



# **The University of Wisconsin press bulletin.**

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# Badger Youth Show Progress in State Plan of Work-Study

High school graduates who are pursuing special training through University Extension college courses at selected centers in the state, and financing their work through part-time employment provided by the National Youth administration, have furnished evidence of excellent scholastic ability and persistence in following through, according to extension division reports at the University of Wisconsin. The reports portray results of first semester studies.

Two students maintained a steady flow of five lessons per week; six completed four lessons per week; 18 returned three lessons per week; 13 had record of better than two per week; nine returned one lesson per week, and the rest a lesser number. Individual programs were complicated, it was revealed, by problems of adjustment, illness, and plans for transferring to residence institutions. Yet only five students dropped out, and the rest gave evidence of diligent attention to the courses marked out for them.

The study centers reported on are Columbus, Lancaster, Mt. Horeb, Portage, and Tomah. Students participated also from Black River Falls, Blair, Camp Douglas, Cazenovia, Deerfield, De Forest, Galesville, Gays Mills, Hancock, Hazel Green, Kendall, La Crosse (Aquinas), Livingston, Lodi, Lone Rock, Milton, Montfort, Muscoda, Necedah, New Glarus, Ontario, Patch Grove, Plainfield, Poynette, Redgranite, Rio, Seneca, South Wayne, Sun Prairie, Viroqua, Westfield, Whitehall, and Wilton.

These are "locally directed" correspondence courses studied under direction in high schools. The programs are based on financial and educational need, making possible profitable employment and college training at the same time.

"Under this plan of work and study," commented Dean F. O. Holt, "the student learns while he earns. Not only can he secure the beginnings of a much coveted college education but he can meet pressing family responsibilities and at the same time be of service to his home community and to his country in these times when young men and women must prepare themselves, at a minimum of expense, for more effective contributions of national defense."

# Hitler and Japs Please Note: U. W. Marksmen Practice

University of Wisconsin marksmen are sharpening their shooting eyes for collegiate competition (and maybe for the Japs and Nazis) on one of the finest indoor rifle ranges in the state, a \$10,000 "double-deck" installation in the east section of Camp Randall stadium.

Sponsored by the University Reserve Officers Training corps, the rifle and pistol teams are firing 80 postal matches against other squads all over the country, and will engage in several shoulder-to-shoulder matches in one of the heaviest intercollegiate schedules ever arranged for the Badger marksmen. The teams and use of the range are supervised by members of the ROTC instructional staff.

The rifle team season began early in December, and will continue until April. The range which they use was completed last year in the new addition to the stadium, and it has 20 firing points arranged in a double deck, with firing from the central aisle in two directions. "Daylight" lighting and acoustic treatment are modern features of the range. A carrier system is provided for bringing targets to and from the backstops.

Interest in rifle and pistol competition is extremely high, according to Col. H. H. Lewis, commandant of the ROTC. In addition to the large schedule of postal matches, the riflemen will participate in the Hearst Trophy match and Corps Area Intercollegiate match this season. The pistol team has nearly 30 postal matches with teams throughout the country, and will attend the regional match at Purdue university early in the spring. Other shoulder to shoulder pistol competition is pending with Illinois, Missouri, and Michigan State universities.

The Wisconsin rifle range is built directly into Camp Randall stadium beneath the stands where thousands of football fans are seated each fall. The huge new unit houses football, track, baseball, boxing, and wrestling training quarters in addition to the rifle layout.

On the new range, all shooting is done at 50 feet, with pistol competition on the ground floor and rifle firing from the upper deck. Marksmen are protected from ricocheting slugs by steel flanges mounted against all sharp corners of the walls. Targets are backed up by one-fourth inch thick steel plates slanting into sand pits, which receive the spent bullets.

# U. W. Men to Address Foundry Conference

Dean Ellis Johnson, head of the University of Wisconsin College of Engineering, will give the welcoming address at the fifth annual Wisconsin Foundry conference in Milwaukee Feb. 26-27. The two-day meeting includes a series of talks and roundtable discussions on current foundry problems. Dr. J. F. Oesterle, of the Wisconsin department of mining and metallurgy, is co-chairman of the conference. Pres. Clarence A. Dykstra will be the principal speaker at a luncheon and joint meeting Feb. 27.

To Editor:—The news in this bulletin is prepared especially for the press and is released for publication on the date below. Please address exchange copies to Editor, 711 Langdon Street.

