branches worked particularly closely with the University during the 1911 legislative session. Not by coincidence, that session was the most remarkable in the state's history. Among its other accomplishments, the 1911 Legislature and Governor McGovern enacted laws that established the first workable income tax in this country, limited the working hours of women and children, created the first work-

ers' compensation program in the nation, created an Industrial Commission, made work places safer, created a highway commission, provided for the conservation of water resources and forests, created a state life insurance program, strengthened farm cooperatives, improved vocational education, created a Board of Public Affairs to coordinate state agencies and make them more efficient, and increased the powers of local units of government.

The government's receptivity to the University during that session was foreshadowed in the 1910 platform of the Republican Party, which held the governorship and controlled the legislature during the 1911 session: "We are proud of the high eminence attained by our state university. . . . We commend its research work. . . . We regard the university as the people's servant, carrying knowledge and assistance to the homes and farms and workplaces." Many years later in an interview, Selig Perlman gave a moving account of the 1911 Legislature, which gathered two or three evenings a week to hear and discuss lectures by such experts as Booker T. Washington and Theodore Roosevelt.[52] Perlman said:

> That was the most remarkable thing, the faith in education. . . . They were so friendly to the university experts. . . . They showed in every one of their movements the feeling that this is a new land, this is a new deal, so to say, for them and that they were intent on making the best of it, for themselves and for their children and for anyone that wished to come in.[53]

Perlman concluded that "it really was a most inspiring thing." It still is a most inspiring thing.

One cause of that receptivity was the recognition that adequately funding the University was a wise investment. That can be seen most clearly by looking at the results of the state's investment in the University's agricultural research and outreach activities. During 1904 President Van Hise claimed:

> It is absolutely certain that the annual increase in the wealth of the State due to investigations and to dissemination of knowledge among the people by the College of Agriculture is more than ten times the entire grants of the State to the University, and it is probably true that this increase in wealth is more than twenty times the amount of such grants.[54]

During the next year Governor La Follette made a similar claim:

> The Babcock milk test increases the product of the state more than a million dollars each year. The introduction of Swedish oats has added millions of dollars annually to the value of the crop. Investigation relating to smut of oats during the past ten years has increased the income of the state by four and one half million dollars per annum.[55]

A few years later a journalist went beyond assertion and presented some statistics that made the same point:

> What does the State get for the $400,000 it spends yearly on agricultural education?
>
> In the ten years from 1900 to 1910 the value of all farm property in Wisconsin increased by more than 74 per cent. although the number of farms showed an increase of less than 6 per cent. and their total area less than 10 per cent. The number of its cows increased 47 per cent. in these ten years; the annual value of its butter output, 70 per cent., its cheese product 86 per cent., and its yield of corn from 25 bushels an acre, the average for the whole country, to 36 bushels an acre.[56]

Although the College of Agriculture could not claim sole credit for those accomplishments, it deserved the lion's share.

The Board of Regents also encouraged the University's faculty members to perform activity, especially research on Wisconsin problems and outreach, that are part of the Wisconsin Idea and made policy decisions that made it more likely that faculty members would do so. One year after the founding of the University, the regents created a Department of the Practical Applications of Science. In 1880 the president of the Board of Regents announced:

> Recently it has been the policy of the Board to give greater prominence to those departments of instruction which more particularly relate to the practical industries of our State. Reference is made especially to the departments of agriculture and practical mechanics.[57]

Almost 100 years later, during 1974, the regents of the University of Wisconsin System approved mission statements for System institutions that assigned to the University, among other functions, "providing public service by application of the results of scholarly and scientific inquiry for the benefit of society, and meeting the continuing educational needs of the public through coordinated statewide outreach programs."[58] Many other examples could be cited, but Curti and Carstensen are correct that there has always been a gap between the regents' mandates for practical work and the University's attention to it.[59]

Many of the citizens of Wisconsin were receptive to the Wisconsin Idea. They and the University formed a mutually beneficial relationship. The University provided practical assistance, and the citizens provided support and, less obviously, knowledge. As to the support, President Van Hise's biographer stated: "There is no question whether a university which emphasized the older curricula alone could have secured the popular esteem, and hence the appropriations, that the broader University of Wisconsin did."[60] As to the knowledge, when L. R. Jones, the first member of the Plant Pathology Department, began to study the diseases of cabbage, he was wise enough to ask cabbage farmers to help him select varieties that were likely to resist disease. Two more recent members of that department described that sharing of knowledge and added:

> [T]he concept of the professor building on what the farmer already knew was fundamental in an effective partnership. . . . The farmers had other effective inputs. For years thereafter, when legislative hearings on the university budget were being carried on in Madison, the farmers would travel to Madison to support university research.[61]

Another cause has been a strong tradition of interdisciplinary work. In the University's early years, the small size of the faculty made it necessary for professors to teach more than one academic subject. A little later, most professors specialized in one subject, but the faculty was still so small that specialists in a number of disciplines were grouped into an academic unit. These were unavoidable consequences, but during 1892 a School of Economics, Political Science and History was formed as one of the inducements to lure Ely from Johns Hopkins. For decades, professors from various departments have collaborated on agricultural research. Many professors in this century have owed their primary allegiance to their intellectual discipline; whereas, professors who have worked in an interdisciplinary department or done research with professors from other departments are more likely to owe allegiance to their academic unit (a college or perhaps an interdisciplinary department), to the University or to the state. To the extent that this happens, the professor is more likely to do applied research (which is more likely to lead quickly to a solution of specific problems) rather than pure research and to do research directed at solving Wisconsin's problems rather than doing research that will advance his or her discipline. That of course does not mean that basic research cannot lead to practical and local results.

Under the leadership of Charles McCarthy and Edwin Witte, the Legislative Reference Library was an important source of the Wisconsin Idea. As we shall see, both men shuttled back and forth between the University and state government, which helped them build bridges between the two institutions to convince politicians to use the services of professors and professors to perform those services. Philip La Follette wrote that "an important feature of the 'Wisconsin Idea' as it came to be called, was the Legislative Reference Library."[62] La Follette was probably thinking of the Library's role in the legislative process and thus thinking of the Wisconsin Idea as a political phenomenon, but the library's service as a liaison between state government and the University was also important. That relationship has waned in recent times.

The relationship between Charles Van Hise and Robert M. La Follette is another cause of the Wisconsin Idea. They were both members of the University's Class of 1879 and were friends of students. For example, Van Hise attempted the difficult task of tutoring La Follette in science.

Professor Ben Elliott, a member of the Steam and Gas Engineering Department of the UW-Extension Division from 1912 to 1938, is shown in the midst of his boiler class in Fond du Lac (photo courtesy of UW-Madison Archives, Neg. #X25 2794).

Later Van Hise became the first Wisconsin native to become the president of the University, and La Follette became the first Wisconsin-born governor of the state. Their terms in those offices overlapped, which was not a coincidence. La Follette appointed 10 of the 13 regents who chose Van Hise to be president, and the press at the time thought that La Follette strongly influenced the regents' decision.[63] During their tenures in office, La Follette repeatedly sought Van Hise's counsel and appointed him to several state boards. Birge overstated the case when he attributed the success of the Wisconsin Idea to the compatibility of Van Hise and La Follette, but their relationship certainly was one reason for that success.[64]

La Follette individually also deserves a substantial share of the credit for the Idea. He appointed the regents who chose President Van Hise, and he worked closely with Van Hise and the University, providing adequate funds and using the skills and knowledge of its administrators and professors. He also deserves much of the credit for making the Legislative Reference Library effective and for preaching the value of service to the state. His desire to diminish the power of the special interests and to protect individuals, especially those who had little influence on state government, led him to seek help from the University.

The Most Important Cause of the Idea's Success

Many of the causes previously discussed were significant; a few have been very important. Together they may have been enough to produce the Wisconsin Idea, but the Idea would not be as strong as it has been if it had been dependent on them alone. One other cause must be identified and credited. It ensured that there would be a Wisconsin Idea and that the Idea would be powerful and effective. Wisconsin can be justifiably proud that, despite its average resources and population size, it produced a number of impressive persons, some of them politicians or government workers, most of them professors, who worked together for the common good. That phenomenon

is similar to the fortuitous circumstances that spawned the classical culture of Ancient Athens and the concentration of genius in little Florence that created its Renaissance culture. It is the likes of Harry Russell, J.C. Walker, Charles Van Hise, Harold Groves, John R. Commons, Stephen Babcock, Thomas Chamberlin, Robert M. La Follette, Aldo Leopold, Charles McCarthy, Louis Reber and Francis McGovern that we ought to celebrate when we celebrate the Wisconsin Idea.

4. THE UNIVERSITY PRESIDENTS' SUPPORT OF THE WISCONSIN IDEA

Because a university president often determines the focus and direction of the institution, it may be useful to gauge the level of interest early presidents of the University of Wisconsin showed in helping the state. One looks in vain for such interest in the first four presidents: John Lathrop, Henry Barnard, Paul Chadbourne and John Twombly. They were all supporters of the classical curriculum and of the model of a university that was dominant until the Civil War. For example, Curti and Carstensen report that Chadbourne published an article "criticizing the emphasis in [state] universities on the practical and utilitarian at the expense of broadly cultural values."[65]

A number of persons who have written about the Idea have credited Bascom, the president who followed Twombly, and Van Hise as being important advocates and facilitators of it. As we have seen in regard to J. David Hoeveler, Jr.'s article on the Social Gospel, Bascom's role was minimal: he had, although quite ambivalently, a suitable theory but did little in regard to practice. In contrast, there is abundant evidence for Van Hise's support, both theoretical and practical, for the Idea. One statement of his position, phrased with his characteristic vigor and clarity, is the following:

> At the present time a very large fraction of the work of the University is done not for the students who are here, but for the two and one-half millions of people of the state.
>
> If there is one feature which especially characterizes the present administration of the University it has been the emphasis of the University as the instrument of the state.[66]

In the rush to praise Bascom and Van Hise for championing the Wisconsin Idea, the two presidents who served between their tenures have been slighted. One of them, Thomas Chamberlin, wrote, "Scholarship for the sake of the scholar is simply refined selfishness. Scholarship for the sake of the state and the people is refined patriotism."[67] He made a strong statement in favor of extension work and supported the mechanics' institutes.[68] At the 1904 Jubilee of the University, at which Van Hise was inaugurated, he remarked that "Research in every realm of a people's legitimate interests is an appropriate function of the people's organized self, the state, and of the people's organized instrument of research, the state university." He subtly argued, however, that practical research and teaching of the most basic knowledge were not enough:

> I hold that it is a legitimate function of the state to train boys to be farmers, yet I believe it to be a much higher and truer function to develop a science of agriculture, to increase the intellectual activity of every farmer, to improve the agricultural art on every farm, and by such improved art, to furnish better and safer food to every citizen.[69]

The University's extension work began during Chamberlin's presidency, and he supported the agricultural short course and Farmers' Institutes, which had not interested Bascom. Similarly, President Charles Kendall Adams, in his inaugural address, said, "In no other state has the modern method of reaching the people by means known as university extension been so general or so successful. Nowhere else have the masses of the people received so much direct assistance from the teaching force at the university."[70] One would expect from those remarks on such an occasion that Adams would be a strong supporter of the Wisconsin Idea, and he was.

After the long administration of Van Hise, 1903 to 1918, the Idea had been so firmly established as a goal that all of the succeeding University presidents have supported it. For example, we have already seen President Harrington's recognition of, and agreement with, that ideal in the

1960s. After Van Hise's tenure the problem was not support for the Idea but realization of it. Although the president is a university's central figure, since Van Hise's time the University and the environment, including state government, in which it exists have changed so substantially that the presidents' support for the Idea has not guaranteed its revitalization.

5. TWO DEPARTMENTS ILLUSTRATE THE HISTORY OF THE WISCONSIN IDEA

The history of the Wisconsin Idea is so rich that merely presenting it from beginning to end would obscure the path that it has taken. One way to avoid that is to begin by presenting the contributions of two quite different University departments, Economics and Plant Pathology.[71] They make good examples because the former is a social science department and has contributed to the state primarily by giving the government policy guidance, information, personal service, and technical assistance; the latter is a scientific department and has contributed to the state primarily through its research on problems important to Wisconsin and its outreach work. They are good choices also because each has produced a fine departmental history. These two departments have very similar histories, which suggests that their stories are good examples of the history of the Wisconsin Idea. This strategy will also allow for an early examination of the person who, I think, has made the most impressive contributions to the Wisconsin Idea: the economist John R. Commons.

The Department of Economics' Service Orientation

For decades the University's Department of Economics has been strong. It has consistently stood near the top of national rankings, which are based primarily on research. It has carried a heavy teaching burden. It has provided service to the federal government, sometimes at the

UW-Madison President Charles Van Hise, pictured in his office at Bascom Hall, guided the university in the 1903 to 1918 period, which was critical for the birth of the Wisconsin Idea (photo courtesy of UW-Madison Archives, Neg. #(X2-5) 185).

highest levels, such as Robert Lampman's service as a staff member of the Council of Economic Advisors. Nevertheless, Lampman was correct when he wrote in the department's history: "Perhaps the distinctive personality of the Wisconsin Department of Economics is to be found in its emphasis on service to the state."[72] Its record of service has been exemplary.

The Early Years

As previously mentioned, the department began as the School of Economics, Political Science and History in 1892. In its early years its interdisciplinary nature added to its vitality and effectiveness. Not only did it include then the three disciplines identified in its title, but also elements of sociology and business. The department held together until 1900, when History was separated into its own unit, the School of History, under Frederick Jackson Turner's direction, and the School of Commerce and the Department of Political Science were formed.

The first important economist at the University was the first director of the School and the man for whom it was formed, Richard T. Ely, whose relation to the Wisconsin Idea has been discussed. Of the University's economists who were important to the Idea the next to arrive on the scene, in 1901, was Thomas S. Adams. His first major contribution was an exhaustive report on the taxation of mortgages.[73] This was important work because at the time, 1907, the state was in the process of amending its constitution to allow it to impose an income tax. This development occurred partly because the state was not effectively taxing intangible property (property that is not valuable in itself but as it represents a right, in the case of a mortgage the right to seize tangible property if a loan is not paid and thus equivalent to a right to receive payments of principle and interest). Thus, Adams's report enabled the legislature to consider later whether mortgages and other "credits" (rights to receive payments) should be subject to the income tax. His willingness to do that kind of practical intellectual work was foreshadowed by *Labor Problems*, which he and Helen Sumner published during 1905. Of it Robert Lampman noted, "This problems-approach to studies was apparently rather new at the time."[74]

Some writers have claimed that Adams helped draft the income tax law of 1911, which turned out to be the first workable law of its type in the nation. However, McCarthy, who had attempted to enlist Adams's aid for that task, wrote to him: "Your suggestions to us have been critical rather than constructive and at present probably will have the effect of killing the whole matter. . . . At the distance which you are from this place, I believe you cannot be of use to us in the construction."[75] Moreover, Delos Kinsman, who drafted the income tax bill, in his interview about that experience did not mention receiving assistance from Adams.[76] Adams, however, did help administer that law, as well as the other state tax laws, because Governor McGovern appointed him to the Wisconsin Tax Commission, a position that he held from 1911 until 1915, when he became a professor at Cornell.

John R. Commons

John R. Commons joined the department in 1904. Certain personal characteristics and his experiences before his arrival at the University were important reasons for his contributions to the Wisconsin Idea. He was anything but a conventional academic. He had been only a middling undergraduate at Oberlin, although one of his professors there saw his potential and helped him gain admission to the graduate program at Johns Hopkins. He did not finish his Ph.D., because he failed a history examination, but again persons who knew him there advanced his career. One was Ely, who brought him to the University. Before he began his academic career, he worked for five years for the U.S. Industrial Commission and the National Civic Federation.

In addition to this unusual background, his mind did not work as does that of a typical academic. His writing is awkward and he was said to be somewhat inarticulate. However, he was charismatic, he identified problems, he could organize and inspire groups to work on the problems that he identified, he was tireless and he had brilliant insights, especially those that resulted from forming analogies. These qualities and the fact that he had worked outside the academy before he worked inside it influenced his teaching, research and public service. Rather than lecturing, he usually organized his classes into groups to do field research on practical problems. He did much of his writing with others. Along with some colleagues, he wrote an important

history of American labor, but many of his publications were about practical problems. He was eager to help state and local governments find solutions to problems.

"Institutional Economics", the school of economic thought of which he was a leader, influenced his willingness to serve the state and the forms that his service took. According to Robert Lampman, "Edwin Witte said he learned from Commons that institutional economics was 'economics in action' and that every economist who dealt with policy-making was inevitably drawn into consideration of institutional or noneconomic factors."[77]

In contrast, most of the economists who were Commons' contemporaries considered their field as virtually self-contained: the study of powerful laws working with little resistance on interchangeable humans. However, Commons believed that "in all cases we have variations and hierarchies of the universal principle of collective action controlling, liberating and expanding individual action in all the economic transactions of bargaining, managing and rationing."[78] His school of economic thought was called institutional economics because it defined an institution as the agent of that collective action.[79] Institutions had "working rules" that defined their nature and determined the kinds of pressure that they exerted on individuals.[80] Because individuals' behavior was influenced by institutions rather than by economic laws, economists, in order to understand economic behavior, had to take account of other disciplines. In fact, Commons believed that the "correlation of economics, jurisprudence and ethics. . . .is prerequisite to a theory of institutional economics."[81]

At the most basic level of economic activity, the transaction, the parties, according to Commons, interacted in a characteristic manner. He thought that in each transaction there was conflict, a dependence among the parties and a desire for order. Institutional economists studied these three phenomena. The scarcity of the things that the parties want causes conflict. The need to acquire things from others causes dependence. Unlike other economists, he did not believe that transaction would necessarily be harmonious. Rather, he thought that order would emerge from conflict.[82] That is an important statement because it expresses the idea on which Commons based some of the more important legislation that he drafted for this state.

Actually, Commons appeared on the stage of Wisconsin government one year before he started to teach at the University. Ely's biographer asserted that Commons helped prepare Robert M. La Follette's speech to the legislature at the beginning of the 1903 session.[83] The speech was extremely long and dealt with many subjects. La Follette devoted much of it to two of his favorite themes during that portion of his political career: the direct primary and the regulation and taxation of railroads. Most of it seems to have no relation to Commons, but at least one passage has echoes of institutional economics. While arguing for a tax on mortgages, the subject of Thomas Adams' article, La Follette analyzed the subject as would Commons, by looking at transactions: "The lender's ability to name the interest rate is not absolute. It will depend wholly upon the supply of money seeking investment."[84] Like Commons, he believed that external forces influenced the two parties as they tried to reach a meeting of the minds. La Follette's conclusion is also similar to the one that Commons would propose, and for the same reason: "If it be true that taxing mortgages as an interest in the mortgaged premises under such a statute would, in some measure, increase the interest rate, nevertheless such law rests upon sound principles and correct morals."[85] That is, La Follette suggested that another institution (the state) establish a working rule (a tax on mortgages) that would influence the transaction, and he argued that to do so would be moral, thereby correlating economics, jurisprudence and ethics, which Commons thought to be the inevitable result of a correct economic analysis. The prose is La Follette's, but the ideas are Commons'.

Shortly after Commons' arrival at the University, La Follette put him to work again. During 1904 the governor asked Commons to draft a civil service law, a project that was dear to La Follette's heart because of his long battle with Elisha Keyes, who during his years in power controlled many patronage positions.[86] Although McCarthy's Legislative Reference Library had some capacity to draft legislation by 1904, securing expert drafters, especially of technically difficult bills, was a major problem. Commons stated that La Follette's directions for the civil ser-

Professor John R. Commons, UW-Madison economist, was the principal architect of many of the major innovations enacted by the Wisconsin Legislature in the early 1900s, including a merit civil service system, worker's compensation, and hours and wage standards (photo courtesy of UW-Madison Archives, Neg. #25 1923).

vice bill were very general except for one detail: that only heads of departments and elected officials were to be exempt from taking civil service examinations. That is, Commons did not merely draft La Follette's policy choices; Commons, himself, made most of the policy choices and put them into statutory form.

The two most important features of the act are the requirement that appointments be made solely on merit, to the extent practicable as determined by competitive examination, and the establishment of a civil service commission to administer the law.[87] The first feature is the detail that La Follette wanted; the second is Commons' idea, and it is characteristic of his thought. He believed that in transactions (in this case, between a state agency that wanted to hire an employe and an applicant for that job) it was appropriate to add a third party (in this case, a commission charged with administering the law that governed the transaction). That arrangement fit with his institutional economics. This notion became basic for him, as he later recognized: "I now see that all of my devices and recommendations for legislation in the state or nation have turned on this assumption of a non-partisan administration by specially qualified appointees."[88] Dependence on experts is in keeping with the belief that the University's professors should use their knowledge to aid the state, which is, of course, an important part of the Wisconsin Idea.

Commons' next important project for the state was drafting the legislation that regulated municipal and inter-urban public utilities.[89] While working on this bill, Commons frequently consulted the Railroad Commission, which included his former colleague in the department, Balthasar Meyer. That is, he played less of a role in formulating policy than he had while working on the civil service bill. Although the act is very long, Commons is correct that, because it used general terms that the Commission was to interpret and granted considerable powers to the Commission, it left "a huge field of investigation and discretion to the [Railroad] Commission."[90] For example, it required utilities "to furnish reasonably adequate service and facilities" and allowed the Commission to establish rates if it found fault with a utility's rates.[91]

During 1910, Commons provided his services to the City of Milwaukee. Shortly after the Social Democratic Party prevailed in the elections of that year, Victor Berger, a leading member of that party and the influential publisher of the *Milwaukee Leader*, asked Commons to study the city's government and recommend changes that would make it more efficient. Commons did the job properly, enlisting a number of his graduate students, hiring experts, consulting with other experts and examining nearly all of the city's government. It was exactly the kind of project in which he delighted: attempting to solve a complicated, practical set of problems by mobilizing a large, knowledgeable team under his own direction. His group made many suggestions for improving existing units of the city's government and established two new units: a Bureau of Economy and Efficiency and a Municipal Reference Library, which was modeled on McCarthy's state library. The work of Commons' group in Milwaukee influenced Frederick Howe to comment, "I know of no place in America where officials work with more devotion than they do in Wisconsin. There is an enthusiasm in the public service that is unique."[92]

Commons realized that the state would benefit from having an agency like the Milwaukee Bureau of Economy and Efficiency, so he approached Governor McGovern and advocated that idea.[93] By now Commons was no longer merely drafting bills that would implement someone else's ideas or making some policy decisions; he was initiating policy. McGovern liked the idea, and eventually a law that created the State Board of Public Affairs was enacted.[94] The board consisted of the governor, the secretary of state, the chairperson of the finance committee of each house of the legislature and three persons who were appointed by the governor. It had extensive duties, including supervising other state agencies' accounting methods, investigating and promoting the development of the state's resources and investigating and suggesting ways to develop the state's economy. For a time, one of Commons' former students, Benjamin Rastall, was the board's director.

Then Commons again demonstrated his knack for forming analogies. In his autobiography he wrote, "While working on the public utility law of 1907 I wondered why similar administrative machinery could not be set up for the conflicts of capital and labor."[95] Then his preference for organizing work groups to solve practical problems operated again. After reading about a Belgian council composed of representatives of business, labor and the public, he told one of his graduate students to write a dissertation on that council. While Commons was working on the Milwaukee study, he had that graduate student assign one of Commons' classes to study labor administration in other countries. Using the wealth of information that his students had generated, and aided by the advice of McCarthy, he drafted the legislation that created an Industrial Commission and established safety standards for work places.[96]

The commission consisted of three members, who were appointed by the governor. It was entrusted with administering and enforcing the laws on safety in the workplace and in employment, on the labor of women and children and on truancy; with discovering and prescribing safety devices; with operating employment agencies; and with encouraging management and labor to settle labor disputes. The commission had broad investigatory powers and the power to issue orders, violation of which was an offense, and it could request the Attorney General or a district attorney to prosecute violators. For two years Commons served on the commission, and he was responsible for assembling the advisory committees that created standards for the various kinds of work and work places.[97] To do that, he brought together persons who represented competing interests and had different perspectives and different knowledge. The operation of each advisory group reflected his transaction theory of economics; although they were affected by the institutions of which they were a part and limited by the working rules specified by the statutes, they eventually reached consensus. At the completion of his term, Commons rejected an offer of a six-year term and returned to the University. The Commission eventually evolved into the current Department of Industry, Labor and Human Relations.

Rather than providing detailed, voluminous standards for every kind of occupation, the act defined "safe" and "safety," its two crucial terms, as "such freedom from danger to the life, health or safety of employes or frequenters as the nature of the employment will reasonably permit."

That is, as he had in the act that regulated utilities, Commons used general terms and allowed a commission to interpret them on a case-by-case basis. Arthur Altmeyer, who shuttled back and forth between teaching in the Department of Economics and other duties, called this act, particularly its combination of establishing general standards and granting extensive administrative powers, "nothing less than a work of genius."[98]

Not satisfied with drafting two major acts during the 1911 session, Commons had a hand in a third: a workers' compensation act, which was the first in the nation. He did not draft that act but he played a major role in formulating its policy and in convincing the interested parties to agree to it. This was groundbreaking legislation. At the time, employers were subject to suits by injured workers and by the survivors of workers who had been killed and they were purchasing liability insurance to protect themselves, but the legal system was heavily weighted on the employers' side. Under the "fellow servant rule", a worker who was injured by another worker could not recover damages from the employer. Even if a worker could prove that the employer was at fault, any degree of negligence by the worker would defeat his or her claim. Employers won some cases by convincing a court that the worker, by accepting employment, had assumed all the risks of the employment and thus had no grounds for legal action. Therefore, workers rarely won in court.

As early as 1904, some Social Democrats who represented Milwaukee in the legislature introduced a workers' compensation bill. In 1907 one of them, Frank J. Weber, met with Commons and Joseph D. Beck, who was a member of the Industrial Commission, to discuss the subject.[99] During the following year Commons, along with Beck, Beck's aide and W.W. Cook, a University law professor, met with the Merchants and Manufacturers Association of Milwaukee. The association, because of the advantages its members had in the courts, could be expected to be suspicious of proposed workers' compensation laws. At the meeting, Commons drew an analogy with the situation in 1907 when the public utility regulation bill was enacted: regulation was inevitable and the businessmen would be better off if they cooperated with the legislature and workers' groups.[100] He advocated a voluntary system, contributions by both employes and employers and administration by the state.[101] All of those details were eventually part of the legislation. During 1909 Commons helped Beck write an attack, published in the *Biennial Report* of the Bureau of Labor and Industrial Statistics, on the then current means of compensating injured workers and an exhaustive study of the systems that existed in other countries.[102]

The work of Commons and others began to take effect. In their inaugural addresses to the legislature, Governor James O. Davidson in 1909 and Governor Francis McGovern in 1911 called for the passage of workers' compensation legislation.[103] McGovern, who described the prevailing legal situation and the advantages to both employers and employees of a compensation system, was especially persuasive. A workers' compensation law was enacted during the 1911 session.[104] The act did not require participation but encouraged it by abolishing the fellow servant rule and the assumption of risk doctrine. It created formulas for calculating compensation and established a board to administer the law. One commentator has called this act a conservative reform, but, considering the extreme degree to which the law at the time favored employers and the fact that no other state had a workers' compensation law, by enacting this legislation Wisconsin took a great step forward for its workers.[105]

Commons also had a hand in another pioneering piece of legislation. During its annual meeting in 1910 in Milwaukee, the National Consumers League decided to advocate minimum wage laws. The Wisconsin Consumers League began the effort in this state and enlisted Commons.[106] In 1911 a pamphlet was prepared for them "under the direction of John R. Commons."[107] It contained a description of wage boards in Australia and England, which were used as models for the Wisconsin legislation; a minimum wage bill that had been introduced in both houses of the legislature; a careful, detailed study that documented the appalling working conditions and wages of women and children in Milwaukee; and summaries of legal opinions that appeared to support the constitutionality of the bill. The details of the bill were typical of Commons' approach to solving social and economic problems (establishing a general standard and giving experts the authority

to administer it), which suggests that he drafted it.[108] Under the bill unless employers obtained an exception they were required to pay a "living wage", and the Commissioner of Labor was empowered to determine whether wages were up to that standard. The bill was the first minimum wage bill to be introduced in this country. Theodore Roosevelt, during his appearance in Madison to address the legislature, expressed interest in the bill. In fact, one of the first things he said after arriving at the Governor's mansion was that he had heard that Commons was involved in the legislation and that he wanted to meet him.[109]

Both the senate and assembly bills were replaced by substitute amendments that merely mandated a study of wages. Although both substitute amendments passed in their houses, neither passed in both houses, so neither was enacted. However, the 1912 Republican Party platform contained a plank supporting minimum wage legislation. The 1913 Legislature did enact a bill that required the payment of a living wage to all women and minors and gave the Industrial Commission the authority to enforce that requirement.[110] The act, although narrower because it did not cover men, closely resembled the version that Commons apparently drafted for the previous session.

Commons unsuccessfully advocated a tax reform. At Oberlin he had been attracted to the ideas of social reformer Henry George.[111] The centerpiece of George's economic policy was the single tax: a property tax based solely on the value of the property's location. George believed that this tax would promote development, because constructing buildings would not increase the tax, and would be so lucrative that no other taxes would be needed. During the 1913 session Representative Edward Nordman introduced a joint resolution to amend the state constitution to permit municipalities and counties to grant very broad property tax exemptions. His goal was to tax only land in order to penalize speculators who held it for future sale rather than developing it. Commons supported the bill and added that if only land were taxed it should be assessed according to its location and speculative value.[112] Those details would have made the bill closely resemble Henry George's ideas. Commons claimed that he drafted a single tax bill in 1923, but he may have meant 1921 Assembly Bill 504.[113]

Commons' influence on state government waned until another La Follette was elected governor. Commons asserted his affinity with La Follette Progressivism by presiding at the last speech that Philip La Follette, one of Robert M. La Follette's sons, gave during his 1930 campaign.[114] La Follette won the election, and during his first term Commons and other Wisconsin economists helped enact the nation's first unemployment compensation law. The story of that law begins much earlier. In fact, Commons had supported aiding unemployed workers as early as 1893.[115] During the second decade of this century two of his former students – William M. Leiserson, director of the Wisconsin employment office system; and John B. Andrews, executive secretary of the American Association for Labor Legislation and the co-author with Commons of *Principles of Labor Legislation* – became advocates for the relief of unemployed workers and specifically for unemployment insurance.[116] Commons' notion of the best way to construct an unemployment compensation system began to take shape when he formed another of his analogies. He had hoped that the workers' compensation bill of 1911 would induce employers to make their businesses safer in order to reduce their premiums. In his autobiography Commons wrote, "Eventually, in 1921, I began to extend this principle to unemployment. Why not make individual employers responsible for their own unemployment, instead of so-called 'society'? They could then make a profit by hiring employment experts and paying the bills for public employment offices."[117] Actually, he seems to have made a public statement of that analogy during the previous year in La Crosse.[118]

By 1921, the economic prosperity that followed World War I was fading and unemployment was becoming a more serious problem. As a result, the enactment of unemployment compensation became both more necessary and more possible. Wisconsin labor leaders supported Commons, who, with some of his students, began to do research for, and to draft, a bill on that subject. Commons began to promote the bill, pointing out its similarities to the Workers' Compensation Act and arguing that, rather than draining businesses' resources, it would aid them, partly by pre-

venting labor unrest. Nevertheless, the bill was strongly opposed by business forces and was indefinitely postponed (killed for the session). Commons, with his students and labor allies, continued for ten years to support unemployment compensation bills, but the improvement in the economy made their task more difficult. During that interval Commons had some practical experience in the field. He organized a private system of unemployment compensation according to an agreement worked out between the management of Chicago's men's clothing industry and their workers.[119]

Paul Rauschenbush, UW-Madison economist, was a member of Governor Philip La Follette's "kitchen cabinet" in the 1930s. Along with Harold Groves, Elizabeth Brandeis and Edwin Witte, he drafted Wisconsin's unemployment compensation act, the first in the nation (photo courtesy of UW-Madison Archives, Neg. #X25 2803).

By 1930, however, the Depression had again made unemployment compensation an important issue. Commons also had a new set of allies among the University's economists: Elizabeth Brandeis, Paul Raushenbush and Harold Groves. Brandeis and Groves had written their dissertations under Commons, and Groves was elected to the state assembly in 1930. Commons did not help draft the unemployment compensation bill for the 1931 session, but the ideas that he had been developing for years permeated it. For example, under the bill each employer had its own fund and could stop contributing to it when it amounted to $75 per worker. As a result, an employer that did not lay off its employes and thus did not have to draw money from its fund could eventually stop making contributions to it. This detail derived from Commons' idea that an unemployment compensation system should, among other things, reduce unemployment. This time Commons and his allies won. On January 28, 1932, Governor Philip La Follette, surrounded by

Commons, Groves, Brandeis, Raushenbush and a few others, signed the bill and Wisconsin had the first unemployment compensation system in the country.

Several themes are important in the story of Commons and the Wisconsin Idea. Jack Barbash, another important University economist, has identified them. He recently wrote: "Commons belongs in Labor's Hall of Fame because he was the first great American economist – or perhaps better, social scientist – to put his science in the service of improving the conditions of labor."[120] According to Barbash, Commons did not believe in dismantling the capitalistic system but in modifying it by means of legislation that was conceived by experts with the help of the interested parties, provided incentives for capitalists to change their behavior and created boards to administer the law and regulate behavior. Barbash's description of Commons' approaches sounds very much like a description of the New Deal. Wisconsin was certainly a laboratory for much of the New Deal legislation, and some of Commons' graduate students worked for the federal government during President Franklin Roosevelt's administration. Thus, Commons probably had some influence on the New Deal. He also influenced the state's policy by means of his graduate students. He taught at the University from 1908 to 1933. During that period, he supervised 41 graduate students who earned Ph.D.'s, which was 40% of the degrees granted by the Department of Economics during that period.[121] Among them are three who play a role in this account: Edwin Witte, Elizabeth Brandeis and Harold Groves.

Balthasar Meyer

Resuming the chronology of the Department of Economics' involvement with the Wisconsin Idea requires that we backtrack to 1905, when Robert M. La Follette appointed Balthasar Meyer to the Railroad Commission. Meyer had begun teaching in the department in 1898, when he became its fourth member, and in 1903 he published *Railway Legislation in the United States*. His understanding of railroad regulation seemed to have made him an ideal choice for the commission. He served on it until 1910.

However, Meyer disappointed La Follette, who believed that the railroads needed to be reined in, because Meyer turned out to be anything but an aggressive regulator. In fact, he wrote in his book, "No one whose privilege it is to know the railway men of the country will for a moment maintain that they are not, as a body, desirous of serving the public in the best possible way."[122] He expressed the corollary of his conception of the railroad barons in a speech that he made during 1906; in it he argued that the railroads, not the commission, should set rates.[123] Stanley P. Caine, in his study of railroad regulation, has demonstrated that during his tenure Meyer dominated the commission and prevented it from interfering significantly in the railroads' conduct of their business.[124] Caine concluded, quite reasonably, that the commission certainly did not reform the railroads.

The Second Generation

Soon students of the first generation of the University's economists began to obtain doctorates. The department hired many of them. In fact, of the 15 professors who were hired between 1906 and 1944 and who taught in the department for at least 10 years, 13 had earned their Ph.D.'s at the University. This inbreeding did not significantly harm the department's quality, because many of those alumni were first-rate. It ensured that the values and service orientation of members of the first generation, most notably Commons, were perpetuated. That passing of the torch greatly benefited the state.

One of the few academics who participated in the Wisconsin Idea and was not a member of the faculty at the University was Delos Kinsman. However, he taught at a college that is now part of the University of Wisconsin System, the normal (teacher-training) school in Whitewater. In 1900 Kinsman completed a dissertation, *The Use of the Income Tax in the Commonwealths*, at the University. After the voters ratified the amendment to the state constitution that permitted the imposition of an income tax, the legislature attempted to draft a law to impose the tax, but failed.[125] Because Kinsman had exhibited knowledge of the income tax in his dissertation, McCarthy and a legislative committee asked him to draft an income tax bill.[126] As Commons had with some of the bills on which he worked, Kinsman made some policy decisions, for exam-

ple providing that income tax assessors were to be appointed.[127] He also solved some very difficult technical problems and produced a law that withstood a legal challenge and could be administered. In fact, he created the first workable income tax in this country.

Edwin Witte

During 1912, the year after Commons' bill creating the Industrial Commission was enacted, one of his students, Edwin Witte, went to work for the commission, but he stayed only six months. Five years later, after serving briefly as an assistant in the Department of Economics, Witte became the Secretary of the Commission. During his tenure he administered the labor laws that Commons had worked on and that were enacted during the 1911 session. He adopted Commons' approach of applying the commission's regulatory powers with restraint to bring about small but significant improvements.

