

**Distributed Mentor Project:  
Comprehensive Participant Survey Analyses for 1994-1997**

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## **Distributed Mentor Project: Comprehensive Participant Survey Analyses for 1994-1997**

The primary goal of the Distributed Mentor Project (DMP), funded by the Computing Research Association's Committee on the Status of Women in Computer science and Engineering (CRA-W), is to increase the number of women entering graduate school in Computer Science or Computer Engineering. The primary strategy for achieving this goal is to involve female CS&CE undergraduates in research projects with a female mentor at a major research university, thereby exposing them to academic career opportunities and inspiring them to apply to graduate school. Every year since 1994, the DMP has matched 20-25 female CS&CE undergraduates from around the country with mentors at various research institutions for ten weeks of research during the summer. Students recruited into this program have already demonstrated a high potential for success in graduate school and an ability to make effective use of the research and mentoring opportunities, based on their grades and their statement of purpose on their application. Students may be at any stage of the undergraduate program, but it is preferred for them to have completed their second or third year.

In 1995, the LEAD Center was asked to evaluate the success of the Distributed Mentoring Project over a four-year period. This evaluation sought answers to the following research questions, which were motivated by the Project's goal of increasing the number of women enrolled in graduate school in CS&CE:

- 1) Do DMP student participants attend graduate school at higher rates than similar non-DMP students?
- 2) Are there measurable effects of the program on participants' goals, outlooks, feelings about themselves, and feelings about the field of CS&CE? If so, what are these effects and how do they relate to the primary goal of increased graduate school attendance?

Answering the first question required LEAD evaluators to track the DMP participants after they completed the program to determine their enrollment status and future plans. It also involved finding a control group to compare to the DMP participants in terms of graduate school enrollment. Attempts were made to locate and survey CS&CE female undergraduates from the same institutions as DMP participants, but because this group was found to have significantly lower GPAs and substantially different reasons for majoring in CS&CE, they did not prove to be a suitable control for women who participated in the DMP. Instead, comparative data on rates of graduate school enrollment for highly proficient female undergraduates in computer science and mathematics were found by accessing the results of a nationwide one-year-after-graduation survey performed by the National Center for Educational Statistics in 1994.

To answer the second research question, LEAD evaluators interviewed 30 DMP participants from the first three years of the program (10 participants per year) before, immediately after, and one year after their participation in the DMP. These interviews were extensively analyzed and summarized in previous LEAD evaluation reports (see Evaluation Reports #1 and #2). All DMP participants from the last four years were also surveyed by e-mail in the fall following their DMP experience. These surveys allowed LEAD evaluators to quantify and check the reliability

of the highly detailed data already gathered through participant interviews. Preliminary analyses of the first three years of surveys have already been reported (see Evaluation Report #2). This final report analyzes and summarizes the results of all four years of student surveys conducted by the LEAD Center and illustrates the significant impact of the DMP on the young women who participated in it. (Copies of previous reports are available on the project website, located at <http://www.cs.wisc.edu/~condon/mentor.html>).

In this report, survey results are grouped topically, starting with the critical question of what DMP participants have done in the years since graduating from college. A copy of the '96 and '97 version of the survey is included in the Appendix. It should be noted that this 62-question survey has questions that were not included in the '94 and '95 version. The '96 and '97 version was updated to include significant issues that arose during interviews. As a result, there are some questions reported in the sections that follow that were only asked of the last DMP cohorts. Response rates for the survey were fairly high, especially for the last three years: 44% of participants responded in '94, 75% in '95 and '96, and 88% in '97, for an overall response rate of 70%. Hence, the survey responses reported here can be taken to be representative of the experiences of the DMP population as a whole. For each table in this report, the total number of participants who provided survey data on that topic is reported, usually in the last row of the table. Additional data beyond those reported here may be generated on request.

