

**Distributed Mentor Project:
Comprehensive Participant Survey Analyses for 1994-1999**

Preliminary Report

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Distributed Mentor Project: Comprehensive Participant Survey Analyses for 1994-1999

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 about 20 female CS&CE undergraduates from around the country with mentors at various research institutions for ten weeks of research during the summer. A total of 129 students have participated in the program, and have worked with a total of 65 mentors. 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, and then again for a three-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 six years were also surveyed by e-mail in the fall following their DMP experience.¹ 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). An analysis of the 1994-1997 survey data is also available. This report

¹ With two exceptions: the 1994 cohort was surveyed in the fall of 1995 and the 1998 cohort was surveyed in the fall of 1999.

analyzes and summarizes the results of all six 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 a description of how "distributed" the program has been. In this section, we look at what schools the students came from and what schools they went to in the program. Next, we look at the critical question of what DMP participants have done in the years since graduating from college. Finally, we examine the students' feedback about the program. 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.

I. The DMP participants: how "distributed" are they?

In this section, we look at the degree to which the DMP students have been "distributed" around the country. First we will look at where they came from, and then where they went in the program. The following table presents the number of participants each year as well as the number of new participants each year. A total of 129 female undergraduates have participated in the DMP over the six years of its existence. Eight students participated in the program for two years and so appear in the first column for each year of their participation.

	Number of participants	Number of new participants*
1994	25	25
1995	28	25
1996	21	21
1997	24	23
1998	21	19
1999	18	16
Total	137	129

*e.g. A student who participated in 1994 and 1995 is counted in the 1994 cell, and not the 1995 cell.

A. Where did the DMP students come from?

The DMP selected students from a range of institutions: the 129 DMP student participants came from 92 different institutions representing 35 states. The Carnegie classification of these institutions appears in the table below. Slightly less than half (44.2%) of student participants came from large research institutions, while about 20% came from 4-year institutions and 20% came from institutions granting baccalaureate and masters degrees.

Carnegie Classification of students' institutions	N=	%
Baccalaureate I	20	15.5%
Baccalaureate II	10	7.75%
Masters I	26	20.2%
Masters II	1	.775%
Doctoral II	11	8.53%
Research I	46	35.7%
Research II	11	8.53%
Engineering	4	3.10%
Total	129	100%

The DMP students came from all around the country, with about 1/3rd coming from schools in the Northeastern states, and about a quarter coming from institutions in the Southern – Southeastern states and from the Midwest. The fewest number of students came from the Western region, with ten of these 13 states not having any representation.

Regional representation of student participants²	N=	%
Midwest	36	27.9%
Northeast	47	36.4%
South - Southeast	30	23.3%
West	15	11.6%
Total	129	100%

B. Where did the DMP students go?

The DMP students worked with a total of 65 female CS&CE researcher mentors over the past six years and went to a total of 45 institutions and 27 states. The distribution of students at the Carnegie classification for institution types the students visited appears in the table below, and shows that **76.8%** of the student DMP participants spent their summer at large research institutions.

Carnegie Classification of Mentor's institutions	N=	%
Baccalaureate I	1	0.775
Masters I	5	3.88%
Doctoral II	24	18.6%
Research I	70	54.3%
Research II	29	22.5%
Total	129	100%

About 1/3rd of the students spent their summer in the Northeast, and in the South – Southeast. A quarter of the students spent time in the West, and few (11.6%) went to the Midwest.

Regional representation of mentor's states³	N=	%
Midwest	15	11.6%
Northeast	43	33.3%
South - Southeast	38	29.5%
West	32	24.8%
Total	129	100%

Twenty-four of the 129 students stayed at their home institution when they participated in the DMP. This means that 105 or **81.3%** of the student participants were "distributed" or spent their summer at a different institution than their home university or college.

² This is a rough cut of the United States into regions.

