

EXPECTATIONS FOR SUCCESS AND THEIR EFFECTS ON WOMEN ENGINEERING GRADUATE STUDENTS

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Abstract----- Brown University's Women in Science and Engineering Program (WiSE) presents information on self and advisor expectations for female and male students in Brown's graduate engineering program, and the effect of academic expectations on women students' success. We base our conclusions on surveys and focus groups conducted with current Brown University Engineering faculty and graduate students. We compare the expectations held by faculty with those that male and female students have for themselves. We also compare students' perceptions about their professors' expectations of them with those reported by faculty. We begin by introducing our motivations and methods and continue with findings, case studies, and subsequent conclusions. We conclude with recommendations for methods by which students and graduate programs can use the culture of expectation to increase women students' success as engineers and scientists. This paper provides an initial study of work in progress, and emphasizes those aspects of our collected results and recommendations that would improve or provide a mechanism for feedback to other undergraduate and graduate science programs.

Index Terms--- Women students, Engineering programs, Graduate study, Expectations for success

The role of gender in science, math, and engineering programs at the undergraduate level has been extensively studied. The importance of mentoring to graduate advisees and expectations of advisees has also been documented [1]. In contrast, little work has been published on the actual role of self-expectations of graduate engineering students versus those of their advisors. Published reports offer crucial advice on explicit expectations for doctoral students, addressing topics such as mentoring, support (academic and financial), exposure to various career opportunities, thesis preparation, and advising [2]. This paper focuses on Brown's Engineering graduate program because we find that inquiry of this type tends to address issues in undergraduate programs. We believe that this paper will add to our understanding of gender and expectations for students in the graduate environment. This paper also hopes to determine the role, if any, that gender plays in forming these

expectations. The purpose of this study and the resulting paper is to offer students, faculty, and staff insight into the expectations that students and professors have for student work. Data for this paper are being obtained via anonymous surveys of the faculty and graduate students in Brown University's Division of Engineering. The two-part survey, one section of students and one of faculty, seeks to compare the expectations graduate students hold for themselves versus those of their advisors, and additionally compares the responses of female and male students. The survey poses questions encompassing student gender, year of study, discipline, courses taught, complexity of students' research, papers published, conferences attended, presentation and talks given, involvement in writing grant proposals, patents in progress, expectations of themselves, and career aspirations.

The graduate student survey compares:

- Students' expectations for themselves,
- Students' beliefs about his or her advisor's expectations for students with the faculty survey, which asks about:
- Expectations of current advisees.

The results obtained for the two surveys discuss:

1. Responses to self-expectations and to advisors' expectations of students, evaluated by respondent gender,
2. Expectations held by students and faculty,
3. and factors listed by respondents as essential to student success

While much of the data for this paper comes from surveys of graduate students and faculty (all in Brown's Division of Engineering), we will also cite data from focus groups and individual interviews conducted with the same population. We expect to draw conclusions from both sets of data, but acknowledge that each is limited in its own way. Thus, our conclusions will include information that we were able to gather and assess, as well as on areas in which we were unable to collect helpful data or develop conclusive results.

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We hope that insight will be gained into the role of expectations in women students' success in Brown's graduate Engineering program. We expect that this information will also be useful to members of other institutions. Brown's WiSE Program will use this paper internally as a means of assessing graduate student needs and will provide feedback to improve and clarify expectations for students in the engineering department. We hope that our exploration of this topic will encourage further dialogue between students and faculty in regard to expectations for student performance, and that improved communication will offer benefits to our graduate students.

REFERENCES

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