**Tracking data and future plans: Post graduation outcomes for DMP participants**

The table below summarizes what DMP participants from the first 3 years of the program said they were doing when contacted in the Fall of 1997. In all, 86.3% of former participants were successfully contacted.

| Tracking outcomes for '94,'95,'96 participants (in Fall 1997)  | Total |
|--|-------|
| Enrolled full-time in graduate school in CS&CE, no adv. degree | 28    |
| Received Masters in CS&CE (1 still enrolled)                   | 3     |
| Received Ph.D. in CS&CE  | 1     |
| Enrolled in graduate school, but not CS&CE                     | 1     |
| Working, enrolled part-time in CS&CE graduate courses          | 2     |
| Working, with graduate school plans                            | 10    |
| Working, with no graduate school plans                         | 11    |
| Undergraduate, with immediate graduate school plans            | 3     |
| Undergraduate, with plans for work first, then GS              | 2     |
| Undergraduate, no graduate school plans                        | 2     |
| Unable to be contacted   | 10    |
| Total number of participants '94-'96                           | 73    |

This next table addresses the primary goal of the Project and shows how many DMP participants in each of the first three years went on to enroll in graduate school in CS&CE:

| DMP cohort | '94 | '95 | '96 | Total |
|------------|-----|-----|-----|-------|
|------------|-----|-----|-----|-------|

|  |            |               |               |               |
|--|------------|---------------|---------------|---------------|
| Total number of participants                         | 25         | 28            | 20            | 73            |
| Participants who have graduated and been tracked     | 20         | 23            | 13            | 56            |
| Tracked graduates who became CS&CE graduate students | 6<br>(40%) | 14<br>(60.9%) | 10<br>(76.9%) | 30<br>(53.6%) |

About half of the women involved in the first three years of the DMP program have gone right on to graduate school in Computer Science or Computer Engineering after receiving their baccalaureate degrees. Of the 56 DMP participants who had already graduated when last tracked in the Fall of 1997, **53.6%** were enrolled in graduate school in CS&CE, the vast majority of whom enrolled within a year of graduation.

A comparison comes from the Baccalaureate & Beyond longitudinal survey conducted by the National Center for Educational Statistics, which in 1994 surveyed 1,158,170 students who had received their baccalaureate degrees one year earlier. This nationally representative sample included 9,560 women with Computer Science degrees, and of these, only **2.94%** were enrolled in graduate or professional school one year after graduating. If we restrict the sample to Computer Science women who, like those in the DMP, had GPAs greater than or equal to 3.5, the percent who went on to graduate or professional school falls to **2.53%**.

By comparison, there were 17,680 men with Computer Science degrees in the B&B sample, and of these, **9.23%** went on to graduate or professional school within a year. If you restrict the male sample to those with GPAs greater than or equal to 3.5, the percent going on to graduate or professional school is **29.19%**. In other words, the best male CS majors are about 10 times more likely to go on to graduate or professional school within a year than the best female CS majors! This gap between male and female enrollment in graduate school is higher than in any other field in the B&B classification. And this, as much as anything, illustrates the need for a program like the DMP to encourage women CS&CE majors to consider graduate school and careers in research. (For an exploration of the reasons behind this huge gap between men and women, see our analysis of DMP interview data in Evaluation Report #1 and #2)

Even if we add women with math majors to the B&B Computer Science sample and again look at those with GPAs over 3.5, the percent going to graduate or professional school within one year is only **15.45%**, still far below the 53.6% of DMP participants that have gone to graduate school thus far.

Although it is too early to know what the 1997 DMP participants will be doing after graduation, the 1997 survey did ask students what their post-graduation plans were. The 21 of 24 participants who returned a survey responded in the following ways:

| Post-graduation plans of the '97 cohort             | N  | %    |
|---|----|------|
| Undergraduate, with immediate graduate school plans | 8  | 38.1 |
| Undergraduate, with plans for work first, then GS   | 9  | 42.9 |
| Undergraduate, plans unknown                        | 3  | 14.3 |
| Undergraduate, no graduate school plans             | 1  | 4.8  |
| Total number surveyed of 24 participants            | 21 | 100  |

In short, **81%** of the 1997 DMP participants plan to go to graduate school eventually, 38.1% as soon as they graduate.