Release Wednesday, Feb. 11, 1942

# University Promotes Defense Plans In Many Badger Cities

Adapting its normal peacetime activities to new needs arising from war emergencies, the Extension division of the University of Wisconsin is operating greatly expanded programs on various fronts as contributions to the allied war effort. These have one objective, described by Dean F. O. Holt as "to cooperate in government ventures essential to the successful prosecution of war."

Responding promptly to the government's call, the State University set up a statewide program of classes at the college level to promote maximum efficiency and speed up outputs of defense industries in cooperation with the National Committee on the Conservation of Manpower.

The courses were planned for Appleton, Beloit, Clintonville, Eau Claire, Green Bay, Kaukauna, La Crosse, Manitowoc, Racine, Stevens Point, Superior, Waukesha, and Wausau, and possibilities for others are being surveyed. Similar classes have been organized in the metropolitan area by the University Extension division at Milwaukee.

The scope of classes is indicated by such subjects as machine shop methods, applied geometry for defense industries, engineering sketching and advanced blueprint reading, applied engineering mathematics, time and motion study, metallurgy, general machine shop inspection, safety engineering, Diesel engineering, plant protection, engineering psychology, cost accounting and personnel management.

## Give Radio Instruction

Subject to government approval, the University will offer instruction in classes in radio fundamentals to be formed at radio centers in the state. The government reported a demand for several thousand radio technicians to help meet pressing needs for the army, navy, and the radio industry.

# Young Men Graduate From Dairy Course At U. of Wisconsin

A number of young men have recently completed a twelve weeks' course in dairy manufacturing at the University of Wisconsin College of Agriculture, according to an announcement by H. C. Jackson, head of the department of dairy industry.

These young men have received special training in dairy chemistry and bacteriology, milk composition and tests, plant equipment and layout, dairy marketing and dairy mechanics. Those interested in the manufacture of special dairy products such as ice cream, butter, cheese, and market milk, have been given training in their chosen line of work.

Those who completed the course include: Francis H. Baker, St. Cloud; John D. Beckerleg, Highland; John F. Bussman, Warren; Harold Cohen, Rochester; Ivan R. Christensen, Brooklyn; Ben J. Eisenbise, Mt. Carroll, Ill.; Ernest Erb, Brodhead; Frederick K. Faehndrich, Brooklyn, N. Y.; Harvey A. Hahn, Cleveland; Roger C. Faken, Forestville; John M. Jardine, Durand; Harry Drew

# U. W. Men Make 'Tagged Atoms' to Aid Disease Fight

Making substances radioactive, by bombarding them with neutrons at terrific speed, is now being accomplished by University of Wisconsin scientists to provide other State University research men with materials which may be used in investigating certain forms of disease and in other physiological and chemical experiments.

For months a handful of research experts have been studying and experimenting with processes for production and application of what they call "radioactive tracers" in State University laboratories.

The scientists who have been devoting outside-the-classroom time to producing the substances and applying them in experiments include Dr. J. L. McKibben and David Firsch of the physics department; Prof. N. F. Hall, Truman Kohman, Dr. Enoch Johnson, Dr. John E. Willard, Edward G. Bohlman, Leslie B. Seely, W. U. Day, and Almy D. Coggeshall of the chemistry department; Dr. Paul Neilson of the anatomy department; Prof. B. M. Duggar and Dr. Herbert Dutton of the biology department, and Dr. H. P. Rusch of the cancer research laboratories.

Use Atom-Buster Production of the radioactive elements is accomplished in the University atom-smashing laboratory on the campus, through use of a type of electro-static generator developed by Prof. Raymond Herb. This machine is housed in a steel tank 14 feet long. Within the tank, under eight times normal air pressure, the generator builds up an electrical potential of about 1,850,000 volts. This voltage is used to impart a high speed to deuterons, which are nuclei of heavy hydrogen atoms.

These deuterons strike a beryllium or lithium target, which, upon bombardment, releases neutrons which literally bounce about in space as they hit nuclei of other atoms. As these neutrons bump into another substance, that substance may become radioactive. When they become

# THE UNIVERSITY OF WISCONSIN PRESS BULLETIN

The purpose of this Bulletin is to bring to the newspapers of Wisconsin and their readers—the people of the state—pertinent news and information concerning their State University. The University Press Bureau will gladly furnish any special news or feature stories to editors. Address letters to R. H. Foss, editor, Press Bureau, University of Wisconsin.

