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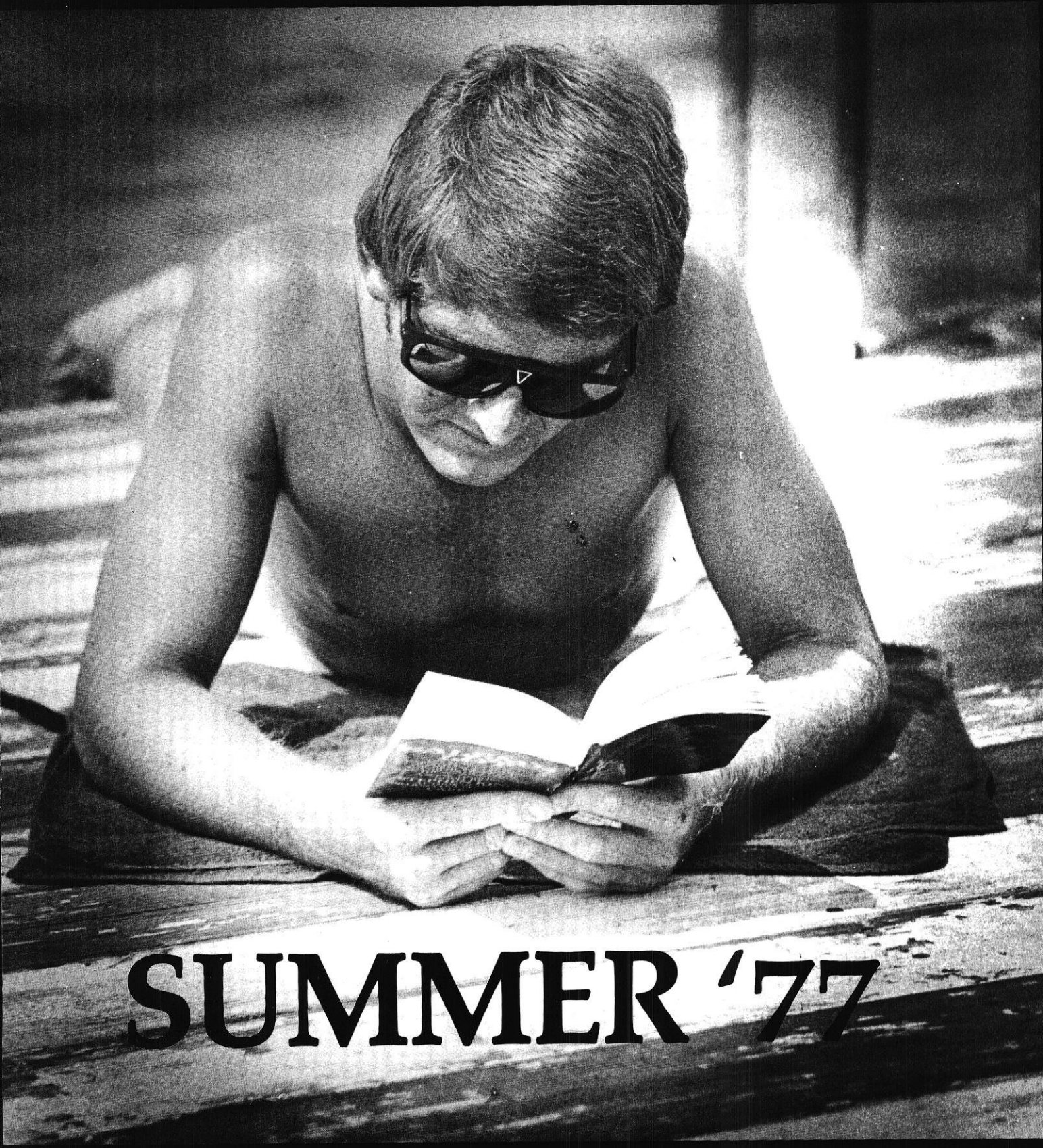
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# wisconsin engineer

VOLUME 81, NO. 6  
SUMMER ISSUE  
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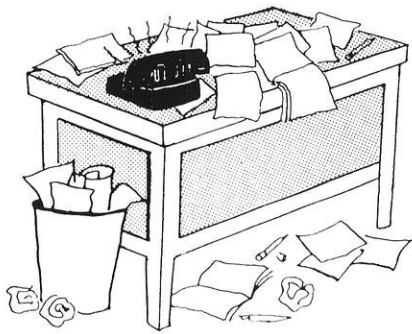
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## From the desk of the Editor

Summer is here and I have the uncomfortable feeling of being left behind. Graduating friends are talking about twelve and sixteen thousand dollar jobs in exotic places. Their plane tickets read "Boston", "Anchorage", "Dallas" and "L.A.". And I face yet another year in Madison. There's talk of new cars and new people, of that camera they've always wanted. And I silently hope my student loan comes through for next year. They pack their meager belongings along with their diplomas, leaving by

saying "Stop in next time you're in Japan!" Then they're gone and I'm left holding a 420 manual.