Another way to peek into the future of DMP participants is to analyze their responses to the survey question of “Highest degree sought.” This question was asked both on the post-program survey and on the tracking survey that was e-mailed to former participants every fall. The table below reports participants’ most recent responses to the question of “Highest degree sought” for all 4 DMP cohorts.

| Highest degree sought | ‘94 | ‘95 | ‘96 | ‘97 | Total | % of all |
|-----------------------|-----|-----|-----|-----|-------|----------|
| CS&CE MS              | 6   | 7   | 8   | 5   | 26    | 30.6     |
| CS&CE Ph.D.           | 7   | 11  | 8   | 7   | 33    | 38.8     |
| Non CS&CE adv. degree | 2   | 1   | 0   | 1   | 4     | 4.7      |
| BA/BS                 | 5   | 6   | 1   | 1   | 13    | 15.3     |
| Undecided             | 1   | 0   | 2   | 7   | 10    | 11.8     |
| Total respondents     | 21  | 24  | 19  | 21  | 85    | 100      |

As the table shows, at least **69.4%** of DMP participants plan to eventually obtain an advanced degree in CS&CE.

In sum, the results of the LEAD Center’s tracking surveys and post-program surveys suggest that DMP participants are indeed highly likely to go on to graduate school in CS&CE. Already their rates of graduate school enrollment are well beyond the rates seen in a comparative national sample of female CS&CE graduates, and their stated future plans indicate that over two-thirds of the participants ultimately plan to obtain advanced degrees in CS&CE. By this measure, the DMP is easily meeting its primary goal. Of course, the women who are recruited into the Project were specifically selected to have a comparatively high potential for graduate school enrollment (based on grades and statements of purpose), so these numbers alone do not tell us what effect the Project itself had on the women who participated in it. Did their experience in the DMP make them more likely to enroll in graduate school than they had been already? To answer this question, it is useful to know the demographics of the women who participated in the Project. Who were they, and what was their potential for success? Then, we must examine questions on the survey which specifically ask about the role of the DMP in encouraging participants to enroll in graduate school. (Additional evidence of how the DMP affected participants’ graduate school aspirations may also be found in the interview analyses of Evaluation Report #1 and #2)

### **Demographic information: Who participated in the DMP?**

The next four tables report on the race/ethnicity, year-in-school, overall GPA distribution, and average GPAs of the women who participated in the first four years of the DMP:

| Race/ethnicity | N  | %    |
|----------------|----|------|
| White          | 52 | 76.5 |
| Asian American | 9  | 13.2 |
| Hispanic       | 4  | 5.9  |

|                   |    |     |
|-------------------|----|-----|
| African American  | 1  | 1.5 |
| Native American   | 1  | 1.5 |
| Indian            | 1  | 1.5 |
| Total respondents | 68 | 100 |

| Year in school    | N  | %    |
|-------------------|----|------|
| Freshman          | 2  | 3.0  |
| Sophomore         | 16 | 24.2 |
| Junior            | 29 | 43.9 |
| Senior            | 18 | 27.3 |
| Transfer          | 1  | 1.5  |
| Total respondents | 66 | 100  |

| Overall GPA distribution | N  | %    |
|--------------------------|----|------|
| 3.0-3.19                 | 2  | 3.0  |
| 3.2-3.39                 | 2  | 3.0  |
| 3.4-3.59                 | 5  | 7.6  |
| 3.6-3.79                 | 20 | 30.3 |
| 3.8-4.0                  | 37 | 56.1 |
| Total respondents        | 66 | 100  |

| DMP cohort  | '94  | '95  | '96  | '97  | Total |
|-------------|------|------|------|------|-------|
| Average GPA | 3.69 | 3.81 | 3.74 | 3.77 | 3.76  |