It was appropriate that Witte followed in Commons' footsteps by administering a law that Commons had drafted. Witte wrote, "I owe to Commons my entire outlook on life and a great many of my ideas."[128] Witte's biographer described the basic components of that outlook and those ideas in a statement that casts light on both men as well as the working of the Wisconsin Idea during the first third of this century:

> Witte inherited from Commons . . . a set of assumptions. . .: that a wide variety of practical and noneconomical considerations impinged upon the making of any economic decision, law, or institution; that laws worked out by the persons whom they would affect were usually superior to those of theoreticians; that associationalism was an irreversible fact and the best means of harmonizing groups in conflict lay in collective bargaining and negotiation; that where voluntary action failed to protect the economically weak the state should rectify the imbalance; and most of all, that social change could come through a pragmatic and democratic approach, without veering from America's capitalistic and constitutional traditions.[129]

In 1922 Witte became director of the Legislative Reference Library, succeeding McCarthy, and a lecturer in the Department of Economics. McCarthy, despite his claims of political neutrality, had a political agenda and nudged legislators in the directions that he approved. In contrast, Witte established the nonpartisan work standard that is now a statutory mandate of the Legislative Reference Bureau. Occasionally he expressed a political opinion in a speech, but his conduct at the library was so politically neutral that he had good working relations with every governor who served during his tenure, despite their varying political positions.[130] He held a more sophisticated view of drafting than had McCarthy and improved the agency's research function by having his staff summarize, rather than merely gather, material. In short, McCarthy established the library and was a dynamic force for the Progressives, and Witte increased the library's professionalism.

After Witte became chair of the Department of Economics in 1933, he continued to serve the state. For example, he advised Governor Albert Schmedeman and Governor Philip La Follette, and he served on the State Planning Board, the Citizens' Committee on Public Welfare and the Wisconsin Labor Relations Board.[131] His major public service after he left the library, however, was drafting the federal Social Security Act.

Harold Groves

Harold Groves was another University economist who became a major figure in the history of the Wisconsin Idea. Because of his relation to Commons, his interest in public service is not surprising. Not only was he Commons' graduate student, but also in his autobiography he wrote, "Like many others, I idolized Commons and sought to shape my career in the image of his."[132] For example, like Commons, he believed that economics has a moral dimension and that tax policies should be evaluated according to their economic, social and political effects.[133] His expertise in the field of public finance made it likely that he would be drawn into public policy development and he would think that field would inevitably be linked to public policy matters.[134] He

also was a firm believer in progressive taxation and in its ability to reduce differences in wealth.[135]

During his one session in the Wisconsin Assembly Groves was responsible for enactment of a law that made the income tax much more progressive.[136] The law increased the personal exemption from $3 to $4. That seems like an extremely small change, but it allowed an additional $100 of income to be shielded from taxation for each person for whom the taxpayer could claim an exemption. In 1931 that was significant. That feature was also progressive, because personal exemptions favor taxpayers who have low incomes. Groves's bill also increased the rates for all of the income tax brackets except the lower three, which both made the tax more progressive and increased the revenue that it generated. At that time 60 percent of the revenue from the income tax was returned to the municipality or county in which it was collected, except that there was a limit based on the value of the property in the municipality or county. Groves's law modified the limit in order to direct more money to units of government that had low property values and low average incomes.

Another bill that Groves introduced failed to pass, but a variation of it passed during the next session. At the time, persons could escape the inheritance tax by making gifts, unless the state could prove that the gifts were made in contemplation of death, which was difficult to do. Groves's solution was to impose a tax on gifts, regardless of the circumstances under which they were made, at the rates that applied to the inheritance tax. During 1932 the Tax Commission, of which he was a member, recommended that the state create a gift tax. In 1933 the state created an emergency gift tax to raise money for the relief of victims of the Depression. Groves believed that that was the first state gift tax.[137]

During the 1931 session he, Raushenbush and several graduate students in the Department of Economics drafted the unemployment compensation bill.[138] Groves introduced it and was a major force in its passage, as were Commons, Raushenbush, and Brandeis. Raushenbush became the first director of the Wisconsin unemployment compensation system and served in that position from 1932 until 1967. That is probably the longest tenure of any former professor from the University in a position in state government.

After his term in the Senate, Groves kept active in state government by serving in advisory positions. For example, he and two others wrote a book-length study of the state's tax system for the Legislative Council; later he wrote an unpublished history of Wisconsin taxes for the Council; and in 1959 he was one of the co-chairs of a committee that wrote a book on taxation for the Continuing Revenue Survey Commission that Governor Gaylord Nelson had formed. That commission made extensive use of the work of Groves and his fellow committee members, and their report led to major changes in Wisconsin taxes.[139]

Governor Philip La Follette appointed Groves to the Tax Commission, a position that he held from April 1, 1932, until February 5, 1933. During his tenure in that important office, in addition to further serving the state, he gained valuable practical experience. For example, one of his assignments was the difficult task of assessing railroads. After Schmedeman became governor during 1933, Groves resigned from the commission. However, his service in important state positions was not over. He won a State Senate seat in the 1934 elections. The increased strength of the Democrats and the formation of the Progressive Party by liberal Republicans threw Wisconsin politics into disarray and placed Groves in the minority in the Senate. Thus, he was unable to get any significant legislation passed.

Groves was a researcher who worked on problems that were important to the state, a legislator, a state official and an adviser to policymakers. That is, he played nearly all of the roles in the Wisconsin Idea. A few weeks before he died in December 1969, a journalist wrote a feature story about him, headlined: "Harold Groves – The Epitome of the Wisconsin Idea." That is an accurate description.

The Department After the Depression

Thus, during the first third of the 20th century, the Department of Economics at the University was an extremely important part of the Wisconsin Idea. After that its contributions to the Idea

somewhat declined, and in 1958, the department reached a turning point. At that time members of the department began to worry that the practice of hiring and retaining so few persons who had earned their doctorates outside the University was keeping the department on a steady course while the discipline of economics was changing.[140] The response to this situation was the hiring, during 1958, of Guy Orcutt, a econometrician (a specialist in the application of statistics to economic data). Orcutt's appointment was followed by the appointments of a number of other econometricians. After that, according to one member of the department, "the econometricians and the theorists were very assertive in pushing for their priority."[141]

This change in orientation may have brought the department into the mainstream of economic research, but it abandoned institutional economics. That is, econometrics is based on the assumption that the actors in an economic system are mere bits of data, not human beings who are attached to institutions and who make decisions for non-economic reasons. For this article, it does not matter which position is more sound theoretically, but it does matter that institutional economists – because they believe that law, economics and ethics are interrelated – are very likely to serve the state, and econometricians – because they are most interested in data – are likely not to do so.

The change in the department's orientation has not been absolute. Since Orcutt's arrival, some members of the department have not been econometrists and some have adhered to the Wisconsin Idea. For example, Ralph Andreano was the administrator of the Division of Health in the Department of Health and Human Services, and Charles Cicchetti served as a member of the Public Service Commission and as an economic adviser to Governor Patrick Lucey. Moreover, the department shared staff members with, and otherwise assisted, the Institute for Research on Poverty, founded in 1966, which has worked on some studies relevant to the state. Examples are studies, many of them done with state officials, of the administration of the state's Aid to Families with Dependent Children program, of emergency assistance and of welfare reform.[142] More recently, Donald Nichols and Donald Hester were members of Governor Anthony Earl's Council on Economic Affairs, and some University economists now are members of the Center for the Wisconsin Economy, which is part of the La Follette Institute. It is also possible that econometric research contributed to the work that falls within the tradition of the Wisconsin Idea. Nevertheless, substantial as they are, the department's contributions to the Wisconsin Idea during the most recent years do not quite match its contributions during its early years.

The Establishment of the Department of Plant Pathology

Like the Department of Economics, the Department of Plant Pathology has been both professionally distinguished and a major servant of the state. Even before the establishment of the department, research in plant pathology was conducted at the University. During 1891 Harry Russell began research in Germany on the immunity of plants to bacteria.[143] After his arrival at the University, the dean of the College of Agriculture insisted that he concentrate on bacteriology as it related to the dairy industry, but Russell devoted some of his efforts to studying the diseases of cabbage. Russell's main contributions to plant pathology were not his own research but his formation of the department in 1910 when he was the dean of the college and his hiring of Lewis R. Jones to be the first member of the department.

The Jones Era and the Continuation of its Work

Soon after Jones came to the University, Harry Russell told him that he had been doing research on diseased cabbages in the Racine area and that the growers there still needed help. Jones recognized the disease, which was caused by a fungus. He kept some plants that had resisted the disease, cross-pollinated them and saved the seeds, eventually developing the Wisconsin Hollander, which was resistant to the disease. In 1919 John C. Walker became a member of the department, and, until his retirement 45 years later, his research included work on the diseases of cabbages. For example, he and Glenn Pound did important work on viruses that attack cabbage plants, and he developed varieties that were more suitable for the production of sauerkraut. Upon Walker's retirement, primary responsibility for cabbage research was placed in the capable hands of Paul H. Williams, although others also worked on the problem. Partly because of Williams'

improvement of the techniques of obtaining cuttings and seeds, the department developed more than 20 varieties of cabbage that resisted the disease "cabbage yellows" that had been the subject of its earliest research.

In addition to his research skills, Jones was an extremely successful recruiter of talent for the department. His major acquisitions were Walker, James G. Dickson, A. Joyce Riker and George W. Keitt. In addition to hiring talented faculty members, Jones encouraged interdisciplinary work, which increased the effectiveness of the department's research, and encouraged members of the department to attempt to solve the state's problems. A current faculty member,

Professor Lewis R. Jones was recruited from the University of Vermont in 1910 to head the newly formed UW Department of Plant Pathology. He emphasized the blending of theoretical and applied science to benefit farm production throughout Wisconsin (photo courtesy of UW-Madison Archives, Neg. #X25 2814).

Luis Sequeira, has written that "Jones went on to build what was unquestionably the strongest department of plant pathology in the country for many years."[144] The benefits that it has provided to Wisconsin agriculture are incalculable.

Extension Work

Jones was also responsible for instituting the department's strong tradition of extension work. In 1911, he recruited Richard E. Vaughn, who later became the state's, and perhaps the nation's, first full-time extension plant pathologist. Vaughn immediately began helping Wisconsin pea farmers solve the problem of pea blight. Vaughn used two strategies to deal with the skepticism of farmers about the new ideas coming from the University. He used field demonstrations, applying the department's discoveries at a few farms and inviting other farmers to see the results. For example, he planted the cabbages developed by Jones that resisted cabbage yellows. His second strategy was to hold meetings around the state during the winter to explain the department's research findings. Vaughn did extension work until 1950.

Vaughn was joined by others. John H. Brann did extension plant pathology work from 1915 until 1947, concentrating on helping the state's potato growers but also doing other work. After Vaughn and Brann retired, Earl K. Wade assumed their duties. In 1963 he was joined by Gayle L. Worf. Wade took responsibility for fruits and vegetables, and Worf took responsibility for all the other crops. In 1974 the department's extension work was strengthened by the addition of a diagnostic program.

Potato Research

The department has done some of its more important work on diseases affecting potatoes. Jones began that kind of research in 1911, and Brann took it up in 1915. The pace of this research accelerated in the mid-1930s, when Walker and Russell Larson began to work on viral diseases. Many members of the department followed the lead of those two men. Because of the severity of potato diseases, particularly those caused by viruses, it is necessary to develop varieties that will resist diseases and then to produce and distribute their seeds. In 1913 the department started the first potato seed certification program in the country. During 1941 the College of Agriculture established a potato seed farm. Members of the Department of Plant Pathology, along with members of other departments, have participated in that farm's work. Mainly because of the farm's success, seed potatoes have become more important to Wisconsin agriculture, and recently about 20 percent of the acres devoted to potatoes in the state have been planted with seed potatoes.

In 1953 Henry Darling discovered a potato rot nematode (a parasitic worm), thereby beginning work in nematology in the department. The problem was serious enough to threaten the state's potato industry, and, as a result, a quarantine was established. Members of the department experimented on heavily infested fields with various fumigants (smokes, vapors or gasses used to disinfect) and found that one of them was very effective. During this crisis Gerald Thorne, a nematologist who worked for the U.S. Department of Agriculture in Utah, was consulted. After the crisis ended, Thorne agreed to take a professorship in the department. During the 1970s Arthur Kelman, aided by others, began doing important research on potato diseases, especially bacterial soft rot.

The combination of research on potato diseases, improvements in breeding and the development of high-quality seed potatoes combined to revive Wisconsin potato production. Much of this work was done by plant pathologists. By 1984 the state's per-acre yields were among the better yields in the country. Persistent and effective work by the department and other units of the College of Agriculture have paid large dividends for Wisconsin potato growers.

Research on Apple Scab

Another example of the department's willingness to devote decades to solving the problems of an important branch of Wisconsin agriculture is its work on apple scab. George Keitt, one of Jones' recruits to the department, who achieved national prominence, began this work in 1916. He, his students and his successors carried on the work for more than 50 years. In fact, Keitt and a colleague published an important paper on the subject in 1964, 48 years after he began work on apple scab. The problem turned out to be so complicated that, in addition to conventional plant pathology research, its solution required work in biochemistry, epidemiology (the study of the spread of diseases), genetics, cytology (the study of cells) and nutrition. Apple scab has not been eliminated, but research on it has led to many important discoveries.

John C. Walker

John C. Walker, another of Jones' early recruits, is the most eminent of all of the University's plant pathologists. His brilliance was obvious early, when, as an undergraduate, he published a paper on potato diseases. As noted previously, he continued his research on potato diseases after he became a member of the department in 1919. However, his potato research is only a part of his accomplishments.

His studies of plant diseases caused by bacteria are important both in themselves and as illustrations of his methods. Having grown up on a dairy farm near Racine, he was well aware of the problems of the cabbage growers of that area, problems that Jones attempted to solve. It was

therefore not surprising that some of Walker's early work was on cabbage black rot. First he discovered that the disease was transmitted by contaminated seeds. Then he learned that applying hot water to cabbage seeds would control the disease. This is a good example of his talent for discovering the point in its life cycle that the cause of a disease could be most effectively attacked. He also believed that he could always find a crop variety that would resist the disease that he was studying. After he found that variety, he used breeding techniques to develop a resistant variety that could be cultivated for commercial purposes. He applied these principles to diseases of cucumbers and beans as well as those of cabbages, and he developed for Wisconsin farmers resistant varieties of all of those crops.

In 1923 Walker turned his attention to diseases of onions. His work culminated in a paper that he and Karl Paul Link, a brilliant biochemist, published in 1935. This paper was the first to establish that the presence of a certain chemical would make a crop resistant to the agent that caused a disease. The paper also explained the inheritance of resistant qualities. Later Walker and some co-workers demonstrated that other factors might make the usually effective chemical fail to cause resistance. In yet another paper he showed that tomato wilt was caused by an interference with water movement, not by a toxin (a poisonous substance). Thus, one can see the subtlety of Walker's mind. He not only could make an important discovery but he also could suspect that it did not apply universally. That skepticism allowed him to modify his original discovery when it was necessary to do so.

Walker could also find unlikely causes of plant diseases. He, along with James G. Dickson, discovered that unusual soil temperatures could cause diseases in plant varieties that were otherwise resistant to them.[145] That insight led to his realization that it was necessary to study not only the relation of a crop and the agent of disease that was attacking it, but also the relation of both to environmental conditions.

These accounts of research projects fall far short of illustrating all of Walker's contributions to Wisconsin agriculture and to plant pathology. Two distinguished Wisconsin plant pathologists have assessed Walker's career in glowing terms. Glenn Pound wrote of him:

> He is our profession's best example of combining basic and applied research. He became an unusual resource to the vegetable seed industry, the vegetable canning industry and to the farmers of Wisconsin and the nation. Few, if any, have contributed so much to the economics of food production.
>
> The academic dimension of Walker's life was equally illustrious. He organized his research around projects designed to control diseases but into these projects he built objectives designed to obtain the most fundamental information of the disease process. There were no limits to the extent of his probes for fundamental information. The research of his laboratories brought great international recognition and acclaim to him and the department. He is truly one of the great historic leaders of plant pathology.[146]

Luis Sequeira wrote that Walker "has been one of the dominant figures in plant pathology; during his professional life he probably contributed more to our knowledge of vegetable diseases than anyone before him or since."[147]

A partial list of Walker's honors demonstrates that Pound and Sequeira were not exaggerating:

President, American Phytopathological Society

Member, National Academy of Science

Fellow, American Association for the Advancement of Science

Winner of the National Forty-Niner Service Award

Recipient of an Honorary Doctorate, University of Gottingen (Germany)

Forest Pathology

Another scientist who was brought to the department by Jones early in its history and later became prominent was A. Joyce Riker. Among his interests was research into the diseases of

trees. After the initial logging had left little of the state's forests standing, attempts were made to reforest. It became clear that that project would be futile unless diseases could be controlled. Jones was greatly interested in forestry, so it was natural for the department to lend assistance to the project. Fred Wilson of the Wisconsin Conservation Department appears to have been the person who convinced Riker to begin research in this field, which he did in 1936. Riker first attacked the problem of white pine blister rust, and by 1938 he was able to develop resistant varieties. The department continued research on blister rust until 1964.

Riker typically sought aid from others who had knowledge of the problems on which he was working, and he was an expert at obtaining research funds. Riker's alliances with the Wisconsin Nurserymen's Association helped him obtain state and federal funding. He and his coworkers did research on many diseases of trees native to Wisconsin. An example is burn blight, which attacked pines in northeast Wisconsin during the 1940s. Riker's group identified an insect and a fungus as causes of the disease. By 1959 twenty-nine persons, funded mainly by the Wisconsin Conservation Department, were engaged in forestry work. Much of their attention was focused on oak wilt. These persons built field laboratories, began training programs for state foresters, and added courses in forestry to the department's curriculum. In 1954 the College of Agriculture established a Department of Forestry and Wildlife Management, and in 1962 Forestry became a separate department.

The Second Generation

The generation that followed Jones and the faculty members whom he recruited early in the department's history continued the department's traditions of high quality research and belief in the principles of the Wisconsin Idea. We have seen evidence of their contributions in the accounts of the continued work on the research projects begun by the first generation. Because the department had grown considerably and its activities had become diversified, it is impossible to give a full account of the work of the second generation. However, focusing on one important representative will give some idea of the department's continued belief in the Wisconsin Idea.

A good example is Glenn Pound, who was the department's third chairperson and, from 1964 to 1979, dean of the College of Agriculture. In addition to his administrative contributions and his work with Walker, he did important research on other subjects relevant to Wisconsin. His research on cabbages in 1940 led to his development of a variety that would resist both mosaic and yellows. During 1946 he began working on a disease that was attacking radish crops in southern Wisconsin. He discovered the source of the disease and then developed a resistant variety of that crop. He published approximately 100 research articles and served as president of the American Phytopathological Society.[148]

The Department's Orientation Changes

By 1959 the Department of Plant Pathology was considerably inbred. Thirty-three of the 39 persons it had hired up to that time had earned their Ph.D.'s in the department. Glenn Pound attributed this to two causes. One was the desire of the major figures of the early years – Jones, Walker, Keitt, Riker, and James Dickson – to ensure that the department would stay on the course that they had set. This they did by hiring their own graduate students. The other cause that Pound cited was the rapid expansion of plant pathology departments after World War II, which in turn greatly expanded the job market. The first cause is credible, but the expansion of the job market would make it easier to find qualified recruits elsewhere, which would seem to discourage inbreeding. By the 1950s the department, like several in the University, was getting a reputation for inbreeding. Somewhat worried by its image, the department hired Luis Sequeira, a Harvard Ph.D., in 1961, and Richard Durbin, a University of California Berkeley Ph.D., in 1962. Durbin had a joint appointment with the department and the U.S. Department of Agriculture.

Sequeira had been interested in plant physiology (the study of plants' life functions and chemical processes) and the use of electron microscopes in research. Durbin, too, was interested in plant physiology, and he "was encouraged to conduct basic research in this area rather than servicing what was to become the diminishing needs for support of the oat breeding efforts of the USDA and agronomy."[149] That is, he was encouraged not to work directly on the problems

of Wisconsin farmers. At about the same time the department changed its curriculum. It had been starting its students in courses devoted to individual crops, but it changed to introductory courses, such as Sequeira's plant physiology courses, that were more theoretical and demonstrated various ways of applying plant pathology. Those changes in orientation made it less likely that the department's faculty members would do practical research directly related to the diseases of crops native to Wisconsin. Plant pathologists who thought of themselves as specialists in a certain crop would be likely to aid Wisconsin farmers who grew that crop, but those who thought of themselves as plant physiologists or plant virologists would be less likely to help Wisconsin farmers and more likely to work on problems that were important to their field. Walker had been able to do both, but there are not many Walkers. This is not to say that the department abandoned the Wisconsin Idea. For example, Sequeira did important work on diseases that were attacking lettuce crops in the state.

The change in orientation can be put most dramatically by looking at the current understanding of a phrase that has been passed down throughout most of the department's history, like a piece of ancient lore that must be preserved. Walker used to advise his colleagues and students to "keep one foot in the furrow." When the department published its history in 1985 it chose as its title *One Foot in the Furrow*, and it devoted the last chapter to speculation about that phrase's meaning. The conclusion reached is that Walker was advising his colleagues that – despite other activities such as teaching, committee work and outreach work – plant pathologists must do research in plant pathology. I interpret the phrase differently and suggest that the interpretation offered in the history indicates that the department has indeed changed its orientation. Perhaps Walker meant that a plant pathologist should keep one foot in the real world of Wisconsin agriculture (the furrow), where problems could be found, and the other foot in the laboratory, where those problems could perhaps be solved. In other words, the great plant pathologist was metaphorically advocating the Wisconsin Idea.

Comparison of the Evolution of the Two Departments

These two fine departments, Economics and Plant Pathology, have, surprisingly, gone through virtually identical phases:

1) Founding by a dynamic figure who set the initial course and hired first-rate colleagues (Ely, Jones).

2) The early arrival of a giant figure (Commons, Walker).

3) The creation of later generations by inbreeding, which continued each department's devotion to the principles of its first generation, including adherence to the Wisconsin Idea.

4) About 1960 a change in orientation that made it less likely that the department would be so devoted to the Wisconsin Idea (although neither department came anywhere close to abandoning the Idea) and that was caused by significant hiring decisions (Orcutt, Sequeira and Durbin).

5) Recent publication of its history, including an attempt to define a phrase that expressed its orientation during its earliest years ("institutional economics", "one foot in the furrow").

Obviously, some of the departments at the University did not evolve exactly as did these two. However, I suspect that many of the departments that have been important in the story of the Wisconsin Idea did evolve in somewhat similar ways. For example, the Department of Political Science became much more oriented toward quantitative research at about the same time that the Department of Economics did, although it did so gradually, not because of a single decision about hiring.[150] Moreover, abstracting even further from the list of similarities between the two departments that have been the examples so far, one can see a slight downward curve in the strength of the Wisconsin Idea.

6. A HISTORY OF THE WISCONSIN IDEA

The Earliest Example

It is difficult to identify the first example of the Wisconsin Idea in action, but the most plausible candidate is the creation of institutes for teachers in 1860. Although these institutes were held

University research and outreach programs on integrated pest management help Wisconsin farmers increase yields while reducing their use of pesticides and irrigation (photo courtesy of Wolfgang Hoffmann, UW-Madsion, Agricultural Journalism).

on the campus, they were outreach activities because the students were at the University only briefly and were not seeking degrees. They are a very odd beginning for the history of the Idea. Henry Barnard became the president of the University in 1859. The regents expected him to present a plan under which the small, fledgling University could develop. Barnard had little to offer by way of a general plan, but he was interested in improving the common schools, for example by strengthening the University's normal department and cooperating with the normal schools. His plan to organize institutes for persons who were already teaching in the common schools was a result of this interest.[151] Barnard's tenure lasted only about one year and is nearly barren of accomplishments. It is ironic that a president who had so little effect on the University probably is the one who launched the University's service to the state.

Early Work for Farmers

The next example of the Idea is the establishment, in 1866, of the experimental farm. As we have seen, this was a result of a reorganization that the University implemented in order to secure the funding that the Morrill Act made available and a result of Dane County's contribution of the revenue from a sale of bonds. The regents purchased nearly 200 acres of land that were located immediately to the west and southwest of the campus. There they planned to establish "an *experimental farm,* where agriculture is to be practically taught by experimenting on different soils and location of land, and *not a model farm*, where the best kind and largest quantity of particular products are sought to be obtained."[152]

Examining the University's potato research from its beginnings in the early years of the experimental farm up to the present reveals that the early research conducted at the farm was much less sophisticated and effective than was later research. During 1869 workers at the experimental farm sowed eight plats of potatoes, using seven methods of preparing the seeds. They found that planting seeds in different ways did not result in a significant difference in yield. In fact, the

yields of the two plats in which seeds were planted in the same way differed considerably. Disheartened, they conceded that "this is a further proof of the difficulty of securing those uniform conditions in agricultural experiments, which will enable one to draw correct conclusions from a limited number of trials."[153]

Later University researchers had more success. Early in this century they found a spray that would control potato blight and help increase yields by 20 to 25 percent.[154] A few years later, in 1914, Dean Russell reported, "Wisconsin stands near the head as a potato growing state. The opening up of large areas of virgin soils in the central and northern portions of the state has resulted in a material expansion of this industry."[155] Russell gave credit to Professor Milward's attempts to organize potato farmers into cooperatives and to the State Potato Growers' Association, of which Milward was the secretary, and he promised that in the following year the University would begin to inspect and certify potato stock that was to be used for seed. More recently four geneticists – Gustav H. Rieman, Delmer C. Cooper, Robert Hougas and Stanley Peloquin – developed the Superior variety, which resists potato scab and is very suitable for processing into potato chips.[156] They and others also created varieties that were appropriate for table use, and the seed certification program that Russell promised was created. Within the last few years, Peloquin has developed another variety that is important because it can be stored cold.[157]

In 1877 the regents claimed that many useful experiments were performed at the experimental farm but the results were published only in the annual *Reports of the Regents* and thus did the state's farmers little good.[158] In other words, the University was beginning to carry on research on Wisconsin problems, but it was having difficulty beginning outreach activities to communicate the results of that research. That problem was solved not by publishing results more widely but by sending the director of the farm, William Henry, around the state during the winter. Henry fought, not always successfully, against the difficulties of the Wisconsin winter to contact farmers. He reported that he was enthusiastically received by farmers and also learned a good deal from them.[159]

By 1883 Henry had begun advising the state's dairy farmers to store fodder in silos over the winter.[160] At first farmers refused to believe that fodder could be preserved. The establishment of the Wisconsin Farmers' Institutes in 1885 allowed an exchange of ideas on the subject, and during an 1887 Institute several farmers who had decided to try silos reported that the silos had allowed their dairy operations to survive the drought of 1886. Meanwhile Professor Franklin H. King had been working to improve the design of the silos and had discovered that cylinders were much more effective and safer than squares, which trapped gasses in the corners, creating the potential for an explosion. He published his research in 1891, and the Wisconsin landscape was on the way to being dotted with cylindrical silos.

During the early 1880s, Henry was also interested in adding an experimental station (which would be more oriented toward research projects and less of a working farm) to supplement the experimental farm. The Wisconsin Dairymen's Association supported the idea, as it supported much of the early work in agriculture at the University. In his 1883 address to the legislature, Governor Jeremiah Rusk urged that an experimental station be begun and that it be funded by an appropriation of $6,000.[161] In response to Rusk's suggestion, a law was enacted to establish a station and a professorship in pharmacy, both to be funded by increasing the state property tax.[162] The timing was fortuitous because in 1886 the federal Hatch Act created a system of state agricultural experiment stations, and Wisconsin's station was opened in the following year. Joining the system put the University's station on firmer financial ground and facilitated interaction with the stations that other universities operated.

H.P. Armsby, the associate director of the station, reported early in its existence that, rather than trying to obtain immediate answers to narrow problems that farmers faced, it did broader research in an attempt to discover more general principles.[163] His statement suggests that the station was doing pure research and was thus not an example of the Wisconsin Idea. His example, however, was research about the relation between the feeding of dairy cattle, especially the proportion of their food that is protein, and their milk production. He also reported the implications

of his findings for cattle in Wisconsin. Experiments of that kind would certainly please the Wisconsin Dairymen's Association. In fact, in 1888 Henry, who still directed the station, wrote, "We have endeavored to prosecute lines of investigation which seemed the most important and to offer large prospects of usefulness. To this end the feeding of livestock and the dairy industry have occupied most of our time."[164]

In 1885 a law was enacted that authorized the University to hold Institutes for farmers during the winters in order to "present the most recent investigations in theoretical and practical agriculture."[165] This outreach function, especially its attention to practical problems, is a good example of the Wisconsin Idea at work. The University conducted 57 Institutes during the winter of 1886-87, and approximately 50,000 farmers attended them.[166] This impressive statistic indicates that Wisconsin farmers' initial skepticism about the University's ability to help them quickly disappeared and that the University was willing to devote considerable effort and substantial resources to accommodate the farmers. Nine years later the number of Institutes increased to 106, and again the number of participants was estimated at 50,000. In addition, at 11 of the Institutes cooking schools were offered for farm wives. During that same year ten summer meetings were held and the University published 60,000 copies of the Institutes' bulletin.[167]

The interest of Wisconsin farmers in the Institutes continued to be intense, and this program was clearly one of the more successful of the University's outreach activities. After about 15 years of its operation the Board of Visitors reported that:

> the crowds that attend these Institutes, which are limited only by the size of the hall where held, the intense interest manifested, the notes taken and questions asked are in themselves a refutation of the charges of inefficiency. If not, observe the silos built; the creameries and cheese factories established; the more scientific methods of feeding that are now practiced; the more intelligent use of fertilizers; increasing quantities and better fruits; less waste; healthier and better bred stock, better schools, better homes and a greater degree of contentment among the people. Surely the money is well invested! Their benefits are incalculable.[168]

The millennium seemed to be at hand.

Another very successful outreach program was thrust upon the University, rather than started by it, at about the same time that the Farmers' Institutes began. In the early 1880s a number of farm groups lobbied the legislature to separate the College of Agriculture from the University.[169] A bill to do so was introduced but failed to pass. Nevertheless, the University felt pressure to improve its agricultural training. The regents appointed a committee to address the problem.[170] One appointee could not serve, but William Vilas (a lawyer and later a U.S. Senator and generous donor to the University) and H.D. Hitt (a farmer) wrote a report in which they proposed that the University add an agricultural program consisting of two 12-week sessions that would be held during winters and would offer practical instruction. Henry and other faculty members did not like the idea, but the regents forced it upon them.

The Wisconsin Farm Short Course, the first such educational program in the nation, began in 1886. Despite his misgivings, Henry, whose years of contact with Wisconsin's farmers made him aware of their educational needs, devised a rational curriculum. The first year consisted of courses in feeds and feeding, soils, breeding, laboratory work in plant science, dairying, crops, agricultural chemistry and bookkeeping. The second year consisted of practical courses, such as stock judging and drainage, as well as some pure science, such as a bacteriology course.[171] Henry then went out into the state looking for students. The first year only 19 enrolled, but the number grew and the University maintained the course. In fact, in 1903 it added a miniature version of it: a two-week course.

Some faculty members were suspicious of the short course because they thought that students should take basic preparatory courses before they took practical courses and because they thought that an over-emphasis on practical instruction would weaken the College's research program. However, as to the second objection, Frank Parker Stockbridge was probably correct when he stated that, during the Short Course, knowledge flowed in two directions: as well as learning,

the students identified for the professors actual problems, thereby stimulating research. The effect on the legislature and governors is much less speculative. The Short Course, and even more so the Farmers' Institutes, convinced them that the College of Agriculture was an invaluable resource, not a drain on the state's revenues.

Outreach During President Chamberlin's Administration; The Babcock Test

Of the University's first five presidents, only Barnard was interested in outreach activities, and his tenure was so brief that the summer training program for teachers was the only result of his interest. Bascom, the fifth president, held a traditional view of a university's mission; he supported the liberal arts and traditional, on-campus instruction. However, as we have noted, Bascom's successor, Chamberlin, was a strong supporter of outreach programs. He approved of both the Short Course and the Farmers' Institutes, and a number of outreach programs began while he was president.[172] Partly because of this attitude, the University's service to the state grew rapidly during Chamberlin's term of office.

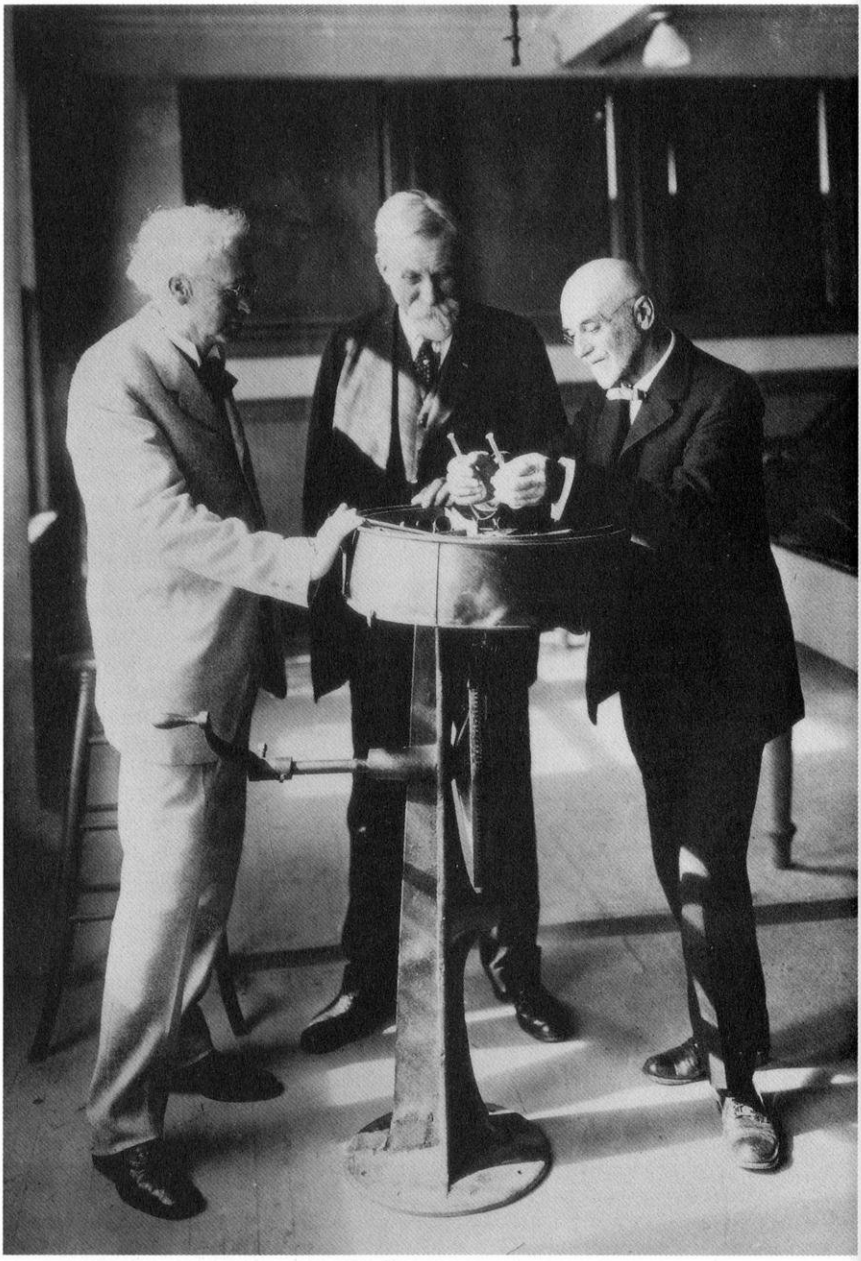
One of Chamberlin's outreach activates was to revitalize the summer training program for teachers that Barnard had begun.[173] John W. Stearns; who was a professor, president of the Wisconsin Teachers Association and editor of the *Wisconsin Journal of Education*; began to direct that program. Stearns, because he was familiar with and known by teachers, was an ideal director. The summer schools began by emphasizing science, trying to make teachers aware of new developments. Two years later a summer session for students who were working toward degrees was begun, and Dean Birge was chosen to direct it. The programs were combined in 1904 and Dana Munro then became the director. Summer school thus became only in part an outreach program. In 1926 the University began the first of its short-term summer clinics, a series of classes for coaches. Later it began clinics for engineers, drama teachers, high school musicians, bankers and others.

Buoyed by the success of the Farmers' Institutes and the increasing popularity of the Short Course, the University, during 1890, designed a dairy course to train operators of butter and cheese factories and offered it during the winter. Only two persons attended the first session. However, that year the director of the program became widely known, so that the next year 72 students attended.[174] In 1893 the University hired its first specialist in dairy science, Edward H. Farrington, and he began to work in the dairy course. The program was later made flexible: students could study for periods ranging from 10 to 20 weeks. The director of the dairy course who became famous between its first and second years was Stephen Babcock. He also created for Wisconsin's dairy industry an enormous benefit that is surely one of the high points in the history of the Wisconsin Idea.

In 1890, the second year of the College of Agriculture, Babcock published Bulletin 24 of the Wisconsin Agricultural Station, which described his butter fat test that revolutionized the dairy industry. The importance of this little bulletin was recognized immediately; the University initially published 60,000 copies. By coincidence, during its second year (1893), the School of Economics, Political Science and History included among its faculty Frederick Jackson Turner, whose brief paper, "The Significance of the Frontier in American History," published that year, revolutionized the understanding of the study of American history.

Babcock began as a chemist who was interested primarily in analyzing the chemical composition of milk. His discoveries had begun to make a mark for him. However, Hiram Smith and other prominent dairymen convinced Henry that they needed a simple, inexpensive test to determine the butterfat content of milk. In turn, Henry, by that time caught up in the spirit of the Wisconsin Idea, prodded Babcock, who had very recently joined the faculty, to set aside his theoretical studies and work on the problem.[175]

Babcock discovered that applying the correct amount of sulfuric acid to milk would dissolve the casein (a type of protein), which in turn would liberate the butter fat. Using a centrifuge to whirl the milk's container completed the separation. In fact, after the whirling the fat rose into the bottle's neck, and if the proper markings were made on the neck the person who was conducting the test could read the percentage of butterfat in the milk. The equipment needed for the test



Professor Stephen Babcock made an important contribution to dairy science when he developed the first reliable butterfat tester in 1890. He is shown here (right) demonstrating the tester to College of Agriculture Dean William A. Henry and University President Thomas C. Chamberlin (photo courtesy of UW-Madison Archives, Neg. #X25 226).

was inexpensive, the time needed to perform it was short and the training needed to perform it was simple so that almost anyone could learn to do it.