Midwest: ND, SD, NE, KS, MN, IA, MO, WI, IL, IN, MI, OH

Northeast: ME, NH, VT, MA, RI, CT, NJ, NY, PA, DE, MD + DC

South – Southeast: WV, VA, KY, NC, TN, SC, GA, AL, MS, FL, AR, LA, OK, TX

West: WA, OR, CA, MT, WY, ID, NM, UT, CO, AZ, NM, AK, HI

³ See above breakdown of regions.

C. DMP Mentor participation

As stated above, 65 mentors have participated in the DMP over the past six years. These 65 mentors represent 45 institutions from 27 states. Most of these institutions are large research institutions. The mentors have worked with an average of 2.18 student participants over the years, and 61.5% of the mentors have worked with 2 or more students.

Number of students mentors worked with	N=	%
1 student	25	38.5%
2 students	22	33.8%
3 students	10	15.4%
4 students	2	4.44%
5 students	3	6.67%
6 students	1	2.22%
7 students	2	4.44%
Total mentors	65	100%

Many mentors have also participated multiple years, with the average mentor participating 1.71 years. A little less than half of the mentors have participated more than one year.

Number of years mentor has participated in the DMP	N=	%
1 year	34	52.3%
2 years	21	32.3%
3 years	6	9.23%
4 years	3	4.62%
5 years	1	1.54%
Total mentors	65	100%

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

We attempted to contact the 129 student participants in the fall of 1999 about their graduate school experience and future graduate plans. We were able to contact many of these participants over email, and a few were contacted via telephone. In some cases, we talked with their parents. All in all, **80.6%** of former participants were successfully contacted.

	Tracked in Fall, 1999 (N=)	Tracked in Fall, 1999 (%)	Number of participants, by first year of participation
1994	21	84.0%	25
1995	20	80.0%	25
1996	14	66.7%	21
1997	18	78.3%	23
1998	15	78.9%	19
1999	16	100%	16
Total	104	80.6%	129

The table below summarizes what DMP participants from all years of the program said they were doing when contacted in the Fall of 1999.

Tracking outcomes for '94 – '99 participants (in Fall 1999)	Total
Enrolled in graduate school in CS&CE, no adv. degree	21
Received Masters in CS&CE, still enrolled in CS&CE graduate school	8
Received M.S. in CS&CE	12
Enrolled in graduate school, but not CS&CE (here, math & physics)	2
Working, with graduate school plans	11
Working, with no graduate school plans	22
Working, undecided about graduate school	2
Not working (ill), with graduate school plans	1
Undergraduate, with immediate graduate school plans	17
Undergraduate, with plans for work first, then GS	5
Undergraduate, no graduate school plans	1
Undergraduate, undecided about graduate school	1
Unable to be contacted	26
Total number of participants '94-'99	129

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	'97	'98	'99	Total
Total number of participants	25	25	21	23	19	16	129
Participants who have graduated and been tracked	21	20	14	18	5	2	80
Tracked graduates who became CS&CE graduate students	9 (42.9%)	11 (55%)	11 (78.6%)	6 (33%)	3 (60%)	1 (50%)	41 (51.3%)

Of the 80 DMP participants who had already graduated when last tracked in the Fall of 1999, **51.3%** were enrolled in graduate school in CS&CE or had earned advanced degrees in CS&CE. Twenty-eight or **35%** are currently enrolled in graduate school in CS&CE.

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.

Very few of the 1998 and 1999 DMP participants have graduated from their undergraduate institutions, and the table below lists the post-graduation plans of those participants still working toward their BA/BS degree.

Post-graduation plans of the '98 and '99 cohorts	N	%
Undergraduate, with immediate graduate school plans	17	70.8%
Undergraduate, with plans for work first, then GS	5	20.8%
Undergraduate, plans unknown	1	4.2%
Undergraduate, no graduate school plans	1	4.2%
Total number of surveyed participants still enrolled as undergraduates	24	100%

In short, **91.6%** of the 1998 and 1999 DMP participants who have not yet graduated from their undergraduate institution plan to go to graduate school eventually, **70.8%** 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 6 DMP cohorts.