As seen in the tables above, DMP participants were primarily White CS&CE students who had just completed their sophomore, junior, or senior year, and who had GPAs above 3.7. This is a fairly elite group of students to start with. It is also a group that started out fairly committed to CS&CE (although not necessarily committed to graduate school), as seen in the next table:

| Q14: Were you considering majoring in CS&CE by your first year of college? | '96 | '97 | Total % |
|--|-----|-----|---------|
| yes  | 9   | 16  | 69.4    |
| no   | 6   | 5   | 30.6    |
| Total respondents  | 15  | 21  | 100     |

Survey respondents were also asked about whether they felt they “fit” in the field of CS&CE and whether they intended to stay in the field long-term. How participants responded may be seen in

the next two tables. Because these questions were asked only after participation in the DMP, it cannot be ascertained what effect the DMP had, if any, on either of these self-perceptions.

| Q16: I feel I “fit” in CS&CE | ‘96 | ‘97 | Total % |
|------------------------------|-----|-----|---------|
| Strongly agree               | 2   | 7   | 25.0    |
| Agree                        | 8   | 10  | 50.0    |
| Neutral                      | 2   | 3   | 13.9    |
| Disagree                     | 3   | 1   | 11.1    |
| Strongly disagree            | 0   | 0   | 0       |
| Total respondents            | 15  | 21  | 100     |

| Q17: Do you plan to stay in field of CS&CE long-term? | ‘96 | ‘97 | Total % |
|---|-----|-----|---------|
| yes   | 12  | 16  | 77.8    |
| no  | 1   | 0   | 2.8     |
| undecided   | 2   | 5   | 19.4    |
| Total respondents                                     | 15  | 21  | 100     |

As can be seen above, about three-quarters of the participants felt they “fit” in CS&CE and intended to stay in it long-term. However, since CS&CE is one of the few scientific fields in which it is not difficult to get a high paying job with only a bachelor’s degree, it cannot be assumed that these same students were also intending to go on to graduate school in CS&CE. Indeed, according to the Baccalaureate & Beyond survey mentioned earlier, Computer Science graduates have among the lowest rates of graduate school enrollment of any major, and for women, they have the lowest rate altogether. The 2.94% of female CS students who enroll in graduate school within a year of receiving their baccalaureate degrees can be compared to 35.1% in the Physical Sciences, 19.9% in the Life Sciences, 16.7% in Engineering, 15.4% in Mathematics, and 13.61% in Social and Behavioral Sciences.

Another factor to consider in the background of DMP participants is the type of undergraduate institution they attended. DMP students came from a wide variety of institutional types, ranging from small liberal arts colleges to major research universities. The Carnegie Classifications of participants’ home schools (which takes into account size, graduate programs, and degree of emphasis placed on research) is reported in the table that follows:

| Carnegie Classification of participant’s home school | N  | %    |
|--|----|------|
| Bachelors I  | 8  | 11.8 |
| Bachelors II   | 6  | 8.8  |
| Doctoral I   | 5  | 7.4  |
| Doctoral II  | 3  | 4.4  |
| Masters I  | 9  | 13.2 |
| Research I   | 32 | 47.1 |

|                   |    |     |
|-------------------|----|-----|
| Research II       | 5  | 7.4 |
| Total respondents | 68 | 100 |

As can be seen in the table above, over half of the DMP participants (54.5%) came from large research universities. One might ask why these students, who no doubt have some research opportunities at their own institutions, made up such a large proportion of DMP participants. A good reason can be found in the moderate correlation ( $r = .332$ ,  $p < .05$ ) between the Carnegie Classification of participants' home schools and participants' responses to survey question 30, where they were asked to rate how much they "felt like part of the department." As it turns out, the students at larger, research-oriented schools were more likely to rate themselves low in feeling like they were a part of their department. Hence, students from larger schools, while more likely to have opportunities for research at their own schools, were also more likely to feel like they did not "fit" in their departments, and this sense of alienation and discomfort discouraged many of them from approaching faculty members about becoming mentors or allowing them to do research. So although students from the smaller schools were less likely to have access to research labs and research faculty, the DMP also provided an important opportunity for students who did have access to such labs. For **74.2%** of all participants surveyed, the DMP was their first research experience.