Babcock did not patent the process and modestly described it in his bulletin: "in the hope that it may benefit some who are striving to improve their stock and enable creameries to avoid the evils of the present system, the test is given to the public." Attractive as Babcock's modesty was, it was inappropriate. The test had enormous consequences. The most obvious is that it provided a way to determine the butterfat content, and thus the value, of a quantity of milk that was offered for sale. An operator of a cheese factory put that result bluntly: "The Babcock Test can beat the Bible in making a man honest."[176] The availability of this simple test of value stabilized and rationalized the milk market. Later Dean Henry pointed out some less obvious benefits of the Babcock test: it allowed buttermakers to use their churns more effectively, it helped dairymen distinguish between good dairy cows and bad dairy cows and it allowed milk to be valued before it was combined with other milk for skimming, which made milk cooperatives and large creameries possible.[177]

The financial benefits of the test demonstrate its importance. Because the test allowed a creamery operator to test the change in butterfat content of milk during the operation of a separator, the operator could make fine adjustments of the machine instead of merely guessing at the amount of fat that was being removed. The operator could thus save much more of the fat to be used to make butter. Dean Henry thought that this reduction of the amount of butterfat wasted increased by five percent annually the amount of butter that the creameries in the state sold. That increase was worth $800,000.[178] Although it is difficult to grasp the magnitude of $800,000 in 1904, one gets the point by recalling that the University's budget for that year was $400,000.

The historian of Wisconsin's dairy industry claimed that "the Babcock test was a truly monumental achievement. No other single invention, with the possible exception of the centrifugal cream separator, had a more beneficial influence on the manufacturing side of the dairy business."[179] That conclusion seems to be inescapable.

During the year after Babcock invented his test, the University began offering extension courses. This program was modeled on the English system of extension work in that it consisted of series of off-campus lectures. Ten courses, each consisting of six lectures, were offered in 1891-92. The range was impressive: American History, English Literature, Scandinavian Literature, Greek Literature, Economics, Antiquities of India and Iran, Bacteriology, Physiology of Plants, Electricity and Landscape Geology. Some of them were offered more than once. Courses were held around the state, including locations as far away as Ashland and Washburn, as well as in Chicago. It was also impressive that the average attendance was 170.[180] These figures for the first year of a program demonstrate once again that there was considerable demand in the state for the University's services.

During the early years of this program, full-time faculty members gave the lectures in addition to attending to their other duties. The most popular, as measured by the requests for his lectures, was John Charles Freeman, who spoke on American Literature, a field in which he was one of the first specialists. Freeman was a Civil War hero, a former diplomat, an acquaintance of Robert Browning and Alfred Lord Tennyson and a wealthy man whose network of friends included most of the socially and financially prominent citizens of Madison.[181] This elegant man's lectures in remote Wisconsin villages were received as enthusiastically as were Oscar Wilde's lectures to the miners of Nevada. Assigning extension lectures to full-time faculty members ensured their quality but took its toll on the professors. By 1904 it was clear that "ever since the extension movement was organized, professors have found that it has very considerably interfered with their own investigations. On the other hand, few, if any of them, have felt that the compensation afforded by the system was any adequate return for the sacrifice thus made."[182] As a result, a number of professors dropped out of the program that year.

Late Nineteenth-Century Agricultural Work

One of the more spectacular scenes in the history of the Wisconsin Idea occurred during 1894. Harry Russell, a bacteriologist who had studied with Louis Pasteur and Robert Koch, had

joined the University's faculty the previous year. At that time tuberculosis was taking a heavy toll on Wisconsin dairy herds, and Russell had developed faith in a new test for the disease. The test indicated that 28 of the 30 cows in the University's dairy herd had tuberculosis. To the horror of the students who were attending the Short Course and who watched the experiment, Russell slaughtered the 28 cows. Much to the relief of Dean Henry, who had given Russell permission to slaughter the cows, post-mortem examinations demonstrated that all of them did have tuberculosis, although they had no visible symptoms of the disease. President Adams reported on Russell's work in terms that belied its drama: "Dr. Russell's studies of tuberculosis in dairy cows show that the disease ... has afflicted a good many of our herds .... Dr. Russell is now co-operating actively with the State Board of Health in this matter, and has under care at the present time several tuberculous-infected herds in the state."[183] Russell's demonstration that cows needed to be tested for tuberculosis and the imposition of quarantines helped to slow down the disease's spread.

The legislature, during 1895, passed two laws that gave new duties to the College of Agriculture, thereby showing its confidence in the college's ability to solve problems. One of those laws required every manufacturer and seller of commercial fertilizer to send a sample, along with a $25 fee, to the experimental station.[184] The station was required to analyze the samples to determine whether the manufacturer or seller of the fertilizer had accurately stated its chemical composition. If the statement was accurate, the station certified the fertilizer. The law created a criminal penalty for manufacturing, importing or selling fertilizer if its chemical composition did not match the certified composition. The station certified ten brands during the first year of analysis.[185]

The other law required the College of Agriculture to "prepare a bulletin or handbook describing the agricultural resources of Wisconsin, especially the newer and more thinly settled districts .... In general it shall set forth the advantages of the newer portions of this state for those seeking homes on lands in the effort to draw to Wisconsin a desirable class of farmers."[186] Although this law did not clearly state the area that was to be promoted, it was Northern Wisconsin.[187] Dean Henry himself, along with four professors, studied that part of the state, and the college wrote and printed 50,000 copies of *A Hand Book for the Home Seeker.* The college soon reported that an agent had convinced 100 families to move into one northern county. This was an effort to deal with the effects of deforestation in Northern Wisconsin, a problem that, as we have seen, also interested Ely. Unfortunately, we have also seen that the area's disadvantages for agriculture virtually doomed these efforts to failure.

The College of Agriculture's next breakthrough that had huge financial implications occurred in 1896.[188] In that year, Babcock (who thus made his second major discovery for the dairy industry), Russell (who again demonstrated his versatility), and Decker devised the Wisconsin Curd Test. Cheesemakers were occasionally producing an inferior product. They suspected that the cause was some of the milk they used, but, because most of them bought milk from more than one farmer and mixed it before beginning to make cheese and because none of them had a way to identify tainted milk, they were unable to prevent the occasional bad lot of cheese. The only solution was to throw away the cheese and, thus, some of their profits.

Babcock, Russell and Decker's test consisted of heating a sample of milk, adding a chemical that curdled it, cutting the sample into small pieces, pouring off all the whey and reheating the milk. Then the milk fermented, much as it did during cheesemaking. After the fermentation was complete, the curd was cut again. At that point the presence of small holes, which were easily seen, indicated that the milk was bad.[189] Like Babcock's butterfat test, this one was quick, simple to learn and required only inexpensive equipment and materials.

President Adams considered the curd test to be "probably next in importance to the invention of the Babcock Milk Test," and he estimated that it was worth $100,000 annually to the state's cheesemakers.[190] A few years later Dean Henry claimed that the test saved Wisconsin cheesemakers an amount equal to the College of Agriculture's budget.[191] In addition, it increased the

confidence that Wisconsin agriculturists had in the University and the confidence that the public had in Wisconsin agricultural products.

One measure of the College of Agriculture's outreach program during this era is its distribution of bulletins. By 1896 the series of bulletins had grown to 54 publications, nine having been added that year. The college also had published 12 *Annual Reports*, 10 annual *Farm Institute Bulletins* and a number of other items. It printed 216,000 copies of the publications that it prepared during that year, including 60,000 copies of the current *Farm Institute Bulletin* and 50,000 of the *Hand Book for the Home Seeker.* It published a bulletin on its new commercial fertilizer certification program and a wide variety of bulletins on narrow topics. Some of the publications were substantial: the *Annual Report* and the *Farm Institute Bulletin* were more than 300 pages long, and the *Hand Book for the Home Seeker* was about 200 pages long.

In 1897 the team of Babcock and Russell made another important discovery that aided the dairy industry. This one began with theoretical research, and their discovery was later applied to practical problems. In the course of conventional chemical analysis of milk, the kind of research that Babcock did before Henry set him to work on the butterfat testing problem, they discovered galactase, an enzyme. Later they found that this chemical resembled human digestive fluids and, with a leap of insight, concluded that it might therefore have something to do with the ripening of cheese. They managed to establish that this was the case, thereby overturning the notion that bacteria caused the ripening.

At this point they tried to find a practical application of their discovery. They succeeded, causing Dean Henry to write, "here is a happy illustration of the value of a purely scientific discovery to the farmer."[192] If bacteria did not cause the ripening, the process could be carried out at temperatures near the freezing point. Babcock and Russell asked cheesemakers if that was possible, were told that it was not, tried it anyway and proved themselves correct. As a result, cheesemakers began shipping their product to refrigerators rather than curing it in their own factory. The ultimate effects were higher quality cheese and the growth of dairy cooperatives in Wisconsin.

Dean Henry was not only an able and energetic administrator but also a scholar. His greatest scholarly accomplishment was *Feeds and Feeding: A Hand-Book for the Student and the Stockman* (1898). It is an exhaustive study – nearly 700 pages long – and for some time was a standard work. Its subtitle is revealing: the book contains both scientific information for the student and a wealth of practical information for the farmer. Henry hoped that the book would entice Wisconsin stockmen into becoming students of their occupation, into learning some basic science, as well as helping them farm more effectively and profitably.[193]

The Progressive Era

By the turn of the century, the Wisconsin Idea was flourishing. There were quite a few examples of the Idea in action, most of them examples of either outreach work or agricultural research that was directed at the problems of the state's farmers. The state government responded with funding that, in light of the high quality of the University, appeared to be adequate, although the Reports of the Regents during the 19th century contain many pleas for increased funding. The state government also occasionally required the University to perform services useful to the state. As the new century dawned in 1901, a dynamic force appeared on the scene. It strongly supported the Wisconsin Idea and expanded its scope, especially to include service to the state government. That force was the Progressive wing of the Republican Party and, in particular, Robert M. La Follette.

La Follette, unlike earlier governors, eagerly sought the guidance of University professors. He noted that "while I was governor, I sought the constant advice and service of the trained men of the [University] in meeting the difficult problems which confronted the state. Many times when harassed by the conditions which confronted me, I have called in for conference President Van Hise, Dr. Ely, Professor Commons, Dr. Reinsch and others."[194] The first three of those advisers have already appeared in this account. The other, Paul Reinsch, was originally a member of Ely's School of Economics, Political Science and History, but in 1901 he became the first chair-

person of the first political science department in the country. He wrote a number of solid books, such as *World Politics at the End of the Nineteenth Century* and *Intellectual and Political Currents in the Far East*. His public service expanded beyond Wisconsin: he was a delegate to the Pan-American Conference in 1908 and 1910 and later he was Minister to China.

In 1901, the year that Robert M. La Follette entered state government, so did another major figure in the Wisconsin Idea story – Charles McCarthy. The State Historical Society of Wisconsin had recently moved from the capitol to its new quarters on the University campus, taking with it a collection of documents that had been used by the legislature. To fill that vacuum the Free Library Commission established a Legislative Reference Library. McCarthy, one of Turner's graduate students, was hired to be a document clerk.

McCarthy is part of this story for several reasons. First, after he became the chief of the Legislative Reference Library and a very prominent figure in state government, he taught at the University. Appropriately, his assignments were courses in The Theory and Practice of Legislation and Practical Bill Drafting. Thus, although he was a civil servant before he taught at the University, he was in fact also a faculty member who served state government. With one foot planted at each end of State Street, maintaining contact with state government and the University, he was perfectly positioned to encourage an interchange between the two institutions. He was convinced that such an interchange was valuable. He wrote to Ely that the University's professors should be eager to help state government: "We had a glorious ideal for our state University, it seems to me, in that of 'Service to the State'. To me it seemed the solution of a great many of

Charles McCarthy was both a University instructor and the organizer and first chief of the Legislative Reference Bureau. The bureau, which performs drafting and research for the legislature, was one of the first agencies to apply the Wisconsin Idea to government service (photo courtesy of State Historical Society, WHi (X3) 44686).

the ills which have beset us."[195] He also thought that the state government should recruit professors. In a memorandum addressed to the Board of Public Affairs, he wrote, "I will suggest that the agricultural extension department of the University could well be called in to help in this matter [immigration]. Indeed the whole Economics Department of the University should be called upon for the solution of this question."[196]

McCarthy not only prodded state officials and University professors to make it more likely that the latter would help the former, but also when that help was arranged he worked to increase its effectiveness. For example, Commons reported his experiences as he began to draft a civil service bill: "Within a day or two after La Follette requested my help on the bill, McCarthy had me supplied with everything one could need in drafting that bill. I soon could submit to him and to La Follette a preliminary draft."[197] It is important to note that Commons submitted the draft to McCarthy. Commons also acknowledged the value of McCarthy's "stubborn criticism of every detail in my work." Thus, McCarthy facilitated the operation of the Wisconsin Idea when it took the form of professors providing technical skill or advice on matters of policy.

Finally, McCarthy advocated certain policies and worked to make the passage of certain legislation more likely. Ostensibly the Legislative Reference Library under McCarthy was not in either of those businesses. One of the "Rules for the Drafting Room," which were prominently displayed in the library, was "the draftsman can make no suggestions as to the contents of the bills." However, McCarthy was not a mere technician. For example, he, on his own initiative, submitted a draft of a resolution that would require a study of continuing industrial and agricultural education. After the resolution passed, McCarthy was named to the study commission. In fact, the report of the commission, as it was presented to the Governor on January 10, 1911, bears his imprint.[198] An example of his influence on the outcome of legislation is his correspondence, during the administration of Governor Philipp, with Zona Gale, who was a prominent writer and keenly interested in state and University matters. Philipp's attitude toward the University at first differed radically from La Follette's. When McCarthy heard that the University's budget for extension work might be reduced, he wrote to Gale, hoping that she would use her influence with State Senator George Staudenmayer, who, like Gale, lived in Portage.[199]

Governor Philipp attempted to call McCarthy to task for his support of Progressive causes. In fact, during his campaign he advocated abolishing the Legislative Reference Library and dismissing McCarthy. The Joint Committee of Investigation of State Boards and Commissions questioned McCarthy for two days. Eventually Philipp himself took over the questioning. Their exchange is slightly comic, because as Philipp probed McCarthy evaded.[200] McCarthy and his library weathered the crisis. In fact, Philipp soon came to realize that McCarthy and his staff could, and would, do valuable work for him and his allies, too.

Although Wisconsin politics significantly changed after La Follette became governor, the College of Agriculture held to its course of providing useful information and service to the farmers of the state. The college's work for tobacco farmers illustrates its ability to mobilize specialists in a variety of disciplines and to work simultaneously on a number of problems having to do with one crop. President Van Hise reported that during 1905:

> [T]he work on tobacco has been upon the securing, testing, and distribution of seeds of the qualities best adapted to Wisconsin; experiments upon commercial fertilizers for tobacco in Rock, Columbia, and Crawford counties; experiments upon cover crops to supply humus and nitrogen; the advisability of raising in Wisconsin shade grown Sumatra tobacco; the production of new varieties of tobacco adapted to Wisconsin; and handling, curing, and fermenting the crop.[201]

Many of those projects resulted in useful information.

Not only did President Van Hise approve of work of that kind and, in general, of the Wisconsin Idea but his own work reflected the Idea. He was a geologist and during his field work he had become interested in forestry. Because he had studied the geology of Northern Wisconsin, where the forests by his time had been nearly logged into nonexistence, he was especially interested in preserving forests and in reforestation. His interests and the state's needs coincided, and

between 1905 and 1915 he was the president of the Department of State Forestry. During part of that time he was also the chairperson of the Conservation Commission, which had even wider duties and also included Birge. During his tenure in the Department of State Forestry, a law was enacted that allowed the state to take over and preserve land for forestry purposes if the property taxes on it were delinquent. In addition, an amendment to the state constitution was ratified that authorized a state forestry program.[202] On those bases, the state began to acquire a considerable amount of land for a forest preserve. However, the Wisconsin Supreme Court later invalidated both the constitutional amendment and the forest reserve program.[203]

Another of Van Hise's efforts to aid the cause of forestry in Wisconsin was more enduring than the forest reserve program. His connections to persons who were interested in forestry extended beyond Wisconsin to the national scene. He used those connections to persuade the United States Forest Service to locate the U.S. Forest Products Laboratory, the first such laboratory in the world, adjacent to the University's campus.[204] Being a national institution, the laboratory did not restrict itself to research on problems that benefited this state, but much of its research was relevant to Wisconsin. Moreover, connections between it and the University began to be formed – that was the reason for locating it next to a university's campus – and its scientists and some of the University's scientists worked together.

Van Hise's service was not unique at that time. He proudly reported in 1906 that:

> [T]he Dean of the College of Letters and Sciences is the director of the state Geological Survey, and is a member of the Fish and Forestry Commissions. The Dean of the College of Agriculture is a member of the Forestry Commission. The College of Engineering is the custodian of the public standard weights and measures. The professor of history is a member of the commission for the purpose of devising a plan to provide for the preparation of the history of the Wisconsin soldiers in the Civil War. The professor of bacteriology is a member of the state Live Stock Sanitary Board. The professor of railway engineering has been an aid to the Tax Commission and the Railroad Commission . . . . A professor of political science is chairman of the Civil Service Commission. A professor in the department of political economy has been carrying on investigations for the Tax Commission . . . . The president of the University is president of the Geological Survey Commission, president of the Forestry Commission, and a member of the Free Library Commission.[205]

Although Van Hise, from the beginning of his presidency, strongly advocated the University's research on Wisconsin problems and the service of University administrators and faculty members to state government, he did not at first significantly support another component of the Wisconsin Idea: extension work. When, during 1905, he was asked his opinion about one type of extension instruction he replied, "I have given so little attention to correspondence work that I am unable to express an opinion on the point you raise."[206] In fact, general extension, unlike agricultural extension, had been languishing. Although the University had been doing extension work since 1891, Van Hise pointed out that one person had charge of both inspecting high schools and general extension.[207] The former was thought to be more important, so extension was slighted, and it also suffered from insufficient funding.

Several influences began to change Van Hise's mind. One was William Rainey Harper, president of the University of Chicago, whom Van Hise had known when he was a visiting professor at Chicago. Harper had been active in the Chautauqua lecture movement and was thus convinced of the value of education that occurred outside classrooms and that was provided to non-degree students. He wrote to Van Hise that he hoped Van Hise would "extend the direct work of the University beyond its walls, to bring all the people of this splendid state directly into contact with university men and university thought."[208] Another influence that moved Van Hise in the same direction was the Free Library Commission, especially Frank Hutchins (its secretary), McCarthy and Henry Legler.[209] By late 1905 Van Hise had been converted. During a speech he proclaimed, "a state university should not be above meeting the needs of the people, however elementary the

University Extension was launched in 1907 when Louis Reber was hired to direct the new department, which had been unanimously approved and funded by the 1907 Legislature. During his tenure of two decades, he promoted the expansion of Extension service to all state residents (photo courtesy of State Historical Society, WHi (X3) 6012).

instruction necessary to accomplish this."[210] The president's phrasing is instructive. He revealed that at first he thought that extension work was beneath the University's dignity, but extension advocates had convinced him otherwise.

When Van Hise became convinced that a course of action made sense, he almost invariably began vigorously to pursue it. His newfound attraction to extension work was no exception. He reported that "in 1906 E.W. Pahlow was appointed secretary for [extension] work to study the problem and organize the movement. The coming year the department of the university extension will be regularly organized, with H.E. Legler as secretary, F. A. Hutchins as field organizer, and W.H. Lighty in charge of correspondence work."[211] Again, Van Hise's wording is revealing. By referring to a "movement" he indicated that the University would be making far more than a feeble attempt. It is also interesting that he appointed two of the staff members of the Free Library Commission to the extension program, thereby using their experience with assisting the general public (one of the library's duties was loaning books to persons who did not have easy access to other libraries) and following up on their expression of interest.

Legler did not remain at the head of the extension program for long. Near the end of 1907 Van Hise brought Louis Reber from Pennsylvania State University to direct the program. Reber

held that position until 1926. He, more than anyone else, deserves credit for building a strong general extension program at the University. His view of extension work was broad; he proposed to teach anything to anyone in the state. In fact, he wanted to create an interest in learning, and thus in using the extension programs, in persons who previously showed no such interest.[212] He fended off complaints that extension work was beneath the University by arguing that the University was a service institution; that is, he believed in the Wisconsin Idea. Reber conceded that the University's on-campus departments should have control of extension courses that could be counted toward degrees, but he built a separate teaching force for the other courses. He also stationed some of his staff members out-state, where they would be more accessible to their students. Van Hise agreed with Reber's approach. The public apparently liked the approach, too. The clientele for extension work grew rapidly, and as a result so did the appropriations for it.

Beginning in 1907, an attempt was made to merge General Extension with the outreach programs of the College of Agriculture, but that attempt failed, and until the 1960s that college had its own extension programs and the Cooperative Extension program. Russell, who became Dean of the College in 1907, was a strong believer that each department in the college should teach, conduct research and do extension work. That arrangement became known as the "three-legged stool." Russell even kept track of the amount of funds spent on each of the three functions.[213] Each of the three functions contributed to the effectiveness of the other two.

Van Hise and Reber built the extension program so well that when Governor Philipp, who took office in 1915, attacked the program, he could not make a dent in it. Extension's budget had grown from $20,000 in 1907, the year during which Reber arrived, to $200,000 in 1914. Philipp wished to reduce the state's budget, and he may have considered extension work to be part of a complex that included the Progressives, the Legislative Reference Library, President Van Hise and professors who were active in state government: a complex that constituted much of the Wisconsin Idea at the time. Philipp wanted to cut the Extension's budget in half and eliminate some of its field work and its non-traditional instruction.[214] Van Hise and Reber fought back, and McCarthy worked behind the scenes. In addition, by this time Lincoln Steffins and Frank Stockbridge had published articles in nationally circulated magazines that gave glowing accounts of the University's service to the state, including its extension work. The legislature passed a bill that increased the Extension's budget to $206,000. Philipp had prepared a veto message but instead acquiesced and signed the bill.

Before extension work was reorganized and before Reber arrived at the University, a movement had begun that would lead to the creation of one of the more important branches of that work. In the early years commercial operations were taking advantage of a substantial desire for correspondence courses. The redoubtable McCarthy studied the market and estimated that 35,000 residents of Wisconsin were annually paying $800,000 for that kind of course.[215] At about the same time McCarthy and Legler surveyed Wisconsin business leaders, who overwhelmingly agreed that the University should begin to offer correspondence courses.[216]

After becoming convinced that the Extension should offer correspondence courses, President Van Hise was soon able to report that "a large number of departments in the University are planning to offer correspondence courses. Thus the correspondence work offered will have the widest range, including language and literature, political economy, political science, history, sociology, mathematics, the pure sciences and the applied sciences."[217] There were to be sequences of courses and courses for workers, such as locomotive engineers and mechanical drafters, and, with certain restrictions, students were granted credit toward degrees for the courses.

The state government immediately recognized the value of this program and began to support it financially. Governor Davidson (1906-1911), who was a strong supporter of the Wisconsin Idea, told the legislature in 1909:

> The extension division is strongly organized, and meets with great favor among the people of the state. At the end of the first year after the appropriation [for correspondence instruction in 1907], more than one thousand students were doing regular correspondence work. This work should be encouraged as it gives to a large class of

> our young men and women who, by reason of circumstances, are obliged to leave school and begin earning a livelihood before they are properly equipped for the business of life, an educational advantage which they would not otherwise enjoy.[218]

The persons who were in charge of the correspondence study program were shrewd enough to monitor it and to adjust it to fulfill its students' needs. For example, recognizing that the students had difficulty working without direct contact with their teachers, Reber began to send professors out into the state to meet with groups of students who were studying the same subject.[219] The combination of a strong market and the University's intelligent efforts to appeal to that market caused correspondence study to grow rapidly. By July 1, 1910, students had completed or were taking 4,794 correspondence courses from the extension division.[220] At that time the most popular course was Mathematical Engineering, and many other courses that directly related to work were popular. Nonetheless, 350 students had registered for English courses and there were even 63 students in Ancient Languages and 24 in Philosophy.

The boom days of the correspondence study program came much later during the years when United States Armed Forces Institute courses were offered under a contract with the U.S. Department of Defense. During 1956-57, there were 8,423 students enrolled in regular University correspondence courses, which was not many more than the number enrolled during 1910, but about 85,000 students were taking the USAFI courses.[221] When the contract with the Defense Department ended during the mid-1970s, student enrollments dropped significantly, but recently the growth in students has been fairly consistent at about two percent annually, and 11,616 students were enrolled in Extension correspondence courses during 1994.[222]

While the Extension Division was being revitalized, the College of Agriculture continued its outpouring of information that benefited the state's farmers. Research on soils was an important part of the college's work during this era. Some of it was aimed at increasing the amount of tillable land in the state. Professors and others from the college studied marshy soil to determine the proper drainage, the more effective fertilizers, the crops that were more likely to be successful and the best methods of growing them. Others did research on sandy soil to find methods to add humus (the organic matter in soil), effective fertilizers, and ways to prevent the soil from blowing away.[223] A few years later, in 1915, soil scientists joined the effort to promote and assist the growing of alfalfa in the state. For example, they found that adding lime to the fields would improve alfalfa crops, but that could be done effectively only after a simple test for the acidity of soil was discovered by Emil Truog.[224]

The College of Agriculture directed much of its efforts to Northern Wisconsin, where there was still a need to replace the virtually defunct logging industry with more viable economic activities. The college established three experimental farms in the far north. Some nearly worthless land was drained on one farm and barley, which grew well, was planted. The college also entered into contracts with three farmers under which the college provided fruit trees and directions for cultivating, pruning and spraying them, and the owners did the work. The college also attempted to establish the commercial growing of strawberries in the area.[225]

The impressive agricultural activity during the middle of the first decade of this century is attributable in part to increased funding. President Van Hise acknowledged the generous increase in the college's funding in 1905.[226] Also, at about the same time, the federal government enacted the Adams Act, which provided funds to each state for agricultural research. In 1905, the first year that the act was in effect, each state received $5,000, and the amount increased by $2,000 each year until it reached $15,000.

Another reason why the College of Agriculture flourished during this era is Van Hise's 1907 appointment of Harry Russell as dean of the College. In fact, Russell deserves most of the credit for the College's generous funding. He was effective in dealing with the legislature and adept at convincing corporations and farming groups to fund research that would benefit them. Russell strongly supported research, teaching and extension work. An energetic man, as his scientific discoveries that have already been mentioned indicate, he vigorously worked for the College, even engaging in turf battles with Dean Birge of the College of Letters and Sciences. One exam-

ple of his administrative skill was his establishment of departments in new areas of inquiry. For example, the Department of Agricultural Economics and the Department of Plant Pathology were established early in his tenure. Like many forceful and effective persons, he was not without his enemies, and he finally grew tired of the battle in 1930, when he accepted an appointment as the first full-time director of the Wisconsin Alumni Research Foundation. John Jenkins accurately wrote of Russell, "he in fact presided over the transformation of the College into a 'state-of-the-art' institution whose shape and accomplishments attracted imitators and admirers far and wide."[227]

As Russell began to reshape and revitalize the College of Agriculture, Reber continued to expand the offerings of the Extension Division. One imaginative program that the division began, about 1908, was aid to debating and literary societies. Organizations of those kinds were among the more vibrant and important extracurricular activates on the main campus, and they had their counterparts in many municipalities in the state. However, as someone who worked for the Extension Division realized, the non-university societies had little guidance. Van Hise put the Extension Division's response well: "this opportunity for educational work has been seized by the extension division."[228] Seizing opportunities was the division's practice during the Progressive Era. Soon a stream of suggestions about topics, reading lists and materials was flowing out of Madison to the societies. From this project Van Hise concluded "the above but illustrates the fundamental idea of the extension division. It is not enough for knowledge to exist in books to be obtained by men under favorable circumstances; the knowledge must be carried out to the people."[229]

Reber also saw that the Extension Division attended to the needs of industry and its workers, although this program was begun at the initiative of employers. He reported that, in cooperation with the Milwaukee Merchants' and Manufacturers' Association, the Extension Division was offering courses in Milwaukee to train workers. Employers provided space and equipment and paid the tuition and the workers' wages while they were in class, and every two weeks an instructor from the division arrived to teach the workers.[230]

Nor did Reber ignore the state's municipalities. He established the Municipal Reference Bureau in 1909 to serve them. This bureau's functions were "to collect data and information on subjects of municipal government and place it at the disposal of the citizens of the state who [could] benefit from it."[231] To accomplish those objectives it assembled a library of about 10,000 documents. During the two-year period that ended on July 1, 1912, it answered nearly 3,000 requests for information. The volume of requests indicates that once again the Extension Division had discovered a significant need for services. The requests covered a wide range of subjects. The bureau received more requests for information about the commission form of government than about any other subject, and eventually it published a bulletin on that subject. Today some of these functions are carried out by the extension's Local Government Center.

An unusual and short-lived extension program was the Civic and Social Center Bureau, which was founded in 1910. Its goal was to help develop the civic, social and recreational resources of municipalities.[232] Its Director, Edward Ward, thought that school buildings should be the center for this kind of activity. Among the outpouring of laws by the 1911 Legislature was one that required school boards, upon the application of at least half the voters of the district, to make school buildings available for the discussion of public questions and for civic, social and recreational purposes.[233] The law also provided that if the citizens of a community were organized into a "nonpartisan, nonsectarian, nonexclusive association for the presentation and discussion of public questions," the school board was required to open school buildings to them free of charge. This program failed because of lack of interest.

During this era Governor McGovern, like Governor La Follette, turned to President Van Hise and prominent University professors for advice, among them Reinsch, Commons and Ely, who had served La Follette in the same capacity. Others were William Scott, an economist and the second person to join the School of Economics, History and Political Science; Balthasar Meyer, whose work with the Railroad Commission has been noted; and Edward Ross, who was consid-

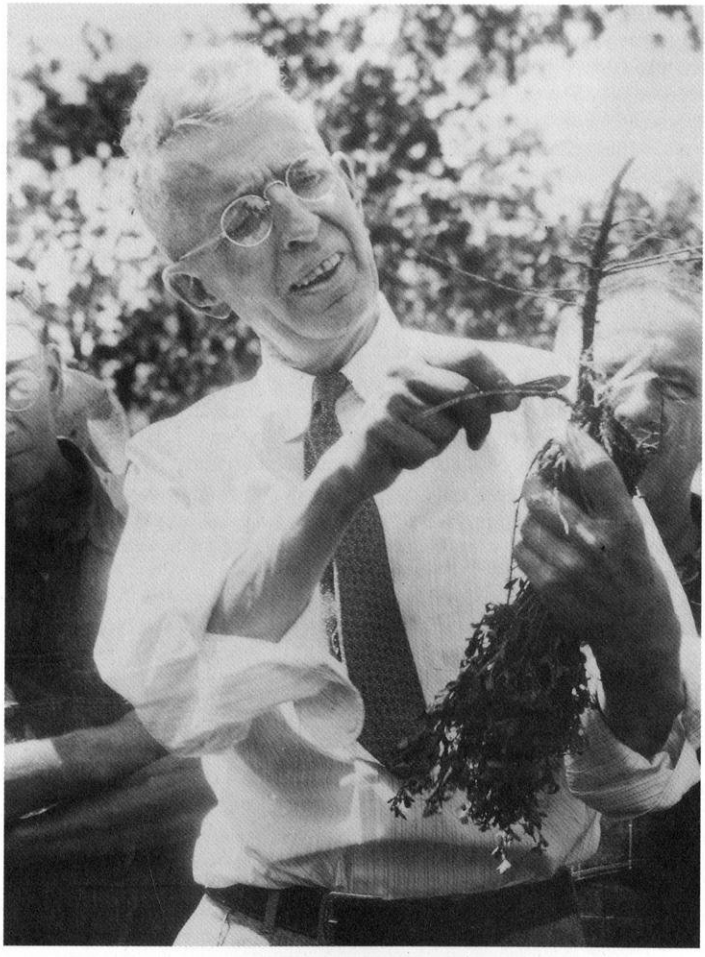
ered a controversial sociologist (partly because he brought Emma Goldman, an anarchist and social activist, to the University for a lecture).[234] That was indeed an odd assortment; it ranged from Meyer, who favored railroad executives, and Ely, who by that time was quite conservative, to Ross, who was very liberal. The occasion for the interaction of these notables was a Saturday lunch club, which included state officials, such as McCarthy, and some legislators.

Many other University administrators and professors served state government during the Progressive Era. McCarthy listed 46, and more names appear on other lists.[235] Some of these academics have been mentioned, but the service of a few others is worthy of note. Among them are William Pence (Engineering), Railroad Commission; Samuel Sparling (Political Economy), first chairperson of the Civil Service Commission; Frederick Turneaure (Dean of the College of Engineering), Highway Commission; William Hotchkiss (Geology), Highway Commission; E.M. Griffith (Forestry), State Forester; Edward Birge (Dean of the School of Letters and Sciences), Supervisor of the Geological and Natural History Survey, Fishery Commission, Conservation Commission and Forestry Commission; William A. Scott (Political Economy), Teachers' Examiner; and Harry Russell (Dean of the College of Agriculture), State Board of Forestry. In addition, McCarthy enlisted a number of professors to help draft bills. Among them were Eugene Gilmore (Law) and Chester Lloyd Jones (Political Science). Like Commons, Jones organized his students into work groups and worked with them on bills.

It is surprising that Gilmore is only the second professor of law to appear in this account, because one would expect many professors from that school to have provided advice and drafting skills. In addition to Gilmore's contributions, several law professors were working together on a project on criminal law.[236] After the persons who attended a conference on criminal law and criminology asked the regents to consider appointing a law professor in those fields, the School of Law responded by studying criminal procedure. Dean Oliver Rundell prepared a report of the findings. The professors later expanded their study to include civil procedure. The Wisconsin branch of the American Institute of Criminal Law and Criminology, which had started the ball rolling, formulated recommendations for legislation based on the School of Law's report on criminal procedure, and in 1911 a law that incorporated some of those recommendations was enacted.[237]

By this time President Van Hise's interest in conservation had become even greater. In 1910 he published *The Conservation of Natural Resources in the United States*, which at the time was a classic treatment of the subject.[238] At the urging of the Conservation Commission and particularly of Van Hise, a law was enacted that ensured that the state would have the primary rights to water power and that holders of water power franchises would be subject to regulation by the Railroad Commission.[239] This law created difficulties for Van Hise because two regents were part of a group that was interested in constructing a dam on the Wisconsin River, the kind of project that the act affected.[240] In 1912 the state Supreme Court decided that the law was unconstitutional because it deprived citizens of property and liberty.[241]

In 1911 the College of Agriculture began another outreach program. Late that year the Oneida County Board asked the college to station an agricultural agent permanently in Rhinelander.[242] By the end of the following spring, agents had begun work in that county and two others. This was the beginning of the Cooperative Extension program, which has been a mainstay of the Wisconsin Idea and which remained in the College of Agriculture until the 1960s. The agents traveled around the county to farms during most of the year and taught courses during the winter, as well as providing instruction in the county teachers' training school. The college paid half of the agent's salary; the county paid the other half and the agent's expenses. The legislature soon recognized the value of this program, and during the next session a bill on the subject was enacted.[243] That act allowed each county, except those that had a school of agriculture, to arrange to have an agricultural agent; directed the agents to do the work that they were already doing; and, most important, made an appropriation. Funds that the federal Cooperative Extension Service began to provide in 1914 strengthened this program. The partnership between counties



Professor Laurence Graber earned the title of "Mister Alfalfa" for his work to increase alfalfa production across the state. Annual alfalfa acreage grew from 18,000 to 3 million from 1911 to 1954 (photo courtesy of UW-Madison Archives, Neg. #X25 2802).

and the University's outreach programs turned out to be fruitful. In 1981 Wisconsin's counties ranked third in the nation in the amount of money that they spent on extension programs.[244]

Also during 1911, Laurence Graber began the work for which he became known around the state as "Mister Alfalfa." Ransom A. Moore, head of the Agricultural Experiment Association, directed Graber to increase the number of acres in the state devoted to growing alfalfa from 18,000 to at least one million.[245] Graber promoted the crop by writing "Wisconsin's Opportunity with Alfalfa" with Moore. The University eventually printed more than 50,000 copies of the piece. He even wrote and distributed a poem about alfalfa and encouraged young persons to present alfalfa pageants. Another of Graber's roles was to make sure that alfalfa growers were aware of relevant discoveries that the College of Agriculture and the Experiment Stations had made. One of them was the discovery early in the 1920s of a variety that they called the Grimm. Later geneticist Royal A. Brink, plant pathologist F. R. Jones, and agronomist Dale Smith developed

Vernal, an even better variety, which added millions of dollars to the value of Wisconsin's alfalfa crop.[246] By 1954 alfalfa production in the state had gone well beyond Moore's apparently impossible dream: three million acres were in cultivation. Although Graber does not deserve all the credit for the vast increase in the cultivation of that crop, he deserves a large measure.