MADISON, WISCONSIN

# 120 Men, 20 Co-eds To Study Army Radio Communication at U. W.

University of Wisconsin students and Madison civilians will soon begin training in army radio communications in a new radio code instruction room being completed in the University armory under direction of Reserve Officers Training corps instructors.

The new code room is being built to accommodate 40 students at one time, with individual code "tickers" installed at each small booth. The new room will more than double the size of classes which can be handled by military department radio instructors.

Already 120 men have signed up for the radio training course being offered as a public service by the University ROTC unit, and 30 of them have begun work in courses taught by University signal corps instructional staff members. In addition, 20 University women have requested instruction in a radio course which will fit them for duty with civilian defense projects.

"Civilian defense is our first interest," Lt. Frank Glassow, ROTC instructor, commented. "We are also training for possible duty in the army signal corps, and there are civilian jobs in radio communications which do not require army personnel, but in which army training helps," he explained.

# U. W. Geologist's Work On Minerals Is Praised

The work of Dr. R. C. Emmons of the University of Wisconsin geology department was praised by Prof. E. R. Larson, president of the Geology Society of America, at the society's annual meeting in Boston recently. Prof. Larson, in his presidential address, advised all mineralogists to familiarize themselves with Emmons' methods of determining mineral identification.

# British WRENS to Visit State U. Campus April 10

Final permission has been granted by the British Admiralty in Washington for girls in the British Women's Royal Naval Service to be the guests of the boys in the University of Wisconsin Haresfoot club for the weekend of Military ball, April 10, at the State University.

The girls, more commonly known as WRENS, are serving with the British navy in the United States. They will fly to Madison from Washington

as guests of the Haresfoot club under the sponsorship of the Chicago Sun.

According to Fred Doerflinger, president of the Haresfoot club, the whole idea came about from an article in the Chicago Sun two weeks ago announcing the arrival of the girls from England.

"We hope to do our part in bettering relations between the youth of this country and Great Britain," Doerflinger said.

Haresfoot is the all-male organization on the campus that has as its famous slogan, "All our girls are men, yet everyone's a lady." Each year the organization tours the state with a musical show written and directed by University students.

The WRENS are a bit of wartime England transplanted to wartime America for the duration. WRENS get their name from the organization of which they are members, the Women's Royal Naval Service.

Stiff white collars, brass-buttoned

radioactive elements take on temporarily some of the qualities usually associated with radium. Thus far, the Wisconsin scientists have made radioactive a number of substances, including cobalt, nickel, copper, phosphorus, and bromine.

Once the elements are tagged by their radioactivity, they are turned over to other University scientists for research purposes.

As Dr. McKibben explains, certain elements are best made radioactive with "slow" neutrons, while others react best to "fast" neutrons. Slow neutrons occur when the neutrons emitted by the target collide several times with the water which surrounds objects being treated. With slow neutrons, the imparting of radioactivity to an element is a matter of changing the isotopic forms of the element. For example, bromine changes to a heavier form, but remains bromine.

With fast neutrons, the element being treated actually changes to another element. For instance, cobalt may be transmuted to iron in the process of having a fast neutron stick in the nucleus of a cobalt atom, and release a proton.

The radioactivity is not permanent. In the case of the cobalt-iron change, the iron formed has a "half-life" of 47 days, during which the radioactive potency of the metal diminishes to half its former value. In the process of decay, the iron atoms emit electrons and return to their original form, cobalt.

Protection from X-rays In the Wisconsin machine, elements being made radioactive are hung under water close to the end of a long tube which leads from the generator to a large wooden water-filled tank. The target, source of the neutrons, is mounted at the end of the tube, and when the beam of deuterons "bullets" is shot down the tube and hits the target, the resulting neutrons shoot out and hit the substances hung in the water. The 350 gallons of water in the

tank prevent powerful neutrons from penetrating out into the scientists' working quarters and causing possible injury to the men working with the machine. In a like manner, one side of the machine along which the operators must walk is shielded with lead sheets and five-gallon tins of water to prevent stray X-rays generated within from coming out and harming the men.

