

Implementing Student Experience Project (SEP) Strategies to Build Equitable Learning Environments: A Faculty Workshop

Tonya C. Bates, Department of Biological Sciences (CLAS)
Sam Furr-Rogers, Department of Biological Sciences (CLAS)

Scholarship of Teaching and Learning Grant Proposal
Fall 2021

ABSTRACT

More diverse student populations are enrolled in institutions of higher education than ever before. It is understood that there is a need to ensure the success of every student who is pursuing their academic goals; however, data shows that approximately four out of every ten new college students will not graduate within six years. The Student Experience Project (SEP) is a collaborative endeavor that uses innovative, research-based practices to build equitable learning environments and instill a sense of belonging in students on campuses across the nation. Change recommendations from the SEP include ideas to increase social belonging, practices to foster academic encouragement and growth mindset, and ways to cultivate a supportive and inclusive classroom. However, in large enrollment courses, faculty often find these recommendations challenging to implement. In addition to the number of students, additional factors affecting the successful adoption of these practices may include instructor hesitancy, time constraints, and diverse student populations.

In this project, we propose to (1) create new practices and adapt current SEP practices to allow successful implementation in large enrollment courses and (2) evaluate their impact on student belonging, identity safety, growth mindset, self efficacy, and social connectedness; both for the overall class population and within structurally disadvantaged or numerically underrepresented groups in STEM using data collected from student feedback and surveys using Copilot-Ascend. Finally, we will (3) create a professional development workshop to provide faculty with data-driven strategies that can be easily implemented in a variety of courses to build equitable learning environments.

SoTL Budget Request Page
January 15, 2022 to June 30, 2023

BUDGET: Request by budget category. Joint proposers must select one PI to be the lead and one department to receive this allocation.

Lead Principal Investigator: Samantha Furr-Rogers

Principal Investigator 800#: 800117827

Title of Project: Implementing Student Experience Project (SEP) Strategies to Build Equitable Learning Environments: A Faculty Workshop

Allocate operating budget to Department of: Biological Sciences

Fiscal Year One (January 15, 2022 to June 30, 2022)		
Faculty Stipend	Paid directly from Academic Affairs fund on May 15, 2022	\$3000*2 = 6000
911250	Graduate Student Salaries	
911300	Special Pay to Faculty other than Grantee	
915000	Student (Undergraduate or Graduate) Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
921160	Subject Incentive Fee	
925000	Domestic Travel	
926000	Foreign Travel	
928000	Communication and/or Printing	
930000	Supplies	
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Contracted Services	

		Year One Subtotal
Fiscal Year Two (July 1, 2022 to May 30, 2023)		
Faculty Stipend	Paid directly from Academic Affairs fund on May 15, 2023	
911250	Graduate Student Salaries	
911300	Special Pay to Faculty other than Grantee	
915000	Student (Undergraduate or Graduate) Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
921160	Subject Incentive Fee	
925000	Domestic Travel	
926000	Foreign Travel	
928000	Communication and/or Printing	
930000	Supplies	
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Contracted Services	
		Year Two Subtotal 0
TOTAL FUNDS REQUESTED (Year One + Year Two)		\$6000

BUDGET NARRATIVE

A total of \$6000 is requested to support this project. A stipend of \$3,000 will be paid to each of the Principal Investigators (PIs), Tonya Bates and Sam Furr-Rogers in the summer of 2022 to analyze data, utilize results, and create the professional development workshop. We will also work on creating a workshop schedule for Fall 2022 and Spring 2023 by reaching out to professional networks and contacts. See Proposal Narrative and timeline for details.

CHARLOTTE

COLLEGE OF LIBERAL ARTS & SCIENCES

Office of the Dean

Banita W. Brown
704.687.0074
bwbrown@uncc.edu

October 19, 2021

SOTL Grants Committee
Center for Teaching and Learning
ctl@uncc.edu

Dear Committee Members:

On behalf of Dean Nancy Gutierrez in the College of Liberal Arts & Sciences, I am writing this letter in support of the SOTL proposal submitted by Tonya Bates and Sam Furr-Rogers from the Department of Biological Sciences which is entitled, "Implementing Student Experience Project (SEP) Strategies to Build Equitable Learning Environments: A Faculty Workshop." This proposal addresses the following area of focus as described on the SoTL Grant RFP website: Equity Gaps. I fully support this proposal. The main objective of the project is to adapt current SEP practices and create new practices that will allow faculty to implement SEP strategies in large enrollment courses. The project leaders also plan to create a professional development workshop for faculty that are based on these principles.

Both PIs have consistently implemented SEP strategies in their large enrolled sections of BIOL 1110. They have experience incorporating SEP interventions in their course. Thus, due to this funding, they will be able to extend their expertise to other faculty from other disciplines.