This great burst of creative energy that the University unleashed between 1900 and 1913 did not go unnoticed at the very highest level of state government. Addressing the legislature in 1913 Governor McGovern remarked:

> Among the educational institutions of America none more frequently calls for the unstinted praise of thoughtful men who live outside our borders than the University of Wisconsin. This preeminence of our University is due not to its age, its size, nor the richness of its endowment, but principally to its willingness to serve all the people of the state, especially those who have never been within its walls as resident students.[247]

However, McGovern, recognizing that there was also a minority view of the University, then began a counterattack against the University's enemies, such as those who claimed that it interfered with the people's liberty. We have had glimpses of those enemies and will have a closer look at them later. They became more dangerous during the administration of Governor Philipp, who succeeded McGovern.

Further Expansion of Outreach Work

The University pioneered the use of radio for educational purposes. At first that medium was little more than a toy, but eventually it became an important part of the University's mission. The story begins in 1914, when Edward Bennett, a professor of electrical engineering, built a transmitter and obtained an experimental radio license, 9XM.[248] During the following year Bennett transferred the license to Earle M. Terry, an assistant professor of physics, who began transmitting weather reports that the U.S. Weather Bureau station on campus had prepared. In 1919 Terry and a student assistant added broadcasts of music during the evening. Soon the station began to broadcast agricultural price reports and accounts of athletic events. By then the experimental era was ending, as a change in the station's call letters, to WHA, indicated.

Because the station was no longer experimental and was thus expected to broaden its offerings and its audience, Terry began looking for programs. The College of Agriculture provided a noon hour program on farm and home topics, and the School of Music provided more live broadcasts of its concerts. Thus, by 1925 WHA offered diverse programs, but its funding continued to be a problem. At that time, it was not funded by the University and was making do on its own. During the 1926-27 fiscal year President Glenn Frank gave modest financial support to the station from the University. During the Depression years programming continued to outpace funding. A number of state agencies provided programs, so that the station also became a means of communication from state government to its citizens. Three major expansions of WHA's mission occurred in 1931. One was that, upon the urging of President Frank, WHA added a "Freedom of Speech Forum" which was intended to provide a means for the expression of diverse viewpoints on current issues. The second was instituting the "Wisconsin School of the Air," which consisted of programs that school children listened to in their classrooms. The third was offering the first full-length, non-credit course in Elementary Spanish. Those three additions to its programming made the station educational in the purest sense of the term. A logical extension of the second and third of those developments was beginning the "Wisconsin College of the Air" in 1933. Other stations were added and a network evolved so that the entire state could be reached.

One can get a clearer idea of WHA and the evolution of its programming by looking at the programming for a representative day after the network became well-established. On Friday, September 3, 1954, the network broadcast the following:

MORNING	
Weather Roundup	Direct from transmitters
Farm Feature	College of Agriculture personnel giving latest in farming; V.G. Rowley, Dairy and Food Division; and Reports from State Department of Agriculture.
Band Wagon	March music
News	United Press wire service
Weather	Direct from Madison weather station
Morning Melodies	Classical music
Piano Music	Classical selections
Markets	To farmers from capitol
Homemakers Program	UW Home Economics personnel in daily talks
Views of the News	Readings of editorial comment
Classroom lecture	A 50-minute visit in a professor's lecture room: Professor D. Fellman
AFTERNOON	
Noon Musicale	Light classical music
News	United Press wire service
Farm Program	University and State Department of Agriculture report to farmers; 4-H Club activities
Chapter a Day	Daily readings from books
Afternoon Concert	Classical music
The Lively Arts	Series by author-lecturer Gilbert Seldes

This program – along with the "Wisconsin School of the Air", which was being broadcast for children in schoolrooms – is entirely in keeping with the network's mission. According to a study of the network done at that time, "it is the policy of the University and the State Radio Council to provide programs which would not find an assured place on the air on commercial stations because they appeal to less than the mass audience demanded by sponsors, or because the stations lack the educational resources to produce them."[249]

One of the more colorful persons involved with the Wisconsin Idea created one of the more successful of WHA's instructional programs. In 1921 Edgar Gordon, who was a young teacher of music at the University and who later was known affectionately as "Pop" Gordon, volunteered to create a music program for elementary students. Many of the school districts in the state were unable to hire a music specialist, so Gordon filled a need. Within ten years his occasional program had become a weekly feature of the "Wisconsin School of the Air," and soon he was traveling throughout the state to meet his students and inviting them to come to the campus. At the height of the on-campus program, 10,000 students were involved. Gordon responded to that influx by holding music festivals around the state. His students recognized his contributions when 3,000 gathered to sing for him upon his retirement, and President Harrington concluded his address "The University with a State as its Community" by telling Pop Gordon's story. Gordon's obvious success led to the creation of another very popular outreach program, the summer music program for high school students.

During this same era another significant outreach program began. As we have seen, under the leadership of Ely and Commons, the Department of Economics from its beginning was interested in, and strong in, labor economics. Selig Perlman, a member of the Department's second generation, kept alive that interest. The Department supported the founding, in 1926, and the continuation of the School for Workers, which is designed to train both workers and union leaders. Witte said later that Perlman "enthusiastically devoted himself to the work of the School for Workers ... of which he was the principal mentor in [1926-50]."[250] Robert Ozanne, Jack Barbash, James Stern and others held joint appointments in the School and the Department, and for a while Edwin Young, who would later serve as president of the University, was the School's director.

Conservation Efforts During the Late 1920s

After the attempt to persuade persons to move to Northern Wisconsin and take up farming failed, the University began to attack the problem of the cutover area of Northern Wisconsin from a different angle. By the late 1920s attention shifted to reforestation, not only because the other solution had failed but also because too-extensive logging had endangered the watersheds and other parts of the environment. During the 1927 legislative session two laws were enacted to encourage reforestation. One provided property tax benefits for land owners who agreed to refrain from logging on their land.[251] The other authorized counties, if their voters approved, to create forest preserves on land that they acquired, for example because of delinquent taxes.[252]

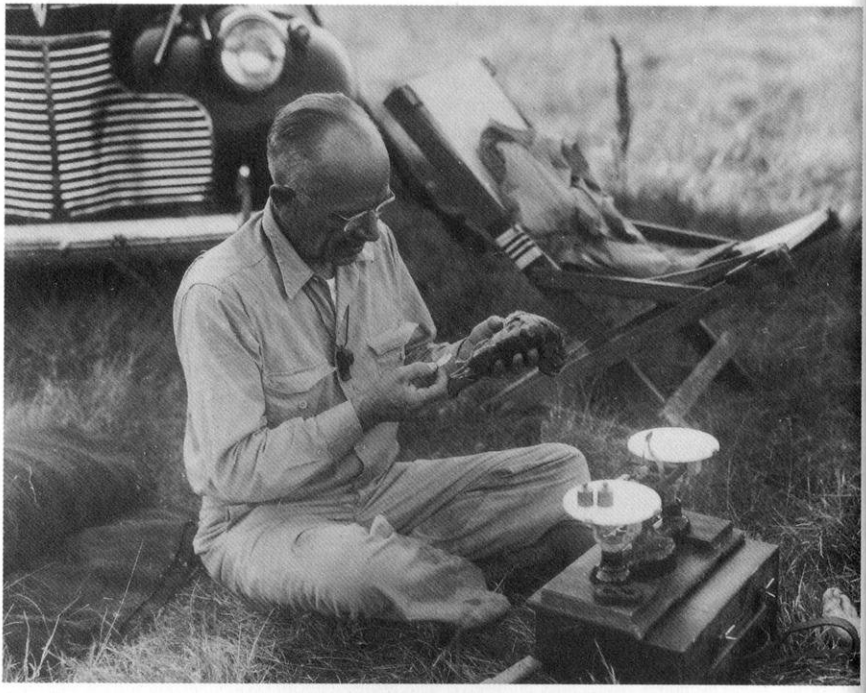
In 1928 Benjamin Hibbard of the Department of Agricultural Economics and several colleagues published *Tax Delinquency in Northern Wisconsin*. It showed that recolonization of Northern Wisconsin had failed and argued for land use controls, zoning and reforestation and for encouraging recreational, rather than agricultural, use of the land in that part of the state.[253] Dean Russell had independently come to similar conclusions. The legislature, probably responding to Hibbard's report and to Russell's opinions, passed a bill, which the governor signed. The resulting act extended county zoning power, with the approval of town boards, to include setting aside areas for forestry, agriculture or recreation.[254] This prodding by the University and these responses by the legislature did much to shape present-day Northern Wisconsin, an area that has extensive forests and a few farms and an economy that depends heavily on tourism and recreation.

Aldo Leopold is usually considered to be a national figure, because his *Sand County Almanac* has made him the environmentalists' moral philosopher. However, he, too, plays a role in the history of the Wisconsin Idea. In fact, his most famous book is part of that role. In his book he describes and contemplates things and events in nature. The basis for most of his meditations is observations that he made near his shack, which was located between Lake Delton and Portage. In a sense, then, he was a University professor who learned about issues pertinent to Wisconsin and then communicated his findings. The issues discussed in *Sand County Almanac* are very different from the ones that have been mentioned so far in this history, and so is the means of communication: his book is, among other things, a work of literature, because of its elegant prose.[255]

Leopold's more conventional role in this story, as an expert in game management, began in 1929, when the University sponsored a series of his lectures on the subject.[256] At the time, game management was not sufficiently developed to be an academic discipline or at least to be widely considered as such. That would change as Leopold's ideas on the subject crystallized. They certainly had done so by the time he published *Game Management*, the classic text in the field, in 1933. Prodded by Russell, who by that time had moved to the Wisconsin Alumni Research Foundation, President Frank approved hiring Leopold to teach game management, which he began to do in 1934. During that year he also was very busy as a guest lecturer in and near Madison.

Leopold eventually began to apply his knowledge of game management principles and the information he obtained from field observations in Wisconsin to the state's game management problems. For example, in 1943 he made detailed recommendations about the type of deer hunting season that should be allowed. The basis of his recommendations was his belief that the season should be designed to reflect the status of the deer herd, not to provide maximum opportunities for hunting. He also recommended that the bounty on wolves be eliminated and that deer not be fed. That same year he became a member of the Conservation Commission. In his research and publications he often dealt with Wisconsin problems. Some examples are "Population Turnover on a Wisconsin Pheasant Refuge" and "The Ecology of the Wolf in Wisconsin."

One of Leopold's main theoretical contributions to environmental thinking was his rejection of the idea that one should focus on preserving one part of nature (or, to use Leopold's term, "the land") at a time in favor of the belief that one should consider nature as a whole. As a member of the Conservation Commission he applied this principle when he made decisions about environmental issues. For example, in 1948 he convinced a majority of the commission's members to delay a decision about whether to allow a dam to be built on the Menominee River so that more



Aldo Leopold's role in the Wisconsin Idea revolved around his pioneering work in wildlife ecology and game management that resulted in the broader view of environmental systems replacing single species management (photo courtesy of UW-Madison Archives, Neg. #X2194N).

information could be gathered on the state's rivers. About this issue Leopold asserted, "the building of a power dam is an act of violence on nature and it is up to somebody to prove a dam will make the river more valuable than it is without it." That is, rather than thinking narrowly about the uses of water resources, he thought broadly about the entire environmental system of which the river was a part.

Governor Philip La Follette and the Professors

Of all of Wisconsin's governors, Philip La Follette probably was the most comfortable with intellectuals. Horace Gregory, who later became a fairly well known writer, remarked in his autobiography that, when he was a student at the University, Philip La Follette, Moses Slaughter (who taught Latin), William Ellery Leonard (an English professor, poet and translator who was the son-in-law of Professor Freeman, the popular Extension lecturer) and he formed a Sunday night discussion group.[257] Gregory also wrote that La Follette was "the first real intellectual of my own age that I had met."[258] La Follette asked two eminent professors, Max Otto of the Philosophy Department and John Gaus of the Political Science Department, to help him prepare the inaugural address that he gave in 1931.[259] La Follette referred to Gaus and his wife Jane as "intimate friends" of himself and Mrs. La Follette.[260]

Philip La Follette, like his father, turned frequently to professors for advice. In fact, he turned to one of the professors to whom his father had turned, Commons. In describing the work of two committees that met during 1931, La Follette wrote:

> The interim committees dealing with chain banking and unemployment were aided by the best expert and technical assistance we could find – such people as Professor John R. Commons; Arthur Altmeyer (later chairman of the federal Social Security Board); Paul and Elizabeth (Brandeis) Raushenbush; Professor Edwin Witte; Dean Lloyd Garrison of the Wisconsin Law School.[261]

Agricultural and Environmental Work During the Depression

The University had conducted research on corn for many years, but it made its first substantial breakthrough during 1932, when a team of agronomists developed a hybrid that was uniquely suited to the state's growing conditions.[262] Farmers soon became convinced of the variety's possibilities and began planting it. Also, this achievement had a good deal to do with the establishment of many seed companies in the state. During the next generation, some geneticists (including Brink, Oliver E. Nelson and Norman P. Neal) and some agronomists (including Arthur M. Strommen) developed several varieties of corn suitable for planting in Wisconsin.[263] For example, these varieties do not require long growing seasons, so they make cultivation of corn possible in more northerly parts of the state. That attribute, their higher yields and their resistance to disease added considerably, perhaps as much as $20,000,000 annually, to the value of the state's corn crop and helped make corn Wisconsin's leading crop.[264]

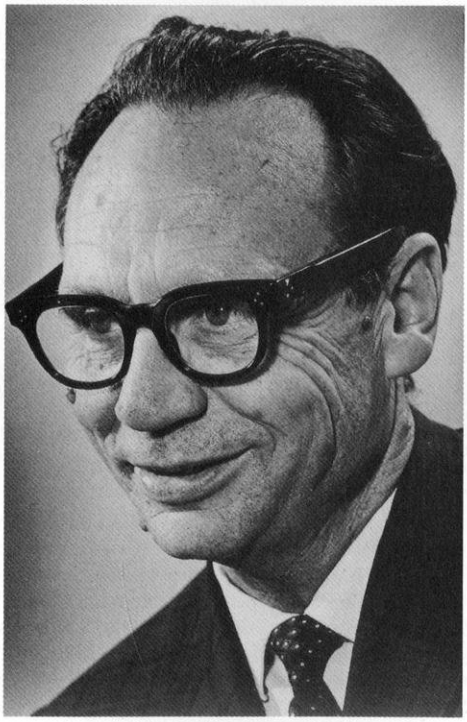
President Harrington (1962-1970) began a speech about the University's service to the state by telling the story of a farmer who was having trouble with his corn crop.[265] He had driven to one of the University's experimental farms for help and started asking questions of a man who was standing in a corn field. Luckily, he had by chance found Neal, one of the world's leading authorities on corn. Neal asked if the farmer had made use of some of the University's aids for farmers: its free soil testing program and its free bulletins. He recommended planting one of the varieties that he and the other University scientists mentioned above had developed. To Harrington this was a typical and oft-repeated example of the University gathering useful knowledge and making it readily available and of a Wisconsinite realizing that the University was a good place to turn for advice.

During the next year a similar incident that had a very different outcome occurred. A farmer drove from central Wisconsin to Madison with the carcass of a cow, a milk can of the cow's blood, and the clover that the cow had been eating, which a veterinarian thought caused the cow's death.[266] Finding the State Veterinarian's office closed, the farmer began looking for help elsewhere and stumbled upon a biochemist. It was a lucky stumble. The biochemist had been working on the very problem, and the biochemist was Karl Paul Link. The luck, however, was not the farmer's but Link's and, eventually, the University's and the world's. Link confirmed the veterinarian's belief about the cause of the cow's death, so that the farmer was left with more knowledge but also with the problem of finding different feed for his herd. Link, however, was stimulated to concentrate harder on his research on clover's prevention of clotting. He eventually flipped the problem around, realizing that preventing clots is sometimes beneficial. The result was Link's invention of Dicumurol, which has medical uses and, in the form of Warfarin, kills rodents. The ultimate result, after the Wisconsin Alumni Research Foundation patented Dicumurol, was millions of dollars that the University could use for research.

Although during the Depression Wisconsin did not have the serious soil conservation problems that the "Dust Bowl" states had, its problems stimulated interest at the University in soil conservation. By that time the University had a long history of soil research, dating back to Henry, and of interest in soil conservation. President Van Hise, a geologist, was an advocate of soil conservation.[267] Staff members of the Cooperative Extension service aided in drafting a bill that, when enacted, created a soil conservation program and established a state soil conservation committee, consisting of two Extension staff members and the assistant director of the agricultural experiment station, as well as two farmers.[268] The committee was given responsibility for working with local soil conservation districts, which were authorized by the act. The local committees were given considerable power to regulate farming methods so as to conserve soil.

An Update of the List of University Persons in Government

A dissertation submitted to the University in 1940 attempted to catalog as many as possible of the University persons who worked, other than as members of examining boards and informal advisers, for state government between 1905 and 1940.[269] The list includes 98 names but is of limited use because it provides only a few dates and, with a few exceptions, does not indicate the ways in which the individuals listed divided their time between the University and government service. It also names persons who moved from state government to the University. A few of the more significant persons listed are Nathan Feinsinger, a professor of law who was a counsel



Robert Gard played a major role in Wisconsin's cultural life as he brought theater and arts to the state through radio and television educational broadcasts and various statewide programs, including the summer Rhinelander School of the Arts program (photo courtesy of UW-Madison Archives, Neg. #99977.C.2).

for the Labor Relations Board; John Gaus, a political scientist and friend of Philip La Follette's who served on the Citizens' Committee on Public Welfare; W. O. Hotchkiss, a professor of geology who was an *ex officio* member of the Highway Commission; Don Lescohier, a professor of economics who, during 1929 and 1930, directed a study of reemployment opportunities; and Henry R. Trumbower, an assistant professor of political economy who was a member of the Railroad Commission from 1916 to 1923. The most interesting combination of duties was that of John Walsh, who was an instructor of boxing and a law clerk for the executive department.

The 1940s and 1950s

In 1945 a lanky young man from Kansas, Robert Gard, arrived at the University. He later published many books, some of them set in Wisconsin, and frequently lectured, thereby developing a considerable following. However, it is primarily because of the reason he was brought to

Wisconsin – to rejuvenate its theater – and for logical extensions of that task, that he is part of this story.[270] Oddly enough, he knew soon after his arrival that he would belong in a story like this one. He read McCarthy's *The Wisconsin Idea* and realized that McCarthy described the same service concept that Gard had adopted. In fact, Gard recognized his own aspirations in McCarthy's title. Thus was born the Wisconsin Idea Theater.

Gard, both in his own writing and in his conception of the theater, was a regionalist, a believer that persons could create valid and significant art by describing experiences that were unique to the area in which they lived. He turned first to developing playwrights. One of his methods was to present a weekly radio program, "Wisconsin Yarns," in which he communicated Wisconsin folk material that could be used by playwrights. He realized later, with the help of a group of persons who visited him, that simply encouraging rural persons in the state to write would be more effective than would feeding them material. To provide encouragement, he organized the Wisconsin Rural Writers' Association in 1948. At about the same time, theater groups began to spring up spontaneously around the state, so Gard and the small staff that worked with him contacted them. Later Gard founded Wisconsin House, which published regional literature; the Wisconsin Arts Foundation and Council; the Rhinelander School of the Arts and the Robert E. Gard Wisconsin Idea Foundation.

Gard thus was a major force in the state's cultural life. He achieved so much to a large extent because he developed the quality Adlai Stevenson mentioned in the quote at the beginning of this article: a belief in the people of Wisconsin. He believed that they had talent, that they could be reached and inspired and that they were interested in, and could profit from, services that the University provided. The spotlight in this article has been on the University, but there would not have been a Wisconsin Idea if the people of the state had erected a wall between themselves and the University. All the major contributors to the Wisconsin Idea probably had, at least unconsciously, the same belief in the people that Robert Gard had.

Governor Oscar Rennebohm (1947-1951) revived in a small way a practice that had been a major component of the Wisconsin Idea but that had fallen into disuse: appointing persons from the University to permanent, full-time positions in state government. He chose William Young of the Department of Political Science to be the director of the Division of Departmental Research in the Governor's office. That may sound like an inconsequential position, but the division was the precursor of the current Division of State Executive Budget and Planning in the Department of Administration. That is, it was the unit of state government that had the main responsibility for advising the governor on policy issues. Young, therefore, was one of the governor's more important advisers.

During 1952 Dean Rudolph Froker of the College of Agriculture appointed Henry Algren to be the associate director of Cooperative Extension.[271] Algren proved to be an imaginative, dynamic administrator. For example, he provided financial assistance for extension agents to pursue graduate studies. He worked nationally to provide training for extension administrators; in fact, he was instrumental in establishing the National Agricultural Extension Center for Advanced Study at the College. He also clarified the duties of the Cooperative Extension staff and made its programs more responsive to the needs of the state's residents. John Jenkins correctly asserted that "largely through Henry Algren's initiative and leadership, the decade of the 1950s was the golden age of Cooperative Extension for the state and the College."[272]

In 1953 it had been almost 50 years since the University's extension was reorganized. Some statistics about the Extension for that year indicate the size to which it had grown.[273] Almost a million and a half persons attended meetings that the Cooperative Agriculture Extension sponsored. That branch of the extension program also distributed more than one million bulletins, which was the equivalent of seven to each farm in the state. The division wrote more than 18,000 news articles and prepared more than 8,000 radio broadcasts. Its county offices received more than 200,000 telephone calls. University Extension was also thriving. During the 1953-54 fiscal year, the enrollment in correspondence courses was about 90,000 (about 80,000 in courses for

the United States Armed Forces Institute), and about 30,000 persons participated in the division's institutes.

During 1953 the University began serving the citizens of this state by means of a new medium: television. That year the State Radio Council began operating WHA-TV, an educational television station. In 1963 the state's Coordinating Committee for Higher Education was made responsible for devising a plan for educational television in the state. One impetus for the increased interest in educational television was the availability of federal matching grants under the Educational Television Facilities Act of 1963. Six years later the Educational Communications Board was formed and attached to the Coordinating Committee. The ECB became an independent agency in 1971, and the following year it began to build television stations. That same year, Vilas Communication Hall opened on the campus of the University of Wisconsin-Madison. Its television facilities, which WHA-TV operated, were vastly superior to the facilities that had been available. At the present time, the Educational Communications Board holds the license for five television stations, and the University Extension holds the license for WHA-TV, the flagship station of the network. The network has recently begun offering instruction by means of fiber optics, microwave, satellite and cable. In short, the entire state now benefits from a large array of educational opportunities that the Extension and its partner, the Educational Communications Board, provides.

Governor Nelson (1959-1963) used members of the University faculty more extensively than any governor since McGovern.[274] In fact, he began using them during his first campaign for the governorship, when he sought advice about land use planning and environmental policy from Jacob Beuscher of the School of Law and Raymond Penn of the Department of Agricultural Economics.[275] Their advice resulted in the creation of the Department of Resource Development by means of a bill that Beuscher, Penn and others drafted. Nelson appointed David Carley, who had recently earned a Ph.D. from the University, as the first director of that department, and he named Beuscher, Penn, George Hanson (State Geologist) and Robert McCabe (Wildlife Ecology) to the department's board. The board also sought advice from other faculty members.

One of the main accomplishments of Nelson's administration was the enactment of the Outdoor Recreation Action Program. Ahlgren of the Cooperative Extension Service, who was also the chair of the State Soil and Water Conservation Board, served on the Recreation Committee, and faculty members prepared studies for the committee. Nelson also revitalized the Natural Resources Committee of State Agencies, which coordinated the environmental work of various units of state government. That group, too, sought advice from faculty members, including, again, Beuscher and Penn, and also William Loomer, Arthur E. Peterson, Arthur H. Robinson, Marvin Beatty and George L. Wright, as well as Vice President Ira Baldwin.

Nelson also asked Isadore V. Fine to predict the economic effects of establishing an Apostle Islands National Lakeshore. While serving in the U.S. Senate in 1970, Nelson was instrumental in securing passage of the law that created the National Lakeshore. He also asked Fine to study the economic development problems of Northern Wisconsin and appointed Sherman Weiss, an Extension agent, to be an economic development agent for that area. As we have seen, by this time state policymakers realized that Northern Wisconsin's hopes lay with tourism and recreation, not with farming.

Nelson also turned to the University when the issue of county forests arose. It will be recalled that establishment of those forests was authorized in 1927. During Nelson's administration, the 27 counties that had established forests and the Conservation Department disagreed about dividing the income that the forests generated. Nelson vetoed legislation that would have ended the partnership between the state and the counties that were in the program, and his veto was narrowly sustained. Realizing that the issue was volatile, he created a task force to work on it. Penn and William Lord (Agricultural Economics) served on the task force, and Fred Trenk of the Extension, who had worked on the program in its earliest years, assisted it. Alterations to the program that the task force suggested forged a consensus, and the program was saved.

The 1960s and 1970s

Between 1962 and 1964, during Governor Reynolds' administration, David Adamany, who was to play important roles in state government for more than a decade, was a member of the Public Service Commission. At the time of this appointment, Adamany was not a professor, but during the 1970s, after completing his Ph.D. at the University, he joined the Department of Political Science. His next appearance on the state government stage was in a very important role: chief designer of a campaign finance law (Chapter 334, Laws of 1973) that moved Wisconsin into the national forefront on that issue. His work on that act drew on the knowledge that he gained by writing a dissertation and a book on the subject.[276] During the administration of Governor Lucey (1971-1977), Adamany was for a time the Secretary of the Department of Revenue.

The campaign finance act deserves some scrutiny. The act created an Elections Board to administer the finance provisions and election law in general. The basis for the regulation of campaigns was a requirement that candidates, political committees and political groups register and periodically report to the Elections Board the contributions they received and the disbursements they made. The act also created limits on the contributions that individuals may make to campaigns and on the disbursements that campaigns may make. The limits of both contributions and disbursements varied according to the office for which the candidate was seeking election. Bookkeeping and other technical requirements were established to make it easier for the Elections Board to monitor compliance with the law. The act was rational in its conception and sophisticated in its details.

For years the University's efforts to aid industry were primarily Extension's training of workers to do their jobs and the activities of the School for Workers. In 1963 the University added a different kind of assistance: the University-Industry Research Program.[277] The program's missions are to direct businesses and industries to University researchers who have the knowledge that they need, to facilitate the acquisition of technology by business and industry and, in general, to foster economic development in the state. Some new companies have made extensive use of the program. For example, through the program, businesses could obtain University review of their business plans, suggestions for improvement of their products and for developing markets, information on product liability law, testing of products, and creation of manufacturing processes. The program also provides literature searches, sponsors seminars and conferences and publishes *Touchstone*, a periodical that contains information on the University's basic and applied research that may interest the program's clientele. The Department of Development frequently calls on the program to give information to businesses that are considering locating in this state.

We have seen the Nelson administration's great interest in environmental issues. Governor Warren Knowles (1965-1971) also made protecting the environment a major priority. During his administration a committee, the more important members of which were connected to the University, drafted an important piece of legislation that protected shorelands.[278] Herman Smith, an extension agent, was the chairperson of the committee, which also included Doug Yanggen of the Agricultural Economics Department. For this work the state government also called once again on Beuscher and Penn. Staff members of the Extension Division helped to write a manual to explain the new act and assisted county officials in administering it.

The act's central provision authorized counties to zone shorelands that met certain requirements. The act also allowed the state to determine the limits of floodplains in any county, city or village that had not adopted a "reasonable and effective" floodplain zoning ordinance. To improve the state's monitoring and administration of the laws that protected shorelands and floodplains and water resources in general, the act also created a water resources division in the Department of Resource Development and transferred powers to it from other state agencies. The act is highly technical, so the contributions of the University experts were crucial.

The need to assemble University experts to work on public policy issues having to do with the environment made it clear that problems of that type had become complex. The University responded in 1970 by forming the Institute for Environmental Studies. In addition to granting

interdisciplinary degrees, the institute engages in a wide range of environmental research programs and has an extensive outreach program that includes a radio program, frequent lectures, seminars, publications and reference services.

In a speech delivered in 1977 on interactions between the University and state government, Clara Penniman, former chairperson of the University's Department of Political Science, included some of the Institute's work among her four examples of current interactions.[279] She mentioned its work with the state climatologist and the Department of Natural Resources (in regard to fish) and its thermal scanning research, which has improved both the state's rating of the insulation of buildings and the energy efficiency of the state's own buildings. After it discovered the need for more insulation in many of the buildings in the state, the Institute brought in the University Extension to promote wider use of insulation. Penniman herself has taken an active interest in Wisconsin government and has published on Wisconsin taxes.[280]

Today much of the Institute's work is coordinated by four units: the Center for Climatic Research, the Center for Environmental Policy Studies, the Environmental Remote Sensing Center and the Great Lakes Cooperative Park Studies Unit. The outreach functions are part of the Wisconsin Idea, and, although much of the institute's research is national or international in scope, some of it is directed at Wisconsin problems. An example of research that directly benefits this state is a study of contamination in the Fox River and Green Bay, conducted in collaboration with scientists from the Wisconsin Department of Health and Social Services.[281]

Although Governors Nelson and Knowles used faculty members mainly on a temporary basis and principally for advice and technical skill pertinent to the environment, Governor Lucey appointed a number of faculty members to permanent positions in the state government in a variety of fields. A few governors who succeeded Governor Lucey continued this practice. For example, Governor Lucey appointed two young, talented faculty members to the technically demanding position of commissioner on the Public Service Commission. They were Matthew Holden of the Department of Political Science and Charles Cicchetti of the Department of Economics. Stephen Born of the Department of Urban and Regional Planning became the Director of the Office of State Planning and Energy, and Ralph Andreano, an expert on health care finance from the Department of Economics, became the administrator of the huge Division of Health in the Department of Health and Social Services. One member of Governor Lucey's cabinet was also from the University: Virginia Hart, who came from the School for Workers to become the Secretary of the Department of Regulation and Licensing. A Lucey appointment who continues in the position to which the governor appointed her is Shirley Abrahamson, formerly of the Law School, who became the first woman justice on the Wisconsin Supreme Court. She has served with great distinction, attaining a national reputation for her thoughtful opinions as well as her publications and her speeches. Recently she has been considered for a position on the U.S. Supreme Court, and the length of her tenure will soon qualify her to become the Chief Justice of the Wisconsin Supreme Court.

Governor Lucey formed the Employment Relations Study Commission and charged it to make a thorough study of the state's civil service system. Between 1975 and 1977 Dennis Dresang, a member and later chair of the University's Department of Political Science, served as the Commission's staff director. The Commission's work led to a major rewriting of the civil service statutes and to the transfer of personnel functions from the Department of Administration to the newly formed Department of Employment Relations.[282] Thus, the Commission had major consequences. As we shall see, Professor Dresang has continued to make his skills and knowledge available to state government.

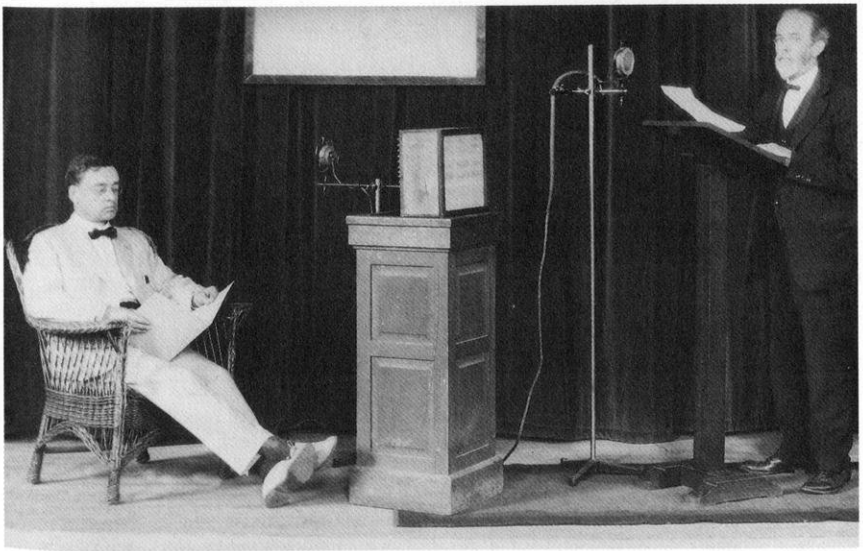
During the first year of the Lucey administration, Engineering Extension reached its 70th year of existence. Its growth had been quite dramatic. Two years later, during the 1973-74 academic year, approximately 15,000 persons took advantage of its correspondence courses, evening classes, institutes and other offerings.[283] By that time Engineering Extension had expanded its program to include the Professional Development Degree, video cassettes, educational telephone and television networks and the Statewide Extension Education Network. It has also be-

come the largest university engineering extension program in the country, and its high quality is widely known.

At about the same time, the General Extension and Cooperative Extension programs were also thriving. Their officials estimated that they served about 25% of the state's citizens.[284] That included about 72,000 persons who attended institutes and workshops for which fees were charged and 15,642 persons who were enrolled in off-campus courses for credit or took correspondence courses. Seventy percent of the state's elementary students listened to WHA's "Wisconsin School of the Air." County Extension agents had contacts with more than 500,000 persons. The Extension also conducted more than 20,000 group meetings and field trips. The range of the subject matter in which the Extension provided instruction was very broad.

During the Lucey administration the Wisconsin Idea took an unusual twist. Until that time University professors had influenced state government's policies either by accepting positions in that government or by offering advice directly to public officials, sometimes at their own initiative, more often at the officials' initiative. However, during 1973 Jon Udell, a professor in the School of Business, began to exert an influence on state government by publishing research at the request of, and sometimes with the financial support of, non-governmental entities. His interest was tax policy and his views were the opposite of Harold Groves'. That is, he did not believe that taxes should be progressive but that they should be designed to stimulate economic growth, which often meant that tax advantages should be given to the wealthy under the assumption that, having more capital after they paid taxes, they would create more jobs.

During 1973 the *Milwaukee Journal* commissioned and published a series of articles by Udell that were based on surveys of opinions about the state's business climate and, specifically, about its taxes.[285] The persons whom Udell surveyed believed that the state's taxes were too high. Udell offered a number of solutions that had been proposed by the Metropolitan Milwaukee Association of Commerce, including creating an investment tax credit for manufacturing machinery and equipment used in Wisconsin, a property tax freeze for industrial facilities that



Early educational broadcasting experiments by Professors F. M. Terry (left) and William H. Lightly, shown here in the Sterling Hall studio about 1923, eventually led to statewide broadcasts of educational, agricultural, music and other public affairs programs over WHA-AM, which is the nation's oldest station today (photo courtesy of UW-Madison Archives, Neg. #1159 B.1).

needed repair, a repeal of the property tax on inventories and a property tax exemption for manufacturing machinery and equipment.[286]

Governor Lucey was concerned about the state's economy and was quite responsive to Udell's suggestions. Probably at the urging of the governor, the Democratic Assembly members of a conference committee on the state budget bill joined forces with the Republican senators on the committee. The result was the creation of a number of tax advantages for business and industry: an income tax and franchise tax deduction for sales taxes paid for energy used in manufacturing; an increase in the rebate for the property taxes paid on inventories, finished products and livestock; and a property tax exemption for manufacturing machinery and equipment.[287] These and subsequent policy changes significantly shifted the property tax burden from owners of factories and retail businesses to homeowners. Some argue that those tax advantages also significantly improved the state's economy. Udell was among those who so argued.[288]

Udell's next target was the income tax on capital gains. He and employes of the Public Expenditure Survey of Wisconsin argued against Wisconsin's tax treatment of that kind of income.[289] They thought that the severity of the tax discouraged investment and encouraged elderly persons to leave the state. Udell and his coauthors did not assert that capital gains should be exempt from the income tax, but that, in computing the tax, 40% of the taxpayer's net capital gains should be subtracted from the taxpayer's income and that the gain should be indexed to cancel the effects of inflation.[290] Udell's efforts did not have the immediate success that his 1973 business tax proposals had. However, the legislature included a provision in the 1987-88 state budget bill that would have exempted 30% of the capital gain on assets held for more than one year but less than five years and 60% of the capital gain on assets held more than five years.[291] Governor Thompson used his veto powers to convert that provision into an exemption of 60% of the gain on assets held more than one year.

Udell and the Public Expenditure Survey next turned their attention to the inheritance tax.[292] They argued, based on a study that was sponsored by the the *Milwaukee Journal* and depended heavily on surveys, that the inheritance tax was encouraging elderly persons, especially those who were wealthy, to leave Wisconsin and that it was regressive. Some of the state government's tax experts immediately countered that additional factors needed to be considered.[293]

The first result of the pressure that Udell, the Public Expenditure Survey and others exerted was the creation of an inheritance tax exemption for property left to a spouse.[294] Supporters of women's rights had also been advocating that change in policy. A later result was the repeal, in phases, of the inheritance tax.[295] Ironically, soon after that repeal, Tun-Mei Y. Chang of the Department of Health and Social Services wrote a paper that convincingly argued that the inheritance tax was only a minor reason why elderly persons moved away from Wisconsin.[296]

In fact, Wisconsin's tax policy has been altered substantially from 1970 to the present. That change can be seen not only in the legislative provisions just mentioned but also in others, such as the reduction in the number of the brackets for the individual income tax. To phrase that change as simply as possible, emphasis has been on taxation designed to increase economic development rather than on progressive taxation. Certainly Udell was not the only reason for these changes in Wisconsin's tax policy, but his work has been one of the more important reasons for that change.

The Lucey administration continued the tradition of environmental legislation that had been revitalized by the Nelson administration and expanded by the Knowles administration. One major law enacted in the Lucey era depended on a study that began before Lucey took office. For six years the University Extension and the Department of Natural Resources had jointly conducted the Inland Lake Demonstration Project to determine whether it was feasible to manage Wisconsin's lakes.[297] Three members of the staff that conducted the project – Stephen Born, Lowell Klessig and Doug Yanggen – helped to draft legislation that authorized the creation of inland lake preservation districts.[298] The districts were given the power to impose taxes and special assessments, and a state appropriation was created to help fund them. The districts' commissioners were charged with doing research, planning rehabilitation projects and coordinating ef-

forts to save and rehabilitate lakes. The bill also created an Inland Lakes Protection and Rehabilitation Council in the Department of Natural Resources. Like some of the earlier environmental acts, this one was made possible by the technical knowledge of the persons who drafted it, many of whom were from the University.