Highest degree sought	'94	'95	'96	'97	'98	'99	Total	% of all
CS&CE MS	2	4	2	5	3	3	19	18.3%
CS&CE Ph.D.	7	6	6	5	8	7	39	37.5%
Non CS&CE adv. degree	2	2	2	2	2	1	11	10.5%
BA/BS	10	8	3	4	0	1	26	25.0%
Undecided	0	0	1	2	2	4	9	8.6%
Total respondents	21	20	14	18	15	16	104	100%

As the table shows, at least **55.8%** 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 that 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)

III. Feedback Survey Data: Demographics, Role and Evaluation of the DMP

In the fall following their participation in the DMP, the students were sent a survey via email that asked them some demographic questions and questions about their experience in the program.⁴ With the exception of the first year of the program, response rates were high to these surveys with a total response rate of **80.6%** for the students over the six years the survey was conducted. It should be noted that three versions of the survey were sent out to students. One version was sent to the 1994 and 1995 students, another version was sent to the 1996 and 1997 students, and a third version was sent to the 1998 and 1999 students. As a result, there are some questions reported in the sections that follow that were only asked of the last two DMP cohorts (years 1996-1999), and some questions reported that were asked only of the last cohort (years 1998-1999). The student responses to this set of surveys are used throughout this section.

	Responses (N=)	Response rate (%)	Number of participants, by first year of participation
1994	12	48.0%	25
1995	22	88.0%	25
1996	18	85.7%	21
1997	21	91.3%	23
1998	15	78.9%	19
1999	16	100%	16
Total	104	80.6%	129

A. 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	84	82.3%
Asian American	10	9.8%
Hispanic	4	3.9%
African American	2	2.0%
Native American	1	1%
Indian	1	1%
Total respondents	102	100%

Year in school	N	%
Freshman	2	2%
Sophomore	30	29%
Junior	49	47.6%
Senior	21	20.4%
Transfer	1	1%

⁴ Copies of the surveys are included in the Appendix.

Year in school	N	%
Total respondents	103	100%

Overall GPA distribution	N	%
3.0-3.19	2	2%
3.2-3.39	3	3%
3.4-3.59	10	10%
3.6-3.79	29	29%
3.8-4.0	56	56%
Total respondents	100	100%

DMP cohort	'94	'95	'96	'97	'98	'99	Total
Average GPA	3.71	3.80	3.74	3.78	3.76	3.75	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 3.6. 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:

Were you considering majoring in CS&CE by your first year of college?	'96	'97	'98	'99	Total	Total %
Yes	12	17	8	10	47	65.3%
No	7	5	5	4	21	29.2%
Undecided	0	0	2	2	4	5.5%
Total respondents	19	22	15	16	72	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. Participants' responses 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.

I feel I “fit” in CS&CE	'96	'97	'98	'99	Total	Total %
Strongly agree	2	6	2	3	13	18.6%
Agree	11	10	6	8	35	50%
Neutral	2	3	2	2	9	12.9%
Disagree	4	2	4	3	13	18.6%
Strongly disagree	0	0	1	0	1	1.4%
Total respondents	18	21	15	16	70	100%

Do you plan to stay in field of CS&CE long-term?	'96	'97	'98	'99	Total	Total %
Yes	16	17	10	12	55	76.4%
No	1	0	1	1	3	4.17%
Undecided	2	5	4	3	14	19.4%
Total respondents	18	22	15	16	72	100%

As can be seen above, about two-thirds of the participants felt they “fit” in CS&CE and **76.4%** intended to stay in CS&CE 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.

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.

Factors important in choice to study or major in CS&CE (N=104)	#1 reason (%)	Top 4 reason (%)	A factor (%)
CS&CE is enjoyable and interesting	43.3	75.0	90.3
I am good at math and science	24.0	69.2	82.7
CS&CE is challenging	9.62	67.3	82.7
CS&CE affords many career opportunities	6.73	53.8	71.2
CS&CE jobs pay well	0.96	26.0	54.8
A friend/relative is in computer science	2.88	16.3	36.5
I like the idea of being a computer scientist	1.92	24.0	42.3
A teacher encouraged me	2.88	18.3	42.3
Other	7.69	10.6	12.5

Additionally, if we look at the reasons for applying for the DMP, this gives a clearer indication of their goals and interests with respect to CS&CE. Almost all of the student respondents cited as factors the desire to learn about research in CS&CE and most hoped to see if graduate school was "right" for them.

