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Exploring Factors that Contribute to STEM Transfer Student Sense of Belonging

Brittney R. Gallant
Portland State University

Cate Pocitari
Portland State University

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INTRODUCTION

- There is an ongoing disconnect between the number of students who enter college intending to earn a STEM degree and those who persist to degree, this is particularly true for **community college transfer students**.^{2,3}
- Sense of belonging can support the persistence of students in the STEM fields, yet how that belonging develops, in particular for transfer students, is largely unknown.⁴
- Here, using a mixed methods approach, we aim to understand how a group of community college transfer students developed a sense of belonging and if involvement in a STEM Intervention Program (SIP) impacted this belonging.

METHODS

- Using a survey and semi-structured interviews we investigated the experiences of STEM community college transfer students (n=38) at Portland State University (PSU).
- Survey questions were designed to measure the students' levels of belonging to the university and a sub-community within the university.⁵
- Interview questions were designed to understand if and how S-STEM Scholars developed sense of belonging post-transfer.
- Non-SIP/1 SIP/2 SIP identifies how many SIPs students were involved in
- We are using a framework by T. Strayhorn: **7 Core Elements of Sense of Belonging (SOB)**⁴ as a guide as we iteratively develop a codebook.

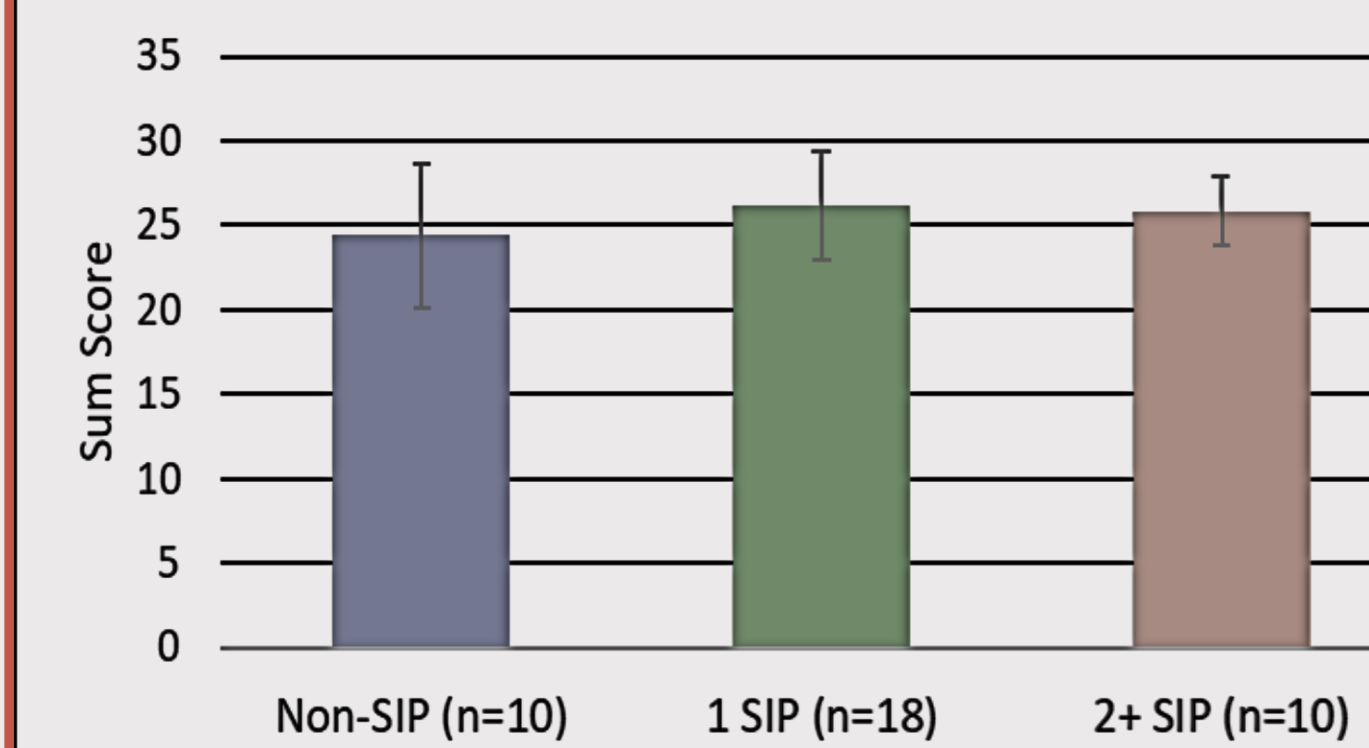
SURVEY RESULTS

A Survey Questions on Sense of Belonging at PSU⁷

- I am enthusiastic about PSU
- I feel that I am a member of the PSU community
- I am happy to be at PSU
- I feel a sense of belonging to PSU
- PSU is an excellent school for me
- I see myself as part of the PSU community

A) Questions asked regarding Sense of Belonging (SOB) Within PSU B) Sum of Likert-scale responses of Sense of Belonging at PSU by SIP status (± SD)