The legislature and the governor enacted the farmland preservation program during 1977. An important factor in drawing the government's attention to the problems that the act was designed to solve was a paper written by Richard Barrows of the Department of Agricultural Economics and Richard W. Dunford, who was not a University employe.[299] They studied the degree to which agricultural, urban and recreational factors affected the value of agricultural land in the state. Although they were not entirely satisfied with the reliability of their data, they were able to make a convincing case that in many counties urban and recreational factors were more important than agricultural factors. It follows from that finding that in those counties there was significant pressure to convert agricultural land to those other uses. Barrows and others provided technical assistance during the preparation of legislation to deal with this problem.[300] After creation of the farmland preservation program was enacted, Barrows served as the first director of the program.

The legislation had two main components. One was an ingenious income tax and franchise tax credit that was based on the fact that in areas where agricultural land was being sold at high prices and then converted to other uses, land that continued to be farmed would be assessed at high levels for property tax purposes because its value was determined on the basis of its potential selling price for other uses. In response, the credit applied to agricultural land that was taxed at a high level and that was subject to either zoning restrictions or a county's agricultural preservation plan that would prevent its conversion to other uses. The other component was a system for preserving farmland. It included the requirements that land owners had to fulfill in order to enter into farmland preservation agreements and thus qualify for the credit and other requirements for agricultural preservation planning and zoning.

Governor Lucey resigned during July 1977 to become the U.S. Ambassador to Mexico. Lieutenant Governor Martin Schreiber then served as acting governor for one and a half years until he lost the 1978 gubernatorial election. He retained most of the officials Lucey had appointed, including those from the University. In addition, he made one major appointment from the University. Donald Percy, a brilliant administrator, had risen rapidly through the ranks at the University and the University of Wisconsin system to become one of the two senior vice presidents, one level below the System's president. Governor Schreiber appointed him Secretary of the Department of Health and Social Services, the state's largest agency.

The man who became governor in 1979, Lee Sherman Dreyfus, had been the chancellor at the University of Wisconsin-Stevens Point. To date, he is the only person who came from the University System to the governor's office, and thus his service can be viewed as an example of the Wisconsin Idea operating at the highest level of state government. He retained Percy and brought a number of academics into his administration. One was Kenneth Lindner, also a chancellor (at the University of Wisconsin-La Crosse), who assumed the vital position of Secretary of the Department of Administration and brought with him a professor of education, Richard Rasmussen, to be his deputy. Governor Dreyfus appointed Lowell Jackson of the University of Wisconsin-Extension as the Secretary of the Department of Transportation; Virginia Hart of the School for Workers (who had also been a Lucey appointee) as a member of the Labor and Industry Review Commission; Gary Rohde, a professor of agriculture and applied economics at the University of Wisconsin-River Falls, as Secretary of the Department of Agriculture, Trade and Consumer Protection; and Cyrena Pondrom, an English professor and administrator, as executive director of the Governor's Employment and Training Office.

The 1980s and 1990s

During the last few decades, the University of Wisconsin System has increased its efforts to assist business and industry. One example of these efforts is the publication, beginning in 1982, of a *Directory of University Resources for Business and Industry.* By 1990 the directory had

developed into an exhaustive listing of resource centers, laboratories, research units, small business development centers and institutes, career planning and placement offices, internships, libraries, reference services, translators, business services and other useful resources. In short, by using the directory, persons in business and industry could easily find in the University System almost any kind of help that they needed.

After the Dreyfus administration, fewer persons from the University System were appointed to high positions in state government. The next governor, Anthony Earl (1983-1987), retained Jackson for a time and appointed Walter Dickey, a law professor, as administrator of the Division of Corrections in the Department of Health and Social Services. Governor Tommy Thompson (1987 to the present) appointed only two persons from the University System to major, full-time positions. One was Robert Haase, a business professor, who became the Commissioner of Insurance, and the other was Charles Kuehn, a lecturer at the University of Wisconsin-Green Bay, who became chairperson of the Parole Board. Governor Thompson, however, appointed many University persons to various councils, boards, commissions and study groups.[301]

In 1983, the legislature created the Robert M. La Follette Institute of Public Affairs at the University of Wisconsin-Madison.[302] The Institute was directed to engage in "research, public service and educational activities to advance the knowledge of public affairs and the application of that knowledge to the needs of this state." The Institute was built on the foundation of the Center for Public Policy and Administration, which was formed during 1967 at the request of Governor Knowles. (The Center had granted masters degrees in Public Policy and Administration but did little research.)[303] The work of the Institute certainly fits within the definition of the Wisconsin Idea. It soon refined its mission, deciding that "the Institute's major scholarly function will be to provide an objective non-partisan center for policy studies, studies that will be

From early Institutes for Farmers to today's Farm Progress Days, university innovations in agriculture continue to be passed on to Wisconsin farmers (photo courtesy of Wolfgang Hoffmann, UW-Madison, Agricultural Journalism).

problem-oriented, building on and including basic research."[304] The faculty of the Institute decided to consult with governmental officials about the areas of policy research on which it should concentrate. Among its early choices were economic development, responses to changes in the scope of the federal government, state priorities and unemployment compensation. It also eventually began an outreach program that included workshops and seminars.

The La Follette Institute soon began to produce many publications on issues pertinent to Wisconsin. For example, it has published four major collections of articles. The first, issued in 1988, included articles on the state budget process, the recent history of state and local finance, a number of human services issues, agricultural policy and natural resource policy.[305] The authors included Institute faculty members, other academics and non-university persons. The Institute has published three editions of *Dollars and Sense: Policy Choices and the Wisconsin Budget*, in 1990, 1991 and 1994. Each of these volumes included articles on the process of creating a governmental budget, both in general terms and specifically related to Wisconsin, and articles on a number of policy issues that, because of their importance at the time, were likely to be analyzed and debated during the preparation of the state's budget bill.

Governor Earl appointed the Wisconsin Task Force on Comparable Worth, which issued its report in 1986. Dennis Dresang, the director of the La Follette Institute, served as chairperson and Carin Clauss, a professor of law at the University, as vice chairperson. James Jones, a professor of law at the University, and Wallace Lemon, an associate vice-president of the University of Wisconsin System, were members of the task force. The mission of the task force was to determine whether the pay for state jobs held mainly by women and members of minority groups was less than the pay for similar jobs held mainly by white males. The task force determined that there was such a disparity. It produced an exhaustive report to document its findings and recommended that the disparity be eliminated. Since the report was published, the state has made some progress in achieving pay equity.

In the 1993 spring election, Alex Molnar, a professor of education at the University of Wisconsin-Milwaukee, ran unsuccessfully for State Superintendent of Public Instruction. Late that year the winner of the election, John Benson, having recognized Molnar's abilities and in particular his grasp of urban education issues, appointed him chief of staff of an Urban Initiative Task Force. The task force had the difficult assignment of proposing actions that school districts and the Department of Public Instruction can take to reduce violence and other symptoms of social disorder that, although not unique to urban schools, are most serious in them. The task force was also directed to propose statutory changes that will alleviate those problems and a strategy that will make it more likely that its recommendations will be followed.

The final figure discussed in this history of the Wisconsin Idea is John Witte, a professor of political science, a member of the La Follette Institute faculty and an expert in education and state tax issues. He was one of the two editors of the institute's *State Policy Choices: The Wisconsin Experience*, co-author of an article about the Wisconsin budget process and author of "Wisconsin Income Tax Reform". He also wrote on education issues for Volume I of *Dollars and Sense*. In addition, the La Follette Institute has published his "Public Subsidies for Private Schools," in which he analyzed the Milwaukee Parental Choice Program, under which the state provides funds for some children to attend private schools. These are useful works and certainly serve the state. He is also the grandson of one of the major figures in the history of the Wisconsin Idea, Edwin Witte, and his contributions reflect that lineage.

7. EVOLUTION OF THE WISCONSIN IDEA

Although no history of the Wisconsin Idea could possibly be complete, this one provides enough detail to allow a reasonable assessment of the Idea's evolution. For this article the Idea has been defined as the University's service to the state, which includes six distinct components. Two components relate to direct services to the people of Wisconsin – performing research that is focused on Wisconsin's problems and providing outreach activities. Four components relate to state government – offering policy advice, providing information, providing technical skill and serving in governmental positions. The relative amounts of energy expended on the compo-

nents has changed over time. During the first decade and a half of this century, when many of the innovations credited to Wisconsin were developed, policy advice was the most impressive component. Over the past 50 years, outreach activities have probably been the most important.

A more difficult question is whether the Wisconsin Idea has flourished or faded in the latter part of the 20th century. Two shrewd observers, who were well-qualified to make a judgment on the issue of the Idea's course, argued that the Idea has faded. In 1972 John Weaver, the president of the recently formed University of Wisconsin System, addressed a rhetorical question to the Board of Regents: "Is it not timely – indeed prerequisite – that we begin a re-examination and rededication as well to the public service role of these universities? Should we not, with zeal, seek a revitalization of the 'Wisconsin Idea'?"[306] He would not have called for a revitalization if he had not believed that the Idea had faded. During 1992 Bryant Kearl, a veteran University faculty member and highly placed administrator, gave a speech entitled "Who Killed the Wisconsin Idea?"[307] He overstated his title for rhetorical effect, but he certainly thought that the Idea had faded, partly because the University's structure, especially the restructuring of Extension during 1962, and the demands on its faculty members discouraged public service and partly because persons outside the University turned less frequently to it for assistance, even though the University had much to offer the state.

Some statistics support the position that Weaver and Kearl take. Between 1969 and 1987 nine groups, which five governors appointed, studied property taxes in Wisconsin. This is the kind of public policy work that professors often did during the early years of this century. A list of these groups, the year in which they began work, the number of University of Wisconsin System full-time faculty members appointed to serve, and the total number of members (those two numbers expressed as a fraction) follow:

1. Task Force on Local Government Finance and Organization (The Tarr Task Force), 1967, 1/13.

2. Governor's Task Force on Educational Financing and Property Tax Reform (The Doyle-Task Force), 1972, 0/47.

3. Governor's Commission on State-Local Relations and Financing (The Wallace Commission), 1976, 1/53.

4. Blue Ribbon Tax Reform Commission, 1978, 4/13.

5. Committee on the Personal Property Taxation Phaseout, 1978, 0/7.

6. Governor's School Finance Task Force, 1983, 0/5.

7. Strategic Development Commission, 1984, 0/22.

8. Wisconsin Expenditure Commission, 1985, 0/9.

9. Governor's Local Property Tax Relief Commission (The Barry Commission), 1987, 0/23.

The scarcity of professors is striking; the groups were composed primarily of legislators and representatives of interest groups that had a stake in the group's recommendations. One could argue that appointing such persons made it more likely that practical recommendations would result and that legislation to implement them would be enacted. Conversely, one could argue that a wonderful source of knowledge and intellect was virtually ignored.

I think that the assessments of Weaver and Kearl are too harsh. It is true that there have not been recent contributions by professors of the magnitude of the Babcock Butterfat Test and the pioneering legislation of the Progressive Era. However, Extension work is flourishing and the number of professors who have served state government recently is impressive. My intuition is that the Idea was stronger in some earlier eras than it is now, although a compelling demonstration of that intuition is impossible.

8. FORCES THAT OPPOSED THE WISCONSIN IDEA

It is clear there have been forces that have opposed the Wisconsin Idea, made it less effective or both. Some of them have been in the state government and others have been at the University. It is worth examining some of those forces, partly for their historical interest and partly to inform those who would work to ensure that the University's service to the state will remain significant.

Early Political Counterforces

Near the end of Governor McGovern's term of office, which was one of the high points of the University's service to the state, a sword forged by the Wisconsin Idea's most staunch supporters was turned against it. It will be recalled that, because of his experiences with a similar board that he created in Milwaukee, John R. Commons had advocated that the state establish an agency that would oversee the rest of the executive branch. The result of Commons' advocacy was the Board of Public Affairs. The 1913 Legislature, although it was controlled by the Progressives and was friendly to the University, passed a bill that directed the Board to study the University. Governor McGovern, although he was a great supporter of the University, signed that bill. The Board hired two persons from outside the state, one to investigate the efficiency of the University's teaching methods and the other to investigate the College of Agriculture.[308]

The intent of the legislature and governor was not hostile, but the "experts" had little understanding of universities, and its report, known as the Allen Report after its primary author, was quite negative. President Van Hise brushed it off:

> The survey of the University, while resulting in elaborate reports both on the part of the members of the survey and of the University, led to no results; for the reason that at almost every point there was direct conflict in regard to facts, between the officers of the survey and the university authorities.[309]

The survey was sharply attacked both from inside and outside the University. The Stalwart wing of the Republican Party, which was victorious in the 1914 elections, was not greatly influenced by the report, probably because of the negative reaction to it.[310] The report thus produced little, but it was the first attack on the University that included substantial analysis rather than mere carping, such as that of Charles Cary, who was the State Superintendent of Public Instruction at the time.

Although the Stalwart legislators did not take the Allen Report seriously, during the 1915 session they introduced many bills that could be considered "anti-university". Among them were bills that would remove the president from the Board of Regents, abolish the Board of Regents, discontinue the property tax that was allocated to the University and lower the entrance requirements for the Law School and the Medical School.[311] None of the bills was enacted; in fact, they may have been introduced merely to send a message or to appeal to constituents.

Because he spoke more frequently on the subject, Governor Philipp's position on the University, and in particular on the Allen Report, is clearer than that of the Stalwart legislators. Philipp was predisposed to believe the negative view of the University that the report presented. For example, during the 1914 campaign he attacked the University for influencing students to be disloyal to the United States.[312] At first Philipp believed the report, as is indicated by the fact that he hired Allen as an aide after the report was issued.[313] As the University's allies rallied to support the institution, Philipp changed his mind. His biographer reported that:

> Before the end of the summer [of 1915] he and Van Hise reached a general agreement on the immediate course of the university. Surveyor Allen's temporary position was terminated and he departed, much to the relief of Van Hise and the university faculty. In time the atmosphere between the Capitol and Bascom Hall became almost cordial.[314]

Later Philipp agreed to call a special session of the legislature to appropriate additional funds for the Medical School and shrewdly added a few other bills to the agenda so that the legislature would not adjourn before passing the bill that Philipp most wanted.

Philipp's original motives were a desire to limit the University's appropriations and, probably to a lesser extent, to punish it for certain actions and its alliance with the Progressives. He gradually learned that it was a valuable resource and, for that reason, had considerable support. This episode of the Allen Report and the Stalwarts' treatment of the University did little damage to the University and the Wisconsin Idea, but it reduced the Idea's momentum.

In 1921 John Blaine, a progressive Republican, replaced Philipp as governor. Under ordinary conditions the resulting change in the political climate would have improved relations be-

tween the state government and the University, but the conditions were far from ordinary. That was the year that McCarthy died. Although Witte was a worthy successor as chief of the Legislative Reference Library, he was not the human dynamo that McCarthy was. Also, by that time McGovern and Robert M. La Follette had long since had a falling out, which was caused in part by McGovern's attempt to become the chairman of the 1912 Republican National Convention, in order to aid the Progressive candidates, Theodore Roosevelt and La Follette, against William Howard Taft. La Follette interpreted this attempt as a shift in allegiance to Roosevelt, and it increased his enmity toward McGovern. He had earlier turned against his first large financial backer, Isaac Stephenson, and many of his other early allies. All of these struggles splintered the Progressives.[315] Although they had recaptured the governorship, they were weakened and thus less able to pass legislation that faculty members helped to develop. Even more damaging to the Wisconsin Idea was the extremely negative and public reaction that most University faculty members and administrators, including many of the leading proponents of the Wisconsin Idea, had to La Follette's opposition to World War I. As a result, Blaine, who supported La Follette, was cool to the University.[316]

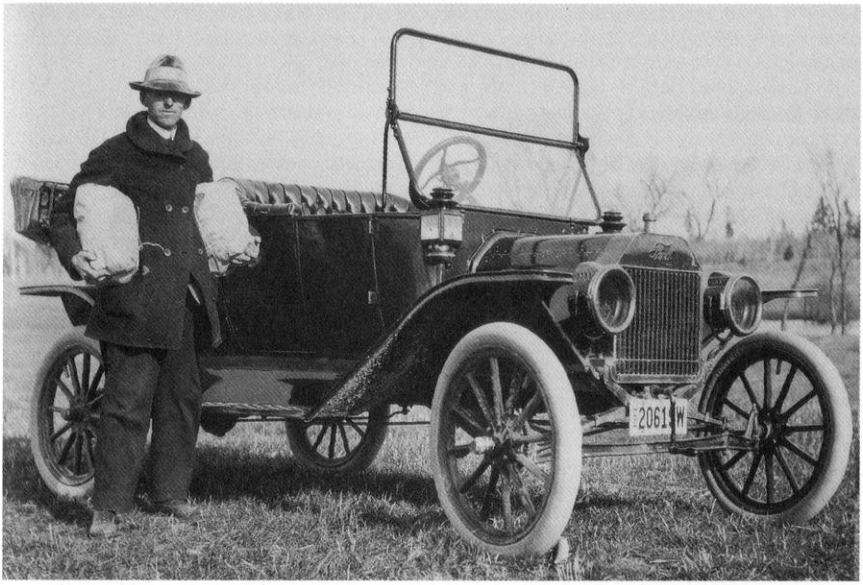
Early Problems at the University

At about the same time, certain events at the University did not bode well for the Wisconsin Idea. Van Hise, who probably did more for the Idea than any other president, died in 1918. Birge, who came to the University in 1879 and had been dean of the College of Letters and Sciences since 1891, replaced Van Hise and served until 1925. Soon after he assumed the presidency, Birge wrote in a letter, "No one at my age desires to undertake the duties of a new and arduous position."[317] He also thought that he would serve for a brief time, as he had from 1900 to 1903, until a permanent president was chosen. Consistent with his attitude toward his new position and his expectation of a brief tenure, he ran a caretaker administration. For example, he, unlike Van Hise, did not vigorously fight for state funding. He also declined to reorganize the University and to try to improve faculty salaries. Although he believed that the University should serve the state, he did little to facilitate that work. Birge had served the University loyally and well for decades, but, because of the age at which he became president and his attitude toward the position, he was not the president that the University needed at that time.

Similarly, Birge's successor, Frank, made certain decisions that diminished the University's stature. The most recent volume of the history of the University presents a moderately favorable assessment of Frank's administration, but earlier writers took a dim view of it.[318] Extensive evaluation of the merits of Frank's presidency would be beyond the scope of this study, but three facts about it are relevant to the Wisconsin Idea. Because Frank became the University's president at a time when the Wisconsin Idea needed a shot of adrenalin, it is important to examine those facts.

The first is that his tenure was plagued with controversy (and was ended with his firing by the Board of Regents, which Philip La Follette dominated). The faculty mistrusted him because of his lack of academic credentials (he had been the editor of a popular magazine before he came to Wisconsin) and because of his fancy life style, which he maintained even when the Depression began to have a devastating effect on the faculty members' salaries. Philip La Follette, realizing that Frank was a conservative who had political ambitions – perhaps even aspiring to the U.S. Presidency – became Frank's enemy. Various persons attacked him for fiscal mismanagement, favoritism, ineffective oversight of the athletic program and other problems. The complaints made against Frank probably resulted in lower appropriations for the University, and they certainly resulted in the devotion of a great deal of time and energy to fending off his critics and a lowering of the popular opinion of the University.

Two of Frank's appointments significantly affected the Wisconsin Idea. One, the appointment of Chris Christensen to be the dean of the College of Agriculture, somewhat changed its emphasis. Christensen was an economist, not a scientist, like all of the previous deans of that College. He made policy decisions that reflected his background. For example, on a radio program he stated, "In the redirected short course, special emphasis is being given to the economic and social problems of farming and marketing for rural living."[319] In fact, the Short Course, un-



UW county agricultural agent E. L. Luther takes the Wisconsin Idea into the field in 1914 with the latest technology of the day (photo courtesy of UW-Madison Archives, Neg. #X25 2815).

der Christensen, began to resemble the Danish folk schools that impressed him.[320] That is, cultural and social components were added to the instruction in agriculture. In general, although the college continued to do impressive scientific research, Christensen shifted some of its efforts to social, cultural and economic work, especially to the promotion of agricultural cooperatives. Those changes may have been appropriate during the Depression, but they probably did not sit well with some of the faculty members of the College, which had emphasized science for decades.

The other of Frank's appointments that significantly affected the Idea was clearly unfortunate. That was the selection of Chester Snell to be the dean of the Extension Division. Reber, the retiring dean, had recommended Snell, who had been in a similar position at the University of North Carolina.[321] Although Snell was highly regarded, he was only 30 years old, and he and Frank agreed that he would eventually reduce the time he spent at the Extension Division and begin working for Frank. As he did with his other appointees, Frank left Snell alone. The new dean quickly set about shuffling personnel and speeding up the division's expansion at Milwaukee. Snell's inflated self-image and Frank's belief that he should give his subordinates considerable autonomy, more than Snell desired, caused the relationship between the two to deteriorate, and extension faculty members at Milwaukee began to think that Snell was autocratic and vindictive. It eventually became clear that Snell was causing major problems for the University, and in 1935 he was fired.

In addition to his sins of commission, Snell can be charged with one sin of omission. President Frank appointed him partly because at North Carolina he had run an extension program that was integrated with the campus program. That is, rather than having separate extension and regular faculties, the individual departments at North Carolina were responsible for both extension and on-campus work. At the University of Wisconsin, the College of Agriculture was similarly organized, and its extension work was much more effective than was the rest of the University's. Frank hoped that Snell would bring about that kind of integration. Snell did not succeed. The

degree to which extension work has been integrated with the on-campus departments has varied considerably throughout the University's history, and it appears that close integration is more effective.

More Recent Problems at the University

In 1963, the year after he became the president of the University, Harrington proposed to the Board of Regents that General Extension and Cooperative Extension be merged in order to achieve efficiency and coordination. The College of Agriculture opposed this idea, just as, in 1907, it had opposed an attempt to remove Cooperative Extension from it. Harrington prevailed and during 1965 the University of Wisconsin-Extension was created. Four years later Glenn Pound, the dean of the College of Agriculture, sharply and publicly denounced the merger, alluding to the new unit's "gross inefficiencies" and arguing that there were too many layers of authority and that extension activities had been cut off from their blood supply: research and classroom teaching.[322] Recently Bryant Kearl said of the merger: "For the Wisconsin Idea, which obviously depended on access to the wide range of specialized knowledge available in a true university, it was a deadly blow."[323]

In 1971 legislation was enacted to merge the University of Wisconsin and the State Universities (formerly the State Colleges, which in turn had developed from the Normal Schools) into the University of Wisconsin System. This resulted in greater isolation of the Extension, exacerbating the problems created in 1962. During the early 1980s, a study group formed by the Board of Regents recommended that many of Extension's staff members be reintegrated into units in the System that primarily served full-time students, especially the University. However, after some movement in that direction, the course was reversed. During the last few years Extension personnel have been formally reintegrated into the University, but the actual level of reintegration is open to question. Policymakers seem to have realized that the 1965 merger was a mistake, but its effects persisted for many years and, as Pound and Kearl charged, it has harmed the Wisconsin Idea.

Changes in the Academic World

The Wisconsin Idea was also affected by external forces: changes that took place in all universities. For example, the importance of, and nature of, research have changed. For decades academics have been expected to teach, do research and perform public service, but the relative weight given to each role has changed. The priorities have varied considerably from institution to institution, but over time the importance of research, especially publishable research, has increased and the emphasis on public service has decreased. This is one reason why certain branches of the Wisconsin Idea (direct service to state government and outreach work) have recently not been attractive to some faculty members.

The nature of research has also changed. For example, as has been noted with regard to the Department of Economics, social science research has become more quantitative. William Sewell, who during the 1950s was the chair of the Faculty Division of Social Sciences and then the chair of the Social Science Research Committee, has noted, with approval, this trend.[324] Also, during that decade there was a movement in the College of Agriculture away from applied research and toward basic research.[325] Basic research often prepares the way for the solution of practical problems. However, working directly on practical problems is often more effective. In addition, large increases in federal funding for research have made it more likely that faculty members will work on theoretical or "national" problems rather than on practical or state problems. By the end of the 1950s, the shocking realization that research in the Soviet Union had progressed to the point that that country could put Sputnik into orbit was responsible for a large increase in national research funds, which accelerated these changes in the nature of research. The ability of some professors to obtain consulting contracts has also reduced the amount of research done on the state's problems.

Changes in the Legislative and Executive Branches of State Government

The legislative change that has most significantly affected the Wisconsin Idea is the increase in the sources of information available to legislators. As a result, legislators have tended to rely less on the University for information. Part of that increase is attributable to the legislators' own increase in knowledge. At the beginning of the 1993 session, 63 of the 131 members (there was one vacancy) identified themselves as full-time legislators. Because their attention was focused on their legislative work, they were more likely to acquire information that was relevant to their policymaking. All legislators, regardless of whether or not they also have other occupations, have in recent years spent an increasing amount of time on legislative business, thereby increasing their knowledge of issues.

Legislators, as well as policymakers in the executive branch, also recently have had increased access to information, some of which is thrust upon them. Lobbyists and interest groups, in addition to their more obvious work to influence legislation, acquire a considerable store of information, which they make available to legislators. The number of lobbyists, and thus the amount of information, has grown considerably in recent years.

Both the executive branch and the legislative branch have created and increased sources of knowledge and technical skill for themselves. The Legislative Reference Bureau, formerly the Legislative Reference Library, has provided research and bill drafting services since 1901. For many decades it was the only unit in state government that had those functions as its primary mission. The executive branch preceded the legislature in establishing its own source of information. In 1959 the Department of Administration was created and was given several functions, among them policy research.[326] The Division of Departmental Research in the Governor's office had been performing that function, but the creation of the new department significantly increased the research capacity of the executive branch of the state government. The new department included a Bureau of Management, which was charged with, among other things, preparing and analyzing the governor's budget and performing organization and management analysis.[327]

The legislature soon realized that it would be in its interest to give itself the kind of research capacity that it had given to the executive branch. During the 1961 session, it passed a law that authorized a committee to study the staff services that it needed.[328] The legislature and the Ford Foundation financed the study and the addition of staff members. In 1964 a research analyst was hired for each party caucus in each house, and two part-time interns were hired for each house.[329] Later more interns were hired and still later their positions were made permanent. When the funding from the Ford Foundation ceased, the state appropriated money for those positions.

The committee also recommended that the legislature hire fiscal experts, and a Legislative Budget Staff was created. In 1969 that unit was renamed the Legislative Fiscal Bureau, and its duties were more clearly defined.[330] Its primary function has always been to provide support for the Joint Committee on Finance, the legislature's most powerful committee, but it also aids other legislators. Its work involves not only fiscal analysis, such as determining the fiscal effects of bills, but also policy analysis. The bureau's analysts are specialists, so they develop a good deal of knowledge of their fields. In the past, professors had fairly frequently performed the policy analysis that the Legislative Fiscal Bureau now performs.

The interns and the permanent employes who replaced them were assigned to some of the Legislative Council's study committees. The Legislative Council had been created in 1947 to conduct studies during the intervals between legislative sessions.[331] It was at first composed of ten legislators. After the interns who were assigned to the council were replaced by permanent employes and more persons were hired, their duties were expanded. In 1969, members of the Legislative Council Staff were assigned to each of the legislature's standing committees. The staff members became familiar with their interim committees' subject matter. If they were assigned to a standing committee for a long time, they became experts in that committee's subject matter. Thus, they, like the Legislative Fiscal Bureau's analysts, performed functions that professors had performed.

At the time when staff members of the Legislative Council began to assist standing committees and the Legislative Fiscal Bureau's functions were increased and more clearly defined, the Legislative Reference Bureau had only two permanent drafting attorneys and hired a handful of others during the legislative sessions.[332] During the early 1970s, the bureau began to hire more permanent attorneys and stopped hiring sessional attorneys. The bureau has gradually increased the number of its drafters. As a result of these developments, it has become better able to provide a technical skill, bill drafting, that is essential to the legislative process and is another function that had occasionally been performed by professors. The bureau's attorneys are also specialists in subject areas, and thus, in addition to developing drafting skills, they acquire knowledge of their subjects. Both they and the research and library staff act as sources of knowledge for the legislature.

Thus, between 1968 and 1973, three service agencies significantly increased the support that they supplied to the legislature. At about the same time the number of legislative aides, another source for gathering information, increased significantly. This growth in information sources is revealed in the legislature's major appropriations for operating expenses:

	1965-66	1966-67
Legislature	$1,783,750	$1,909,150
Legislative Council	138,000	153,000
	1967-68	1968-69
Legislature	1,504,500	1,571,500
Policy Research	80,300	85,000
Legislative Council	148,700	239,400
	1969-70	1970-71
Legislature	3,039,100	3,245,700
Legislative Fiscal Bureau	125,600	132,700
Legislative Council	276,600	291,600
	1971-72	1972-73
Legislature	4,303,400	4,625,000
Legislative Fiscal Bureau	174,500	208,200
Legislative Council	339,400	357,100

Interactions Between the University and State Government

Finally, during recent years relations between the University and state government have not been as cordial as they were during, say, the Van Hise-Progressive Era. A series of political protests at the University cost it some support. They included: demonstrations during 1967 that were aimed generally at the Vietnam War and specifically at recruitment at the University by Dow Chemical Company, which manufactured napalm that was used in the war; a strike during 1969 in support of demands by African-American students; a strike during 1970 by the Teaching Assistants' Association; escalation of anti-war activity in 1970 after the invasion of Cambodia; and in 1970 a bombing directed at the Mathematics Research Center, which did work for the U.S. Department of Defense.

The University and the state government have always disagreed about the proper level of funding for the University. Sometimes the disagreements have been minor; at other times, the government has provided significantly less revenue than the University desired. On rare occasions, the government's motive for doing so has perhaps been punitive, although much more often the government simply has had too little revenue to satisfy everyone. More recently the issue of authority has been a sticking point. The state government perceives the issue to be oversight that is needed because of the large amount of state money that the University receives. The University perceives the issue to be over-management and a decrease of its authority. The com-

bination of political activity at the University that has disturbed state officials and disagreements about the proper level of funding for the University and the allocation of decisionmaking responsibility may have made the government less likely to request assistance from the University and may have made the University less likely to volunteer it.

9. GAINS AND LOSSES RESULTING FROM THE WISCONSIN IDEA

By this point, both the nature and the magnitude of the benefits that this state has derived from the Wisconsin Idea should be obvious. The state government has benefited enormously. University professors have contributed invaluable technical skill and advice on policy matters; they have left their mark on numerous state laws. Moreover, those contributions have ranged from significant to essential in regard to the legislation that has given Wisconsin its reputation as a pioneer and innovator, legislation regarding the income tax, worker's compensation, unemployment compensation and campaign finance. Some of the more able administrators who have served in the executive branch of the state government have come from the University.

The citizens of Wisconsin have also received much from the operation of the Wisconsin Idea. Some of the huge fiscal effects of the University's research have been mentioned. The countless examples of knowledge and advice passing from the University to individual citizens of the state have also been important. Opportunities for formal instruction away from University campuses have been plentiful. Nor should the pleasure provided by the University be ignored; for example, persons throughout the state have been able to listen, in their own communities, to concerts by the Pro Arte Quartet, a first-rate musical group.

The costs of the Wisconsin Idea are far less obvious, partly because, luckily, their magnitude is much less. The Idea has somewhat distorted the University's operation. President Van Hise argued that pure research and practical research not only are not mutually exclusive but also blend:

> It can not be predicted at what distant nook of knowledge, apparently remote from any practical service, a brilliantly useful stream may spring. It is certain that every fundamental discovery yet made by the delving student has been of service to man before a decade has passed.[333]

He had a point, but sometimes the two kinds of research are distinct and then, to the extent that one is emphasized, the other is deemphasized. Adherents of the Wisconsin Idea have encouraged and engaged in practical research. There is no way to credibly assess the results of that emphasis. On the one hand, it is better to have developed a new variety of corn that will add millions of dollars to the state's revenue from agriculture than to have published the results of esoteric research that will be read by only a few specialists. On the other hand, probably some important discoveries were not made because researchers were doing practical, not pure, research.

It is not difficult to weigh the benefits of the Wisconsin Idea against its costs. This state has been a clear winner because the Wisconsin Idea has operated. We owe thanks to the thousands of persons who have believed in it and acted on their beliefs. We also owe them a commitment to keep the Idea alive. It would be even better if we would commit ourselves to making it stronger.

10. PROSPECTS

It is difficult to predict the future of the Wisconsin Idea, just as it is difficult to predict the future of anything. Some facts relevant to that future, however, are clear. Some of the reasons the Idea was accepted, such as the Morrill Act and the relationship between Van Hise and Robert M. La Follette, were unique to their time and have long since lost their impetus. Others, such as the Idea's monetary value, have continued in effect. However, the major reason was the involvement of great human beings. They arrive on the scene randomly, so the future of that factor cannot be confidently predicted. Similarly, some of the counterforces, such as the Stalwart Republicans' suspicions about the University and the problems of the Birge and Frank administrations, no longer have an effect. However, it is clear that the state government will not dismantle its own sources of information, and the value to faculty members' careers of public service prob-

ably will not increase. Looking at the question from this perspective, one sees the same blurry picture. The future of the Idea is not necessarily assured.

That assessment leaves one in doubt. Another reason for doubt is that a major determinant of the Wisconsin Idea's future is desire, the desire of state government's policymakers and University administrators and faculty members. If they resolutely decide that the Idea will die, it will die. If they resolutely decide that the Idea will become stronger, it will become stronger. We can hope that the latter path is taken. The Wisconsin Idea, the University's application of intelligence and reason to this state's problems, has immeasurably improved life in Wisconsin.

In addition to the persons whom I interviewed for this article, whose assistance is acknowledged in endnotes; for advice, information, encouragement and assistance I heartily thank Arthur Hove, R. David Myers, Donald Percy, David Stute, Paul H. Williams, Barbara Brown, David Cronon, Larry Barish, Patricia Meloy and John Jenkins.

ENDNOTES

1. Quoted in Lincoln Steffins, "Sending a State to College," *American Magazine*, vol. 62, no. 4 (February 1909), 350. Changes in the names of the institutions that now make up the University of Wisconsin System could add confusion to this account. To avoid that confusion, I will refer to the current University of Wisconsin-Madison as the University of Wisconsin, the name that it had for most of its existence, or simply as the University. I will refer to other parts of the system and to the system itself by the names that they had at the time about which I am writing.
2. From an article in *The Outlook* quoted in the Papers of the Board of Regents, December 13, 1911.
3. Frederick Rudolph, *The American College and University: A History* (Athens: The University of Georgia Press, 1990, reprint of a 1962 edition), 363.
4. Ibid.
5. Correspondence, Robert H. Foss to J. E. Boell, February 20, 1965 (Archives, Memorial Library, University of Wisconsin).
6. Examples are Wilbur Cohen, Foreward to Theron F. Schlabach, *Edwin E. Witte: Cautious Reformer* (Madison: State Historical Society of Wisconsin, 1969), v.; R. David Myers, "The Wisconsin Idea: Its National and International Significance," *Wisconsin Academy Review*, vol. 37, no. 4 (Fall 1991), 4; Merle Curti and Vernon Carstensen, *The University of Wisconsin: A History, 1848-1925* (Madison: The University of Wisconsin Press, 1949), vol. II, 3, and Charles McCarthy, *The Wisconsin Idea* (New York: The Macmillan Company, 1912), 16.
7. Examples are Robert Haveman and Mark Shroder, "Roots of the Wisconsin Idea: The University and Public Policy Since the Progressive Era," *L & S Magazine*, vol. 6, no. 1 (1989), 36; Edward N. Doan, *The La Follettes and the Wisconsin Idea* (New York and Toronto: Rinehart and Company, Inc., 1947), 12; William Cronon, "Planning Another Century of Good Government: The Wisconsin Idea in the Twenty-first Century," Remarks before the Wisconsin SAVE Commission (January 7, 1994), 3; Leo Walsh in John W. Jenkins, *A Centennial History: A History of the College of Agricultural and Life Sciences at the University of Wisconsin-Madison* (Madison: College of Agricultural and Life Sciences, 1991), Preface and Vernon Carstensen, "The Origin and Development of the Wisconsin Idea," *Wisconsin Magazine of History*, vol. 39, no. 3 (Spring 1956), 182.
8. E. David Cronon and John W. Jenkins, *The University of Wisconsin, A History, Volume III: Politics, Depression and War, 1925 to 1945* (Madison: The University of Wisconsin Press, 1994), 828.
9. *1849 Revised Statutes*, Chapter 18, Section 9.
10. McCarthy, 28. The statement is: "Whatever may be the limitations which trammel inquiry elsewhere we believe the great state University of Wisconsin should ever encourage that continual and fearless sifting and winnowing by which alone the truth can be found."
11. Richard T. Ely, *Ground Under Our Feet* (New York: The Macmillan Company, 1938), 187.
12. Richard T. Ely, *The Social Law of Service* (New York: Eaton and Mains, 1896), 175.
13. Richard T. Ely, *Ground Under Our Feet*, 216.
14. Benjamin G. Rader, *The Academic Mind and Reform: The Influence of Richard T. Ely in American Life* (Lexington: The University of Kentucky Press, 1966), 173.
15. Ibid.
16. Ibid., 175.
17. Robert J. Gough, "Richard T. Ely and the Development of the Wisconsin Cutover," *Wisconsin Magazine of History*, vol. 75, no. 1 (Autumn 1991), 3-38.
18. McCarthy, 28.

