

*Report on Activities Stemming from Participation in the DOE-funded
WAMRL Workshop Oct. 2003.*

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In order to attend the Women in Applied Math Research and Leadership conference, I proposed to start a women in math and computer science (and possibly engineering) discussion group at Tufts. The group was to include female postdocs, faculty, and graduate students gathered together in a social setting. The goals of the group were to facilitate research dissemination and interaction as well as to set up a mentoring structure in which the younger members could learn career strategies from the more senior members of the group. In Dec. of 2003, I received notification that funds from both the mathematics and computer science departments at Tufts would be available to me for this purpose.

A number of events have since occurred that have necessitated a variation (in many ways, an expansion) of my original goals. Instead of being involved in the single proposed activity, I have become involved in three new groups, my participation in which was inspired in part by the knowledge I gained at the WAMRL Workshop in Oct. 2003, particularly with regard to mentoring younger colleagues, leadership, and grant writing.

Late in the fall of 2003, a group, initiated by the new Dean of Engineering and initially focused on women in science and engineering, was formed. I participated in the first few organizational meetings and proposed that part of the function of the group should be for support and leadership training for women faculty. Additionally, I proposed that a primary function of the group should be in training both male and female faculty to attract and retain female students, particularly in mathematics, science and engineering. Ultimately, however, the group decided that its scope and focus should be different than I had originally envisioned. The new program that is growing as a result of the initial meetings is currently titled the "Diversity in Science and Engineering Program" and aims at attracting undergraduates in all underrepresented groups into science and engineering program and providing support (through funded research opportunities and diversity training for faculty) for those majors to keep attrition to a minimum. To this end, the Tufts NSF-funded CSEMS program, for which I am a mentor, has shown that we are on the correct path to success [1].

In the spring of 2004, I became co-PI for a proposal that our department, jointly with the computer science department, is making to the NSF. The program to which we are applying is called the "Mentoring Through Critical Transition Points" (MCTP) program. One of our proposal high-

lights will be the emphasis on women and other underrepresented groups. Specifically, we are proposing to bring undergraduate students from small women's and historically black colleges to Tufts to expose those students to a vertical mentoring program in mathematics or computer science. We are targeting colleges whose small size limits the course and research opportunities available to students at their home institutions. The mentoring program will involve undergraduates, graduate students, postdocs and faculty. A primary focus will be on preparing undergraduates for graduate school through research opportunities with postdocs and faculty, by encouraging and funding students to travel to various professional conferences, and by pairing them with graduate student, postdoc, and faculty mentors. A second goal is to prepare graduate students for careers in mathematics and computer science by taking on leadership roles in terms of working with the undergraduates on research projects and by teaching students to pursue and present research, write grants, etc. We propose to hire postdoc mentors who are from underrepresented groups in mathematics and computer science. The grant would provide the ability for us to allow the postdocs to carry a lighter teaching load than we are currently able to give our postdocs, which would allow them to more effectively serve as mentors and would allow them to focus on the transition to leader and researcher in their fields.

As a result of my participation in the former two activities during the 2003-2004 school year, which are clearly targeted toward a broader audience than mentioned in my original WAMRL proposal, the start date for beginning a group at Tufts specifically geared toward women has been pushed to the 2004-2005 school year. This year, we are fortunate to have a number of female graduate students, postdocs, instructors, and permanent faculty in the mathematics department who are interested in making such a program work. Therefore, for the time being, our group only includes women in mathematics and women in computer science who have joint appointments in mathematics. Our first meeting is scheduled for Sept. 29, over lunch provided by the math department. The email feedback has already been encouraging. Our agenda for the first meeting includes

- discussion of the feasibility of starting an Association for Women in Mathematics chapter at Tufts
- setting up research presentations for the fall and spring semesters
- discussion of student expectations as participants in the group
- discussion of faculty expectations as participants in the group

- planning discussion topics for the fall, selecting faculty discussion leaders
- discussion of scope (including CS, Eng, etc.)

One of my long-term goals of this group is that it inspire the graduate students and postdocs to start or participate in similar discussion groups at the institutions where they ultimately find themselves employed.

Recent articles in the AMS Notices [2,3] and a conversation I had with a female former undergraduate advisee regarding an incident of sexual harassment in her applied math graduate program point to the continued need for focus on training and mentoring female mathematicians at all career stages and on helping them to set career goals. By funding the WAMRL workshop, the Department of Energy has made an important step in this direction. I very much hope the Department of Energy will continue to help make such programs available to applied mathematicians such as myself. I would highly recommend future installments of the WAMRL Workshop to others.

References:

[1] “Model for Mentoring and Retaining Engineering Students from Underrepresented Groups”, M. Horn, C. Cao, M. Kilmer, L. Baise, S. Hassoun, D. Souvaine, *Proceedings of the ASEE New England Section 2004 Annual Conference*, 2004.

[2] “Has the Women-in-Mathematics Problem been Solved?”, Allyn Jackson, *Notices of the American Mathematical Society*, Vol. 51, No. 7, August 2004, pp. 776-783.

[3] “Women in Academia: Are we Asking the Right Questions?”, Carolyn Gordan and Barbara Lee Keyfitz, *Notices of the American Mathematical Society*, Vol. 51, No. 7, August 2004, pp. 784-786.