First Group Makes it to Grad School

Each of the five FemProf women who graduated in the spring of 2009 will enter doctoral degree programs at first-tier engineering schools during the 2009-2010 school year. In the first year of the program, FemProf was able to “fast-track” these students through graduate school application. FemProf funded research experiences for most of these students during the academic year, and helped them submit applications for summer Research Experience for Undergraduate (REU) programs.

While some of the five doctoral program-bound women involved in Fem Prof were already preparing for the professoriate, there were others, as of fall 2008, who were not convinced they would apply to doctoral programs. Two students planned to go to work and earn their Master’s degrees part time, while another was undecided as to whether she would apply for a graduate program.

“Ever since (I joined) FemProf, I’ve noticed that if I become a professor I can help the development of the future. I’ll be molding future minds.”

Overall, the FemProf program encourages students to broaden their career options by considering graduate school. The experience aims to support and guide students through their undergraduate studies with a graduate school goal in mind. The students receive career development and research workshops and seminars. They are also exposed to empowerment workshops to help them overcome gender related obstacles. They receive regular advice from mentors along with opportunities to participate in on-campus and off-campus research experiences. In addition, they are assisted in the process of preparing for and applying to graduate school. All these activities led to more committed graduate school aspirations, graduate school applications, and acceptances to top computer science, computer engineering, and electrical engineering doctoral programs.

“I think that through FemProf I have more motivation... you see other women completing the same goal as you. It helps you deal with the pressure of being the only woman in the class.”

“I am going to start the doctoral program at Purdue. I found I enjoy doing research based on my research experience in FemProf.”

Mariheida Córdova Sánchez earned a B.S. in Computer Engineering at the University of Puerto Rico at Mayagüez. She was admitted to the doctoral program in Computer Science at Purdue University. She has worked in several research projects and internships in Human Computer Interaction, Computer Graphics, and Artificial Intelligence, at UPRM, Virginia Tech, and UC Berkeley. Her main area of interest is Artificial Intelligence.

Rebecca Kern earned a B.S. in Computer Science at the University of Houston Downtown. She was admitted to the doctoral program in Computer Science at the University of Houston. Her senior year research experience was on “Collection of collocation events in Natural Language Processing”. Her research areas of interest are Natural Language Processing, Grid Computing and Security.

Yajaira González earned a B.S. in Computer Engineering at the University of Puerto Rico at Mayagüez. She was admitted to the doctoral program in Computer Science at Purdue University. Her senior year research experience was on “Implementation of the Abundance Estimation Algorithm using NVIDIA® CUDA®”. Her areas of interest include Artificial Intelligence, Machine Learning, and Neural Cognition.

Araly Barrera earned a B.S. in Computer Science at the University of Houston Downtown. She was admitted to the doctoral program in Computer Science at the University of Houston. Her senior year research experience was on “Assignment of ICD-9-CM Codes from Clinical-Free Medical Text”. Her research areas of interest are Security, Grid Computing, and Artificial Intelligence.

Cristina Vigil earned a B.S. in Electrical Engineering at the University of Puerto Rico at Mayagüez. She was admitted to the doctoral program in Electrical Engineering at Rensselaer Polytechnic Institute (RPI). Her research experience has been with the Collaborative Adapting Sensing of the Atmosphere Project (CASA) at the University of Puerto Rico at Mayagüez. Her graduate research interest is in renewable energy.
A Summer on Research Internships

This summer, a group of thirteen FemProf students attended research internships at various NSF supported REU sites and National Laboratories. Two students from UHD attended Argonne National Laboratory with a female computer science professor from their institution. Another two students continued their research with advisors over the summer months, before heading to graduate school in the fall. Eleven UPRM students attended REU sites at institutions such as University of Maryland, Texas A&M, Virginia Tech, University of Rhode Island, University of North Carolina at Charlotte, Colorado State University, Notre Dame University, University of South Florida and Trinity University. Another two spent the summer working on research on campus.

The students spent from six to ten weeks working on a research project. In addition they engaged in activities aimed at improving their career development skills and preparing them for graduate school. Some of the students will continue working on their summer project during the Fall semester.

Talking About FemProf

It is a well-known fact that female faculty are significantly underrepresented in computer science and computer engineering departments. This problem is bound to worsen considering the descending trend for female enrollment in computing academic programs. The current circumstances call for immediate and effective initiatives that both increase female enrollment and develop faculty role models for underrepresented groups. FemProf was conceived as a solution to the latter problem. FemProf is a collaborative initiative between the University of Puerto Rico at Mayaguez and the University of Houston Downtown that establishes a model for significantly increasing the number of undergraduate female students pursuing a professoriate career and obtaining a doctorate in computing.

The project employs four strategies. First, recruitment identifies students with key characteristics to succeed in the program (e.g., strong academic preparation, motivation to excel in field). Second, mentoring helps the students develop research skills and experience while providing motivation to pursue graduate studies. Thirdly, career path mentoring provides students the information and motivation they need for applying to graduate studies and pursuing an academic career. Finally, empowerment activities help students overcome gender bias barriers that might deter them from pursuing an academic career.

Although the program was developed for computing students we believe it can benefit students from other disciplines. At UPRM the program currently supports six electrical engineering students and there are plans to recruit students from other disciplines. The FemProf model can be replicated by other institutions. For more information, please contact Néstor J. Rodríguez (nestor@ece.uprm.edu) or Richard Aló (AloR@uhd.edu).