There will always be graduates and there will always be those who are left behind. It's probably better this way. After the initial gloom wears off and thought takes over emotions, you realize that graduating seniors are living proof that the four (or five, as the case may be) years that you put in at the university are well worth the time. That engineering diploma is the key to those high paying jobs. But most of all it gives you a larger choice of companies and cities to work in.

Thanks to my graduating friends I will be able to face yet another exam week; another Wisconsin

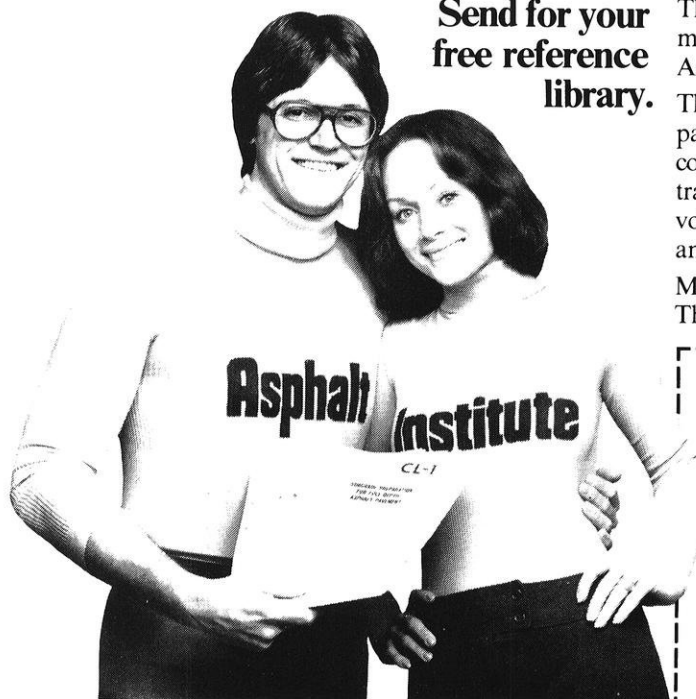
winter; another year. I have something to look forward to. Looking at my tentative schedule, there will be tough times ahead, but at the end I will emerge as a graduating senior, thanks to the memory of my long lost friends.

So, I would like to take this time and space to thank all the graduating seniors for being what they are . . . graduating seniors. The bragging they do about their jobs is an inspiration to those of us who are left behind. And next year, when they come back for a football weekend driving their Corvettes, I will study a little bit harder for that Monday Circuits quiz.

*-the Editor*

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PUBLISHED BY THE ENGINEERING STUDENTS of the UNIVERSITY OF WISCONSIN

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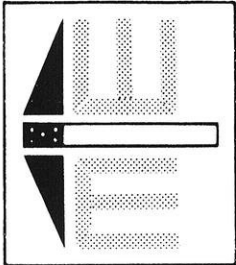
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*After a slow start, women are becoming a fast growing minority.*

Chairman: D. C. WILLIAMS, Ohio State University, Columbus, Ohio 43210

Publishers Representatives: LITTEL-MURRAY-BARNHILL, INC., 60 East 42nd St., New York, NY 10017 and 221 N. La Salle St., Chicago, IL 60601.

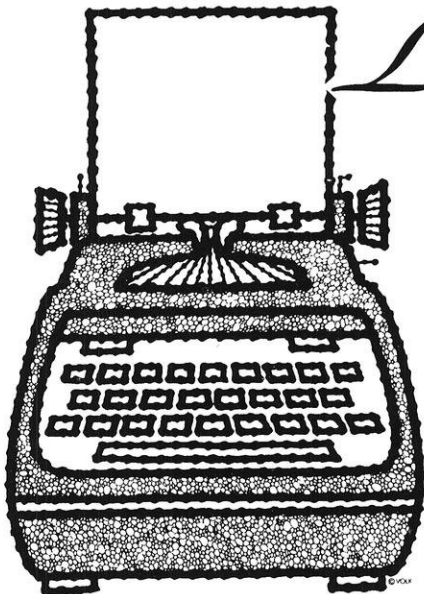
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Second Class Postage Paid at Madison, Wisconsin, under the Act of March 3, 1879. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of Oct. 3, 1917, authorized Oct. 21, 1918.