Sincerely,



Banita W. Brown
Associate Dean for Academic and Student Success
College of Liberal Arts and Sciences
Associate Professor of Chemistry

UNC Charlotte

9201 University City Blvd.
Charlotte, NC 28223

704.687.0081 telephone
clas.charlotte.edu

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PROJECT NARRATIVE

A. SPECIFIC AIMS

1. **Purpose**

Faculty often find it challenging to implement practices that promote equitable learning environments. Some factors affecting the successful adoption of these practices may include high student enrollment, instructor hesitancy, time constraints, and diverse student populations. As such, creation or adaptation of practices to cultivate a supportive and inclusive classroom that can be successfully implemented in a variety of high enrollment courses are necessary. Data shows that STEM students face unique challenges in developing a sense of belonging and persisting in the discipline. As a course in the STEM field, we piloted suggested SEP interventions in BIOL 1110 beginning in Fall 2019. As a large enrollment course, we recognized the need for easily implementable and impactful strategies and are working to create and test interventions that can be applied more broadly for all courses.

In this project, we propose to (1) create new practices and adapt current SEP practices to allow successful implementation in large enrollment courses and (2) evaluate their impact on student belonging, identity safety, growth mindset, self efficacy, and social connectedness; both for the overall class population and within structurally disadvantaged or numerically underrepresented groups in STEM using data collected from student feedback and surveys using Copilot-Ascend. Finally, we will (3) create a professional development workshop to provide faculty with data-driven strategies that can be easily implemented in a variety of courses to build equitable learning environments.

2. **Objectives**

The specific objectives to be achieved are as follows:

1. Create and implement practices to increase student belonging, identity safety, growth mindset, self efficacy, and social connectedness during the Fall 2021 semester.
2. Use data collected through student feedback and CoPilot-Ascend surveys to analyze the constructs in Objective 1, specifically for structurally disadvantaged or numerically underrepresented groups in STEM (structurally disadvantaged races, those with high financial stress, and women).
3. Develop a professional development workshop to provide faculty with data-driven strategies that can be easily implemented in a variety of courses to build equitable learning environments.

4. Facilitate the workshop at Charlotte and at local/regional institutions of higher education.

3. **Research Questions**

The following research questions will guide this study:

1. Do the practices implemented in our classes increase student belonging, identity safety, growth mindset, self efficacy, and social connectedness?
2. Which specific practices have a positive impact on students, including structurally disadvantaged or numerically underrepresented groups in STEM?
3. Do workshop participants gain tangible, data-driven strategies that can be easily implemented in a variety of courses to build equitable learning environments?

4. **Rationale**

Problem To Be Addressed and Relation to University Priorities:

The goal of the SEP and this proposal is to close identified equity gaps, which closely aligns with the UNC Charlotte 2021-2031 proposed strategic plan to ensure diversity, equity, and inclusion as a guiding commitment.

Previous Pilot Work and Early Data:

In Fall 2019, we began piloting SEP interventions in BIOL 1110, a large enrollment and primarily nonmajors general education course with students from a variety of backgrounds and majors. As a large enrollment course, we quickly recognized the need for easily implementable and impactful strategies and are working to create and test interventions that can be applied more broadly for all courses. Based on this diverse student population, we feel that these strategies could be relevant across various disciplines and course delivery methods.

Previous data collected from our courses show significant positive changes in self efficacy, identity safety, social belonging and social connectedness across all survey participants. For example, Fall 2020 showed overall increases up to 26%. Significant increases in structurally disadvantaged or numerically underrepresented groups in STEM such as structurally disadvantaged races, those with high financial stress, and women were also observed.

Most importantly, the next steps are to continue identifying, creating, and testing interventions that close identified equity gaps during the Fall 2021 semester and to create a professional development workshop to translate these strategies into other disciplines. Our goal is to provide tangible, easily implementable practices applicable to a wide variety of courses to workshop participants.

5. **Impact**

This project's overarching goal is to provide faculty with data-driven strategies that can be easily implemented in a variety of courses to build equitable learning environments at UNC Charlotte and beyond.

B. LITERATURE REVIEW

Background

In 2019, approximately 2000 students enrolled in BIOL 1110, making it the course with the highest enrollment numbers in the Department of Biological Sciences. It currently serves multiple purposes at the University. Not only is it a prerequisite for biology majors, but it is also a general education course. This means it is the only biology course many students from other majors will be exposed to during their University career. Therefore, it has the ability to make a unique impact on the student body by fostering an early appreciation for science and the role it has in their everyday life. These introductory science courses historically have low student success rates. This can be attributed to many barriers, including lack of student motivation and feelings of belonging in a large class, an inability to connect with the material or understand how it is applicable to them or the negative perception of science simply being difficult. Our student population and demographics widely vary in BIOL 1110, and they come to us from many different backgrounds. It is well established that STEM students face unique challenges in developing a sense of belonging and persisting in the discipline. We know that other students, such as first generation college students, have similar experiences.

