# Women in Applied Mathematics: Research and Leadership Final Report

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## 1 Review of Activities

Reported here are the results from activities pursued as a consequence of a workshop held October 8-10, 2003 at the University of Maryland. The workshop was titled "Women in Applied Mathematics: Research and Leadership" whose purpose was to promote women who are pursuing a career in applied mathematics.

The participants of this workshop returned to their respected campuses tasked with a set of activities they had agreed to pursue. For my part, the activities were chosen to take advantage of my experience as a mathematician who has been employed in Europe as well as the United States. My activities were chosen to target women undergraduate students who are studying mathematics or a field related to mathematics (such as engineering, physics, computer science, etc.). The theme was to improve the awareness my target group has regarding international opportunities to study abroad: Existence of programs, any necessary application requirements, contact personnel, sources for funding, etc. The manner in which this theme was implemented was multi-faceted;

- Career opportunities: Organizing transportation and registration to the 'Oak Ridge Day of Science', November 17, 2003,
- Local Level: Co-organizing a weekly social event within our Mathematics Department,
- Global Level: Designing, Developing and Publishing a web page,
- Increasing the Scale of Involvement: Developing interdisciplinary relationships between professional women at our university.

## 2 Career opportunities

Oak Ridge sponsored a 'Day of Science' on November 17, 2003 (http://www.orau.gov/dayofscience/). Through the university, I was able to coordinate transportation as well as the registration protocol.

I sent personal invitations to our female undergraduate and graduate students in our mathematics department. One student cleared her schedule for that day and registered for the event.

This career opportunity was chosen because Oak Ridge had promoted it as a chance for undergraduates to:

- Explore cutting edge science at a top research institution in the country,
- Investigate opportunities for PAID summer internships and research collaborations,
- Learn how to apply for these research opportunities,
- Meet and talk to top scientists about pressing scientific problems and how you can be involved.

Additionally, on the science and technology agenda was:

- Exhibits from all ORNL research divisions,
- Hands-on science demonstrations,
- Laboratory staff on hand for one-on-one discussions,
- Focus sessions on applying for internships,
- Focus sessions on developing research collaborations,
- Briefings on cutting edge research,
- Educational prizes  someone will win a laptop computer!,
- Breakfast and lunch are provided.

In short, this was the perfect experience that could be positively drawn from later when the students are making decisions regarding graduate school or a career in industry. The hope was that the students attending would carry their experience to other female students who might not be studying in the sciences; these experiences would lay a foundation from which a positive foundation linking women to science could be made.

## 3 Local Level

Each Thursday afternoon our department hosts a social event in which faculty and graduate students are invited to attend. Using this existing event, I broadened its scope to include undergraduate (female and male) students. After the social (approximately an hour in duration), there is a mathematics seminar open for all to attend. Since October 23rd, 2003, we have had approximately twenty such events and they are scheduled to continue in the future.

On average, we have had two female undergraduate students attending these weekly events. I have noticed that although it was slow at first, these female students now appear very comfortable around our graduate students and our faculty. In fact, one has discussed her job opportunities she is pursuing. This has been one of the more successful programs that reach out to female undergraduate students.

## 4 Global Level

A web page was developed (http://math.tntech.edu/~sleborne/women/index.html) and will be regularly updated in order to serve a larger, more global group of female undergraduate students. The purpose of the web site is to provide a single source for information pertaining to opportunities in applied mathematics. Examples of such opportunities include graduate studies abroad, English bachelors degree programs outside the United States, undergraduate year-abroad programs, as well as undergraduate research programs. Currently, the details found on the web page are,

- Summer programs for women in mathematics: George Washington University Summer Program for (undergraduate) women in Mathematics, June 26 - July 31, 2004, Washington D.C. Carleton College Summer Mathemativs Program for Women Undergraduates, June 20 - July 18, 2004, Minnesota
- International opportunities for students: Study Abroad Programs through TTU International master's programs at the Technical University Hamburg-Harburg, Germany International master's programs at German universities
- Association for Women in Mathematics (AWM): Non-profit organization with the goal to encourage women in the mathematical sciences.
- European Women in Mathematics: Affiliation for women bound by a common interest in the position of women in mathematics.
- Women of Applied Mathematics: Research and Leadership Resources related to women in mathematics
- Gender Studies: Hochschulbergreifendes Studienprogramm in Hamburg
- Math Forum: Resources for Women in Mathematics
- American Mathematical Society (AMS): Resources for Undergraduates in Mathematics
- Women in Math Project: Located at the University of Oregon in Eugene
- Funding opportunities: Association for Women in Mathematics (AWM) offers travel, mentor, and collaborative grants for women.
  NSF ADVANCE program provides Fellow Awards to facilitate women's advancement in academia.
  American Association for the Advancement of Science offers a Women's International Science Collaboration (WISC) Program.

## 5 Increasing the Scale of Involvement

In order to broaden awareness of efforts aimed at improving the perception that women have regarding applied mathematics as a viable profession for women, informal meetings took place. At first, the goal was simply to establish relationships with other women who are faculty at TTU. Next, it is hoped that a more formal interdisciplinary relationship between professional women at our university will result. To date, one luncheon at our faculty dining facility has occurred.