Published six times a year, Oct., Nov., (Dec.-Jan.), Feb., Mar., Apr., by the Wisconsin Engineering Journal Assn. Subscriptions: one year—\$2.00; two years—\$3.75; three years—\$5.25; four years—\$6.50. Single copies are 35 cents per copy. 276 Mechanical Engineering Bldg., Madison, Wis. 53706. Office Phone (608) 262-3494.

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## Letters to the Editor



Dear Lauren:

I've run into a lot of the misconceptions that you mention in your April editorial. Every time someone finds out that I'm an electrical engineer, they want to know if I can fix their T.V. or stereo. Even more discouraging, I recognized all the stereotypes you speak of . . . except the pointed ears? Any how, I'm glad to see someone else fighting the slide-rule-white-socked I mean calculator-wingtip-shoed image.

Yours,

Doo Ming Yee

Graphic Editor

The Wayne Engineer

## Chemical Engineering 424:

# The Summer Lab

Summer school is a luxury for many students. It means paying room, board and tuition as well as passing up that full time summer job waiting at home. But it also means spending summer in Madison which offers sailing, swimming, sunning and warm summer evenings on the Union terrace. Whether to attend summer school is a hard decision to make.

Not all students can make the choice. Senior chemical engineering majors are required to take

Chem Eng 424, a class taught only during summer session.

This five week, intensive lab is run as close to an industrial model as possible. From 7:45 am until 4:30 students worked on assigned labs. Lab reports usually must be written outside of class time. The forty hour 'work week' is divided between researching an assignment to find the best, or in some cases, the only correct way to set up a specific lab and performing that lab.

A student enrolled in the lab is

expected to have a working background in such things as transport phenomena, energy, mass and heat flows, and thermodynamics. Much of the material learned over the summer is material discovered by the student's own research. It isn't taught directly from a textbook. Students also gain experience using large industrial equipment and working with line processes that are now being used in industry.

Work is the key work in this class. Besides the 8 hour day, there is studying to do and lab reports to be written up. "I can't wait to get out into the working world, at least there after my eight hours I can come home and collapse!" commented one graduating senior. "I don't think I'd last more than five weeks. I'm glad its over," said another.

This summer the heat added to the complaint about the class. Without air conditioning temperatures in the brick engineering building easily hit 100. Working with super heated steam made the situation worse.

But generally, comments on the class are good. Since there is no other university that has a program like this, Wisconsin students feel it gives them an edge over engineering students from other universities. "A friend of mine said a recruiter mentioned to him that the experience he gained in 424 was a reason his starting salary was higher than an engineer from another school. Sure I'll gripe about spending a summer this way, but it's worth it in the long run," said one senior.

For better, or for worse, as long as Chem Engr 424 is a required course, the engineering campus will continue to be the summer home for senior chemical engineering majors.

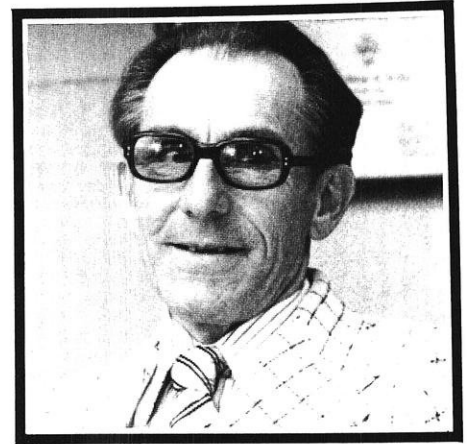


Chem E 242 involved calculations, paperwork and practical skills.

# A Word From the Dean

by:

**Dean Fred Leidel**



This special issue of *The Wisconsin Engineer* is being sent to all undergraduate students who are new to the Madison campus and to the College of Engineering. The idea originated with the student staff of the magazine, who also raised the money required to finance the issue and the mailing through the sale of advertising space. For this, the administration of the College of Engineering is very grateful.

Freshmen have as their advisor Dean Fred O. Leidel, telephone (608) 262-2473. The staff that assists him includes:

Orla Erickson, *Administrative Secretary*

Lois B. Greenfield, *Associate Professor*  
Alfred L. Hampton, *Director, Minority Program*  
Richard S. Hosman, *Assistant Dean*

Linda Remus, *Counselor*  
Naomi Walton, *Assistant Director, Minority Program*

The entire group has offices adjacent to the Engineering Freshman Office, which is Room 22 of the General Engineering Building (formerly T-24), 1527 University Avenue, except Linda Remus who is located in Room 271 of the Mechanical Engineering Bldg. right next door.