Since neutrons have a long range of penetration, it has been found that higher yields of the radio elements are obtained by using large quantities of the material being treated, in solid or dissolved form. One of the first and most difficult problems confronting the research men is getting the radioactive elements out of the solutions or solids from which they were formed during bombardment. This separation of small amounts of radioactive elements from large amounts of material hung about the target requires variations from the ordinary analytical procedures, or development of entirely new ones.

Can "Trace" Atoms The radioactive element most often made in the machine is phosphorus, obtained from carbon disulfide hung in the tank. When the carbon disulfide has been irradiated long enough, the chemists distill off the carbon disulfide, leaving radioactive phosphorus behind. This is converted chemically into a compound which can be injected into animals or fed to plants.

The "tracer" characteristic means that because of their radioactivity, phosphorus or other atoms can be followed through plants and animals, revealing mechanisms of physiological processes. The tracing is done by means of a "Geiger counter," a sensitive gas-filled tube which detects passage of individual electrons given off by the radioactive atoms as they disintegrate. These electrons, known as "beta rays," cause the counter to discharge, and by counting these discharges scientists have a quantitative measurement of the amount of the radioactive substance present. Count-

# State-Wide Radio Broadcast Features U. W. Founders' Day

The University of Wisconsin will celebrate its 93rd Founders' Day this Wednesday, Feb. 11, with an hour-long birthday anniversary radio broadcast over 12 Wisconsin stations, and Wisconsin alumni club dinners throughout the nation.

It was just 93 years ago, on Feb. 5,

# U. W. Broadcasts Tell Industry's War Work

Back-stage looks at the tremendous power Wisconsin factories are putting into their victory efforts are being given now in a new series of broadcasts over state station WHA each Sunday afternoon at 4 o'clock.

The school of commerce of the University of Wisconsin has planned the series under the title, "Wisconsin Industry at War." Among the representative companies whose efforts will be depicted are the following: Gisholt Machine company; Allis-Chalmers Manufacturing company; Fairbanks Morse company; Kohler company; Kearney-Trecker corporation; and the Heil company.

The plan is to show what is being done by industry and to stimulate greater civilian participation in the all-out victory production campaign, Prof. F. H. Elwell, director of the school of commerce, explains.

# Sabotage Detection Included in Course

To aid in the detection of saboteurs in defense industries, the University of Wisconsin chemistry department is incorporating sabotage work in its course in the use of scientific methods in the detection of criminals this semester. The course is conducted by Prof. J. H. Mathews, director of the course in chemistry and well-known crime detection expert.

Emphasis will be placed on methods for tracing sabotage and saboteurs. Lecture material will include bombs and explosives, truth-serum and lie-detection tests, finger print identification, methods for making casts of foot-prints and tire-prints, identification of guns, bullets, and shells, and blood identification.

The course in crime detection was inaugurated at Wisconsin in 1937. Mathews has won a nation-wide reputation for his crime detection work in the state and he has testified in more than 50 murder trials.

uniforms, dark four-in-hands and black stockings identify these charming products of naval discipline, who work long hours doing technical work at the British Admiralty office.

The 30 officers and girls report to work daily in the highly confidential field of communications. Most of them received technical training at the Royal Naval college in England.

Since they were organized in 1939, 15,000 of them have been attached to the Royal Navy. To the plotters of the WRENS goes part of the credit for the sinking of the German battleship, Bismarck.

ing is done by a mechanical recorder.

Thus far, the radioactive substances have been used in experiments in the anatomy, biology, chemistry, physics, and cancer research laboratories of the State University. As techniques for preparing additional radioactive elements are worked out, other departments may begin to use them.

## Help Cancer Study

Among the problems being tackled with the assistance of the "tagged atoms" is one in the chemistry department to determine the ease with which complex chemical compounds exchange their metallic atoms, showing the strength and type of chemical bonds. In another test, radioactive bromine is being used to determine the fundamental nature of chemical reactions.

In the anatomy department, atoms tagged by radioactivity have tested the ability of phosphorus compounds to penetrate the membrane of the placenta in animals. At the cancer research laboratory experimenters are studying cancer in rats with the aid of the phosphorus tracers. Work already has shown that the cancer cells are more active than corresponding cells, since they take up more radioactive phosphorus. It is hoped that further experiments will show additional peculiarities of cancer metabolism.

In botany, the permeability of cell walls to ions is being studied.