According to the participant interviews we conducted earlier, many DMP participants, though fairly certain of their commitment to the field, were uncertain about whether they wanted to go into research, and this is the reason that many gave for participating in the DMP. The reasons that these women entered the field of CS&CE in the first place were varied, but most were motivated by a strong inherent interest in computer science and their strong abilities in math and science. When asked why they chose to major in CS&CE, survey respondents gave the following reasons. (The reasons in the top half of the table were given by over 50% of respondents; the reasons in the bottom half were given by less than 50%).

| Q13: Factors important in choice to study or major in CS&CE | #1 reason (%) | Top 4 reason (%) | A factor (%) |
|---|---------------|------------------|--------------|
| CS&CE is enjoyable and interesting                          | 39.6          | 67.6             | 91.2         |
| I am good at math and science                               | 20.8          | 54.4             | 80.9         |
| CS&CE is challenging  | 5.7           | 57.4             | 80.9         |
| CS&CE affords many career opportunities                     | 11.3          | 45.6             | 79.4         |
| CS&CE jobs pay well   | 1.9           | 22.1             | 63.2         |
| A friend/relative is in computer science                    | 5.7           | 19.1             | 51.5         |
| I like the idea of being a computer scientist               | 1.9           | 16.2             | 44.1         |
| A teacher encouraged me                                     | 1.9           | 16.2             | 42.6         |
| My work experience led me to choose CS&CE                   | 7.5           | 8.8              | 11.8         |
| A friend/relative not in CS&CE encouraged me                | 1.9           | 2.9              | 4.4          |
| Other   | 1.9           | 2.9              | 4.4          |
| My employer encouraged me                                   | 0.0           | 0.0              | 0.0          |

|                   |        |        |        |
|-------------------|--------|--------|--------|
| Total respondents | N = 53 | N = 68 | N = 68 |
|-------------------|--------|--------|--------|

### Role of the DMP in encouraging participants to attend graduate school

Now we may look at the two sets of survey questions that most directly address the effect that the DMP had on participants' desire to enroll in graduate school. One set of questions used a 5-point scale and asked participants to "describe their commitment to going to graduate school in computer science" before their DMP experience (Q44) and after their DMP experience (Q45). This allows us to see whether participants thought their degree of commitment had changed over the summer of their DMP experience. As can be seen in the table below, **57.3%** of participants showed an increase in their commitment to attending graduate school, **30.9%** showed no change, and **11.8%** saw a decrease in their commitment.

| Q44/45: Change in commitment to attending graduate school (from before DMP to after DMP) | '94 | '95 | '96 | '97 | Total | Total % |
|--|-----|-----|-----|-----|-------|---------|
| -4   | 0   | 1   | 0   | 0   | 1     | 1.5     |
| -3   | 0   | 1   | 0   | 0   | 1     | 1.5     |
| -2   | 0   | 0   | 0   | 0   | 0     | 0       |
| -1   | 1   | 2   | 1   | 2   | 6     | 8.8     |
| 0 (no change)  | 3   | 6   | 3   | 9   | 21    | 30.9    |
| +1   | 5   | 5   | 9   | 7   | 26    | 38.2    |
| +2   | 2   | 6   | 1   | 2   | 11    | 16.2    |
| +3   | 0   | 0   | 1   | 1   | 2     | 2.9     |
| +4   | 0   | 0   | 0   | 0   | 0     | 0       |
| Grand Total  | 11  | 21  | 15  | 21  | 68    | 100     |