19. Ibid., 20-21.
20. Frederic, C. Howe, *Wisconsin: An Experiment in Democracy* (New York: Charles Scribner's Sons, 1912), 39.
21. John R. Commons, *Myself: The Autobiography of John R. Commons* (Madison: The University of Wisconsin Press, 1963, reprint of a 1934 edition published by The Macmillan Company), 106.
22. William Cronon.
23. Frederick Jackson Turner, *The Frontier in American History* (New York: Henry Holt and Company, 1920), 283.
24. See, for example, Rudolph, 246, 264 and 306.
25. The act is now codified as 7 *United States Code* 301-305.
26. 7 *United States Code* 304
27. *1884 Report of the Regents*, 10. The name of these reports varies, and some of them are for two years rather than one. To indicate that the source cited is the same I will cite them consistently, using this title and, if the report covers two years, refer to the second year.
28. *1872 Report of the Regents*, 8-9.
29. Fred Harvey Harrington, "The University and the State," *Wisconsin Alumnus*, November 1962, 14 and "The University with a State as its Community" (pages not numbered).
30. J. David Hoeveler, Jr., "The University and the Social Gospel: The Intellectual Origins of the 'Wisconsin Idea'," *Wisconsin Magazine of History*, vol. 59, no. 4 (Summer 1976), 282-298.
31. Ibid., 283.
32. Ibid., 296.
33. Commons, *Myself*, 33-34.
34. Curti and Carstensen, vol. I, 286-287.
35. Hoeveler, 286.
36. Robert M. La Follette, *La Follette's Autobiography* (Madison: The University of Wisconsin Press, 1960), 13.
37. Quoted in J. F. A. Pyre, Wisconsin (New York: Oxford University Press, 1920), 228.
38. Curti and Carstensen, vol. I, 248.
39. John Bascom, *Things Learned By Living* (New York and London: G. P. Putnam's Sons, 1913), 140.
40. Maurice M. Vance, *Charles Richard Van Hise: Scientist, Progressive* (Madison: State Historical Society of Wisconsin, 1960), 84.
41. Curti and Carstensen, vol. I, 283.
42. David Paul Thelen, *The Early Life of Robert M. La Follette 1855-1884* (Chicago: Loyola University Press, 1966), 47.
43. Quoted in *La Follette's Autobiography*, 11. For an account of Ryan, a fascinating person who played an important role in this state's legal history, see Alfons J. Beitzinger, *Edward G. Ryan: Lion of the Law* (Madison: State Historical Society of Wisconsin, 1960).
44. La Follette, 53
45. Eric E. Lampard, *The Rise of the Dairy Industry in Wisconsin: A Study in Agricultural Change 1820-1920* (Madison: State Historical Society of Wisconsin, 1963).
46. Ibid., 341.
47. Ibid., 342.
48. Ibid., 342.
49. *Journal of the Assembly*, 1858, vol. 2, 1522-23.
50. *1859 Report of the Regents*, 20.
51. Fred Harvey Harrington, "The University with a State as its Community."
52. *Wisconsin State Journal*, March 3, 1911, and April 15, 1911.
53. Tape I, recorded April 13, 1950, at the State Historical Society of Wisconsin, State Historical Society of Wisconsin archives, Perlman files, transcript, 10-12.
54. *1904 Report of the Regents*, 26. In 1968 the College of Agriculture was renamed the College of Agricultural and Life Sciences. For the sake of convenience, I will use the earlier name throughout this article.
55. *Journal of the Senate*, January 12, 1905, 103.
56. Frank Parker Stockbridge, "A University That Runs a State," *World's Work*, vol. 25, no. 6 (April 1913), 706.
57. *1880 Report of the Regents*, 5.
58. Board of Regents of the University of Wisconsin System, "Select Mission of the University of Wisconsin-Madison," January 1974.
59. Curti and Carstensen, vol. I, 75.
60. Vance, 111.
61. Glenn S. Pound and Douglas P. Maxwell, "Plant Pathology and the Wisconsin Idea," in Paul H. Williams and Melissa Marosy (eds.), *With One Foot in the Furrow: A History of the First Seventy-five Years of the Department of Plant Pathology at the University of Wisconsin-Madison* (Dubuque, Iowa: Kendall/Hunt, 1986), 301.
62. Philip La Follette, *In Politics: The Memoirs of Philip La Follette* (ed. Donald Young) (New York: Holt, Rinehart and Winston, 1970), 147.
63. See, *The Milwaukee Journal*, November 30, 1908.
64. Edward Birge, "Effect of the War on Higher Education," National Education Association, *Addresses and Proceedings of the 57th Annual Meeting*, vol. 57, 217-219.

65. Curti and Carstensen, vol. I, 234.
66. *1906 Report of the Regents*, 26.
67. Thomas Chamberlin, *The Coming of Age of the State Universities* (no publisher listed, 1890), 9.
68. *1889 Report of the Regents*, 29-30, and 595-596.
69. Thomas Chamberlin, "The State University and Research," *The Jubilee of the University of Wisconsin, 1904* (Madison: the Jubilee Committee, 1905), 182.
70. Quoted in Charles Foster Smith, *Charles Kendall Adams: A Life-Sketch* (Madison: The University of Wisconsin Press, 1924), 37.
71. The economists' academic unit at the University has been given three different names over the past century: the School of Economics, Political Science and History in 1892, the Department of Political Economy in 1903, and the Department of Economics in 1918. For convenience's sake, with a few exceptions I will refer to the unit throughout this section as the Department of Economics.
72. Robert Lampman (ed.), *Economists at Wisconsin: 1892-1992* (The Board of Regents of the University of Wisconsin System, 1993), xix.
73. "Mortgage Statistics and Taxation in Wisconsin and Neighboring States," *1907 Wisconsin Tax Commission Report*, 295-414.
74. Lampman, 25.
75. Quoted in Fitzpatrick, 124.
76. "Genesis of Wisconsin's Income Tax Law: An Interview with D. O. Kinsman," *The Wisconsin Magazine of History*, vol. 21, no. 1 (September 1937), 3-15.
77. Lampman, 29-30.
78. John R. Commons, "Institutional Economics," *American Economic Review*, vol. 21, no. 4 (December 1931), 654.
79. Ibid., 649.
80. Ibid., 650.
81. Ibid., 650.
82. Ibid., 656.
83. Rader, 173.
84. *1903 Assembly Journal*, 28. The article on institutional economics that was quoted earlier was published long after La Follette's speech, but it stated positions that Commons had held for decades.
85. Ibid., 28.
86. Commons, *Myself*, 101. Commons's account of this work illustrates the unreliability of Fitzpatrick's biography of Charles McCarthy, which states at page 115: "Professor Commons tells in his autobiography the story of how in 1905 Governor La Follette asked McCarthy to prepare a civil-service bill." Commons tells no such thing; he wrote that La Follette asked Commons to write the bill.
87. Chapter 363, Laws of 1905, Sections 2 and 3.
88. Commons, *Myself*, 106
89. Chapter 499, Laws of 1907.
90. Commons, *Myself*, 126.
91. Chapter 87, 1911 Statutes, Sections 1797m-3 and 1797m-60.
92. Howe, 50.
93. Commons, *Myself*, 153.
94. Chapter 583, Laws of 1911.
95. Commons, *Myself*, 153.
96. Chapter 485, Laws of 1911.
97. Commons, *Myself*, 157-159.
98. Arthur Altmeyer, *The Industrial Commission* (Madison: The University of Wisconsin Press, 1932), 106.
99. Robert Asher, "The 1911 Wisconsin Workmen's Compensation Law: A Study in Conservative Labor Reform," *Wisconsin Magazine of History*, vol. 57, no. 2 (Winter 1973-1974), 126.
100. Ibid., 128.
101. Ibid., 128.
102. Ibid., 126.
103. *1909 Assembly Journal*, 38-40; *1911 Assembly Journal*, 27-31.
104. Chapter 50, Laws of 1911.
105. Asher.
106. This background information depends on Legislative Reference Library, "History of Minimum Wage Legislation in Wisconsin [with Information relative to the Folding Furniture Works v. Industrial Commission of Wisconsin Case] which involved the Constitutionality of the Minimum Wage Law," 1923.
107. "Proposed Minimum Wage Law for Wisconsin," 1911.
108. 1911 Assembly Bill 799 and 1911 Senate Bill 317.
109. Letter to Alice E. Smith, Erich Stern papers, The State Historical Society of Wisconsin. This letter is the only item in the Madison Collection. Stern's other papers are at the Milwaukee regional center.
110. Chapter 712, Laws of 1913.

111. Commons, *Myself*, 39.
112. *The Milwaukee Journal*, May 5, 1913.
113. Commons, *Myself*, 40.
114. Philip La Follette, 143.
115. John R. Commons, *The Distribution of Wealth* (New York: A. M. Kelley, 1893), 81.
116. Daniel Nelson, "The Origins of Unemployment Insurance in Wisconsin," *Wisconsin Magazine of History*, vol. 51, no. 2 (Winter 1967-1968), 112-114.
117. Commons, *Myself*, 143.
118. Nelson, 116. Much of the remainder of the account of Commons's role in the passage of the unemployment compensation bill depends on this article.
119. Commons, *Myself*, 198-200,
120. Lampman, 69, reprinting excerpts from "John R. Commons: Pioneer of Labor Economics," *Monthly Labor Review*, 112 (May 1989), 44-49.
121. Ibid., 30.
122. Balthasar Henry Meyer, *Railway Legislation in the United States* (New York: The Macmillan Company, 1903), 169.
123. "Government Regulation of Freight Rates," reprinted in *Freight*, vol. 5, no. 60 (February 1906).
124. Stanley P. Caine, *The Myth of a Progressive Reform: Railroad Regulation in Wisconsin 1903-1910* (Madison: State Historical Society of Wisconsin, 1970).
125. For the story of the establishment of the Wisconsin income tax see John Stark, "The Establishment of Wisconsin's Income Tax," *Wisconsin Magazine of History*, vol. 71, no. 1 (Autumn 1987), 27-45.
126. Kinsman, 4.
127. Ibid., 11.
128. Letter to Kenneth Parsons, May 14, 1945, Witte papers, State Historical Society of Wisconsin.
129. Schlabach, 32.
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136. Chapter 448, Laws of 1931.
137. "History of the Wisconsin Tax System," a statement prepared for the University of Wisconsin Tax Study, 27.
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139. Stark, "Harold M. Groves and Wisconsin Taxes," 211.
140. Lampman, 142.
141. Interview with Jeffrey G. Williamson in Lampman, 207.
142. Lampman, 186.
143. Williams and Marosy, 206. Most of the remainder of this section on the Department of Plant Pathology is based on that book.
144. Ibid., 209.
145. Curti and Carstensen, vol. II, 416.
146. Williams and Marosy, 35.
147. Ibid., 210.
148. Jenkins, 150,
149. Ibid., 59.
150. Interview with Leon Epstein.
151. Curti and Carstensen, vol. I, 168.
152. *1866 Report of the Regents*, 8.
153. *1869 Report of the Regents*, 40-41.
154. *1906 Report of the Regents*, 29.
155. *1914 Report of the Regents*, 109.
156. William B. Sarles, "Examples of Progress in the Biological Sciences," Allan G. Bogue and Robert Taylor (eds.), *The University of Wisconsin: One Hundred and Twenty-Five Years* (Madison: The University of Wisconsin Press, 1975), 212.
157. Interview with Stan Peloquin.
158. *1877 Report of the Regents*, 47.
159. *1881 Report of the Regents*, 34.

160. This account of silos depends on Lampard, 158-161.
161. *1883 Senate Journal*, 16.
162. Chapter 300, Laws of 1883.
163. *1886 Report of the Regents*, 42.
164. Jenkins, 10.
165. Chapter 9, Laws of 1885.
166. *1888 Report of the Regents*, 55.
167. *1896 Report of the Regents*, 14.
168. *1902 Report of the Regents*, 50.
169. Carstensen, 183.
170. This account of the report and the reactions to it depends on Curti and Carstensen, vol. I, 471-474.
171. Steffins, 353.
172. Vance, 84.
173. This section on summer schools depends on Cronon and Jenkins, 757-765.
174. Jenkins, 41.
175. Lampard, 199.
176. Ibid., 202.
177. *1904 Report of the Regents*, 74-75.
178. Ibid., 74.
179. Lampard, 203.
180. *1892 Report of the Regents*, 44.
181. For a picture of this social set see William Ellery Leonard's *Two Lives* (New York: Viking Press, 1925). Leonard, Freeman's colleague in the English Department, roomed in the Freeman house and married Freeman's daughter. Freeman and his friends blamed Leonard for her suicide.
182. *1896 Report of the Regents*, 30.
183. *1898 Report of the Regents*, 17.
184. Chapter 87, Laws of 1895.
185. *1896 Report of the Regents*, 13.
186. Chapter 311, Laws of 1895.
187. *1896 Report of the Regents*, 13.
188. That date appears to be correct, although Lampard gives the date as 1895.
189. Lampard, 224.
190. *1898 Report of the Regents*, 15.
191. *1904 Report of the Regents*, 75-76.
192. *1904 Report of the Regents*, 76.
193. Jenkins, 30.
194. Robert M. La Follette, 14.
195. Quoted in Fitzpatrick, 237.
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200. For an excerpt see Robert S. Maxwell, *Emanuel L. Philipp: Wisconsin Stalwart* (Madison: State Historical Society of Wisconsin, 1959), 102-103.
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204. Vance, 114.
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206. Letter to Austin W. Stultz, April 17, 1905, University Archives.
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208. Quoted in Vance, 87.
209. Carstensen, 185.
210. Ibid., 186.
211. *1906 Report of the Regents*, 35.
212. This section on Reber's work depends on Curti and Carstensen, vol. II, 563-577.
213. Jenkins, 54.
214. The account of Philipp's attack, except for Philipp's motives, and the resulting defense depends on Maxwell, *Emanuel L. Philipp: Wisconsin Stalwart*, 100-101.
215. Fitzpatrick, 250.

216. Ibid., 287.
217. *1906 Report of the Regents*, 36.
218. *1909 Journal of the Senate*, 29-30.
219. *1908 Report of the Regents*, 19-20.
220. *1910 Report of the Regents*, 233-235.
221. Clay Schoenfeld, "The 'Wisconsin Idea' Expanded, 1949-1974," in Bogue and Taylor, 253.
222. Interview with Sheila Pink, Registrar.
223. *1906 Report to the Regents*, 27-28.
224. Jenkins, 65.
225. *1906 Report of the Regents*, 27-29.
226. *1906 Report of the Regents*, 27.
227. Jenkins, 55.
228. *1908 Report of the Regents*, 20.
229. Ibid., 21.
230. *1908 Report of the Regents*, 177.
231. *1912 Report of the Regents*, 170.
232. *1912 Report of the Regents*, 173.
233. Chapter 514, Laws of 1911.
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237. Chapter 187, Laws of 1911.
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240. Curti and Carstensen, vol. II, 20-21.
241. *Water Power Cases*, 148 Wis. 124 (1912).
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243. Chapter 611, Laws of 1913.
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263. Sarles, 211-212.
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265. "The University with a State as its Community."
266. Jenkins, 105-106.
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270. This account of the Wisconsin Idea Theater depends on "The Wisconsin Idea Theater," *Wisconsin Alumnus* (December 1951), 23-25.
271. This material on Algren depends on Jenkins, 139-143.
272. Jenkins, 143.
273. "Serving All the State," *Wisconsin Alumnus* (January 15, 1955), 18-19.
274. Gaylord Nelson's speech in "The Wisconsin Idea: A Tribute to Carlisle P. Runge."
275. For an account of the state's environmental legislation during the tenures of Governors Nelson, Reynolds and Knowles, see Thomas R. Huffman, *Protectors of the Land and Water: Environmentalism in Wisconsin 1961-1968* (Chapel Hill: University of North Carolina Press, 1994).
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279. Clara Penniman, "Seventy-five Years of State Government Collaboration," presented at University-State Government Linkages, State University of New York at Albany, February 4-5, 1977.
280. Two examples are "The Wisconsin Income Tax and Erosion," *National Tax Journal*, vol. 15, no. 4 (December 1962), 413-422 (with Dr. H. Rupert Theobald) and "Property Tax Equalization in Wisconsin," *National Tax Journal*, vol. 14, no. 2 (June 1961), 182-189.
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285. Reprinted in Jon Udell, "Wisconsin's Economy as Seen by Industry, Labor and the General Public," University of Wisconsin-Madison Bureau of Business Research and Service (1973).
286. The first suggestion would probably violate the commerce clause of the federal constitution, and the second suggestion would probably violate the uniformity clause of the state constitution (see Jack Stark, "The Uniformity Clause of the Wisconsin Constitution," 76 *Marquette Law Review* 577 (1993)). For a more extensive treatment of this episode see Jack Stark, "A History of the Property Tax and Property Tax Relief in Wisconsin," *1991-1992 Wisconsin Blue Book*, 144-146.
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288. Jon Udell, "The Impact of Recent Legislation on Wisconsin Manufacturers and Employment Growth," (University of Wisconsin-Madison, Graduate School of Business, 1977).
289. Jon Udell and the Public Expenditure Survey of Wisconsin, "Wisconsin's Taxation of Capital Gains: Fair? Progressive? Competitive?" (Public Expenditure Survey of Wisconsin, 1979).
290. Capital gains are the profits from the sale of capital assets (examples are stocks, bonds and livestock). They are calculated by subtracting the basis (usually the cost of acquiring the asset) from its selling price. The income tax was imposed on net capital gains: the result of offsetting capital losses and capital gains. Indexing could be done by adjusting either the basis or the selling price to reflect changes in a measure of the cost of living, such as one of the consumer price indices. It should be noted that taxes are paid only at the time an asset is sold or otherwise gotten rid of, so that the value of the money paid in taxes has shrunk to reflect inflation (in other words, there is an automatic indexing).
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300. Chapter 29, Laws of 1977, Sections 799m and 982m.
301. For a list of some of Governor Thompson's appointments to boards, councils and study groups see Haveman and Shroder, 35.
302. 1983 Wisconsin Act 27, Section 908c.
303. Interview with Dennis Dresang; Alice Van Deburg, "La Follette and His Legacy," (Madison: the Robert M. La Follette Institute of Public Affairs, 1984), 19 and Haveman and Shroder, 36.
304. Alice Van Deburg, 19.

305. Sheldon Danziger and John F. Witte (eds.), *State Policy Choices: The Wisconsin Experience* (Madison: The University of Wisconsin Press, 1988).
306. John C. Weaver, "The Revitalizing of the Wisconsin Idea," Statement to the Board of Regents, February 11, 1972.
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314. Ibid., 100.
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318. For the former position see Cronon and Jenkins. For the latter view see Paul W. Glad, *The History of Wisconsin, Volume V: War, a New Era, and Depression, 1914-1940*, 499-502 and Philip La Follette. Frank's biography is Lawrence H. Larsen, *The President Wore Spats: A Biography of Glenn Frank* (Madison: State Historical Society of Wisconsin, 1965).
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322. Grace Witter White, *Cooperative Extension in Wisconsin: 1962-1982* (Dubuque: Kendall/Hunt, 1985), 19.
323. Kearl, "Who Killed the Wisconsin Idea?" presented to the Madison Literary Society, March 9, 1992, 18.
324. Quoted in Jenkins, 137.
325. Ibid., 136.
326. Chapter 228, Laws of 1959.
327. "First Annual Report," (Wisconsin Department of Administration, 1959-60).
328. Chapter 686, Laws of 1961.
329. "Fourth Report," Legislative Programs Study Committee, November 1969.
330. Chapter 154, Laws of 1969.
331. Chapter 444, Laws of 1947.
332. Interviews with Dr. H. Rupert Theobald, chief, and Peter Dykman, deputy chief, Legislative Reference Bureau.
333. Inaugural Address in *The Jubilee of the University of Wisconsin*, 123.

The Wisconsin Idea is now high tech. In the past, farmers could not know a bull's genetic makeup until his daughters grew up and produced milk. UW researchers have patented a genetic fingerprinting technique that can help identify promising bulls soon after birth and will allow breeders to predict further milk productivity (photo courtesy of Wolfgang Hoffmann, UW-Madison, Agricultural Journalism).

THE WISCONSIN IDEA FOR THE 21st CENTURY

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The University of Wisconsin-Madison

The Wisconsin Idea has a special significance, not only because of its beneficial implementation within the state, but also because of worldwide recognition of its success. Dr. Jack Stark has described the evolution of the Wisconsin Idea in the 20th century. This article will suggest a future vision of its expansion in the 21st century.

The definition of the Wisconsin Idea will change substantially in the next century. The objective in the 20th century has been to make university resources more available to Wisconsin citizens; the 21st century will see an increase in organizational interaction and the growth of resources and technology.

In the current century, educational opportunities have spread across the state through the efforts of both public and private organizations. Partnership will receive new emphasis as one of the hallmarks of the Wisconsin Idea in the next century. University faculty and staff and their partners in external organizations will make up the "outreach leaders" of tomorrow. In addition, evolving technologies will broaden the outreach from beyond the state's borders to national and international horizons.

1. BACKGROUND

The sweeping changes transforming both society and higher education require changes in the conceptualization of the Wisconsin Idea. For more than a century, the services carried out in its name yielded mutually beneficial exchanges between the university and the people of the state. From the establishment of a lecture service for teachers in 1860, farmers institutes in 1885, a mechanics institute in 1888 and continuing with the development of summer classes, applied research, public lectures and many other extension activities, the university has viewed individuals throughout the state as the direct beneficiaries of its outreach. UW President Chamberlin broadened the early emphasis on agricultural extension to include general extension, and President Van Hise nurtured this seed "to assist the ordinary individual as well as the person of talent by carrying light and opportunity to every human being." A strong extension mission was supported by Governor Robert M. La Follette in his first message to the state legislature in 1901:

> The State will not have discharged its duty to the University nor the University fulfilled its mission to the people until adequate means have been furnished to every young man and woman in the state to acquire an education at home in every department of learning.

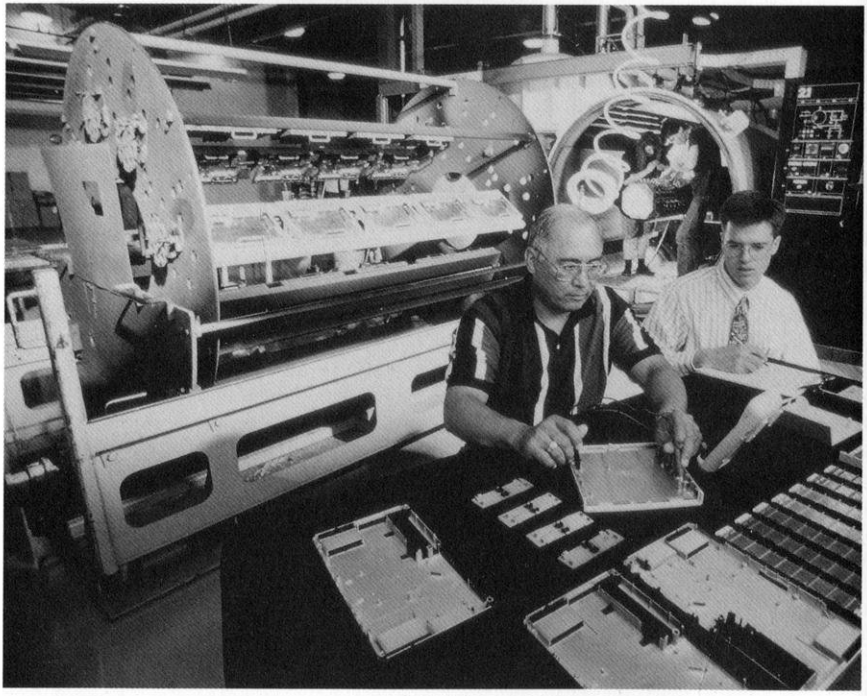
In parallel efforts, Van Hise and La Follette promoted university service to state government, which took various forms, such as drafting proposed legislation and serving as members of state boards, commissions, and administrative departments. These cooperative services reinforced each other and shaped the the creative ventures that formed the Wisconsin Idea. Although the essence of the Idea is likely to persist, the familiar forms of cooperation between the university and the people of the state are already changing.

At the core of the Wisconsin Idea is the concept of partnership. Throughout the 20th century, terms such as "extension" and "public service" have been used in reference to these educational partnerships. The national prominence of UW-Extension was already evident by 1915 when 22 directors of university extension from around the country met in Madison to found the National University Extension Association, the current National University Continuing Education Association. Louis Reber, director of the UW-Extension Division at the time, was elected president of the new association. During the previous year, the Smith-Lever Act of 1914 had been enacted by the U.S. Congress to foster federal, state, and county cooperation in expanding a county agent system. The county agent program had already been sanctioned by the Wisconsin Legislature in 1911, and it continues to this day to provide Cooperative Extension programs in agriculture, family living, youth, and community and natural resource development.

During the Great Depression, the Extension Division created extension centers in Milwaukee and other locations around the state that enabled many high school graduates to begin their college education locally. After World War II, it created additional two-year centers, offering college credit courses. At the peak of the veterans' enrollments, 2,000 students were served at over 30 locations. During this period, correspondence study grew to over 400 courses enrolling 10,000 students. Concurrently, WHA staff broadened its educational radio service with the creation of a statewide FM network, and WHA-TV began broadcasting in 1954. During the 1950s and 1960s, under the direction of Lorenz Adolphson, University Extension Division was acknowledged as one of the four top divisions in the country along with the University of California system, New York University and Syracuse University.

The university continues to review the organization and impact of extension services to keep them productive in a fast-changing world. From 1983 to 1986, the Commission on the Wisconsin Idea for the 21st Century explored desirable future directions. One major theme was responsiveness to emerging partnerships. With growing acceptance of lifelong learning and distance education, which uses new technology to cross time and space barriers, the university's outreach function has received increased reemphasis. At the same time, state and local government, as well as private enterprises, associations, and community agencies have recognized the need for continuing education. The partnership essence of the Wisconsin Idea remains, but new forms of cooperation are evolving.

The comprehensive teaching and research mission of UW-Madison accounts for its distinctive outreach emphasis on cooperative extension, continuing professional education, communi-



The Wisconsin Idea of today includes interaction with many state industries. As part of the UW-Madison industrial consortia, these companies benefit through educational internships, combined research efforts, and technology transfer (photo courtesy of Bruce Fritz).

ty resource development, and applied outreach research. In addition, at each of the UW System institutions, faculty, staff, and students help to plan and conduct outreach activities of all kinds. Systemwide facilities and assistance, such as UW-Extension undergird outreach activities by providing conference centers, telecommunications networks, and program development services.

Millions of people, throughout Wisconsin and beyond, participate in a wide variety of outreach activities each year. They and their respective organizations and communities, in turn, contribute to the vitality and ongoing transformation of the Wisconsin Idea. Local groups and organizations, business enterprises and labor unions, communities and associations, state agencies, and organizations throughout the United States and the world are major partners in outreach planning and support. The university also benefits from this cooperation. Faculty members and students gain first-hand experience from work, family, and community settings that enrich their experiential learning and research. A crucial aspect of the Wisconsin Idea is to promote this two-way exchange between the University of Wisconsin and a wide variety of external partners.

2. INFLUENCES ON FUTURE DEVELOPMENT

The single most important influence on the course of the Wisconsin Idea in the future will be the increasing recognition throughout society of the need for lifelong learning. University students are advised to think about their degrees not as end products but as foundations to enable them to make multiple major career shifts in their lifetimes. Continuing education will be the key to those shifts. To dramatically state this point, some industry representatives claim that on their graduation day, the holders of new engineering baccalaureates already possess more obsolete knowledge than cutting edge knowledge. In a society dependent on mastering emerging information, the new wealth of nations is the degree to which people can access and master new ideas as the basis for economic and social progress.

In addition to benefitting individuals, continuing education contributes greatly to the health of the Wisconsin economy. Whether the state remains competitive in a fast-changing world will depend on opportunities for further education and training among its entrepreneurs and employes.

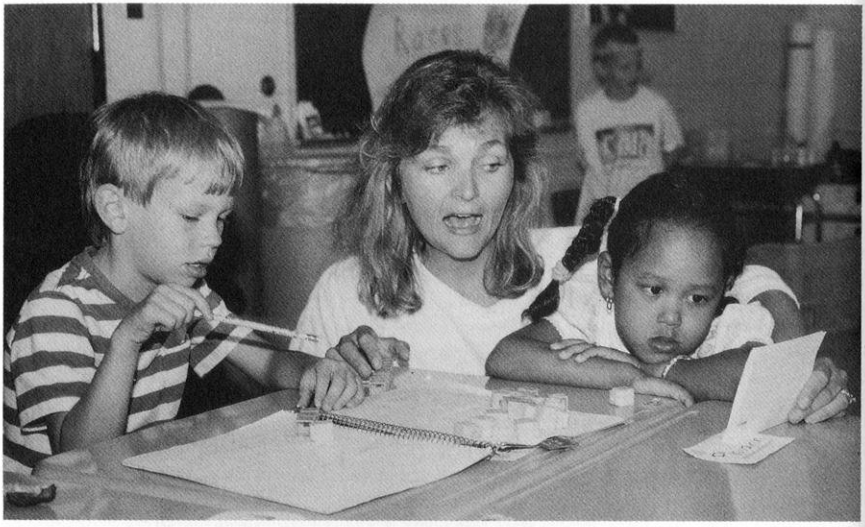
Within this mix of individual and societal needs is a special challenge to the Wisconsin Idea that warrants careful consideration. The importance of lifelong learning for the 30% of the population with a university degree is obvious, but the state must also recognize that the majority of its citizens, who did not attend college, will need continuing education, both as contributors to the economy and as individuals in the society. This larger group may fail to see the benefits of continuing education unless the university gives special attention to their needs and coordinates outreach with other public and private providers.

A second major influence on the Wisconsin Idea is the role of 21st century technology. It is likely to affect all aspects of the Wisconsin Idea's evolution. Examples of the impact of technological development will be discussed in greater detail at various points throughout this essay.

A third influence is the need for multidisciplinary solutions. Most societal issues are now so complex that they extend well beyond any one academic specialty or department — whether economics, social work, or medicine. To this point, however, universities have had only modest experience and success in organizing in multidisciplinary ways. While this challenge can probably be resolved eventually, it currently remains a major organizational stumbling block.

A fourth influence is the declining farm population, which is causing modification of the UW Cooperative Extension Service and its role in the Wisconsin Idea. Cooperative Extension has historically derived support from federal, state, and county governments. Federal support comes through the U.S. Department of Agriculture, but, as Cooperative Extension seeks to modify its outreach efforts, particularly in relation to industrial and urban extension, family, youth, and natural resources, those historic funding patterns may change. The nature of such shifts deserves serious consideration.

The final influence is the parochialism suggested by the popular slogan regarding the Wisconsin Idea: "The boundaries of the university are the boundaries of the state." Most people



Since the turn of the century, teachers have attended summer continuing education courses for professional development as illustrated by this math education program at the Verona Elementary School (photo courtesy of Judy Reed, UW-Madison Outreach Information Office).

probably recognize that the Wisconsin economy is more affected now by national and international forces than forces internal to the state. However, it is not clear if state fiscal support, which has been the backbone of the Wisconsin Idea success story in the 20th century, will be continued if many extension activities occur beyond state borders. A challenge to outreach leaders is to clarify and gain support for a contemporary global definition of the Wisconsin Idea.

3. OUTREACH AND THE WISCONSIN IDEA

Transformation of the Wisconsin Idea in the 21st century will reflect major changes in higher education and the society as a whole. As E. L. Boyer points out in *Scholarship Reconsidered: Priorities of the Professoriate* (published by the Carnegie Foundation for the Advancement of Teaching, 1990) universities are recognizing the interdependence between sharing and applying knowledge, as well as creating and integrating knowledge. This enhances appreciation of outreach forms of teaching, research, and service. Lifelong learning is essential for all, and the university is an important and distinct resource. The following examples of teaching, research and service illustrate the outreach partnerships that will probably characterize the Wisconsin Idea in the 21st century.

The most familiar examples are the teaching and learning that occur beyond the campus and sometimes beyond the state. Each year, many Wisconsinites participate in University of Wisconsin courses, conferences, or workshops which may be held anywhere in the state. Such continuing education programs usually match topics of high interest to targeted populations with the specialized expertise of faculty. Many of these educational activities draw regional or national audiences and make use of the latest information technology to offer outreach teaching through "distance education" as differentiated from the traditional classroom setting. Educational telecommunication networks, video conferencing, and computer conferencing provide participants with easy access to programs in which they can learn from each other, as well as from instructors.

In another type of outreach teaching, people who work in hospitals, schools, private enterprise, or community agencies participate in staff development activities conducted by university faculty and staff members. Cooperative Extension county staff and state specialists work with local volunteers in thousands of extension education activities throughout the state each year.

The added benefit of outreach teaching is that the faculty members find it enriches their research and resident instruction on campus.

Outreach research, which was an important part of the Wisconsin Idea as it developed throughout this century, is likely to become even more important in the 21st century. One form is the applied research that develops when outreach programs attempt to solve community problems. Examples of such problems include contaminated water supplies, relocation of a town destroyed by a flood or tornado, or selecting a strategy for local economic development. As faculty members work with local citizens to collect and analyze information and explore the implications of possible solutions, conclusions are reached that are relevant to communities facing similar problems in the future.

Outreach service is a third way in which faculty members benefit the state through their activities as advisors, consultants and counselors. Examples include recommendations for governmental reorganization, actual counseling services or the medical services to the public that occur as faculty members help graduate student interns gain valuable practical experience in a professional setting. Faculty members may also offer advisory assistance to policy boards, professional assistance to targeted minority groups to facilitate integration, or expert testimony to public agencies. A century-long tradition continues as faculty members sometimes take leaves of absence to serve state government.

4. THE WISCONSIN IDEA WITHIN A GLOBAL CONTEXT

Attempting to limit the Wisconsin Idea to the state's boundaries would only serve to constrict its future. Neither the state nor the university can ignore the reality that daily life in Wisconsin is affected by the entire world and its rapidly evolving technologies. The sources of knowledge are as international as consumer goods.

The State of Wisconsin is already participating in the international arena. In its development efforts of the past 15 years, the state has clearly recognized the need to assist Wisconsin businesses to compete in an increasingly global economy. The state currently employs experts in several foreign countries to facilitate its global commerce and attract business to the state. Throughout the second half of this century, the UW-Madison set an example for American higher education as an active participant in international research and assistance programs, directed by faculty and staff and supported by the federal government and major foundations. It has attracted international students to its campus and provided international study programs abroad for its students. All institutions within the UW System engage in similar programming.

To operate effectively in a global context, our citizens need to constantly enhance their proficiencies. A steady stream of continuing education opportunities is an absolute requisite in the years ahead so that the Wisconsin workforce, at all levels of responsibility, can achieve a competitive edge; an edge that must be maintained in the midst of constant change.

The state has a proud record of innovative governmental agencies, enterprising businesses, and unique contributory community institutions. But each of these sectors needs the vitality of continuously improving performance to stay their leadership courses. The essence of self-improvement through continuous education as embodied in the Wisconsin Idea is essential to achieving 21st century leadership in these important areas.

At the present time, the State of Wisconsin has a high percentage of well-educated citizens in government, education, and business roles, thanks to its historically strong commitment to higher education through tax dollars and private support for its public and private institutions. This sector of the population must be recognized and utilized through innovative partnerships, consortia, and cooperatives.

For its part, the university must recognize that it will play a vastly changed role from the one it played when the Wisconsin Idea was first developed. Though a leader, the UW-Madison was never the sole provider of extension and outreach education. All the campuses of the current UW System have extended this resource base and provided regional access. However, the task to keep Wisconsin a dynamically suitable place to live and work is so daunting and so vast that the

total base of the state's resources must be engaged in this effort. Each of the potential players – large and small business, government, labor, community groups, and education – must have a role.

5. RESPONDING TO EMERGING TRENDS

The university will continue to direct the major portion of its efforts to its teaching mission and its role in research. No enterprise, whether public or private, succeeds in our fast changing society without a solid, engaged research program that provides the new knowledge needed to stay on the cutting edge. This was part of the historic outreach mission and for many enterprises, the university continues to be a crucial source of new knowledge.

As the Wisconsin Idea evolves in the 21st century, new resources and talents will develop. A key tool at the disposal of these partnerships will be the seemingly endless array of new inventions. Without trying to forecast any of the specific technology of the future, it is apparent that with the technological tools already available, distance is diminishing daily as a barrier to interaction among teachers and students and, most importantly, among partners in any given enterprise.

Another key factor in Wisconsin's arsenal of resources will be the pool of human talent that exists in state agencies, businesses, and the educational sector. This is a legacy of the state's long commitment to education.

University commitment to educational programs for the 18- through 24-year old age cohort is certain to remain strong in the next century. Increasingly, however, younger students will be taking university courses before formally matriculating at the institutions. Similarly, a much larger number of adults over age 24 will remain in contact with the state's universities and other educational providers throughout their lives.

As part of this total effort, all institutions of higher education will have to devote some portions of their resources to outreach activity. Motivations will range from simple self-interest to assure the future of various academic disciplines to a commitment to enhance the lives of people located beyond the campus.