Q37 of 1998 and 1999 survey (N=31)* Motivation to apply for the DMP	Reason (%)	Top Reason (%)
It would give me the opportunity to do research in computer science	96.8	45.2
It would give me an opportunity to learn about graduate school to see if it was right for me.	87.1	19.4
It would strengthen my application for graduate school	77.4	3.2
It would give me the opportunity to go to a different institution	54.8	0.0
It would be paid summer work	48.4	0.0
It would give me the opportunity to work with a female academic researcher	67.7	6.5
Other	12.9	3.2

*This question was only asked of the 1998 and 1999 student participants.

B. 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 and after their DMP experience. 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, **60.2%** of participants showed an increase in their commitment to attending graduate school, **26.2%** showed no change, and **13.6%** saw a decrease in their commitment.

Change in commitment to attending graduate school (from before DMP to after DMP) View 1	'94	'95	'96	'97	'98	'99	Total	Total %
-4	0	1	0	0	1	0	2	1.9%
-3	0	1	0	0	0	0	1	1.0%
-2	0	0	0	0	0	1	1	1.0%
-1	1	2	1	3	3	0	10	9.7%
0 (no change)	3	5	5	9	2	3	27	26.2%
+1	5	5	9	7	1	3	30	29.1%
+2	3	5	3	1	6	6	24	23.3%
+3	0	0	1	2	1	3	7	6.8%
+4	0	0	0	0	1	0	1	1.0%
Grand Total	12	19	19	22	15	16	103	100

Change in commitment to attending graduate school (from before DMP to after DMP) View 2	Pre-%	Post- %
Not considering it	7.1%	3.9%
Considering the possibility	34.3%	17.5%
Tentatively committed	23.2%	20.4%
Committed	23.2%	28.2%
Certain that it is right for me	10.1%	30.0%
Average:	2.96	3.63
Total number of respondents	99	103

As the table above indicates, **58.2%** indicated a commitment to graduate school in CS&CE following their participation in the program, compared with 33.4% before the program. 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 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.

Factors encouraging or discouraging graduate school enrollment (N=104)	% Encouraged
Level of success in undergraduate CS&CE courses	83.3%*
Distributed Mentor Project experience	73.1%
Career goals	67.3%
Advisor/mentor at home institution	58.7%
Technical interests	51.0%
Influence of family member	41.3%
Extra-curricular activity at home institution	36.5%
Work experience	27.8%

Factors encouraging or discouraging graduate school enrollment (N=104)	% Encouraged
Pre-collegiate experiences	13.5%

*This wasn't asked in the 1994 and 1995 surveys. Here, N=72

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 **73.1%** of the respondents and a discouraging factor for **8.1%** of the respondents. These results corroborate those found in our post-program interviews with participants.

Related to the issue of motivation for attending graduate school in CS&CE is the participants' gain in understanding and preparation for graduate school. We asked the 1998 and 1999 participants to rate themselves in these areas, pre- and post-program. As the table below indicates, the students gained significantly from the DMP in this area, on average gaining about 2 points in their understanding of graduate school and 1.5 points in their preparation for graduate school.

Q23-28 (N=31)* Changes in Pre-and post-DMP ratings (%)	-3	-2	-1	0	1	2	3	Ave
Understanding of graduate school				3.2	16.1	61.3	19.4	1.97
Preparation for graduate school	3.2		3.2	3.2	35.5	45.2	9.7	1.42

*1998 and 1999 students only

If we look at their post-program ratings, the importance of this shift becomes clear: **87.1%** of the students rated themselves as having a fairly high understanding of graduate school after the DMP, versus 0% before the program. Also, with respect to preparation, **74.2%** of the students rated themselves as prepared to very prepared for graduate school following the DMP, versus 9.7% pre-program.