In short, for most students the DMP experience had a positive effect on their desire to attend graduate school. Further evidence is seen in participants' responses to questions 25 and 26, which asked respondents to say whether a given list of factors encouraged them to enroll in graduate school, discouraged them from enrolling in graduate school, or both. The results are below. (Note: This question did not appear on the 1994 or 1995 surveys, so there were only 36 participants from 1996 and 1997 who responded to the entire list. However, respondents from all four years were asked about the influence of the second factor, their "Distributed Mentor Project experience," so the number of respondents for that factor is 68.)

| Q25/26: Factors encouraging or discouraging graduate school enrollment | % Encouraged | % Discouraged | % both Enc. & Disc. |
|--|--------------|---------------|---------------------|
| Level of success in undergraduate CS&CE courses                        | 75.0         | 2.8           | 8.3                 |
| Distributed Mentor Project experience                                  | 64.7         | 5.9           | 1.5                 |
| Career goals   | 63.9         | 8.3           | 2.8                 |
| Technical interests  | 52.8         | 13.9          | 2.8                 |
| Advisor/mentor at home institution                                     | 47.2         | 0.0           | 0.0                 |
| Influence of family member   | 36.1         | 2.8           | 0.0                 |

|   |      |      |     |
|---|------|------|-----|
| Extra-curricular activity at home institution | 33.3 | 2.8  | 2.8 |
| Work experience                               | 27.8 | 11.1 | 5.6 |
| Pre-collegiate experiences                    | 5.6  | 2.8  | 0.0 |

As seen above, the Distributed Mentor Project experience was the second most influential factor in encouraging graduate school enrollment. It was listed as an encouraging factor by **64.7%** of the respondents and a discouraging factor by only 5.9%. These results corroborate those found in our post-program interviews with participants.

### Evaluation of the DMP experience: Students' satisfaction and value ratings

This next section looks at how participants rated various aspects of their DMP experience. These ratings show us which aspects of the program are succeeding and which need improvement. In addition, correlations between the ratings can allow us to determine which aspects of the program were the most important in producing positive effects. In the first table are participants ratings of their satisfaction with the DMP experience overall:

| Q60: Overall satisfaction with DMP | N  | %    |
|------------------------------------|----|------|
| Not at all satisfied               | 2  | 3.1  |
| Not very satisfied                 | 1  | 1.6  |
| Somewhat satisfied                 | 10 | 15.6 |
| Satisfied                          | 21 | 32.8 |
| Very satisfied                     | 30 | 46.9 |
| Total respondents                  | 64 | 100  |

As you can see, nearly **80%** of DMP participants were “satisfied” to “very satisfied” with their overall experience, while only 4.7% showed significant dissatisfaction (“not at all satisfied” to “not very satisfied”). A strong indicator of the impact of the DMP experience on students’ graduate school aspirations comes from the fact that there was a high correlation ( $r = .650, p > .01$ ) between a participant’s overall satisfaction with DMP and the degree of change in her desire to attend graduate school (Q44/45, see page 9). In other words, a positive overall DMP experience and an increase in the desire to attend graduate school are closely linked.

Participants’ satisfaction with their mentor match was similarly high, with **78.1%** rating themselves as “satisfied” to “very satisfied” with the mentor they were assigned, and only 15.6% showing significant dissatisfaction.

| Q59: Satisfaction with mentor match | N  | %    |
|-------------------------------------|----|------|
| Not at all satisfied                | 0  | 0    |
| Not very satisfied                  | 10 | 15.6 |
| Somewhat satisfied                  | 4  | 6.3  |
| Satisfied                           | 19 | 29.7 |
| Very satisfied                      | 31 | 48.4 |
| Total respondents                   | 65 | 100  |

It is useful to look at these two satisfaction ratings together. When we did so, we found there was a high correlation between satisfaction with mentor match and satisfaction with the DMP overall ( $r = .723, p < .01$ ). In other words, when satisfaction with the mentor match was high, overall satisfaction with the DMP also tended to be high. This suggests that finding the right mentor for a student is an important factor in producing a positive DMP experience.