An increasing number of outreach programs are likely to be multidisciplinary. A current example of multidisciplinary outreach is the Wisconsin Area Health Education Center (AHEC), which creates partnerships between health professions education programs and Wisconsin's underserved communities. The Medical College of Wisconsin, Inc., the UW-Madison Medical School, the more than 30 nursing schools, the UW Schools of Pharmacy and Social Work, and the Physician Assistant program are all involved in the Wisconsin AHEC system.

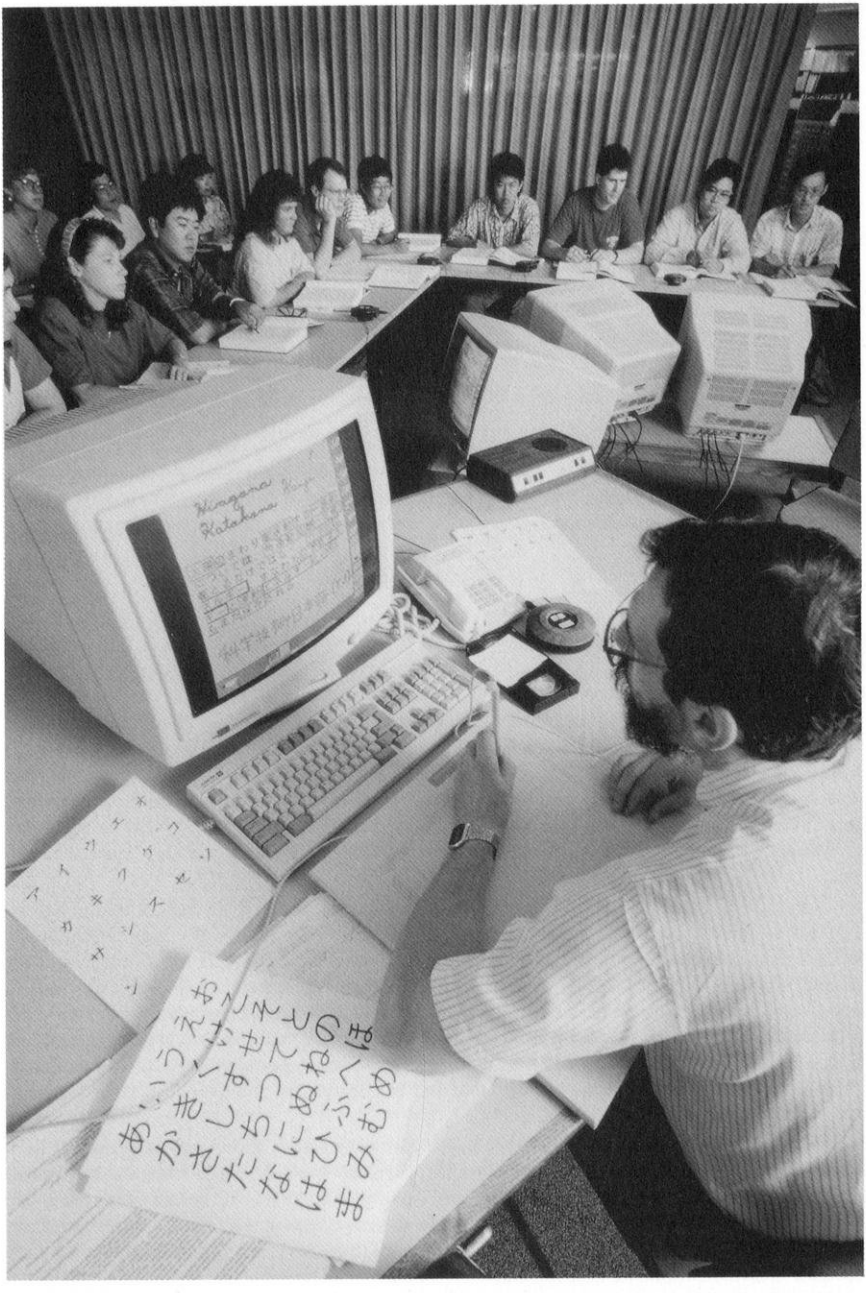
The system has three major foci: 1) to promote health career opportunities programs in the health professions for underrepresented populations, such as rural and minority students; 2) to provide off-campus single discipline and interdisciplinary training and education experiences for health professions and students at the graduate and undergraduate levels; and 3) to provide continuing education and career ladder opportunities to health professionals practicing in underserved areas in Wisconsin, often by means of distance education.

In contrast to the 36 other states with AHEC programs, Wisconsin has a strong emphasis on multidisciplinary, community-based educational experiences. Many physicians and other health professionals are dissuaded from working in rural and urban underserved areas because they feel that working alone they cannot provide comprehensive care to a population in great need. By showing students, early in their educational experience, that comprehensive care may be provided through an interdisciplinary team, they may be more inclined to settle and practice in underserved communities.

6. SOCIETAL INFLUENCES

Broad societal influences are likely to affect the transformation of the Wisconsin Idea. Outreach leaders should be responsive to these influences and concerned with the university mission.

One fundamental influence is economic restructuring. Widespread technological and related social change is reflected in the shifting job market, supply and demand for labor, and the types of occupational tasks that people perform. Rapidly changing knowledge and skill require-



Classroom walls can be broken down with the aid of computer-assisted distance education. Audiographics teleconferencing permits UW-Madison Engineering Professor James Davis to teach students technical Japanese at six sites in five states (photo courtesy of Bruce Fritz).

ments place a premium on adaptability. Growing workplace requirements include learning and technology transfer.

Another influence is Wisconsin's populist political tradition that values public understanding of and participation in policy making. This tradition contributes to commitment and support for university outreach related to a person's role as a citizen, as well as a worker.

A recent trend likely to continue into the next century is quality improvement in public and private organizations. A fundamental concept is that through teamwork, employes seek ways in which to continuously improve the quality of their job performance. International competition stimulates this attention to quality.

Global interdependence also increases the importance of learning about international affairs. In Wisconsin and other midwestern states, many aspects of economic and community life reflect international influences, especially agriculture and manufacturing. Midwestern universities are increasingly cooperating with each other to enhance their contribution to the region and the world, in part through outreach activities.

Policy makers are increasingly recognizing that quality of life makes an important contribution to personal, organizational, economic, and community development. This recognition has been reinforced by social and demographic trends that have heightened attention to youth, family, diversity, equity, and the contribution of education. The trends are associated with issues such as alcohol and drug addiction, violent crime, overcrowded prisons, dysfunctional families, school drop-outs, and discrimination against minorities. Improving public understanding of these issues, including preventive as well as corrective measures, is a challenging task.

7. VISIONARY LEADERSHIP

Fortunately, the commitment to university outreach, which dates back to the land grant tradition of the 1800s, is still supported by national, state, and local public policy. Private enterprise also affirms its commitment to human resource development by enabling its members to participate through released time and financial reimbursement.

The fate of the Wisconsin Idea in the 21st century is likely to depend on two key factors: one will certainly be the effectiveness of leadership demonstrated by outreach proponents; the other will be the recognition by political leadership that the combined efforts of university, private, and state agencies can offer an improved future to the citizens of Wisconsin. Leadership will depend on a shared vision that can galvanize support for the benefits of outreach. It will be necessary to consider outreach in terms of mission, scope, access, responsiveness, planning, and collaboration.

Mission – In recent years, the University of Wisconsin has moved beyond the traditional description of the triad of functions in an institution of higher education – teaching, research and service. It has begun to express its mission in terms of four interrelated functions – creating, integrating, sharing, and applying knowledge. Outreach teaching, research and service also reflect these four functions, especially in sharing and applying knowledge. As members of the university community accept the broader mission perspective, outreach will be increasingly recognized as part of the core university mission and, therefore, a valued faculty activity. A growing number of leaders in higher education are calling for an increased priority for university service/outreach to the state and nation.

Outreach activities demonstrate to the public that universities address societal needs. Recognition of this growing centrality of outreach provides a promising foundation for further strengthening the Wisconsin Idea in the coming century. Leadership on behalf of outreach can build on this foundation in several ways. Because community requests for assistance far exceed institutional capabilities to fulfill them, leadership will have to set priorities for outreach activities that fit both institutional mission and societal needs.

The UW System is currently building on all of these points through a UW Task Force on Business and Industry. Representatives from the UW System Administration, UW-Extension, and UW institutions at Madison, Milwaukee, Platteville, Stevens Point, Stout, and Whitewater serve on the task force and plans are underway to create a Business and Industry Network that will in-

The tradition of summer high school institutes continues today as these Madison East High School students participate in the Wisconsin Fast Plant Program, which provides kits of rapid-growing plants for genetic experiments (photo courtesy of Wolfgang Hoffmann, UW-Madison, Agricultural Journalism).

clude the UW institutions, representatives of the engineering programs at Milwaukee School of Engineering and Marquette University, interested state agencies, and most importantly, representatives from business organizations and trade associations.

This task force is a recent example of the outreach collaboration that has occurred throughout this century. The challenge for the Wisconsin Idea in the 21st century will be to create and sustain local partnerships at a time when international competition is ascendent. Leaders committed to the Idea will have to find new resources in a tight economy and develop new rules for collaboration.

Scope – Wisconsin faces urgent concerns in the daily problems associated with family life, health, environment, energy, aging, subcultures, science, computer literacy, cultural activities, and urban/rural relations. In the past, citizens turned to their government for total or partial responses in many of these areas. As we exit the 20th century, however, there is a strong movement which proclaims that it is time for government to get out of many of these activities. If that feeling continues, it will pose a major challenge for the Wisconsin Idea in the 21st century. It is not clear that these needs can be addressed without some state subsidy.

Scientific literacy is a good case in point. Education, business, and government leaders acknowledge that we have a real crisis in the number of young people, especially women and minorities, who are willing to pursue careers in science. In recognition of that problem, some of the most innovative outreach work with elementary and secondary education has been developed in the last decade by research scientists at universities across the land. The Center for Biology Education at the UW-Madison is but one of the outstanding examples. Its seminars on fast plants and bottle biology have captivated the attention of teachers throughout the United States and in

the United Kingdom. But as motivated and interested as elementary and secondary teachers are in learning these new techniques, they cannot afford to pay the full cost of continuing education.

Adults also need to be better informed about modern science as it affects their daily lives. We also know that efforts to improve science education cannot be developed without support from parents, voters, or people in the science or technology fields who must themselves pursue lifelong learning in science. The National Science Foundation has initiated a nationally significant project in scientific literacy by developing the NSF Institute for Science Education to be located at the UW-Madison. The institute's goals parallel the outreach rationale: educate for lifelong learning; ensure access for students and teachers from kindergarten to graduate school; encourage a nationwide community of science, mathematics, engineering, technology, and education researchers not only to strengthen scientific literacy but also to facilitate the sharing of information about successful programs. The institute is not designed exclusively to transmit knowledge from university researchers to the public, but rather to promote an active collaboration of K-12 teachers, business and industry leaders, visiting fellows from across the nation, leaders of national organizations, and UW researchers. It envisions an educational system that enables citizens to make informed decisions about the ways science, mathematics, engineering, and technology are important to their personal lives.

Family life is changing dramatically, and family needs are most likely to be met by practitioners in the helping professions and by community agencies. In many instances, university outreach can best serve families indirectly by backstopping and assisting these practitioners and agencies. Sometimes the university aids best through its research efforts. For example, the School of Family Resources and Consumer Sciences in its May 1994 report "Strategic Planning for the 21st Century" affirmed: "The School is compelled to respond to the ever-increasing pressure to ensure that research responds to the needs of the people of the state and that research is available and easily accessible to those who need it."

Many outreach programs are controversial, and it can be difficult to find an arena for suitable debate. Programs in environmental protection and energy conservation, for example, can increase public understanding of tradeoffs and support for sound policies, but they can usually do so only by challenging strongly held beliefs on many of these issues. The increase in the numbers of people who are from minority subcultures raises important social justice issues that university outreach can explore if suitable means for public dialogue can be maintained.

Quality of life can be enhanced by outreach cultural activities related to art, music, drama, dance, and literature that benefit both individual participants and the larger society. Outreach activities also can increase public understanding of intergenerational relations and the interdependence of urban and rural areas. Without advocacy, such topics tend to be neglected.

Access – Continuing professional education faces a dilemma in the future, which could, in turn, offer a productive challenge to the outreach mission. It is clear that professionals need to engage in lifelong learning. However, there is a wide disparity in the ability of professionals to pay for education. While doctors, businessmen, engineers, and lawyers may be able to finance the total cost of their continuing education, nurses, social workers, and teachers may not. In the 21st century, we ought not to look at those professions as islands unto themselves. They all contribute to a healthy societal fabric. It takes multiple resources to provide a full range of programs for all professions. For a relatively small amount of state investment and/or a sharing of the total revenues among the professional programs, the state stands to reap a very beneficial return with well-trained professionals in all sectors of society.

A continuing challenge to outreach leaders is to equalize access to educational opportunities. Open access to lifelong learning takes on special urgency in the face of the ominous trend toward a two-class society in the United States. There is optimism that outreach activities can make a positive difference by broadening the middle class through continuing education. Access to education can be improved through distance education programs that overcome barriers of time and space for prospective students, but outreach leaders should recognize that over-reliance on expensive information technology can also increase the gulf between the "haves" and the

"have nots". Past experience with government subsidies of public utilities, such as railroads, may provide valuable lessons about the benefits of investments in infrastructure. Responsive outreach programs must consider a variety of student needs, such as daycare, transportation, work, and schooling, that affect both attraction and retention of participants. These barriers can sometimes be reduced through cosponsorship.

Technology transfer to small manufacturers is an important form of access to outreach. A promising example that could become more widespread in the coming decades is the Wisconsin Technology Access Program (WisTAP). A number of the UW campuses help improve profitability for small manufacturers and technology-based companies in the state through this program. In one instance, WisTAP was credited with saving an enterprise several million dollars on its way to becoming the nation's largest manufacturer of liquid crystal displays.

Responsiveness – Another way to increase responsiveness of outreach activities is by using what we know about adult learning, needs assessment, and especially collaborative learning. Leaders can use newly acquired knowledge about the adult learning process to orient people so they can plan and conduct outreach activities that are responsive and effective. The university can draw on experts in various fields, such as adult education, communications, psychology, and education to assist in these orientations. In the coming decades, wider use of these improved teaching techniques can strengthen the planning and delivery of outreach programs and sustain the vitality of the Wisconsin Idea for the 21st century.

Planning – Effective strategic planning can strengthen the quality of outreach activities and improve the acceptance and support of stakeholders. Outreach has tended to be long on commitment and optimism and short on power and resources. This makes planning especially important. Partnerships between internal and external stakeholders can foster sound planning and commitment to implementation. Leaders who understand this will preserve time for planning, use the plans, and modify them as change becomes necessary.

Outreach activities typically occur at institutional boundaries, and this can result in instability. Outreach leaders can improve stability by using strategic planning to improve policies and organizational arrangements.

Outreach can be strengthened by broadening the range of stakeholders engaged in strategic planning and increasing their contribution to setting priorities that increase the coherence and impact of the programs. The UW Food Systems Professions project, supported by the W. K. Kellogg Foundation, illustrates how a broad base of stakeholders can contribute to planning. The stakeholders reflect wide-ranging interests including agricultural production, nutrition and health, food processing and distribution, rural economic development and quality of life. The issues that are addressed are both rural and urban, economic and noneconomic. Many types of outreach activities are involved in the project, including Cooperative Extension (agriculture, family living, youth, and community development), continuing education (especially the health professions and food industry), and technical assistance to enterprises related to food. The challenges and opportunities facing university outreach in the coming decades warrant this type of comprehensive approach.

Collaboration – Outreach leaders should recognize the importance of many types of outreach activities, including those not provided by the University of Wisconsin. Collaboration with other outreach providers can contribute to internal strength and external service and multiply the impact of the university's activities. Other important providers include the Wisconsin Technical College System, associations, private enterprise, independent colleges, private providers, and community agencies. Improving cooperation between the university and local school districts is another major challenge.

There are many reasons why collaborative types of outreach activities should prove productive in the 21st century. Two prominent ones are the multiplier effect that can occur when several partners contribute, and the impetus for application when the various partners derive a sense of ownership. Cooperation is also valuable when outreach activities occur in a fast-changing field such as the biological sciences. Revolutionary advancements in this multifaceted field affect

food, health, education, economics, and the environment. Many parts of the university and many of its outreach partners are affected and can benefit from effective collaboration.

The School of Family Resources and Consumer Sciences addresses family life education related to nutrition and health in the schools, technical colleges, UW- Extension, and private enterprise. This is one example where a strong outreach mission benefits the public, as well as resident instruction and research. Another is the UW-Madison Department of Family Medicine's Health Education and Research Trial, or HEART Project, that focuses on prevention to reduce cardiovascular illness. Partners in this effort include individual patients, health care professionals, primary care practices, the university, and various health-related agencies and associations. Each has a stake in prevention, and their concerted effort is likely to increase the benefits while sharing the costs.

Outreach leaders can build on grouping experience with collaborative activities in several ways. One is to learn, both from successes and failures, and to develop guidelines to strengthen future partnerships. Another is to recognize the distinctive contributions that various partners can make, so that a multiplier effect is achieved. A third is to increase application, impact, and benefits of outreach activities.

8. POTENTIAL BENEFITS TO STAKEHOLDERS

An attractive feature of the Wisconsin Idea, as it advances into the 21st century, is that all its stakeholders can benefit. With various forms of outreach teaching, research, and service, there are many stakeholders. Continuing education participants can achieve enhanced proficiency and well-being. Family members can enjoy improved quality of life. Organizations, including state and local government, hospitals, school systems, private enterprise, community agencies, and associations can increase their productivity, effectiveness, and member advancement. Local communities and neighborhoods can strengthen community problem solving. The people of the state can improve overall productivity and quality of life. Universities can increase societal support. Colleges and departments can engage in mutually beneficial interactions with their constituencies. Faculty members and students can engage in two-way exchanges and mutual learning. The coming century will bring many unanticipated challenges and opportunities. The Wisconsin Idea continues to provide promising ways in which partnerships between the university and the people of the state can serve us all.

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THE WISCONSIN IDEA: YESTERDAY AND TOMORROW

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UNIVERSITY OF WISCONSIN–EXTENSION

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MADISON, WISCONSIN
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FOREWARD

This is the second in a series of publications sponsored by the Wisconsin Idea Commission. This monograph is the keynote speech presented by George Keller at a conference -- The Wisconsin Idea in the 21st Century: Future Directions for Continuing Education -- sponsored by the Wisconsin Idea Commission, the University of Wisconsin-Extension and the Johnson Foundation, January 15-17, 1986. The conference was attended by fifty participants who included members of the Commission plus invited Wisconsin leaders from business, industry, the arts and humanities, labor, health care, the press, government, public services, and the environment.

In this keynote address, and in the question and answer period which follows, Keller provides evidence for four major societal "upheavals" which are occurring in the United States and the world today. He challenges higher education, and continuing education specifically, to recognize and be responsive to the impact of these changes on the educational needs of people.

The Wisconsin Idea Commission was established in 1983 by University of Wisconsin-Extension Chancellor Patrick G. Boyle to examine emerging social, economic, and technological issues in the world today and their implications for continuing education practice in the future. The Wisconsin Idea concept of extension, characterized by University-citizen partnerships and collaboration, has for over seventy years received worldwide acclaim. As the end of the 20th century draws near, it seems imperative and appropriate to review the historical context of the development of extension education and to examine its redefinition for the future. This has been the purpose of the Wisconsin Idea Commission.

Jerold W. Apps, Chairperson
Wisconsin Idea Commission
July, 1986

BIOGRAPHICAL NOTE

George Keller is senior vice-president of the Barton-Gillet Company, an institutional planning, marketing, and communications firm in Baltimore that works closely with America's colleges and universities. He is also one of our country's leading educational analysts and strategic planners, as well as an award-winning education writer.

Mr. Keller has been a faculty member and college dean at Columbia University, and an assistant to three chancellors and presidents at the State University of New York and the University of Maryland. He co-authored *The Post-Grant University*, a strategic plan for the University of Maryland, in 1981. His latest book, *Academic Strategy: The Management Revolution in American Higher Education* (Johns Hopkins, 1983), supported by a Carnegie Corporaton research grant, is currently in its fifth printing.

Mr. Keller's awards include *Atlantic Monthly's* "Education Writer of the Year," the Sibley Award for education magazine editing, and the U. S. Steel Foundation Medal for "distinguished service to higher education."

THE WISCONSIN IDEA: YESTERDAY AND TOMORROW

There is no denying it. The "Wisconsin Idea" -- the University of Wisconsin's unusual diligence in broadcasting the knowledge and research of its faculty to the people of the state -- represents one of the major changes in the history of American university style. Of the now accepted triad of university purposes -- teaching, research, and service -- Wisconsin's leadership helped make the third (service) respectable to other colleges and universities around the country. Even the most prestigious universities in the land today boast of their service to their region and the nation, or, in their more hyperbolic moments, the world.

For three quarters of a century, the University of Wisconsin has more zealously than most sought to bring enlightenment to farmers and mechanics, to homemakers and legislators, to immigrants and people in small business. Everyone connected with this effort deserves praise, especially since for some professors service to the less educated working people does not come easily; indeed it is often seen as a distraction from "real" scholarly pursuits.

Having acknowledged the great contribution of the Wisconsin Idea, I think it is important to make two other observations: First, the Wisconsin Idea is one of the great public relations coups of American higher education, and second, it was born and has been nourished in a particular set of social, economic, political, and cultural conditions that may no longer exist. In order to look at the Wisconsin Idea in the 21st century, it seems helpful to get behind the original Wisconsin Idea.

AN IDEA BORN OUT OF ADVERSITY

In a sense the Wisconsin Idea was forced on the University of Wisconsin. The University was founded in 1848, the same year the state was admitted to the Union, and it was intended to be financed primarily by the Congressional land grants of 1838. But for the first decade there were successive proposals in the legislature, led vigorously by two private colleges in the state, to repeal the idea of a state university. These colleges argued that a public university was a duplication of their own services and a waste of taxpayer money, and that the land grant fund should really be split between the two existing private schools.

The infant University, in a remarkable piece of conciliation to the religious colleges and their adherents, brought in as president the noted eastern school reformer who had worked with Horace Mann -- Henry Barnard. Barnard quickly mollified the private colleges and won new popular support from the taxpayers by strategically directing the state university's studies away from the classics and liberal arts toward practical subjects and teacher training, a move that the Regents readily supported. The private colleges no longer felt threatened, and the settlers of Wisconsin felt relieved that this new state university would be accessible to them and directly helpful in their work. Thus Wisconsin became a new kind of practical, useful university largely as a defensive strategy for survival. [1]

After the Morrill Act of 1862, the University was nudged along in the idea of service to ordinary people through the Land Grant Act. The University of Wisconsin alertly set up Farmers Institutes, Mechanics Institutes, and Teachers Institutes. The work of the agricultural experiment station, especially the Babcock

Butterfat Test, helped transform Wisconsin agriculture from a rather poor, single-crop, wheat-growing business to a far more profitable dairy and diversified farming business.

The University of Wisconsin, like other state universities, also helped create preparatory high schools around the state. We tend to forget that in 1860 Wisconsin had only seven high schools in the entire state, and the universities of Wisconsin and Michigan both had to devote one-fourth of their teaching time and dollars to providing remedial work in what was then called a "preparatory department."[2] The University of Wisconsin was directly instrumental in building the Wisconsin secondary school system. Though it is not generally known throughout the nation, the state universities actually helped create the high schools in this country rather than the other way around.

Three remarkable individuals also kept the idea of extensive public service alive in Wisconsin. One was University president Charles Kendall Adams, an ex-farmer who became an historian and who arrived in Madison in 1892 after having been relieved of his duties as president of Cornell. In an address he said, "The university is not a party separate from the State. It is a part of the State -- as much a part. . . as the Capitol itself."[3] Adams believed in the idea of service by academics since he had worked with Andrew White at Cornell and knew the work of William Watts Follwell and his so-called "Minnesota Plan" and David Starr Jordon of Stanford and his extension work with fruit growers in California. But he also felt the need to keep providing direct benefits to the voters of this state because of the stubborn legislature. The legislators of Wisconsin persisted for years to launch frequent investigations into the professors' waste of time on research and other such

silly business. Never once, even during the supportive years of Governor LaFollette, did the legislature appropriate all the funds requested by the University.

The second was Richard T. Ely, a noted economist, Christian socialist, and University of Wisconsin professor who kept pressing for good government, help for the people, and enlightened brotherhood among the citizens of the state. The third was, of course, Charles Van Hise -- Governor LaFollette's personal choice for the presidency, which he assumed in 1903-1904. Van Hise had lectured at the University of Chicago under William Rainey Harper, famed educator of Chautauqua. Van Hise was deeply influenced by Harper's ideas of bringing knowledge, art, and learning to all the people.[4]

In 1909, when influential journalist Lincoln Steffens wrote a laudatory and widely read article on the University of Wisconsin, Wisconsin had emerged as the most active university in the United States in bringing academic knowledge and expertise to ordinary citizens. This was two years before Extension was officially founded. Steffens especially mentioned Wisconsin's innovative correspondence courses, which were quite radical in their day. Charles McCarthy, chief of the Wisconsin Legislative Reference Department and lecturer in political science, dubbed the efforts with the name "The Wisconsin Idea" in 1912, and slowly the public relations glow spread throughout the country, with the University of Wisconsin eclipsing all the other universities that were also doing extension work.

I recite this bit of history for several reasons. The Wisconsin Idea, while an extraordinary effort and one that has continued, was not original and it certainly was not singular. The Wisconsin Idea was an idea born out of adversity, the desperate need for adequate legislative appropriations and an educational niche that would

not threaten the already established religious and classically oriented private colleges, at least as much as it was born out of Christian idealism, exceptional leadership, and professorial altruism. It is no diminution of the amazing accomplishments of the University of Wisconsin on behalf of its state to remember that, like most achievements in life, the Wisconsin Idea was driven in part by urgent necessity, the need for support and money, and the particular social conditions and values of the time.

Any discussion on updating the Wisconsin Idea for the 21st century must recognize both the harsh realities behind the Wisconsin Idea and the altruistic legend. For these, too, are times that call for strategic redirection and new forms of conciliation. These, too, are times that demand a frank recognition of the realities and the need for new kinds of service to help overcome difficulties.

TURBULENT CHANGE

What are some of the new realities we face in our time? Unless we understand clearly where we are today, we will not be able to plan intelligently the directions we should take in the next 15 or 20 years.

My own sense is that the United States is going through the most traumatic and turbulent change since the last quarter of the 19th century. The nature of this change and its relevance to new areas of service for the Wisconsin Idea will be the focus of this paper. The four new realities I will describe are those of demography, economics, technology, and higher education.

Demography

Child-bearing patterns. First, the demographic upheaval. There are four components in the demographic revolution. The first component we all know about: the projected 24% decline in the number of high school graduates in this country between 1980 and 1995. This is of interest for several reasons. Never before in the history of the United States have we had a decline like this. The decline in births that began in the early 1960s has been greater than the decline that took place during the Great Depression of the 1930s. It reflects an amazing shift, and by no means a temporary shift, in the child-bearing patterns in this country. According to the 1980 U.S. census, one-half of all women in their 20s were not married. Of the married women in this country 20-24 years of age, 41% were childless, and of those 25-29 years of age, 25% were childless. Fewer people are marrying early and when they do marry they are having fewer children. Whatever the reasons for this, such as the development of the birth control pill and the women's equality movement, it is a profound change in child-bearing. It means that all higher education in this country will have a smaller traditional clientele for many years to come. It may be the year 2030 before we ever again reach the record number of high school graduates in this country that we had in 1979, our peak year.

As another part of that change, more and more people who are having babies are having them out of wedlock. The illegitimacy situation has reached epidemic proportions. The number of one-parent families has gone from 7.4% in 1950 to 19.5% in 1980 and is now estimated to be 24%. Many of these illegitimate children, incidentally, are born to persons who are almost children themselves -- girls 12-19 years of age. Thus,

not only are we having fewer children but the children we are having are increasingly born to very young unmarried girls. I think that this trend presents some very important concerns that we need to address in the years ahead.

Immigration trends. The second portion of the demographic change is the immigrant situation. We tend to think of the period roughly between 1890 and 1910 as the period of great immigration when millions of Italians, Germans, Poles and others came to this country. Oscar Handlin, noted historian of immigration to America, and others have documented this era beautifully. But the decade 1970-1980 surpassed the immigration rates of that earlier era. About 11.5 million people came to this country in that decade, more than one million per year. That does not take into account the estimated 2-4 million illegal aliens who also came during that decade. Immigrants are still flowing into this country at a rate of nearly a million a year. Harold Hodgkinson, resident scholar at the American Council on Education, and others have estimated that by 1990, one-fourth of our population will be minority persons. In California, I was told recently, one-half of all the students in the schools will be minority students by 1988. In Texas, last year, first grade minority students were the majority. Similar changes are occurring in Florida and other states. At Berkeley last year, which some people think is the finest state university in America, 40% of the enrollment was made up of minorities -- 24% Asian, 9% Hispanic, and 7% Black. And Berkeley was second highest in the state. UCLA had an even higher 44% minority enrollment.

This nation is becoming far more polyglot ethnically than it has ever been before. In the past, we have called ourselves a melting pot, but in truth we were largely a

European and African melting pot. About 94% of all these present day immigrants are coming in from two continents that have seldom sent many immigrants to this country, namely Latin America and Asia. While this change will affect Wisconsin less than it will affect New York, California, Florida, Arizona, Texas or Colorado, nevertheless it is a new dimension to the social realities of this entire country.

The black underclass. The third demographic upheaval is the painful and tragic situation of our black citizenry. After centuries of slavery, deprivation, and discrimination, American blacks have in the last two decades finally been granted a modicum of freedom and equality. The early achievements are amazing. We now have three times as many black lawyers and doctors. The number of black military officers has quintupled. Numerous major cities in the country are being governed by a black at present: Philadelphia, Atlanta, Los Angeles, Detroit among others. We have more black professors than ever before. The achievements of the top third of the black community have been remarkable.

At the very same time, however, in the bottom half of the black community there are disturbing developments. The American black teenage girl is now the most fecund 12-19 year-old cohort in the world. In 1984, 58% of all black children in the U.S. were born out of wedlock. One-half of all black children now grow up without their fathers. Nearly 55% grow up on welfare. Black youths are into crime earlier and in greater numbers. Blacks are 12% of our population but half of the prison population in this country. The high school graduation rate for blacks, after 20 years of improvement, has started going down in the last two years. As high school graduation rates decline, so too will college entrance rates and graduate school enrollments for blacks. There

isn't much chance that most universities in this country will be able to meet their affirmative action goals without lowering their admission standards or offering massive, expensive remedial programs.

The black community, which was once relatively homogeneous, has suddenly become a heterogeneous one, sharply divided by class, as demonstrated by William Julius Wilson, a black sociologist at the University of Chicago. Young, college-educated black couples with both husband and wife working now earn 3% more on the average than white couples with both partners working. But at the bottom rungs we have a new underclass which several black sociologists have suggested is one of the most desperate social problems of American life today. Surely universities and the federal government have some obligation to help reverse this tragic, rapidly worsening situation in the bottom half of the American black population.

The geriatric imperative. The fourth change demographically is that we are becoming a geriatric society. We are now probably the oldest country in the world, not in terms of our history but in terms of our demography, and we're getting older. By 1990, only four years from now, 15% of the entire population of this country will be over 65 years of age. By the year 2030, when our baby boomers will be retiring in large numbers, nearly one-fourth of the population of this country will be over 65. In that year the U.S. Census Bureau estimates that 9.8% of the population will be over 80 years of age. Imagine a society where one-tenth of the people are octogenarians or older!

The rise of the geriatric society coupled with the decline in births has created one of the greatest internal financial problems this country has ever faced. We are actuarily out of control in some ways. Fewer and fewer

young people are supporting a larger and larger number of older people. The costs of taking care of the elderly are very considerable and growing. Twice in the last decade the Social Security System has almost gone broke. It was saved only by a bi-partisan commission which imposed a $300 billion tax increase on all of us, the largest tax increase in the history of the world. In fact, Social Security taxes between 1960 and 1984 have increased 2200%. Some economists estimate that young people in the year 2000 might be paying between one-fifth and one-fourth of their entire salaries in Social Security taxes to take care of the elderly. The money demands for Social Security, Medicare, and Medicaid are squeezing out dollars for other social needs from the federal budget and many state budgets. Moreover, more people are retiring earlier. In 1982 for instance, 59% of all workers in the United States retired before the age of 65. That's up from 5% in 1952.

Obviously there are growth areas in this geriatric trend. In fact higher education has as its fastest growing segment of enrollments people over the age of 55. While the number of high school graduates and young college students is declining, the number of people 55 years old and older who are university enrollees and non-credit takers of courses at our institutions is growing.

Incidentally, the U.S. government released a study recently that showed that people over 50 years of age are now that portion of the American population which has the highest disposable income. Those on Social Security and some other pension earners have been indexed and have kept up with inflation. The percentage of persons 65 years and older living in poverty has dropped sharply, from 35% in 1960 to 14% in 1983. As a matter of fact it is not unusual to go to Florida or similar states

and find retirees living in relative luxury on two or three separate pensions, plus their savings and investments. What obligations does a state university have to the elderly in its state?

Economics

The second major revolution is in economics. We've been a fortunate country, blessed with a lot of resources, good land, and hard working people. By 1974 the United States had become the richest country in the world, producing 36% of the world's goods with only 5% of the world's population. The years between 1945 and 1974 were a golden era. We emerged from World War II with nearly all our competitors in ruins. The Germans had been bombed to smithereens. Italy and France had been walked over by two armies, first the Germans, then the Allies. The Soviets had lost 10 million men defending their country from the German invasion. Britain had been bombed repeatedly by the Germans. Japan had exhausted itself in a war it could not afford. China had been involved in a 20-year civil war, and was drained by a corrupt Chiang Kai-shek regime. We had an extraordinary situation.

As a result of the war, the United States had developed all sorts of new scientific research capabilities, and a nuclear capability. Between 1945 and 1974 we had the greatest run of prosperity that any nation in the history of the world has ever had. The stock market was up. We built a new college or community college in this country every week for nine straight years. We built more colleges and universities in this country between 1945 and 1974 than we had in the previous 200 years of our history. We increased welfare. We increased Social

Security benefits. We increased foreign aid. We increased military pay and pensions, and the pay of federal workers. It seemed we could be endlessly generous to ourselves and to others. Our prosperity seemed to be unending.

Economic watershed of the 1970s. Then in the mid-1970s this country went through what is now coming to be regarded as a watershed in its economic history. We suddenly began to notice that the Japanese had recovered from the war and were in fact emerging as one of America's most aggressive economic competitors. It's hard to believe now but in 1960 the United Nations regarded Japan as an underdeveloped country. People were funneling economic aid to the nation and there was scarcely a paved road in all Japan outside of Tokyo and a few other cities. By the mid-1970s we began to see new motorcycles, electronics, cars, and many other pieces of equipment from Japan being sold in this country.

In 1973 the OPEC oil cartel formed to triple the price of crude oil, which threw us into double-digit inflation for several years. Alongside the Japanese economic miracle, South Korea, Taiwan, Singapore, Brazil, Italy, France and many other nations came back very strong. By the end of the 1970s our nation had moved from a period of unbounded prosperity and relatively weak competition to a new kind of international dog fight. We have had deficits in the balance of payment every year since 1975, and they've been increasing. The trade deficits were $61 billion in 1983, $120 billion in 1984, and $149 billion in 1985. About 70% of all U.S. manufactured goods now face intense competition. Our share of the world's semi-conductor market has gone from 40% in 1970 to below 20%, office machinery from 38% to 24%, and so on. Our national debt has risen to $1.8 trillion as against only $280 billion in 1960. Martin Feldstein,

who resigned from Reagan's Council of Economic Advisers to go back to Harvard, predicted that by 1989, only three years from now, our national debt will reach $2.5 trillion. Dozens of cities are nearly bankrupt. New York City, for instance, owes $13 billion in debts and has little prospect of paying these debts off. More and more states are getting into considerable economic difficulties. Missouri, Washington, Minnesota and others have had to slash approximately 5% from their state university budgets in the past few years. Iowa, Mississippi, Louisiana, Texas and others are preparing to do so.

In the midst of this changing financial situation, 19 million new jobs have been created in the past decade in this country. No other nation in the world can match this figure. So the United States has experienced an increase in total employment in this country while most others have not. We are a resilient and entrepreneurial nation. But we will have to recognize that we can no longer live under the prosperous conditions we had in the 1950s, 1960s, and early 1970s. We will have to work harder and be smarter than ever before if we are to stay prosperous as an economy in the 1980s and 1990s.

Shifting trade emphasis. A couple of other things are noteworthy about these economic changes because they impact on each Wisconsin campus and on the work Wisconsin extension people need to consider. Until 1978 our trade with Europe surpassed our trade with Asia. But every year since 1979 we have traded more with Asia and less proportionately with Europe. In 1983 we traded $115 billion with Europe but $165 billion with Asia, and we are faced with the prospect that by the late 1990s our trade with Asia could double that of Europe.

You might say, "So what?" Well, this shift in trade emphasis means that the future of this country will

increasingly be with the West Coast. Long Beach, California has emerged as the third most active port in the United States. Seattle becomes more important, as do Portland, San Diego, and San Francisco. It also means that our university curriculums will have to change. When you look at American college and university curriculums they are largely Eurocentric. We teach Latin and Greek civilization. We teach European history, European music, European art, European languages. Our programs abroad are in Rome, London, Paris, Heidelberg, or Madrid. We are passionately European in our educational focus. We know relatively little about China, Japan and India, where two-thirds of the world's population lives. Last year the Japanese had 22,000 students in this country studying English, American society, and the American economy. We had fewer than 200 students in Japan. The Chinese last year sent approximately 14,000 students to this country and are expected to send more than 50% above that in the coming year.

