Nourishing the Future of the Field: The Programming Language Mentoring Workshop 2012

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To encourage senior undergraduate and beginning graduate students to pursue research careers in the theory of programming languages, we organized the Programming Languages Mentoring Workshop (PLMW), which took place on January 24, 2012, the day before POPL. Registration for the event was open to everyone, but we were specifically interested in attracting women and underrepresented minority students. One of our biggest concerns in organizing the workshop was whether we would be able to attract enough students, but that fear proved unfounded! In the end, 148 people registered for the workshop, making the event standing-room only. The website for the workshop is publicly available and includes the slides from all speakers (`http://www.cis.upenn.edu/~sweirich/plmw12/`).

The content of the workshop included a mix of mentoring talks on how to thrive as a researcher and technical talks surveying a portion of the field. Specifically, on the mentoring side, Simon Peyton Jones spoke on "Writing Papers;" Steve Zdancewic and Amal Ahmed spoke on "Time Management;" Nate Foster, Ron Garcia, Dimitrios Vytiniotis, and Isil Dillig spoke on "Job Search and Life after Ph.D.;" and John Reppy spoke on "Proposal Writing." On the technical side, Benjamin Pierce spoke on "Types," Bob Harper on "Logic," Philippa Gardner on "Verification," Tom Ball on "Program Analysis," Byron Cook on "Termination," and Rajeev Alur on "Modeling and Analysis of Embedded Software." We intentionally selected high-profile speakers at various career stages who could serve as potential role models for workshop attendees. We intermixed the two kinds of talks during the day to provide breaks from the technical talks, which required greater concentration to follow.

To remove financial obstacles to attending, we ran a scholarship program. Applications were due December 2, 2011, and students were notified on December 9, 2011 whether they had received a scholarship. Scholarships included registration for PLMW and POPL, travel to Philadelphia, and shared hotel accommodations during the events. These scholarships were made possible by donations and grants from the National Science Foundation, the Computing Research Association Committee on the Status of Women (CRA-W), the Coalition to Diversify Computing (CDC), SIGPLAN, Amgen, Intel, and a private foundation. To stretch our budget, we asked speakers to donate their travel costs and time, which they all did.

Because of this collective generosity, we were able to award scholarships to 109 students. Of those scholarships, 46 went to women, 5 went to African-Americans, 12 to Hispanics, and 47 to US citizens. Scholarships were not restricted to US citizens or to students attending US universities: we were able to fund students from Argentina, Austria, Bangladesh, Brazil, Canada, Chile, China, Croatia, Denmark, France, Germany, Greece, Hungary, India, Iran, Japan, Mexico, Poland, Portugal, Slovakia, Slovenia, Spain, South Korea, Turkey, and the United Kingdom. Of scholarship recipients, 57 were Ph.D. students, 26 were Masters students, and 21 were undergraduates. Although we did not ask this directly, we believe that almost all of the scholarship recipients would not have been able to attend POPL or PLMW without assistance.

Networking. To facilitate networking between workshop participants and speakers, we included a lunch and a reception as part of the workshop. We asked speakers to attend the lunch and reception as well as the breaks, and to spend that time talking with the participants rather than other speakers (as can be quite tempting). We also created a mailing list so that scholarship recipients could communicate with each other, a resource that they used extensively to organize other social events before and after the workshop.

Survey results. A large percentage of the attendees of the workshop completed a survey about their experiences. Notably, 42% of the participants indicated that that the workshop increased their interest in earning a graduate degree in the field of programming languages and 62% reported that it increased their interest in a research career in this area of computing. Furthermore, 63% reported that the workshop increased their confidence that they could have a successful research career in this field. Overall, the workshop attendees were enthusiastic, with 48% rating it "Excellent."

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Lessons for the future. In retrospect, we should have included a mentoring talk on "How to attend a conference," since workshop participants were slated to attend POPL and it would have been useful to give them advice on how to make maximum use of that resource. Such a talk could also have included information and exercises on networking. As for the technical talks, it worked very well to include in the presentations pointers to papers that would be appearing at POPL, putting those selected papers into context for the workshop attendees.

Next year. Because the reaction to this year's mentoring workshop was overwhelmingly positive, Philippa Gardner and Peter Thiemann have volunteered to organize another mentoring workshop to co-locate with POPL 2013 in Rome. If you have ideas about how to make the experience even better, please feel free to contact us or them.