The next table looks at the frequency of contact that students had with their mentors and how satisfied they were with this frequency:

| Q56: Frequency of contact w/ mentors | Q58: Satisfaction with amount of mentor contact |             |           |       |      |
|--------------------------------------|---|-------------|-----------|-------|------|
|                                      | Wanted more                                     | Wanted less | Satisfied | Total | %    |
| 3 or more times/week                 | 5   | 2           | 31        | 38    | 59.4 |
| 1-2 times/week                       | 9   | 0           | 11        | 20    | 31.3 |
| 1 time every 2 weeks                 | 3   | 0           | 1         | 4     | 6.3  |
| 1 time every 3-4 weeks               | 2   | 0           | 0         | 2     | 3.1  |
| Total                                | 18  | 2           | 43        | 64    | 100  |
| %                                    | 28.1  | 3.1         | 68.8      | 100   |      |

As seen in the last column of the table, 59.4% of the participants were in contact with their mentors 3 or more times per week, and an additional 31.3% were in contact with mentors at least once or twice per week. As seen in the last row, **68.8%** were satisfied with this degree of contact, while 28.1% wanted more contact, and 5 of the 6 students who had contact with their mentors less than once per week thought that this was too little and wanted more (see the middle two cells in the “Wanted more” column). Clearly, having adequate contact with mentors was important to students, and “adequate” could be anywhere from once or twice per week to something more than 3 times per week, depending on the student. But because the vast majority of mentors saw their students at least once or twice per week and most students were satisfied with the degree of contact, there turns out to be no significant correlation between the frequency of contact participants had with their mentors (Q56) and their satisfaction with the mentor match (Q59). Hence, what really made the difference in most students’ satisfaction with their mentor, according to the interviews we conducted, was having a mentor who really seemed to care about the student and her progress.

In addition to working with female CS&CE mentors, 52.3% of DMP participants worked with a graduate student on their DMP project, and 68.8% interacted with a graduate student as part of their DMP experience. Participants’ ratings of the value of these interactions can be seen below:

| Q53: Value of interactions with grad students during DMP | N  | %    |
|--|----|------|
| Not at all valuable                                      | 1  | 1.7  |
| Not very valuable  | 3  | 5.1  |
| Somewhat valuable  | 13 | 22.0 |
| Valuable   | 24 | 40.7 |
| Very valuable  | 18 | 30.5 |
| Total  | 59 | 100  |

**71.2%** of participants said these interactions with graduate students during the DMP were “valuable” to “very valuable.” If participants worked with a graduate student on their project, they also tended to rate themselves as having a greater understanding of graduate school life ( $r = .439, p < .01$ ), which was one of the goals of the DMP. But there was no correlation between whether a participant worked with a graduate student (Q50a) and their overall satisfaction with the mentor program (Q60).

In the three tables that follow, participants rate the value of other aspects of the DMP:

| Q47: Value of DMP research experience | N  | %    |
|---------------------------------------|----|------|
| Not at all valuable                   | 0  | 0    |
| Not very valuable                     | 2  | 3.0  |
| Somewhat valuable                     | 19 | 28.8 |
| Valuable                              | 19 | 28.8 |
| Very valuable                         | 26 | 39.4 |
| Total                                 | 66 | 100  |

**68.2%** said their DMP research experience was “valuable” to “very valuable.”

| Q48: Value of DMP mentoring experience | N  | %    |
|--|----|------|
| Not at all valuable                    | 2  | 3.0  |
| Not very valuable                      | 4  | 6.1  |
| Somewhat valuable                      | 9  | 13.6 |
| Valuable                               | 17 | 25.8 |
| Very valuable                          | 33 | 50.0 |
| Total                                  | 66 | 100  |

