Academic Self-Efficacy and Undergraduate Research Opportunities Predict Intentions to Pursue Graduate School

Elizabeth A. Koellner  
*University of Missouri-St. Louis, easr56@mail.umsl.edu*

Heather M. Lange  
*University of Missouri-St. Louis, hml8tb@mail.umsl.edu*

Drake A. Anderson  
*University of Missouri-St. Louis, daaxc5@mail.umsl.edu*

Steven J. Mellifont  
*University of Missouri-St. Louis, sm3n6@mail.umsl.edu*

Bettina J. Casad  
*University of Missouri-St. Louis, casadbj@umsl.edu*

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Elizabeth A. Koellner, Heather M. Lange, Drake A. Anderson, Steven J. Mellifont, & Bettina J. Casad
University of Missouri-St. Louis

Introduction
Undergraduate Research Opportunities
- The Annual Biomedical Research Conference for Minority Students (ABRCMS) provides an opportunity for underrepresented minority students to present their research and further their career opportunities (Casad, Chang, & Pribbenow, 2016).
- Faculty and peer relations in a research setting predict intentions to pursue graduate school (Hall, Roesler, & Modi, 2018).

Academic Self-Efficacy
- Students with higher levels of academic self-efficacy believe that they will be able to achieve their academic goals (Parajas, 1996).
- Research shows that higher academic self-efficacy is associated with higher academic achievement, more classroom involvement, and more confidence in one’s academic discipline (Drago, Rheinheimer, & Detweiler, 2018).

Intention to Pursue Graduate School
- Greater levels of academic self-efficacy can make a student more likely to plan to pursue graduate school (Casad, Chang, & Pribbenow, 2016).
- Greater participation in undergraduate research is associated with a likelihood to pursue graduate school (Campbell & Skoog, 2004).

Study 1: Participation in undergraduate research, specifically attending ABRCMS, will predict greater intentions to pursue graduate school.

Study 2: Students with higher levels of academic self-efficacy will have greater intentions to pursue graduate school.

Methodology
Study One
- Participants were 68% female and 93% minority men and women (see Table 1).
- Underrepresented students in science, technology, engineering, and mathematics (STEM) fields who attended the ABRCMS (n = 533) completed an online questionnaire that assessed their research confidence and intentions to pursue graduate school.

Study Two
- Participants were 61% female and 52.6% minority men and women.
- Undergraduate students (n = 68) completed an online questionnaire with items that assessed mentoring experience, student experiences, science identity, and academic self-efficacy.

Results
Study One
- Logistic regression indicated that frequency of attendance at ABRCMS significantly predicted student intentions to pursue a research degree in graduate school, $\chi^2(1, n = 524) = 15.19, p < .01$, $R^2 = 0.042$, 95% CI [1.263, 2.09] (see Figure 1).

Study Two
- Multiple regression indicated that the four items assessed significantly predicted graduate school intentions, $F(9, 57) = 2.21, p < .05$, such that a moderate amount of variance in graduate school intentions was explained, $R^2 = 0.26$. Academic self-efficacy alone significantly predicted graduate school intentions, $\beta = 1.37, p < .05$ (see Figure 2).

Discussion
- Results can help further our understanding of underrepresented minorities’ experiences with undergraduate research.
- Exposure to undergraduate research opportunities, such as attending ABRCMS, is important in improving the academic self-efficacy of underrepresented minority students, particularly in STEM fields.
- Increasing undergraduate research opportunities can increase the number of underrepresented students who pursue STEM fields, which can lead to more advances in science.

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