Upperclass transfer students are first contacted by Dean Richard S. Hosman, Room 23, General Engineering Building, and Mrs. Eunice Hoffman who is admissions examiner and advance standing credit evaluator, Room 264 Mechanical Engineering Building, telephone (608) 262-3484. Once registered their dean is Dean John L. Asmuth, and they have an adviser in their degree department assigned by Mrs. Hoffman.

All of the above named individuals are anxious to meet new students and to serve you, and invite students to contact them, either now or during registration, or later.

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## Join Wisconsin and Meet the World



Of the 1,068 new freshman and transfer students who have indicated their intention to enroll in the College of Engineering in the fall semester of 1977, 68 are expected from 20 foreign countries, and 116 from 27 other states and Puerto Rico.

Of the foreign homes of these new students, Hong Kong (as usual) leads with 24, followed by Iran 8, Mexico 5, Indonesia 3, and Saudi Arabia, Libya, and Norway each with two. There are also students expected from Algeria, Canada, Columbia, Israel, Japan, Jordan, Kuwait, Lebanon, Singapore, Turkey, and Venezuela.

Leading the home states and territories is Illinois with 64, followed by Minnesota with 23; New York and Texas, each with 18; California, Louisiana, and New Jersey, each with 6; Connecticut, Florida and Pennsylvania, each with 4; and Ohio, Puerto Rico, and Virginia each with 3. Students are also coming from Colorado, Connecticut, Georgia, Hawaii, Kansas, Kentucky, Massachusetts, Mississippi, Missouri, New Hampshire, New Mexico, Oklahoma, Tennessee, and Washington D.C.

Isn't it unusual for there to be more students from Hong Kong

than from Minnesota, considering they they are half way around the world and pay non-resident tuition, while Minnesotans are right next door and attend under a reciprocity agreement that requires only resident tuition? Not really, for Hong Kong has always supplied a disproportionate number of students, and usually very good ones!

One of the real benefits from attending the College of Engineering on the Madison campus is the opportunity to interact with students of varied customs and cultures from throughout the United States and the world.





# Women in Engineering



by Prof. Lois B. Greenfield

In the United States, women constitute less than one percent of the practicing engineers. A shortage of engineers to solve the technologically based problems of energy, pollution, mass transport, etc., has been predicted. Traditionally, women have chosen not to become engineers, presumably because they were caught up in the stereotype of engineering as an exclusively masculine field, where brawn was more important than brain. What is the story of women in the College of Engineering at Madison?

The first woman student enrolled in engineering, in 1896, was Mildred Waldsworth Campbell. Her history is quite difficult to trace, since she was listed as a civil engineering special student from 1896 to 1898, and as a junior in civil engineering the following year. All trace is lost thereafter.

The first engineering degree granted to a woman on the Madison campus was in 1926. From then until 1945-46, only eight females were awarded bachelors degrees in engineering. There was an increase in numbers of female engineering graduates immediately following World War II, with 12 students awarded BS degrees, and one female awarded a graduate degree, between 1945 and 1949. Since 1953, there has been a steady increase in both undergraduate and graduate degrees in engineering awarded to women.

Among the distinguished women associated with the College of Engineering are the recipients of honorary degrees. Lillian Moller Gilbreth, who pioneered in the application of industrial principles to industrial management, at the same time caring for her large family as described by her children in *Cheaper by the Dozen*, was awarded a Doctor of Science Degree by the University in 1955. Her citation noted the effective manner in which she brought American women into the nation's defense industries, remarking that "she must be ranked not only as the world's foremost woman engineer, but also as one of the truly great American women of all time".