**75.8%** said their DMP mentoring experience was “valuable” to “very valuable.”

| Q49: Value of having a mentor who is female | N  | %    |
|---|----|------|
| Not at all valuable                         | 4  | 6.1  |
| Not very valuable                           | 4  | 6.1  |
| Somewhat valuable                           | 17 | 25.8 |
| Valuable                                    | 20 | 30.3 |
| Very valuable                               | 21 | 31.8 |
| Total                                       | 66 | 100  |

**62.1%** said having a CS&CE mentor who was female was “valuable” to “very valuable.” This last rating suggests that although some participants felt they could have had just as valuable an experience if their DMP mentor was male, the majority felt that having a female mentor was

important. This is consistent with our post-program interviews with DMP participants, many of whom emphasized the importance of having a female role model and seeing other women succeed in what is predominantly a male field. A number of interviewees discussed the distinct cultural and motivational differences between themselves and their male peers in computer science. We wondered whether women who had few female faculty in their home departments would be even more likely to value having a DMP mentor who was female. However, there were no correlations between the number of women faculty in a participant's home department (Q30a) and: (1) their rating of the value of having a mentor who was female (Q49), (2) their rating of how much they “felt like part of the department” (Q30), or (3) their rating of how much they felt they “fit” in CS&CE (Q16).

In addition to having a female mentor, and in some cases, female graduate students to interact with, DMP participants also became linked to other undergraduate women in CS&CE through the DMP e-mail forum that was established in the last two years of the program. As can be seen in the table below, most DMP participants made use of this forum at some point, although a number indicated in their comments that their participation was not frequent. Participants were not asked to rate the value of this forum, so its importance remains unclear.

| Q61: Used email forum | '96 | '97 | N  | Total % |
|-----------------------|-----|-----|----|---------|
| yes                   | 7   | 13  | 20 | 57.1    |
| no                    | 7   | 8   | 15 | 42.9    |
| Total respondents     | 14  | 21  | 35 | 100     |

The last table in our survey analysis summarizes what participants felt they gained from their DMP experience, what they valued most about it, and what they wanted but didn't get from it. This information should be useful in fine-tuning the Project to better meet participants' needs. This question was asked on the '96 and '97 surveys only.

| Q46: Potential DMP benefits.<br>Information on... | % who gained<br>this | % who valued<br>this most (top 4) | % who wanted<br>but didn't get this |
|---|----------------------|-----------------------------------|-------------------------------------|
| Developing better research skills                 | 72.2                 | 52.8                              | 8.3                                 |
| Professional contacts                             | 58.3                 | 19.4                              | <b>19.4</b>                         |
| Publishing; making presentations                  | 55.6                 | 30.6                              | 11.1                                |
| Building self-confidence                          | 52.8                 | 30.6                              | 13.9                                |
| Career opportunities and options                  | 52.8                 | 25.0                              | 13.9                                |
| A letter of reference                             | 50.0                 | 22.2                              | 13.9                                |
| Applying to graduate school                       | 44.4                 | 16.7                              | 13.9                                |
| Selecting a graduate school                       | 41.7                 | 19.4                              | <b>22.2</b>                         |
| Succeeding in graduate school                     | 38.9                 | 16.7                              | <b>19.4</b>                         |
| Finding other research opportunities              | 36.1                 | 11.1                              | 16.7                                |
| Balancing work and personal life                  | 30.6                 | 11.1                              | <b>22.2</b>                         |
| Fellowship opportunities                          | 30.6                 | 8.3                               | 13.9                                |
| Selecting a thesis/research topic                 | 16.7                 | 5.6                               | 11.1                                |
| Dealing with departmental politics                | 13.9                 | 2.8                               | 11.1                                |
| Successful interviewing                           | 8.3                  | 2.8                               | 8.3                                 |
| Dealing with sexual harassment                    | 2.8                  | 2.8                               | 8.3                                 |

|                                       |  |  |  |
|---------------------------------------|--|--|--|
| Total respondents = 36 ('96-'97 only) |  |  |  |
|---------------------------------------|--|--|--|