And one of the most important developments of the work may concern the electro-static generator itself. Work already completed has shown, the scientists feel, that the electro-static generator has good potentialities for producing all types of radioactive tracers, and that the more familiar device for that purpose, the cyclotron, is not the only instrument suitable for that purpose. Hence, although most work in radioactivation has been done elsewhere by means of the cyclotron, work with the Wisconsin machine may result in the providing of a less expensive system, which requires less attention in operation.

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1849, that the State University's first class of 17 students met in a little one-room red brick building in Madison, known as the Madison Female Academy. Today the University has an enrollment of over 10,000 students on the campus, and it has almost 100,000 alumni and former students scattered throughout the world.

The Founders' Day broadcast will reach Wisconsin alumni and citizens throughout the state from 8 to 9 p. m. Wednesday through the facilities of the dozen Wisconsin radio stations, including the entire Wisconsin network.

## Program Is Varied

The program will feature as speakers Pres. C. A. Dykstra, of the University, and Pres. A. J. Goedjen, Green Bay, of the Wisconsin Alumni association. Music by the University Concert band will be featured, Prof. Raymond F. Dvorak directing. Brief talks by a number of University faculty members and students will also be given on the program, and several dramatized stories based on University progress will be included.

If it can be completed in time, musical feature of the program will be the new Wisconsin song, "Pioneers of Wisconsin," composed by Fritz Kreisler, famed violinist, with words written by Pres. Dykstra. This would be the world premiere of the new song, and it would be played by the band and sung by the chorus.

Miss Irene Bird, Green Lake, Wis., senior, who sang on the nationally broadcast Hour of Charm program as the representative of the University of Wisconsin, will also be heard on the program. The broadcast will be made from the Wisconsin Union theater on the University campus.

## 12 Radio Stations

Wisconsin radio stations which will carry the Founders' Day program include WIBA, Madison, in addition to the member stations of the Wisconsin network, including WIBU, Madison; WRJN, Racine; WCLO, Janesville; WHBY, Appleton; WHBL, Sheboygan; KFIZ, Fond du Lac; WSAU, Wausau; WFHR, Wisconsin Rapids; WATQ, Green Bay; WKBH, La Crosse; and WEMP, Milwaukee.

Again this year, as in the past, Wisconsin alumni clubs in cities throughout the state and nation will hold Founders' Day dinners in their own communities.

# Length of State U. School Year Cut to Release Students

Revised calendars for the 1942-43 and 1943-44 school years, saving from three weeks to a month's time in each of the two school terms, were unanimously adopted by the University of Wisconsin faculty at its February meeting.

The abbreviated calendars do not shorten the actual teaching and class work periods for either of the two years, but make up the saving in time during the two school years by reducing the length of vacation periods and examination and registration periods. The University continues on the semester system under the revised calendar.

Monday's action of the faculty in reducing the University's calendars for the next two years, is in line with earlier faculty action taken in December, cutting three weeks' time from this year's school term to release students earlier from their studies for national service or for work on farms and in factories.

The revised calendars were recommended to the faculty by the University's special committee on Emergency Educational Policy, and were presented at the meeting by Dr. J. H. Mathews, head of the chemistry department, chairman of the committee.

The committee's recommendation explained that the shortened calendars do not reduce the actual number of days of instruction, and pointed out that the reduced school terms were necessary for the advancement of the national war effort, by releasing students for a longer period of summer employment on farms and in industry.

Following are the revised calendars for the next two school years:

1942-43	1943-44
Sept. 14, 15 (MT)	Sept. 13, 14
Register 1st year & new students	Sept. 15-19 (W-S)
Sept. 16-19 (W-S)	Sept. 15-18
Register continuing students	Sept. 21 (M)
Sept. 21 (M)	Sept. 20
Classes begin	Nov. 25
Nov. 26	Nov. 25
Thanksgiving	Dec. 23-Jan. 3
Dec. 3-Jan 4 (WM)	Christmas Recess
Jan. 5-9 (M-S)	Jan. 4-8
Pre-registration—2nd Semester	Jan. 18-23 (M-S)
Jan. 18-23 (M-S)	Jan. 17-22
Examinations	Jan. 25
Jan. 26 (Tu)	Registration new students
Jan. 27 (W)	Jan. 26
Classes begin	Apr. 13-16
Apr. 15-18 (Th-Sun)	Spring Recess
May 19-25 (W-T)	May 17-23
Examinations	May 29 (Sat)
May 29 (Sat)	May 26 (Sat)
Commencement	