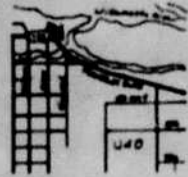


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UNIVERSITY

Women in science are still rare

By Carrie Dennett
Emerald Associate Editor

In spite of reports that the United States lags behind in the sciences and despite the fact that science remains a male-dominated realm, the University has managed to attract an exceptional group of intelligent, accomplished women science faculty.

These women are on the cutting edge of fields like molecular biology, neuroscience, biochemistry, artificial intelligence, psychology and human movement. Among them are recipients of some of the most prestigious fellowship and grants in the country.

UNIVERSITY RESEARCH third in a series

However, the University should not take this as prodding to prop themselves up on a pedestal. There are no women faculty in the physics department, and only three in chemistry.

One of those three, Associate Professor Geraldine Richmond, said the University is not tops at recruiting and supporting women science faculty. But what makes the University different from other schools is that the women here are very good.

"I don't think you could point to a single female here that you could question whether she got the job here because of a 'token' situation," she said. "I think every woman that you look at here has been extremely successful."

"That reflects on the University for recognizing that we don't need the extra shove, we just don't want to hassle with people who stand in our way."

Diane Hawley, an assistant professor in chemistry, said the University is better than many places she has experienced.

When Hawley was looking for a job eight years ago, she perceived a negative feeling toward women at some of the places she interviewed.

One school had Hawley talk to women in another academic department, presumably because there were none in the science departments.

"Sometimes they would ask me if I had special concerns as a woman," she said. "It made me feel really uncomfortable, because one would like to think that in a process like that, the considerations would be the same for a man and a woman."

When Hawley applied at the University in 1985, she saw no indication that her interviewers were thinking about her gender — a good sign, she said, one she has also noticed in hiring of new faculty.

The University's group of women scientists has

jumped the hurdles to achieve not average careers, but award-winning careers. Together they have received many national awards, including Guggenheim Fellowship, Searle Scholar, National Science Foundation Presidential Young Investigator, Alfred P. Sloan Fellowship and Searle Scholar awards.

In 1990, *The Scientist* magazine discovered that of the nine Presidential Young Investigators on the University faculty, six were women — giving the University the highest proportion of female PYIs in the nation. PYIs receive \$25,000 a year for five years to help support their labs, with an additional \$37,000 a year if matched by industry or private-sector sources.

Richmond, a PYI and winner of several other awards, does research using lasers to study what interactions between liquids and material surfaces, in the hopes of understanding what properties of a metal or semi-conductor hold it together or make it corrode.

"Surfaces are what interact with the rest of the world," she said. "Surfaces are where all the action is."

Sarah Douglas, an associate professor of computer science and information science, studies human-computer interactions, or "artificial intelligence." Originally a biochemistry major, she first began working with computers after graduating from Berkeley in 1966, and eventually went on to get her Ph.D in computer science.

Douglas said that as an undergraduate, she was interested in mathematics because of its similarities to language, and found herself wondering how to get her computer to respond in English.

"We have not been able to get a computer to successfully carry on a conversation," Douglas said. This is difficult, she said, because no one really understands how language works.

"Can you reduce human language and human intelligence to computational mechanistic processes?" is the driving question behind her research. "Are human beings just computers?"

Hawley is studying the molecular mechanism that activates only particular genes in our DNA. Once a gene is activated, a ribonucleic acid copy of the gene is produced, which ultimately leads to the production of the particular enzymes that determine a cell's kind, shape and function.

The failure to produce the RNA allows different cells to serve different purposes in the body, but sometimes it's a mistake that leads to diseases.

"The question we're asking is 'What is involved in that selection process?'" she said.

These women and their colleagues have ac-

Turn to **SCIENCE**, Page 5

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\$1 million will aid science education

Undergraduate science education at the University will be strengthened by a new \$1 million grant, announced Wednesday, from the Howard Hughes Medical Institute of Bethesda, Md.

The five-year grant, among 42 awarded competitively by HHMI to colleges and universities throughout the United States, is part of an ongoing effort — the largest private initiative of its kind — to keep American students competitive in science and mathematics.

At the University, the money will be used in several ways to make the study of science a more attractive option for undergraduates, including development of innovative new teaching methods and materials.

"Many colleges and universities across the country have been criticized for 'abandoning' undergraduate education," said University President Myles Brand in a press release. "In contrast, at the University of Oregon, through our Oregon Model, we are redoubling our long-standing commitment to quality, accessible undergraduate education in a comprehensive research university setting."

In the release, Daniel Udovic, associate professor of biology, said the grant will support:

- Activities aimed at attracting and retaining students to the study of science, including seminars and activities for beginning students, peer tutoring to help students with special needs, independent research experiments for advanced undergraduates supplemented by special seminars, and opportunities for undergraduates to publish their research results and present them at scientific meetings.
- Development of computer science software for introductory biology and related fields and tutorials in these areas.
- Summer programs for middle school, secondary school and community college science teachers that will provide opportunities for curriculum development, particularly laboratory activities, and for collaborative research with University faculty.

Udovic, who heads the Biology department, said the HHMI grant will help the University attract and retain its best students in the sciences and lead to "an improved learning environment,

particularly for first- and second-year students, that will encourage a sense of belonging in the University science community."

John Moseley, University vice president for research, said the HHMI funds will "substantially enrich the UO's ability to provide the kind of stimulating undergraduate educational experiences that are critical to activating a student's interest in a career in the sciences."

In all, 181 public and private colleges and universities are now part of the HHMI initiative, which, at \$175.5 million, is the nation's largest privately funded science effort.

The HHMI, established in 1953, employs scientists in cell biology, genetics, immunology, neuroscience and structural biology.

In 1990, HHMI selected Brian Matthews, a University physics professor and director of the University's Institute of Molecular Biology, for a seven-year term as the first HHMI investigator in Oregon. A physicist and crystallographer, Matthews is one of nine university faculty members belonging to the National Academy of Sciences.