

MENTORNET: A DIALOGUE WITH UNIVERSITY PARTNERS

Peg Boyle Single, Carol B. Muller, and Stephanie J. Fox

MentorNet, San José, California

MentorNet, the National Electronic Industrial Mentoring Network for Women in Engineering and Science.

MentorNet, a program of WEPAN, is the National Electronic Industrial Mentoring Network for Women in Engineering and Science. MentorNet is a structured mentoring program that pairs women students in the engineering, math, and science fields with industry professionals and helps them along a yearlong on-line mentoring relationship. Mentoring has proven to be one of the most effective interventions to retain women in fields where they remain underrepresented. Electronic mentoring (ementoring) is the merger of mentoring with electronic communications, mostly email. Ementoring allows mentoring to occur that would otherwise be prohibitive based on time and geography constraints, thereby allowing an expansion of the available mentor pool. In addition, electronic communications have unique qualities that facilitate the development of relationships, based on the attenuation of status differences and the ease of thoughtful communications.

During the 1998-99 program year, over 500 students were matched with industry mentors. MentorNet provided coaching, troubleshooting, and rematching, when appropriate. The mentors were 80% female and 20% male. Over three-quarters of the students were undergraduates, 8% were master's students, and 14% were doctoral candidates or held post-doctoral positions. Almost 70% of the students were in engineering, with the remaining students from the computer science, biological science, mathematics, physics, chemistry, geography, and environmental science fields.

The implementation of MentorNet requires a consortium of members. Corporate partners, professional society partners, and university partners provide crucial funding and help to recruit students and industry professionals, along with providing consulting on the program development and implementation. For the 1998-99 program, the corporate partners were AT&T, Hewlett Packard, IBM, Intel, Microsoft, and Texaco. In addition, a grant from the Department of Education helped support the program. The professional society partners were The Institute of Electrical and Electronics Engineers (IEEE) and The International Society for Optical Engineering (SPIE). The 27 university partners were:

Arizona State University, California Institute of Technology, Carnegie Mellon University, Cornell University, Dartmouth College, Georgia Institute of Technology, Howard University, Massachusetts Institute of Technology, Mills College, Princeton University, Purdue University, San José State University, Smith College, Spelman College, Stanford University, Stevens Institute Of Technology, University of Arizona, University of California at Berkeley, University of California at Davis, University of California at Los Angeles, University of Illinois at Urbana/Champaign, University of Kentucky, University of Michigan, University of Texas at Austin, University of Virginia, University of Washington, and the University of Wisconsin at Madison.

Each university partner has a campus representative, who helps recruit students, provides consulting and suggestions to the MentorNet staff, and who often recruits alumni/ae to serve as mentors.

Dialogue with Campus Representatives

The goal of the Round Table Discussion held at the annual WEPAN conference was to bring the campus representatives together for a face-to-face meeting. As part of this meeting, other goals included addressing questions and issues raised by the campus representatives, raising issues for expanding next year's program pertaining to recruiting students, recruiting alumnae, improving communications among the representatives, and discussing the MentorNet memberships program. The campus representatives who were able to attend the Round Table Discussion were: Cinda-Sue Davis, Director, Women in Science & Engineering Program from the University of Michigan, Suzie Laurich-McIntyre, Associate Director, Women in Engineering Initiative from the University of Washington, Susan Linnemeyer, Assistant Dean & Director, Women In Engineering Programs from the University of Illinois at Urbana/Champaign, Karin Mack, Director, Center for Women in Engineering at the University of California at Davis, and Mimi Philobos, Director, Women in Engineering Programs at the Georgia Institute of Technology. Madelaine Voss, Project Director for Diversity in Engineering Education Initiatives from the San José State University and Barbara Clark, Director, Women in Science Programs from Purdue University, were also in attendance and will be serving as contact persons for the upcoming program year. To represent the Ithaca Evaluation Group, the evaluation group conducting MentorNet's program evaluation, Christine M. Cunningham also participated in the round table discussion.

The issues addressed during the round table discussion were: program evaluation, the memberships program, recruiting students and alumni/ae, and program elements that will be changing in the upcoming year, which include the introduction of a resume database.

MentorNet Program Topics

The MentorNet program topics addressed below are a compilation of the issues raised during the round table discussion.

Evaluation

Before the WEPAN conference, Karin Mack had asked about evaluations by school. She wanted to know not only the experience of all MentorNet participants, but also the particular experiences of the students at her school. During the round table discussion, we discussed this issue further. MentorNet's outside evaluation group, the Ithaca Evaluation Group, is in the process of conducting the evaluation for the 1998-99 program year.

To help the university representatives learn more about their students' experiences, the Ithaca Evaluation Group will produce short evaluation reports by school. These reports will include the executive summary for the whole program. In addition, these reports will identify whether the experiences of the students from a particular school are different from the experiences reported by all the MentorNet student participants. If different experiences emerge, then the differences will be identified and reported. Finally, the school-specific evaluation reports will include the open-ended responses that the students provided about their experience with MentorNet.

