

Program gives undergrads keys to lab, future

By New Mexico State University

LAS CRUCES — As a freshman at New Mexico State University, Norma Escobeda would normally have a limited opportunity to conduct lab research in genetics, her area of interest. At most universities, graduate students are much more likely than undergraduates to spend time on research projects. But thanks to a \$1.5 million grant from the Howard Hughes Medical Institute, NMSU is offering more than 40 undergraduates a chance to conduct biomedical research through the new Undergraduate Research Scholars program.



"This is a program designed not only to give students hands-on experience in real research laboratories, it is designed to help students truly become scientists," said Daniel J. Howard, head of NMSU's Department of Biology and director of the HHMI program. "It is designed to help students develop the critical thinking skills of a scientist and to begin to master the scientific literature associated with a field of study. We plan to produce first-rate scholars, not simply students who have mastered a narrow set of technical skills."

Escobeda, a graduate of Santa Teresa High School, and junior Mary Torrez, a graduate of Belen High School who plans to attend



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New Mexico State University students Jessica Gutierrez, left, and Ryan Paskadi, center, assist Michele Nishiguchi, associate professor of biology at NMSU, in her lab. Nishiguchi will serve as the mentor for the two students in the new Undergraduate Research Scholars program.

medical school and become a physician, will be mentored by Graciela Unguez, an associate professor of biology. Unguez is a developmental biologist who earned her Ph.D. from the University of California at Los Angeles.

In addition to the NMSU

Department of Biology, faculty in the program represent the departments of entomology, plant pathology and weed science; fishery and wildlife sciences; and plant and environmental sciences in the College of Agriculture and Home Economics and the departments of psy-

chology and chemistry and biochemistry in the College of Arts and Sciences.

"These are all accomplished researchers, many of them leaders in their fields, who have agreed to take time away from their busy schedules to mentor students," Howard said during a reception for the program Oct. 11 at NMSU. "They do not receive any additional compensation for their efforts on behalf of the research scholars. They are doing this because they are committed to providing the very best educational opportunities to the students of NMSU."

Waded Cruzado-Salas, dean of the College of Arts and Sciences, welcomed the opportunity to develop young scientists.

"It will transform lives forever," she said at the reception. Cruzado-Salas played an important role in bringing the program to NMSU, Howard said. Of 209 major research institutions invited to compete every four years for grants, only 50 are chosen. This is the first time NMSU has received the grant.

"In awarding grants, an important consideration for the Howard Hughes Medical Institute is institutional commitment to the programs being proposed," Howard said. "Without strong institutional commitment, and this means additional monies, no proposal is competitive. Dean Cruzado-Salas was quite amazing during this entire process. Every time I asked her if the college could help with a program, her answer was yes. And she has stood by those commitments."

As part of the grant process, faculty members developed programs and reforms to improve

science education, including a traveling molecular biology laboratory that will visit rural high schools and give students experience with the latest techniques of molecular biology; a new master of arts in teaching program for science teachers developed in collaboration with the College of Education; a revamping of introductory courses in the Department of Biology; new courses especially designed to help students understand the process of science rather than simply the content of science; and the Undergraduate Research Scholars program.

Students entering the program are required to spend at least four hours a week during the

academic year working with their mentor, attend research seminars offered by their department and attend HHMI-NMSU sponsored seminars and socials. Students will spend the summer between their junior and senior years on the NMSU campus or at Cornell University working full-time with a faculty mentor. They will take courses designed to help them with experimental design and biological techniques and they will write an honors thesis during their senior year based on their research.

"Eye on Research" is provided by New Mexico State University. This week's feature was written by Darrell J. Pehr of University Communications.