If we do not shift our attention to this other part of the world we will increasingly be inundated with their products and will be less able to sell our products to them. We do not understand their religions; they are not Christians or Jews for the most part. We do not understand their culture. Thousands of U.S. business people are only beginning to learn that many Japanese have difficulty saying no to people because they think it's rude. We've got to understand their culture and mores if we want to deal with them.

Service-orientation. Another important aspect of the economic revolution in this country is that more and more manufacturing is moving out of this country. We are becoming a service society. Last year only 17% of the workforce was in factories, 4% on farms, and nearly

all others were in white-collar jobs. The trade union movement has been decimated by this development. Whole industries such as steel and shoe manufacturing have been cut in half in this nation.

As we become a service-oriented society, we have to pay attention to things we threw overboard years ago: manners, personality and dress. After all, when you are planting your crops or working in an auto plant you can wear long hair, dress as you please, use profanity, and even belch whenever you want. But when you work in a bank, in a classroom, for an airline, or in some other service capacity, people expect you to be a little more understanding of other people's feelings and values. So we find the extraordinary situation in many colleges today of students viewing videotaped interviews, working on manners and speech, and learning to "dress for success" -- things we all thought were gone forever as a result of the so-called hippie movement of the 1960s and 70s.

There are some other aspects of this shift to a service society. For instance, in a manufacturing age, large industry is the norm. In a service society, small business is increasingly the norm. So in 1963 we had 186,000 new businesses; in 1983 we had 580,000; and the estimate is that in 1986 we may have as many as 700,000 new businesses in this country. Most of the new jobs will probably be created by these new smaller businesses. There are indications that the Fortune 500 companies will probably add no more than one million jobs to the economy in the next decade but that the small businesses in this country may add between 10 and 14 million new jobs. This means, for instance, that in our business schools, the focus on organizational theory courses and large profit-making firms may have to yield to different areas of study.

International research focus. Another aspect of the economic revolution is that we are probably going to have to do far more international work than ever before. The students have already recognized this. Believe it or not, despite the fact that only 4% of all the high school graduates in this country in 1976 had completed more than two years of foreign language, enrollment in our colleges in Arabic has gone up 160% over the last five years, in Chinese, 82%, and in Japanese, 74%. Students are pointing with their feet and pocketbooks toward the future of this country, while the programs in colleges and high schools barely reflect the multilingual needs of the new international competitive society in which we live.

Just a few more consequences of this economic change. One is that research is going to become increasingly critical to this country. When Brazilians or Algerians or Italians or Portuguese or South Koreans can buy machinery and produce goods at half the price that we can because of our high labor costs, we have to understand that it will be research, novelty, and creativity that will increasingly be our economic edge. In virtually all the growth areas of this country -- optics, electronics, space, medical activities and so forth -- research is at the heart of the work. Research universities such as the great one that has evolved over the years at Madison will become national resources as never before.

A primitive cottage industry. One last thing about the economic picture is that any area of the American economy which does not lend itself to productivity increases will show a faster cost increase than most areas of the economy that do. So whereas Cincinnati Milacron and other corporations can use robotics to develop milling machinery, and whereas the cost of hand calculators has decreased from $200 to $20, the

costs of higher education, according to the American Council of Education, has gone up 39% between 1980 and 1984. The costs of higher education in this country for the last few years have been increasing about one-third faster than the consumer price index. Higher education is a primitive cottage industry in a high-tech world. I'm still talking with you pretty much the way Plato might have talked to youths on Athenian street corners.

Universities are very labor intensive. And we do not employ cheap labor, but expensive labor. Professors' salaries, while still inadequate at many colleges, have increased enormously since the 1950s when I started teaching at $3800 a year as a young instructor at a famous university. We are about a year or two away from the first $20,000-a-year education; at Harvard, Stanford, Bennington, and MIT costs are already up to $17,000 a year. It will be incumbent upon everybody in higher education to try to be more productive and efficient, eliminating all unnecessary duplication. If we do not do so, be assured that state legislatures will be breathing down our budgets in the next several years, as they already are doing in some states.

World agriculture. One other thing. Because I'm in Wisconsin I need to speak about the agricultural part of the economic situation. The world output of wheat has gone up 20% in the last ten years, 105% since 1960. Saudi Arabia, which is 90% sand, has increased its wheat production from 3000 tons in 1974 to 1.3 million tons in 1984; and last year, for the first time, the Saudis exported wheat. In China, where the famine of 1959-61 caused 16.5 million deaths, wheat production has doubled in the past five years from 41 million tons to 87 million tons. China now produces twice as much grain on 285 million acres as the Soviets do on 300 million

acres. Last year for the first time Chinese wheat and rice yields per hectare were higher than that of the United States. Indonesia has doubled its rice production, as have the Chinese. In 1985 President Suharto found himself for the first time in the history of Indonesia with a surplus of 3.5 million tons of rice, which he doesn't know what to do with.

China has replaced the United States as Indonesia's chief supplier of soybeans. In many countries of the world soybean production is up -- even in little Paraguay, which has increased soybean production 1000% in the last 10 years. To complicate matters for the American farmers further, people in the United States, because of a desire for better health, have been eating less beef and pork and more poultry and fish. As a consequence, the price of cattle and hogs has dropped precipitously. On top of that, Canada has increased pork production 34% in the last five years and is now a major exporter of pork to this country. The middle-sized farms in this country are rapidly being squeezed out. Only the largest producers and some of the best small producers, frequently with fathers and mothers who have extra jobs in addition to running the farm, seem viable. Last year, of the 2.2 million U.S. farms, only 679,000, or 30% of them, had more than $50,000 worth of sales.

Clearly economic development and some sort of transformation of the American economy is going to be a very important matter for this country. As I said, we have entered a new age of international economic competition. We need to be smarter and more strategic than ever before. The days of wine and roses of 1945-1974 are over. We are in a wholly new economic era. Education, especially higher education, is at the heart of whatever new economy we are sculpting.

Technology

The third major transformation is in technology. The computer is possibly the most important invention to affect higher education since Gutenberg's invention of the printing press in the 15th century. Universities in 1983 spent an estimated $1.3 billion buying computers. We are transforming the way we store, gather, regurgitate, and transmit knowledge, statistics and information in this country. The computer, combined with video cassettes, teleconferencing, films, television, audiotapes and records, satellite transmission and the rest, is tantamount to a major communications shift for American colleges and universities.

We are moving from a mechanical age to an electronic age. Production of steel is down and that of silicon is up. Mechanical and civil engineering departments are declining, but electrical engineering departments are growing so fast we don't have enough faculty to teach. We are in a boom in materials science, computerized manufacturing and robotics, computer-assisted design for engineering, and much else. I had an architect at my home last week. He said that 60-70% of all buildings he creates are designed on a computer, and he adds artistic refinements by hand.

Technology in education. For education the consequences are quite extraordinary. The Japanese last year opened their "Broadcast University" where some of the finest professors in Japan are put on television to teach the entire people. They have 11 regional centers throughout Japan where citizens can meet in seminars and argue face-to-face with professors on weekends. Taiwan is starting the same type of instruction this year. And Indonesia, a country which has the fifth largest population in the world and which is composed of

3,000 islands, is also introducing radio and TV instruction. There is no way Indonesia can run high speed boats among all those islands and transport everybody to Jakarta; but they can transmit through modern electronic devices from Jakarta to many of the 3,000 islands.

America's Public Broadcasting Service (PBS) is setting up a national education TV network linking local microwave TV systems via satellite. PBS has begun letting out contracts, with help from an Annenberg Foundation grant, to Yale in French and Cal Tech in physics. By the early 1990s, PBS will have some of the best professors in this country teaching over television to people. The prospect is that McGraw-Hill or Texas Instruments or Time-Life or somebody else may before long have an All-American university program that you can buy for $495.50 through your local store. We may have instruction through video cassettes soon that is almost comparable to lectures which you could get at the University of Wisconsin, Yale, or Stanford. That is how consequential the technological revolution is.

A capital-intensive industry. However, the technological revolution has also created an extraordinary equipment problem, and higher education is becoming for the first time in U. S. history a *capital*-intensive industry. We now need, behind every professor, more and more equipment, scientific apparatus, computers, and other capital investments. One of the things that is causing sleepless nights and driving financial vice presidents and presidents into earlier retirement is the prospect of having to spend millions of dollars every year during a constricting economic situation to pay for vital new technology.

Wisconsin was one of the first states in the Union to develop its own university radio station and university

TV station. I know the University is on the cutting edge of this technological revolution. This is a powerful advantage, especially in looking at the future of the Wisconsin Idea. But if you visit Oklahoma State University, for instance, you will find television and broadcast facilities almost comparable to those in New York City. Their hope is to be able to bring some of the finest education to all the people of Oklahoma on a daily basis. They are using modern technology to replace some of their old forms of extension in a very high-powered and artistically sophisticated way.

Education

The fourth major change is in higher education. First, outside the traditional accredited colleges and universities we have seen a remarkable growth of education. One out of six museums is now said to offer college-level courses. The military last year had four million students. The government agencies of all kinds -- municipal, county, state, and federal -- had seven million students in courses. Those of you who have read Nell Eurich's new book called *Corporate Classrooms* know that industry now spends between 35 and 40 billion dollars a year on training and education, and that sum will probably continue to increase. The American Council of Education last year estimated that at least 1000 courses taught by American corporations are worthy of college credit, and the number is proliferating. There are now 6000 proprietary schools in this country, small institutes and colleges run for profit, only one-third of which are accredited. These are the schools of barbering, computer science, cosmetology, auto mechanics, and what not; and they are increasing their enrollments

while many colleges and universities are having trouble holding their own.

Incidentally, 18 corporations, according to Nell Eurich, now offer degrees for credit, and the prospect is that by the year 2000 as many as 100 corporations could be offering degrees of various kinds. Some of them are unusual, such as the two-year associate degree offered by McDonald's Hamburger University in Illinois. But a few corporate programs are actually ahead of what most universities are doing.

The enormous growth of education in other of society's institutions raises questions about the linkages between places like the University of Wisconsin and these other institutions. If they're offering courses and you're offering courses, it seems to me that some sort of closer collaboration and cooperation becomes possible.

The learners. The changes inside higher education are equally profound. Most central in my estimation is that the colleges and universities of this land in the last 15 or 20 years have moved away from being institutions that educate mainly the young just out of high school into becoming more like public libraries educating people of all ages, 14 to 84. If you look at the *New Yorker* magazine, one of the more sophisticated journals of this country, you'll see ads by Wellesley, Mount Holyoke, Harvard and other institutions for their summer programs for young teenagers 14, 15, or 16 years of age. And it is a rare community college these days that doesn't have 50% to 70% of its students as adults. More and more of the smaller colleges have somewhere between one-fourth and one-half of their enrollments as adults, and even the great universities of this country -- the research universities -- are the same. Harvard now has roughly the same enrollment by adults as it has by

traditional students. Overall, 43% of all students enrolled for credit are over age 25. Continuing education for lawyers, engineers, and indeed for professors is now routine.

In addition to this changing age profile, 45% of the students are now going to school part-time. Surely by 1990 that will reach 50%. Indeed one-third of all faculty teaching in American colleges and universities are now part-timers. We are moving toward a different situation where a relatively smaller percentage go to college full-time or teach full-time and a much larger group is involved in some combination of work and learning. This includes many of the faculty in university extension courses, as you know.

Universities are also increasingly becoming multinational. Though the growth has slowed, the number of foreign students in American universities remains quite large. At the graduate level, American universities are now the graduate schools of the world; nearly one out of ten graduate students in this country is a foreign student. And in 1982, the last year for which we have statistics, 52% of all doctorates in engineering went to foreign students; 38% in agriculture; 31% in computer science. We are training a significant portion of the elite of the rest of the non-communist world.

The curriculum. The curriculum in this country is in turmoil as more and more students at colleges of liberal arts and are moving to career and professional programs. Many of the better professional schools in this country are changing their curriculums. In engineering they are moving away from mechanical and civil toward electrical and computer-oriented studies. Last year MIT for the first time had to institute a 50% quota for computer science majors in its freshman class.

In medicine we're moving away from cure to care. Most of the major infectious diseases in this country have been controlled with cures or vaccines. Many of the people in hospitals today are of two groups. One is the elderly and the dying, most of whose diseases are related to old age and are not curable: emphysema, heart problems, arthritis, malfunctioning of certain organs such as the liver, kidney and so forth. The other group in hospitals is people who have, in effect, put themselves there -- drug addicts, people who have been driving while drunk, people who have been smoking two packs of cigarettes a day and have lung cancer, and persons who are alcoholics. A good number of these are psychologically disturbed as well as physically malfunctioning. No longer is medicine concerned almost exclusively with bacteriological diseases. I don't mean to minimize work in immunology or genetics or the problem of AIDS and the common cold. But the epidemiology of modern illness is substantially different from that of several decades ago.

In nursing and pharmacy, people want something less than a pharmacist, because more and more pharmacy is being done through grocery chains, and something more than a pharmacist to work alongside physicians. More and more nursing is being done in nursing homes and various other places which feel they don't need a full R.N., while more nurses who are working alongside physicians are expected to be graduate nurses and specialists.

In journalism we're moving from print to electronic journalism. The line between journalism and public relations or advertising is getting thinner. In education schools, we are moving from an orientation strictly to schools to training people to teach in various other arenas too. In agriculture we're moving to biogenetics

and worries about toxic chemicals as well as concern for new varieties of plants.

So in nearly all the professional schools we're seeing a transformation. And of course continuing education is a major outgrowth of these changes. We are becoming a learning society and the implications of that for this University are immense.

THE WISCONSIN IDEA IN THE 21ST CENTURY

If these four major upheavals are taking place in American society, as I believe they are, what does that mean for the Wisconsin Idea in the 21st century?

First, it seems to me that the importance of extension services from the University of Wisconsin needs to be reaffirmed. Never before in the history of this country has education been so central to the prosperity, harmony, and security of this country. If we are becoming a learning society, if we need to keep ahead of the Japanese, South Koreans, French and others, we are going to have to keep learning and to work smarter than ever before in our lives. From now on a university commencement will not be merely the beginning of a lifetime of work but the beginning of a lifetime of further learning as well as *several* kinds of work. You people are at the heart of this new world of continuing education.

Second, it seems to me that extension programs, like other activities in America, need, as Peter Drucker puts it, to "slough off yesterday."[5] You should substitute the outmoded with the vitally new. It is imperative that you become more entrepreneurial and action-oriented. In the several papers that I was sent for background reading for this presentation, I saw occasional references to "reinstating" or "restoring" the Wisconsin Idea. I hope that does not mean that some of you yearn to return to

the good old days. The good old days were never that good, and we cannot turn the clock back. We are now in a new international situation and we need to look ahead, not back. Surely the Wisconsin Idea itself is alive and well. What is urgent is that new wine be found for the famous old jug. Renovation, not restoration, is required.

Third, I think you need to recognize that the social and economic conditions today are not what they were a century ago when the Wisconsin Idea was born. They are not even what they were a decade ago when this country was at the tail end of the greatest period of prosperity in our history. The American family is not the same; nor is the leadership situation in this country the same. Nor, as I've tried to indicate, are the people the same in this state or in the nation. For one thing, we are more educated than ever before. The number of college graduates has doubled in the last 25 years and the percentage of high school graduates has increased. We are no longer dealing, except among the very poor and the most underprivileged, with illiteracy. We are now dealing with a different constituency. So I hope you will design your refurbished Wisconsin Idea with tomorrow's challenges and opportunities in mind.

Fourth, I suspect you need to slim down and trim your appetites. In a few places in the background papers, a reader might think that extension is involved in problem-solving for nearly all the difficulties in our world -- from unemployment and toxic wastes to women's equality and world arms spending. In a time of increasingly constricted funding for publicly financed activities, it seems imperative to distill exactly which few activities the University of Wisconsin can do best in its outreach work and which activities are the most critical for the continued health and vitality of this state.

Incidentally, one of the consequences of President Reagan's new federalism and of the changing economy is that many states in the Union have now begun to act like countries in the world. I'm an adviser to one governor who has made it a policy to go to Japan twice a year. He has come back with some very substantial new industry. Florida will try to lure away companies from Wisconsin, and Wisconsin will probably try to attract some companies from California. And California will probably try to get industry from North Carolina and New York. Not only will competition between the United States and other nations increase but competition among the 50 states will increase. Therefore your outreach activities need to take cognizance of the fact that Wisconsin's vitality -- economically and socially -- is in jeopardy. When tax receipts and the economy in Wisconsin drop, money for the state university will go down just as assuredly. The interests of Wisconsin, its people, its economy are now linked as never before with the interest of the University.

My own sense is that the extension division should probably stay close to its original two Morrill Act mandates: education and economic development. Education is not a small category. It is very inclusive. It means enlightenment for individuals, families, county and state leaders, for the poorest people in our society. And economic development means assistance and advice to farmers, to engineers, business entrepreneurs, to labor union members, to non-profit organizations, and many others that make our economy vital -- also a broad array. There's plenty of work to do in just those two areas. Again, be careful about spreading yourselves too thin and of confusing knowledge transfer with fixing all of the ills of society. You are educators, not saviors.

Fifth, while the specific land-grant mission rests with a single institution in most states, in the last three decades nearly every state in the Union (including Wisconsin) has created a remarkably diverse *network* of publicly financed institutions: research universities, regional universities, state colleges, technical institutes and colleges, community colleges, and vocational institutes. Some states even support predominantly black public colleges. This suggests to me that whatever you plan for the future of extension ought to employ the talents and special skills of *all* the Wisconsin state institutions of higher education. It is imperative that you put together a collaborative effort, a multi-faceted, cooperative plan, not a spray of individual and sometimes contradictory plans.

Sixth, whatever you devise be sure to recognize that new technology makes possible radically new ways of doing some things. Do we really need a county agent in every county when we have telephones, 800 numbers, computers, four-lane highways and a car in nearly every garage, airplanes, Federal Express, radio, television and video cassettes? Also, our new financial situation in this country mandates that we become far more productive in the use of the people we do employ.

Seventh and last, remember that information is power. Perhaps the most important thing the state university can do for Wisconsin and its people, government leaders, and economy is to provide good information on exactly what is happening in Wisconsin and in the rest of the nation. Armed with precise information about yourself, important trends, movements of money and people, and forecasts about the future, Wisconsin can act faster and more wisely than other states and

other nations. Without powerful information and accurate monitoring of your own economy, human resources, and politics, you will lose to other states such as Texas that monitor their state operations and directions carefully.

Alfred North Whitehead said in 1925: "The greatest invention of the 19th century was the invention of the method of invention." To him, "We could neglect all the details of change such as railways, telegraphs, radios, spinning machines, and synthetic dyes. We must concentrate on the method itself; that is the real novelty of our age."[6]

In a sense, all of us are still involved in refining the "method of invention." But today what we need to invent are not so much new machines and electronic items, though these are still important, but new ways of thinking, new ways of imagining, new ways of responding to swift and radical changes happening in this country and the world economy. No idea, however pathbreaking at its origin -- and the Wisconsin Idea was a pathbreaker -- is worth much unless it keeps refining and updating itself.

This, to me, is the new frontier. This, to me, is your primary charge in trying to design a Wisconsin Idea for the 21st Century.

QUESTIONS AND ANSWERS

Question 1: A primitive industry.

You mentioned that the university is really a primitive industry. Why do we find this primitiveness in the universities where so many things ought to be happening?

Keller: This is one of the major concerns that I have. I have visited the Xerox "university" which is in northern Virginia. They have built a multimillion dollar facility there and they bring many of the Xerox people back to this place every year. They have training films and video cassettes and records. It's extraordinary how they teach. Then you go to the University of Maryland or to Georgetown nearby, and you still have people like me standing in front of classes reading from tattered notes that are sometimes five years old.

You ask why the slowness to adapt? A lot of it is just habit. But there is also skepticism about what can be learned from modern technology. I walked into a room in a Pennsylvania college last year and there were a thousand students in a huge auditorium with two television sets facing both halves of the auditorium. On the sets, a professor from the University of Chicago was lecturing. I was told that all of these people were preparing for the Bar Exam. This is clearly a very productive way of teaching. It's cost effective. All of the young law students, who are already $30,000 in debt because of monies they had borrowed to get through college and

law school, are grateful for that sort of operation. But many other law professors would say that this law professor and his cassette are putting people out of work.

This is not dissimilar to what is happening to labor unions and to other workers who are being replaced by robotics and other forms of contemporary technology. It is a very difficult and painful human problem.

Time/Life for instance has a film on how to play tennis. It's really marvelous. You can get this little video cassette for $10.00 or so. If you went to a country club some pro would charge you $25.00 an hour for 20 lessons. That's the magnitude of change we're talking about in teaching. I think it's going to be very important that we introduce new technology. We must get more productive. I hope it will be done humanely and with some understanding and with good communication between faculty and those who would like to use the new technology more effectively.

Question 2: Worldwide popularity.

I'm still a little troubled by your suggestion that somehow the American educational system is so primitive, and if it is indeed so primitive, I wonder why is it so popular internationally? In fact, if you viewed it as a product, it may be one of the few products Americans now produce that does compete around the world.

Keller: I couldn't agree more. When I said primitive, I was referring to the fact that the American system is pretty much the way it was in the 19th century. If you're a professor in Madison, I suspect you still have lectures and you still talk a lot when you have discussion sections. That's not too different from the way they did it at the University of Paris in the 1800s.

That's all I meant. But within that structure the United States is by far the best system in the world.

Question 3: Technology and learning.

I don't want to make a case that no technology should be applied to higher education, but how many of us would like to go to a university or college where we sit in a room watching a TV screen with 4000 other people instead of rooms of 80-90 people like this, getting our education? I wonder if we ought not be very careful about suggesting that bringing technology to higher education is a sure bet for improving the way we are.

Keller: I don't think it's a sure bet for anything. It could *weaken* education in this country. But our life is a trade-off. I would love to study with the greatest person in the world, whatever I am studying, but I can't afford to go to Harvard or I'm not good enough to get into Harvard, so I study the same subject at my local community college. I'm probably not getting as much out of it, but it's a necessity that I have to live with. In the same way, I would love to be taught tennis by Bjorn Borg. That would be my ideal, but the reality is I'll probably spend $10.00 for a Time/Life video cassette. Similarly, students may find a cassette by a world famous scholar to be preferable to mediocre instruction in person.

The other thing is that high tech frequently means high touch. When we did studies at the University of Maryland, the more we taught electronically the more people wanted to see somebody to argue with them. That's a very important point. It's not an either/or situation. We've got to strike some painful but decent bargains and say that well, in this area I think we can do something a little less expensive. It's not as good and

we can only give you Saturday with the professor but we're not going to be able to make this professor available to you every Monday, Wednesday, and Friday at 11 o'clock and we're not going to let you have a whole year off to study this.

Keep in mind that printing created a similar revolution. Who wants to read books all alone when you can go to lectures and discussions with live scholars?

Question 4: Technology and new ideas.

You gave the example of the two videotapes with a thousand people watching the professor reviewing for the Bar Examination. You didn't mention it in terms of its implications for new ideas and looking ahead instead of changes in learning styles or teaching styles. Can you address that?

Keller: My sense is that there has been one major revolution in teaching in the history of the world and we're on the edge of the second one. The first major revolution was the invention of printing because until printing all instruction was oral. People would travel by mule or on foot to sit at the foot of Erasmus or Thomas Aquinas or somebody in Paris or Bologna. With books, you could take the professor's ideas and move the books around, and you could start new universities in Warsaw and Oxford and all over the place. To this day we still live in that 15th century mode; we talk and we have readings.

What is now happening is that a second revolution is occurring where, alongside books, we have another array of learning instruments. We have films, we have satellites. At Columbia University now they are, with a satellite dish, tapping into Soviet TV soap operas. It's a

way of learning colloquial Russian by watching Soviet television rather than having some professor say, "Now, repeat after me . . . ." It's basically the way you learn a foreign language when you go to a country to visit. What we really have is another vehicle to teach by and we can broadcast like this far more broadly than we do now. In India, you can teach people via radio and television, people who can't read and write! In effect, we are on the edge of a second revolution.

What does that mean for teaching? It means that teaching will become far more interpretive. It will be less the dispensing of facts and basic information because you can get that from a book or a periodical or a film or an audio cassette or somewhere else. What we're going to do is say, "Okay, you've read that, you've seen this, what does it mean?" The teacher becomes far more a kind of broker for understanding and interpretation of facts and less and less a dispenser of dates and wars and the genuses of plants because you can get that in another place. This raises perilous questions because interpretation is what Marxist professors or right-wing people on the other end of the political scale believe they are doing. But analysis will become as important as factual depiction.

Question 5: Cooperation in higher education.

You talked about the competition between young and old, between the top half of the black population and the lower half, and between countries, and so on. Then you say that the universities should work in a manner of cooperativeness and consolidation with all the competing forces in education. Is there some magic in the university that it has that skill?

Keller: The magic resides in the fact that the way to overcome some of the outside competition is through cooperative education. What the Russians have done for years is keep their nation in a state of fearful cooperation and collaboration from an outside enemy. I don't suggest that universities get into that business, but it does seem to me that if you ask yourself how are we going to overcome some of these problems, clearly, in my view, the best answer is we're going to have to use educational skills. I think education is going to be increasingly the major resource we have. From now on the human resource, intelligence of people, is going to be as critical as our resources of land, oil and gold.

Let me say one thing, as someone who is interested in social justice. If you've ever seen the bloated bellies of starving babies around the world you can't help but feel a little bit happy that world wealth is being redistributed. Jamaica, for instance, increased the price of bauxite 900% in the 1970s. You ask why, and the response is, "You go to America -- they've got two or three cars, two or three television sets, two or three homes. They've got more than they need. We're all starving to death. We have nothing. Our average income is $600 a year, their's is $20,000. What's a 900% increase in the price of bauxite for their aluminum mean to them? It isn't going to cost them compared to what our poverty is costing our people."

As the fattest cat on the block it's going to come out of our fur. What you want to do is to try to increase world wealth so that there isn't an increasingly intense competition for a fixed pie. That will take a combination of education and the arts and many other things so that the cultural and world values of these other people

will rise. You know the Chinese have decided to shed parts of Maoism and to come back into the capitalist world to some limited extent. One of the first persons they invited was Itzhak Perlman, America's great violinist, to teach the Chinese what they had forgotten after 20-30 years of Maoism, the beauty of contemporary music through western instruments. That kind of effort puts art and education into a lot of other hands. Education can unite and enrich in ways that other forces usually cannot.

Question 6: Productivity in the university system.

What kind of productivity do we have in the university system, and how do we measure it? And also, do tenure and collective bargaining have any effect on productivity?

Keller: Productivity has been increasing very slowly in the university system, mainly through the use of technology and part-timers. And that's mainly financial productivity. I'm not sure it's an educational productivity. You can measure it in terms of expenditures for faculty. You can hire a part-timer at 20% less than a tenured faculty person, and more and more colleges and universities are doing that. So productivity has been increasing slowly.

But many community colleges and state colleges are unionized, and it's a problem. I've worked with several of these campuses and it's difficult to change anything. Their tendency is to dig in and protect their jobs. It's understandable but it makes change awfully difficult. Responsiveness is reduced, there's no question about that. But that's no different from what's happening in some parts of American industry too -- responsiveness

has slowed down. I don't mean to say that faculty unions are the only drain on productivity. I think some of the leaders in higher education fall behind many of the faculty in being bold about new ideas.

But I think tenure is pretty much a requirement. You just can't have first rate research and teaching if you're living under the shadow of some political figure or trustee being able to fire you if you don't say the right thing. I think tenure is critical. I'm finding when I work with colleges and universities that the standards for tenure are getting more rigorous.

But I don't think you can expect massive productivity gains in education; I would hope that there would be some. It's going to be slow and people are going to have to recognize that there are certain parts of American society that are just going to cost more. The arts for instance. You just can't take a symphony orchestra and say, "Well why don't you play without the oboes, it's cheaper." Or a dance group and say, "Let's knock out the male lead because it'll be cheaper." You can't do that to the arts, or to education; there's just a certain amount of human input that's required. But it does seem to me, just as the advent of printing and reading assisted in teaching, so too certain parts of the telecommunications operation will help make teaching a little more efficient than it is. Technology has already changed the nature of learning in libraries.

Question 7: Multiple educational providers.

Does it matter who does continuing education? Does it matter -- given the competition that you've painted in that arena, the new technology -- that I can get my education from 3M for a lot of things? And if so, in

what circumstances? What kinds of ethical and moral implications are involved? Does it matter whether or not there are university networks that can do this if we can rely on these other very capable educational institutions?

Keller: Very good question. My own sense, and I realize this is a painful thing to have to say to university people, is that probably a lot more of the education, especially the training aspects of the education, will be done by sources other than the university unless the university collaborates and works out arrangements with them to teach jointly. I think that this is just one of the new options, and it's something that education has not recognized. You go into the schools for instance; you walk into the schoolyard at 8 A.M. in the morning and all the kids are talking about last night's TV shows. The teachers teach as if television did not exist. It's becoming very important for education to understand that the telecommunications revolution really is bringing with it other sources of knowledge and information.

I think that consumers will make a free choice. Young people in today's society can decide that they can learn computer programming better in some proprietary school of computer programming than they can at a community college. They can choose that. So you will find some education moving to other suppliers. It's interesting to watch young people today designing their educational futures. They're going to an Outward Bound program to get one thing, to an MBA program at night to get another thing, to recordings to learn a

foreign language. They use several sources of learning and go where it seems best.

Educators are competing just like farmers and the corporations and everyone else. It's a new multifaceted world of information and teaching out there. A lot of high school dropouts as you know have gone into the military. They get their GED certificates in the military, they take some college-level courses and they really progress within the military system at a far better rate than they ever did in high school. So I think it's a plus in a pluralistic society to have several educational sources. But it's also definitely a challenge to the standard colleges and universities to perform at new levels, with innovative techniques.

Question 8: Continuing education as career-related.

From the examples that have been given thus far, I guess my conclusion is that about 95% of what's painted here regarding continuing education is vocational related. There's an economic development thrust that comes out of all of this in terms of business and industry and what we're going to do in that particular area. With the exception of languages, I guess I'm not sure that I heard anything relative to cultural enhancement, what's going to happen there and who's going to do it, the environment, or information for information's sake. Everything is within the context of something vocational, something career-related, something that will enhance a training skill. Which really suggests a bias in terms of the need to change those curriculums. Could you comment on this?

Keller: I think that's a fair accusation. Keep in mind I was not talking about all of higher education.

I'm talking about the Wisconsin Idea and the land grant idea. And the land grant idea is really an economic idea. The Morrill Act said we want to get the poor kids into college as well as the rich kids, and we want state universities to open themselves up to the farmers, and mechanics and the land. The land grant idea was to get America going so people don't starve to death in this country, so we're establishing aid to agricultural experimental stations and aid to what they called mechanic arts (in those days the old A & M). The Morrill Act also had a military component for national defense. Those were the three components for the land grant act and I was thinking of the Wisconsin Idea in that context.

I am not saying that you shouldn't teach people to dance ballet, or that they shouldn't learn to speak Chinese, or that they shouldn't learn the glories of Milton's poetry. Cultural education is as vital as any other. I'm just saying that the land grant act, which is still in place, and from which you still get monies from the federal government for your cooperative extension to help farmers, is really an economic development act.

Question 9: Nonvocational concerns.

If we're going to slim our appetities, have less resources, and still continue to specialize in that outreach effort, does this mean that there isn't room for the nonvocational?

Keller: Well, you know, that's a judgement call. The first priority, always, is for people to stay alive, to feed themselves. So the basic industries -- mining, lumber, agriculture -- will always be key. You'll always have the most support there first because, without food, there is nothing. So the first priority is *always* economic development. The more you run into trouble, the more

you get down to the basic issues of life. I don't want to take away from the cultural things; all I'm saying is that you need to keep in perspective the realities of our times.

Keep in mind that today's economy and political relations require innovation, awareness of other people's values, and a keen sense of human nature. The humanities are actually more necessary than ever if we are both to maintain our way of life and to live peacefully in a multi-cultural world.

Question 10: Diminishing resources.

May I react to your comments on that? If we believe, as so many of us do, that the economic changes of our times are going to have a potentially disastrous effect on the economy here, it's going to be necessary for some of the existing resources to be put into areas that have been previously downplayed. You're going to need people teaching about different cultures, about political structures, about interdependence, whether it's political, military or agricultural. We cannot go back to what the Morrill Act was.

Keller: Good point. I agree. All I'm saying is it's a judgement call. It's a little like a primitive man painting antelopes on the cave. He's painting in the cave at night and he loves it and it fills a need for his soul. But the kids are after him, "Daddy, we need food, you gotta get out there and get us some food." So there's always going to be that tension in life and you can't throw one over for the other. But I also think, what we'll increasingly have to sell the world is what I call third and fourth tier services. More and more the first and second tiers, the basics, will be done by other countries for

themselves. What we can sell is management skills, computers, science, medical research, the arts, and teaching all these things that we're talking about. You're right, third and fourth tier services are going to be increasingly important, not just agriculture and engineering. What we may need is a new Morrill Act for the 21st century.

Question 11: Liberal arts.

The liberal arts have been under attack and they're a low priority. Do you agree with that?

Keller: Not under attack, just less compelling for more young people. Actually several recent reports argue we need to restore liberal arts. Under the old educational system, it was imperative that you got your liberal arts in those first 3 or 4 years of college because that was the only capsule of time you had to study the timeless issues.

Now, with continuing education, I can major in auto mechanics for two years, then move to the University of Wisconsin to study mechanical engineering. I can return to Madison or a local college and read Shakespeare's plays when I'm 32 years old. That is, continuing education really changes the sequence in which you can study courses.

You can now start at very basic training/vocational levels and work your way up to careerism and the liberal arts later. Or you can start with a liberal education in college, then go on to business school, and after that pick up some vocational school coursework in beekeeping.So it's now possible educationally to go either way. There is now a *range* of possibilities, and the new technologies make it possible to change the schemes or to provide a plurality of schemes and sequencing of learning.

Question 12: Focus on business and industry.

Generally speaking, the trend in continuing education has been from popular education and the development of cooperative institutions a number of decades ago to what seems to be the current focus on services to business and industry.

The whole partnership question between the university and the private sector basically seems to be what does the private industry sector need in terms of research, management education, small business development and so forth. Would you comment on that trend? Do you see continuing education and higher education as being strictly an adjunct to the needs of private business?

Keller: I would say to some extent you're correct. But I was troubled by your characterization of all higher education moving in this direction because, among the elderly, I would suggest the reverse. One of the developments of our time is that older people really want a liberal education. They are the people who want the Great Books courses, they want to study watercolors. At age 68, they don't want bookkeeping. So I wouldn't characterize all of adult education as moving in that direction.

But there's no question that the whole issue of economic development has become far more urgent in higher education because it has become far more urgent for America as a nation. There's no question that we have reached a watershed in our economic history and we are getting more concerned about economic development. How you in higher education accomplish that is

an open question. I'm not so sure the only way to do it is to provide research and help to private industry. There are many other ways. And keep in mind that the greatest resource is our people. To stay competitive Americans need to concentrate on developing our human resources, not just particular firms.

Question 13: Higher education for a select few?

You have said that certain parts of American society are going to get increasingly expensive, one of which is higher education. That means that certain people in this country are going to be cut off from that increased productivity you've been talking about. I particularly feel it will be women, and minorities, and displaced workers, mainly because women and minorities comprise a great deal of the low income sectors. The Wisconsin Idea originally was a commitment to broadbased public education, to reach out to those people on the farms and elsewhere. The picture that I get from what you're saying is that we're talking about very few people, or fewer numbers of people, reaching the higher levels of education and a whole lot staying at some lower range to perform these service sector jobs and that it isn't really necessary for us to be educated.

Keller: I certainly didn't mean to say that. Economic development, for *me*, doesn't mean helping the richest corporations. The third tier means return to home economics, helping families stay alive and adjust to new conditions. It really means continuing some of those very basic things that have always been part of the Wisconsin Idea. It seems to me that this state of Wisconsin has made a commitment through public education and through one of the best Extension programs

in the United States to the ordinary working people and I hope it will always continue. I think that's a vital part of economic development.

Let me say one other thing about education. I don't think you can ever get enough education. One of the things that they're finding about Japanese workers, for instance, is that they are all very educated and they're better workers because of that. When you go to a Japanese auto plant, the people on the assembly line are working out things and making suggestions from quality circles of all kinds; they are educated workers. I think that's important. And I think we need to lift up the whole American society educationally speaking. I think the concept that we'll only need a few people to be educated, and all the others should be dolts, is a *crazy* idea.

One other interesting point -- the reason that Chinese agriculture has had a turnaround is that they have, in effect, copied the American cooperative extension program. They now have identified the Chinese experts and have sent them out to teach the farmers out in the provinces how to use hybrid rice, how to use hybrid wheat, and how to plant more effectively. They are using American techniques. We have good techniques. I certainly didn't mean to imply in anything I said that a portion of society will be thrown like refuse on a pile while the rest of us get an education.

The United States is the most successful, long-lived republic in history. The health of our republic requires an intelligent voting populace. Public education is a requisite for our society -- for *everyone* in our land. No other country has provided such opportunities for every citizen to study at the higher education level. This

extraordinary access to higher learning must be preserved. It is one of the grandest accomplishments of the Wisconsin Idea: to bring higher learning to all kinds of people in all walks of life. That part of the Wisconsin Idea must never be allowed to atrophy.

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