

Faculty-Student Research Shauna Sweet

A clear limitation in the senior survey data is that it does not attempt to measure students' informal involvement with faculty members: the survey asks about academic advising but doesn't ask students whether or not they stopped in "just to chat" with a faculty member about courses or their career paths.

Although limited, the senior survey does ask about students' participation in faculty-student research, which is one way in which students and faculty members interact outside of the classroom. Although research is relatively formal (oftentimes research collaborations are funded by a grant or students participate in research as on-campus employment), as suggested by the interviews, a research collaboration is also an opportunity and sometimes just the formal structure that facilitates a friendship or mentoring relationship between students and faculty members.

Available survey data are consistent with what we learn in the interviews: faculty-student relationships are built over the course of a student's career and opportunities such as faculty-student research collaborations can be the foundation for later relationships to faculty. The table below illustrates this "research effect": female students who have participated previously in faculty-student research are almost 50% more likely than other female students to spend at least 3-5 hours per week talking or meeting with faculty outside of class in their senior year. For male students, the direction of the relationship is the same although not nearly as dramatic, and for men this relationship is not statistically significant.

Percentage Spending At Least 3-5 Hours per Week Meeting With Faculty By Research Experience by Gender

	No Prior Research	Prior Research
Male	27% 173	33% 17
Female	31% 262	48% 45

It is important to note that this "research effect" may be generalizable to all students, but the pattern seen here may also be one of self-selection. Not all students are equally likely to participate in faculty-student research. Students who report majoring in "Engineering" and "Natural Sciences" on the Senior Survey account for only 18% of all survey respondents but account for 40% of those who participated in faculty research and nearly half (48%) of all students who participated in faculty research for at least two years during their undergraduate career ($N=2251$).¹ The table below illustrates the difference in participation among male and

¹ In fact, these numbers underestimate the faculty-research collaborations undertaken by students in the maths and sciences; students who report majoring in mathematics do not classify themselves as having majored in a "Natural Sciences." Also, psychology students who frequently participate in faculty-student research often classify themselves as majoring in "Social Sciences."

female students by race and by academic concentration: students who major in math and science are significantly more likely than non-science majors to participate in faculty research. Within academic concentration. Among white students, women are more likely to participate in faculty-student research than men ($p < .05$); among non-white students the pattern is reversed but is not statistically significant.

Percentage Participating in Faculty-Student Research by Gender by Academic Concentration by Race

		Male	Female
White	NS	13%	19%
	Sci	45%	57%
Nonwhite	NS	23%	21%
	Sci	63%	57%

Finally, the data suggest that students who do participate in faculty-student research are more satisfied with faculty-student relationships as compared to their peers. Again, the effect is more dramatic among female students, which again supports the importance of faculty-student interaction for women in particular, and this relationship is also statistically significant ($p = .05$). For male students participating in a research project for more than one year seems to matter, but there is no effect of one year of research on student satisfaction; this relationship is marginally significant ($p = .07$).

Percentage "Very Satisfied" With Faculty-Student Relationships by Research Experience by Gender

	No Experience	One Year	Multiple Years
Male	53%	54%	66%
	350	53	54
Female	58%	65%	70%
	501	102	96