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Research Spotlight

2812 - Factors Influencing Science Transfer Student Participation in Undergraduate Research

Special Populations, Credits and Degree Pathways

Transfer students majoring in science fields experience unique pathways into undergraduate research experiences compared to their non-transfer peers. The results of a survey sent to science majors at an R1 institution in the Southeastern United States about the factors that influence participation in undergraduate research experiences will be discussed with a focus on how the transfer experience often intersects with additional research opportunities and barriers.

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Factors influencing science transfer student participation in undergraduate research

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Introduction

Eight hundred thirty-three science majors from four R1 institutions in the Southeastern United States responded to a survey that pertained to their undergraduate research related Science Capital. The survey was developed based on the theories of Science Capital and Social Cognitive Career Theory (SCCT). Students were asked to rate influences on their undergraduate research participation on a Likert-style scale of 1 (extreme barrier) - 7 (extreme opportunity) and free response questions to account for missed factors. Influences included into the survey fell into five Science Capital and SCCT categories of: *How You Dream, What You Know, How You Think, Who You Know,* and *What You Do.* Factor analysis of the quantitative portions of the scale resulted in a Cronbach's alpha of .888.

Study Population

Survey respondents consisted of 833 science majors from four R1 institutions. Of respondents, 139 of them were transfer students. Demographic comparison via *Z*-Tests revealed a significantly higher proportion of transfer students are Pell Grant recipients than their non-transfer peers. However, this does not seem to have an effect on research participation as statistically similar rates of transfer and non-transfer students had participated in undergraduate research (Table 1).

Demographic Characteristic	Study Proportion N=833 (%)	Transfer Student Proportion N=139 (%)	z score	p-value
Pell Grant recipients	24.00	27.20	-2.63	.008*
Participated in undergraduate research	28.45	30.40	-0.51	.610
Members of the LGBTQ+ community	13.67	11.50	-0.48	.632
Disability	8.58	8.90	-0.34	.732
Genders traditionally marginalized in science	73.60	72.20	-1.36	.174
Race/ Ethnicity traditionally marginalized in science	19.68	21.50	-0.549	.583

Table 1 (above). Demographic comparisons of transfer students to the general study population

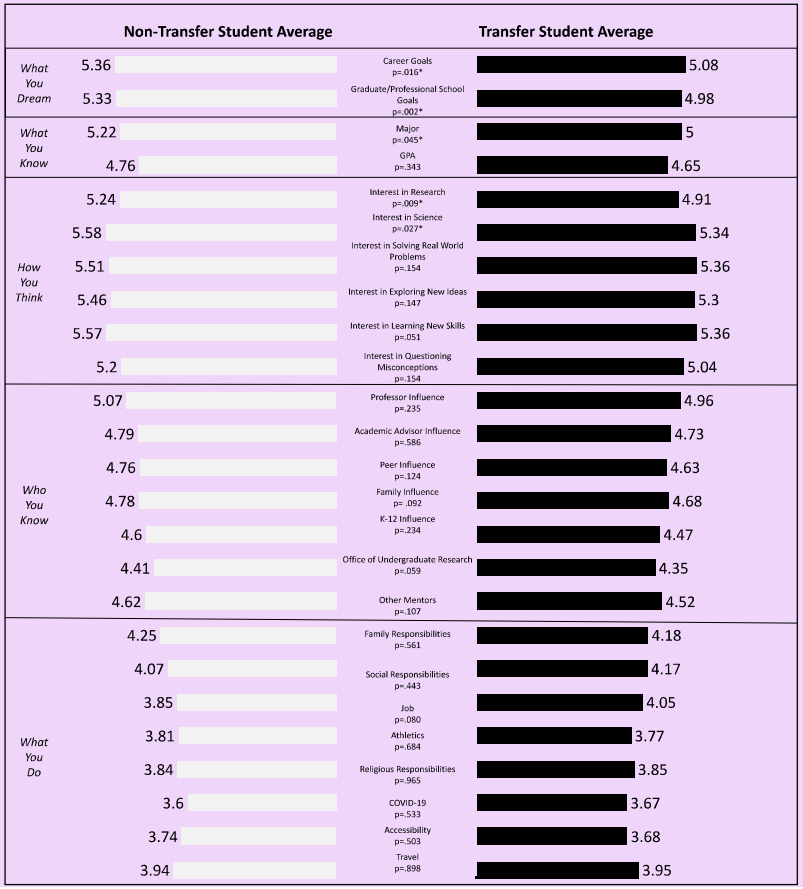

Figure 1 (Right). Comparison of average influence response. Influences on a scale of 1 (extreme barrier)- 7 (extreme opportunity). Significance indicated by *.

Results

Transfer students rated items related to pursuing a career in research related fields as significantly greater barriers to research participation than their non-transfer peers (Fig. 1). Qualitative influences included students not knowing how to find opportunities (quote below). This indicates an area of potential support to help ensure that transfer students have equal access to high Impact practices.

"...As an incoming transfer student at this time [during COVID], I found it to be extremely frustrating to try to get involved in research and ***was not provided the information to even know where to start.*** *After becoming more familiar with [institution] in general, I was thankfully able to join a lab this past semester. I still think [institution] faculty and staff (professors, advisors, etc) could do a better job of* ***letting students know what opportunities are out there...****"*
-Transfer Student, Microbiology Major

Supporting Transfer Student Participation

Transfer student responses to *What You Dream, What You Know, and How You Think* categories were significantly greater barriers than their non-transfer peers. Traditional transfer student support efforts often focus on increasing their social capital; however, results suggest also considering their career-based areas. To support development in these areas, programs could consider measures that help improve other areas of SCCT, such as student self-efficacy (Lent et al., 1994). Additionally making research opportunities more apparent to transfer students was specifically mentioned in the free response of a potential area of improved support.

Acknowledgements and References

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