B Sense of Belonging to a Sub-Community at PSU

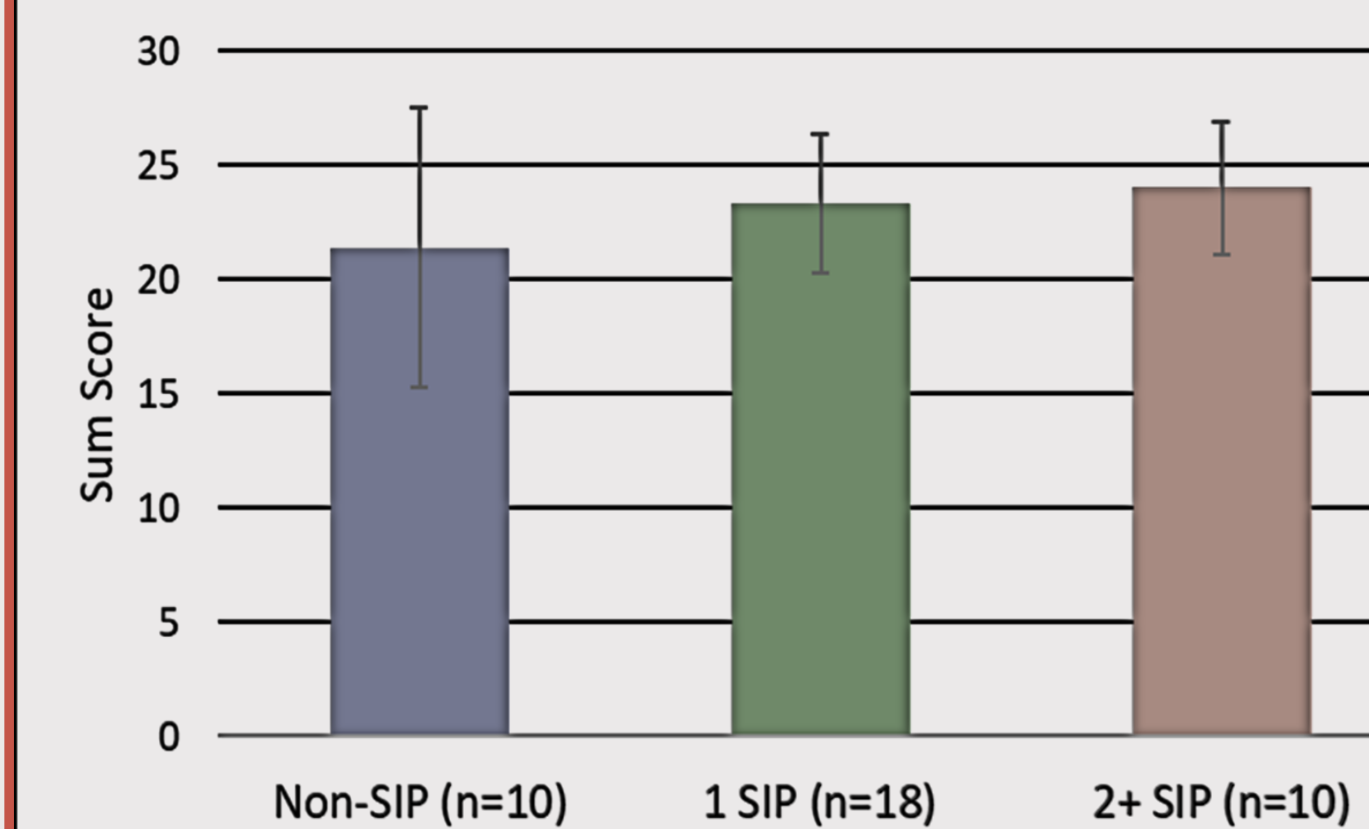


C Survey Questions on Sense of Belonging Within a Sub-Community at PSU⁷

- I am enthusiastic about this group at PSU
- I feel that I am a member of this community at PSU
- I am happy to be part of this group at PSU
- I feel a sense of belonging to this group at PSU
- PSU has an excellent community for me
- I see myself as part of this community at PSU

C) Questions asked regarding Sense of Belonging (SOB) Within a Sub-Community at PSU D) Sum of Likert-scale responses of Sense of Belonging to a Sub-Community at PSU by SIP status (± SD)

D Sense of Belonging to PSU



PARTICIPANT DEMOGRAPHICS

Participants (n=38)	
Age (years (± SD)*)	27 ± 6
Gender (%)	
Male	55
Female	42
Non-Binary	3
Race (%)	
White	37
PEER†	37
N/A or unanswered	26
Ethnicity (%)	
Latinx	40
Not Latinx	60
First Generation Status (%)	
First Generation	71
Continuing Generation	29
SIP‡ Status (%)	
No SIP	26
1 SIP	47
2+ SIP	26

*SD – standard deviation; †PEER – persons excluded due to ethnicity or race; ‡SIP – STEM Involvement Programs

STRAYHORN'S 7 CORE ELEMENTS OF SENSE OF BELONGING



MOVING FORWARD

- Continue to analyze survey data
- Continue to utilize Strayhorn's 7 Core Elements of Sense of Belonging Framework to develop codebook
- Analyze interviews using the finalized codebook

¶EXITO - Enhancing Cross-disciplinary Infrastructure and Training at Oregon; §LSAMP – Louis Stokes Alliances for Minority Participation; ||PCCMenofColor – Portland Community College Men of Color Leadership Program; #SSTEM – National Science Foundation Scholarships in Science, Technology, Engineering, Mathematics Program

References: 1. Olson, S., & Riordan, D. G. (2012). Report to the president. Executive office of the president. 2. Starobin, S. S., Smith, D. J., & Santos Laanan, F., (2016). Community College Journal of Research and Practice. 40(12), 1040-1057. 3. Chen, Y., & Starobin, S. S., (2019). Community College Review, 47(1), 3-30. 4. Strayhorn, T. L., College students' sense of belonging: A key to educational success for all students. (2012). New York: Routledge. 5. Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. Social forces, 69(2), 479-504.

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