

Examining the Quality of Cross

Department of Psychology & Neuroscience
And Dr. Bernadette Park, Professor Department of Psychology & Neuroscience

1. Goals and Objectives

The goal of this research is to examine environmental factors that increase women's intentions to persist in STEM fields. We intend to achieve this goal by addressing two important research questions: (1) what is the quality of interactions between male and female undergraduates (i.e., cross-sex contact) in male-dominated Science, Technology, Engineering, and Math (STEM) fields? and (2) how does the quality of women's cross-sex contact relate to their belonging, self-efficacy, and confidence in their abilities in STEM?

This research employs a social psychological perspective with a particular emphasis on the power of social norms in our environment to influence personal convictions and

work in all female groups

stereotypes. Second, whereas previous "Chilly Climate" research has primarily examined professor-student interactions, we examine women's interactions with their male classmates, which are likely to be important for shaping perceptions of the social climate in STEM. Third, we use quantitative (as opposed to qualitative) methods to assess the effects of cross-sex contact in small group interactions in STEM. Implementing quantitative methods allows us to explicitly test the hypothesis that positive cross-sex contact bolsters women's belonging, self-efficacy, and confidence in STEM. Over time. Given that we are interested in factors that promote women's retention and success in male-dominated STEM fields, our sample of interest is incoming freshmen women who are majoring (or are intending to major) in a male-dominated STEM field.

Participants. At the beginning of Fall semester 2015 we will invite freshman female students enrolled in an introductory STEM course that incorporates interactive, small group learning activities to participate in our study. We have already identified several courses fitting this description. GEEN 1400, First Year Engineering Projects, is an interdisciplinary hands-on course for first-level engineering students in which students work in teams to design, build, and test projects. The introductory Physics (PHYS 1110) and Calculus (APPM 1350) classes also frequently incorporate group work in recitation sections. Students enrolled in APPM 1350 may also enroll in COEN 1350, which provides problem-solving assistance to students in a collaborative learning environment. (s) 0. (r) -0.5 (o.3 (r) -0.1 in) -0.3 (C



Figure 2 Predicted results for the effect of crosssex contact quality on STEM belonging over time

Measures Our two primary sets of measures are reports of crosssex contact quality and psychological outcomes associated with academic success. For the measure of cross contact quality, we intend to include measures of each criterion for positive intergroup contact. This will allow us to examine the effect of crosssex contact quality on different psychological outcomes both globally and with respect to each individual criterion. It is possible that crosssex contact meets some criteria (e.g., cooperation, common goal) more than others (e.g., equal status, potential for friendship). Measures and sample scale items are presented in Table 1.

5. Project Timeline

I will develop the questionnaire measures and submit all materials for IRB approval during Summer 2015. The questionnaire measures will be administered throughout Fall 2015, and analyzed at the end of the semester. In Spring 2015, I will complete data analysis and present the results at DBER in Spring 2016 and will also write up the results for publication.

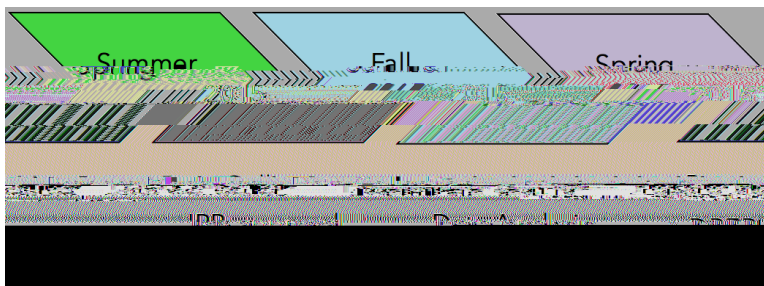


Figure 3. Project timeline

References

- ABET - Criteria for Accrediting Engineering Programs, 2015. (2015). Retrieved March 24, 2015, from <http://www.abet.org/criteria20152016/>
- Chang, A., & Bordia, P. (2001). A multidimensional approach to the group-cohesion performance relationship. *Small Group Research*, 32(4), 379-405.
- Correll, S. J. (2001). Gender and career choice process: The role of biased self assessments. *American Journal of Sociology*,

Chancellor's