Q23-28 (N=31) Pre- and Post-DMP ratings*	Before DMP (%)	After DMP (%)
Understanding of graduate school	Ave=1.97	Ave=3.94
1=no understanding	22.6	3.2
2	58.1	
3	19.4	9.7
4		74.2
5=a thorough understanding		12.9
Preparation for graduate school	Ave=2.35	Ave=3.77
1=not prepared at all	19.4	3.2
2	35.5	
3	35.5	22.6
4	9.7	64.5
5=very prepared		9.7

*1998 and 1999 students only.

C. 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:

Overall satisfaction with DMP	N	%
Not at all satisfied	2	2.0%
Not very satisfied	3	3.0%
Somewhat satisfied	14	13.9%
Satisfied	38	37.6%
Very satisfied	44	43.6%
Total respondents	101	100%

As the table above indicates, **81.4%** of DMP participants were “satisfied” to “very satisfied” with their overall experience, while only 5.0% 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 ($r=.599$, $p<.01$) between a participant's overall satisfaction with the DMP and the degree of change in her desire to attend graduate school. In other words, a positive overall DMP experience and an increase in the desire to attend graduate school are closely linked.

1. Mentor match

Participants' satisfaction with their mentor match was similarly high, with **74.3%** rating themselves as “satisfied” to “very satisfied” with the mentor they were assigned, and only 14.9% showing significant dissatisfaction.

Satisfaction with mentor match	N	%
Not at all satisfied	1	1%
Not very satisfied	14	13.9%
Somewhat satisfied	11	10.9%
Satisfied	31	30.7%
Very satisfied	44	43.6%
Total respondents	101	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 ($r=.731$, $p<.01$). This suggests that finding the right mentor for a student is an important factor in producing a positive DMP experience.

2. Research experience

74.0% of the student respondents said their DMP research experience was “valuable” to “very valuable.” Like the mentor match, the students rating of the value of their research experience is correlated with the value of their satisfaction of the DMP overall ($r=.681$, $p<.01$).

Value of DMP research experience	N	%
Not at all valuable	0	0.0%
Not very valuable	4	4.0%
Somewhat valuable	23	22.8%
Valuable	30	29.4%
Very valuable	45	44.6%
Total	102	100%

3. Mentoring experience

75.8% described their DMP mentoring experience as “valuable” to “very valuable.” And, again, this appears to be correlated with the value of their DMP experience ($r=.691$, $p<.01$).

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%

4. Value of female mentor

64.1% 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.

Value of having a mentor who is female	N	%
Not at all valuable	5	4.9%
Not very valuable	8	7.8%
Somewhat valuable	24	23.3%
Valuable	30	29.1%
Very valuable	36	35.0%
Total	103	100%

5. Aspects gained

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.

Potential DMP benefits. Information on...	% who gained this	% who valued this most (top 4)	% who wanted but didn’t get this
Developing better research skills	64.1	50.7	8.73
A letter of reference	60.2	19.7	10.7
Professional contacts	55.3	29.6	18.4
Career opportunities and options	55.3	31.0	18.4
Building self-confidence	50.5	35.2	17.5
Publishing; making presentations	46.6	21.1	12.6
Selecting a graduate school	45.6	14.1	19.4
Applying to graduate school	44.7	28.2	16.5
Succeeding in graduate school	43.7	19.7	20.4

Potential DMP benefits. Information on...	% who gained this	% who valued this most (top 4)	% who wanted but didn't get this
Finding other research opportunities	41.7	11.3	19.4
Fellowship opportunities	36.9	14.1	15.5
Selecting a thesis/research topic	24.3	5.6	14.6
Balancing work and personal life	21.3	8.5	13.6
Dealing with departmental politics	20.4	1.4	10.7
Successful interviewing	7.8	1.4	8.73
Dealing with sexual harassment	5.8	1.4	8.73
Total respondents	N=103	N=71	N=103