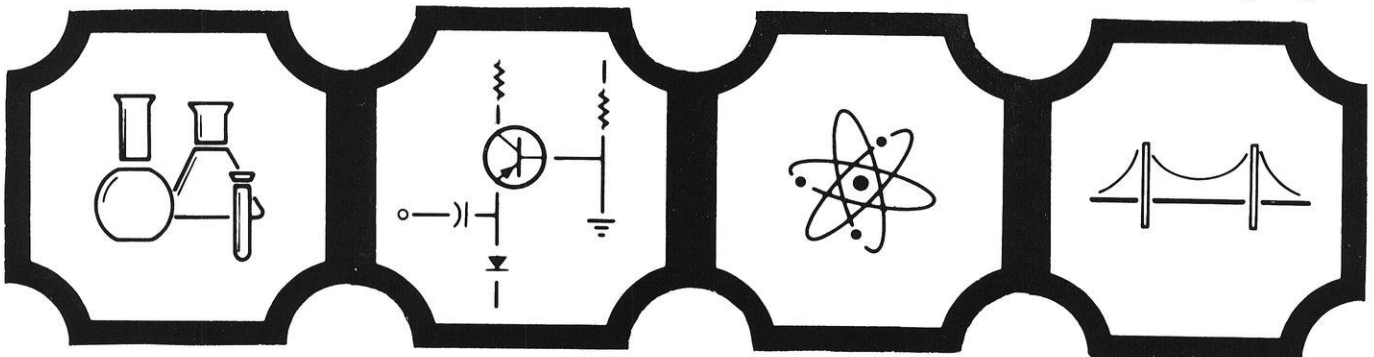
In 1926, Emily Hahn was the first woman to graduate from the College of Engineering. She received her B.S. degree in mining engineering, a most unlikely career choice for a woman at that time. For several years, she practiced as a mining and geologic engineer, before turning to more widely recognized literary pursuits. In 1976, the Honorary degree, Doctor of Humane Letters, was awarded to Emily Hahn by the University of Wisconsin-Madison, which cited her as "A true pioneer in establishing the right of women to have their own careers".

One of the concerns that the College has had has been the encouragement of female students who have little idea about the requirements for a career in

engineering, or who lack information about the possibilities for success and satisfaction inherent in engineering as a career, but who have an interest and aptitude in math and science. As part of this effort to introduce young women to engineering in an environment which would enable them to acquire familiarity with some concepts of engineering and would encourage female high school students to consider engineering as a career, three summer programs were held in 1974, 1975, and 1976 on the Madison campus.

As a result of these summer programs, many of the young women decided to begin engineering careers and indeed, about half of the women in the entering freshman class in engineering in 1976 had participated in the program at the University of Wisconsin-Madison, or at some other engineering college. All of the young women participating thought that the most significant benefit of the program was the opportunity afforded them to learn about the possibility of careers in engineering, a field which they had not really considered before, so that they could make a more sensible decision about their future course of action. This was true for the women who chose engineering as well as for those who decided against it.

It is now being predicted that in the next few years more and more girls will decide to study engineer-



## Women in Engineering

ing, for people are finally realizing that women can help satisfy this country's need for capable engineers.

In 1976, the booklet "Why Not Engineering" was prepared by the women students in the College of Engineering. It gave accurate information about engineering careers, and sought to help young women decide whether or not engineering might be a suitable career for them. It includes descriptions of the kinds of work engineers do, pictures of women engineers and of women engineering students, as well as descriptions of what it is like to become an engineer and then work in the profession.

The women students who have been enrolled in the College of Engineering have participated in and contributed to many phases of student life and activities, including scholarship and service awards. Female students have been active in the student branches of engineering professional societies and have been officers in these societies. Their impact on the College is large in proportion to their members.

Since 1971, the female students in the College of Engineering have been organized on campus as Women in Engineering, a group to which any female engineering student belongs by virtue of her enrollment in the College. In March 1977 a student chapter of the Society of Women Engineers was chartered at the University of Wisconsin-Madison. This group works to provide guidance concerning engineering careers for women to high school students, has invited women engineers to talk about their professional careers, and has participated in social and professional activities in the College of Engineering.

Despite the recent large increases in enrollment of women, the women students currently in engineering still represent only a small fraction of their potential in the general population. The College of Engineering is endeavoring to increase the number of women studying and working in the field.

It seems unlikely that in the future the proportion of women studying engineering will equal that of men. However, evidence of change abounds, and more and more young women are finding that careers in engineering offer them an opportunity for success and satisfaction, for utilizing their interests in mathematics and science to work toward the solution of some of the problems of society.