Memberships Program

As part of MentorNet's sustainability plan, a memberships program will be implemented. Currently, MentorNet is funded primarily by large grants from sponsoring partners and from the Department of Education. As part of the long-term sustainability plan, the long-term viability of MentorNet rests on its ability to recruit a growing number of corporate and university partners who will contribute a modest membership fee each year. This program will request the participating universities to join MentorNet as members at \$2,000, a fee that is deeply discounted for the universities and subsidized by corporate memberships and grants. In 1999-2000, we estimate it will cost approximately \$15,000 for each university to participate in MentorNet. The invitation to join MentorNet will be presented to the Deans at universities already participating. Carol Muller, MentorNet's executive director, asked the campus representatives to consider to whom the invitation letters and information packets should be sent, typically a dean, along with the names and titles of others who should be copied on the letters. Since we value the continued participation of MentorNet's charter university members, we will work with those members to make this memberships program work for them.

Suzie Laurich-McIntyre mentioned that many of the deans may not already know about their schools' involvement in MentorNet. She recommended that MentorNet precede the membership invitation letter with a letter and certificate of recognition for the school's involvement as a charter member in MentorNet and for the campus representative's role in MentorNet participation. Based on this suggestion, MentorNet will send out these letters of recognition before the membership letters are sent out.

Recruiting Students

Student applications for the 1999-2000 year will be posted from August 15, 1999 through October 8, 1999. The August 15 date will allow MentorNet to modify the student

applications based on the results of the program evaluation, post the applications to the web site, and test the application. Around August 15, MentorNet will send out soft copy versions of a Call for Students message, to help the campus representatives recruit students.

We already know of some modifications to the student application and to the matching process. Similar to the application and matching process for the 1998-1999 year, the student's field will be the most important dimension on which students will be matched with mentors. The next important dimensions will be the employment sector in which the student is interested, such as telecommunications or semi-conductors, followed by matching the educational level of the students with that of the mentors.

Mentors and students can also state certain preferences for mentoring partners, based on school affiliation or gender. For the upcoming application, we have changed some of the criteria for the preferences that the students and mentors can choose. For instance, to be matched with a mentor from their university or alma mater, students can rate the importance of this preference for them along the following dimensions:

- I am happy to be paired with a mentor from any school
- It would be nice to have a mentor who attended the school I am currently attending
- I only want a mentor who attended the school I am currently attending

A new dimension on which mentors and students will be matched is topics of interest. The topics were determined based on analyses of the reasons students signed up to participate in MentorNet last year. Mentors will be able to identify topics they want to discuss, and the students and mentors will be matched on their choice of topics. Some of the topics the students have available to chose from are:

- School Decisions - Get support around the academic issues, such as, choosing courses, majors, and internships.
- Industry Knowledge - Gain an increased understanding of what it's like to work in industry, both the positive and the negative aspects.
- Work vs. Graduate School - Get help balancing the pros and cons of getting a job versus continuing in school.
- Life Balance - Be able to discuss with someone my concerns about being an engineer/scientist and having a personal/family life.

Recruiting Alumni/ae

Two schools, Cornell and the University of Virginia, particularly capitalized on the opportunity to get alumni/ae involved with MentorNet last year. The Cornell women in engineering program ended up receiving very positive public relations through getting their alumni/ae involved. Schools may promote and expand their own women in engineering and science programs by listing MentorNet as one of the opportunities available to its women students. We would like to encourage and support this type of collaboration among the schools and their alumni/ae associations. It allows alumni/ae to

get involved with mentoring students and to have a greater sense of involvement with their alma maters.

The mentor applications will be posted from approximately July 15 through October 8, 1999 for the 1999-2000 program. In the meantime, interested alumni/ae and other mentors can place their name on a distribution list by visiting the MentorNet web site, visiting the Mentor page, and entering their name and contact information on the web based form. When the applications are posted on-line, MentorNet will be sending out email messages letting the mentors know they can officially signup.

Program Changes for Next Year

Based on comments we have received from the 1998-1999 participants and the results of the year-end evaluation, we will be implementing a few program changes for the 1999-2000 MentorNet program.

Resume database. For the first time, MentorNet will be sponsoring a resume database on its web site. This database will allow student participants to post their resumes on-line for internship and career opportunities. MentorNet's corporate and professional society strategic partners and members will be able to access the resumes posted on the web site. In addition, MentorNet will be posting a web page listing internship and career opportunities where MentorNet strategic partners and members will be able to post their job opportunities. This site will also allow participating campuses to advertise the internships they have available, such as National Science Foundation's Research Experiences for Undergraduates Opportunities, to the MentorNet student participants. Campus representatives will be asked to supply MentorNet information about internships that are available at their school.

Coaching messages. The coaching messages, or discussion suggestions, are sent to the students and the mentors to serve as a reminder to contact their mentoring partners, to help broaden the topics discussed during the mentoring relationship, and to keep the lines of communication open among the participants and the MentorNet staff. During the 1998-99 program, mentors and graduate students received coaching messages every other week. Half of the undergraduate students received coaching messages every week, the other half received coaching messages every other week. Based on whether there are significant differences between the two undergraduate groups, next year's undergraduate participants will receive weekly or biweekly coaching messages.

Conclusion

Throughout the year and during the round table discussion at the WEPAN conference, the campus representatives have been a valuable resource for advice and suggestions on improving, expanding, and supporting the sustainability of the MentorNet program. This Round Table Discussion provided an invaluable opportunity to meet face-to-face with the campus representatives and discuss issues pertinent to the upcoming 1999-2000 MentorNet program.

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