*Prof. Lois B. Greenfield is the faculty adviser for Women in Engineering and is working to increase female enrollment.*



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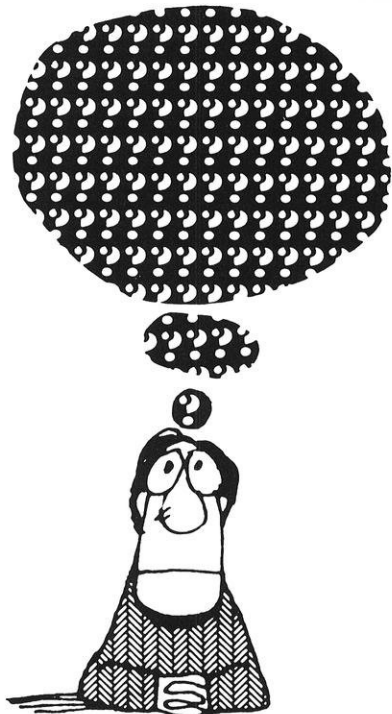


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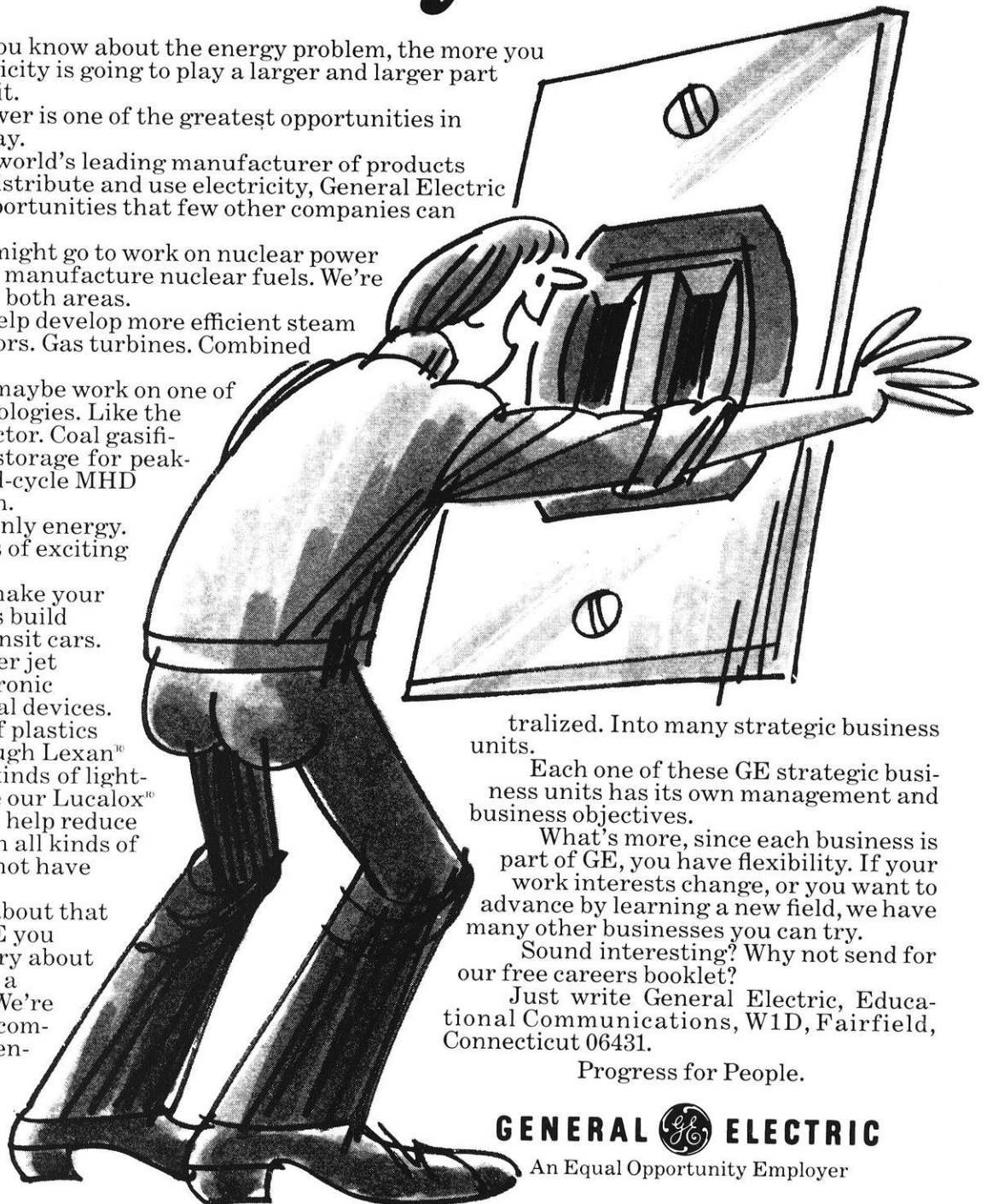
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