Evidence for Impacts of Faculty-Led Trainings

While there are many great opportunities for professional development offered, there are limited options that allow workshop participants to learn from another faculty member with similar experiences as theirs. Faculty-led workshops raise questions and issues not necessarily considered from other perspectives and can provide strategies that can be immediately implemented in other courses. Furthermore, many typically don't have accompanying resources or supported follow-up, while simultaneously expecting participants to translate what they hear into practice (Ferren et al, 2015). In higher education, it is well documented that when faculty are provided evidence and practices from their trusted colleagues, they are more likely to support change and adopt new strategies than from an unfamiliar expert" (Daly 2010). Additionally, we know that instructors' beliefs about mindset can impact student success and create larger racial achievement gaps (Canning 2019). Rodriguez et al. (2021) demonstrated that faculty-led training can promote a culturally inclusive, positive and responsive climate. As such, it is likely that a faculty developed and led workshop will promote the use of inclusive strategies and increase implementation of these practices across our campus and beyond.

C. METHODS

1. Create and implement practices.

Thus far, we have utilized and adapted practices from the [SEP library](#), SEP Convenings, and we have designed our own practices to fill the gaps identified in the SEP pilot study. As we transition from online asynchronous back to face-to-face synchronous courses, we are continuing to develop new strategies and refine previous strategies.

2. Analyze data from Copilot-Ascend surveys and student feedback.

We use Copilot-Ascend (a free, data-driven professional learning program) surveys to enable us to learn how our students are experiencing our course and to determine if those experiences are more equitable and engaging. The survey questions are a Likert scale ranging from strongly agree to strongly disagree. This allows us to identify the number of students who are experiencing specific learning conditions (shown in Figure 1). One survey question is also randomly chosen for the student to explain their response, providing qualitative feedback as well. To protect privacy, all responses are anonymous to the instructor.

Learning Condition	Rated Positively on Last Survey	▲ change since survey 1
Belonging Uncertainty	59%	▲ 22
Identity Safety	83%	▲ 6
Institutional Growth Mindset	95%	▲ 4
Self-Efficacy	88%	▲ 11
Social Belonging	86%	▲ 11
Social Connectedness	82%	▲ 6
Trust and Fairness	97%	▲ 3

Figure 1: Specific learning conditions measured by Copilot-Ascend.

While this data is useful in determining what is happening overall in the course, we can't specifically identify which interventions are impacting students the most from Copilot-Ascend surveys. In order to further elucidate which specific interventions have the greatest impact on student engagement and success, we will use an automatically graded student survey in Canvas at the conclusion of the semester to obtain quantitative and qualitative feedback. We will provide students with interventions created and tested throughout the semester and ask them to rank their impact on the appropriate specific learning condition.

3. Utilize data to create a professional development workshop.

The data collected above from the surveys will be used to guide which interventions we share at the workshop. We will look for specific interventions which students rank first or second within each learning condition.

4. Reach out to professional networks to plan the workshop schedule and facilitate the workshop as planned.

Both PIs will engage with contacts in professional local and regional networks to determine who is interested in learning about these strategies. Examples include local and regional community colleges, members of the Biology and Mathematics Educators (BIOME) Institute, The Society of Transnational Academic Researchers (STAR), and other professional organizations.

Potential Limitations

Both PIs have been involved in the SEP project since Fall 2019. PI Furr-Rogers is one of two instructors on the National SEP Instructor Leadership Track at UNC Charlotte. We don't foresee limitations for this project.

D. EVALUATION

Evaluation for each of the project objectives is described below:

Research Questions	Measurement/ Instrumentation	Sample Questions
<p>Do the practices implemented in our classes increase student belonging, identity safety, growth mindset, self efficacy, and social connectedness?</p>	<p>Copilot-Ascend survey SEP practices and those we have created will be implemented in our classes. To assess their impact, four Copilot-Ascend surveys will be administered throughout the semester. The first survey is administered at the beginning of the semester. Changes in the percentage of students experiencing belonging, identity safety, growth mindset, self efficacy, and social connectedness will be measured. This allows us to identify learning conditions with the largest increases for our students.</p>	<p>The survey questions are a Likert scale ranging from strongly agree to strongly disagree. Examples from the survey include:</p> <ul style="list-style-type: none"> ● I feel accepted in this class. ● I feel like I belong in this class. ● I trust this instructor to treat me fairly. ● This instructor seems to believe that your intelligence is something that you can't change very much. ● I worry about being judged negatively based on my group membership(s) in this class. ● I am confident that I can perform effectively in this class.

<p>Which specific practices have a positive impact on students, including structurally disadvantaged or numerically underrepresented groups in STEM?</p>	<p>Copilot-Ascend survey In the first Copilot-Ascend survey, students report their gender identity, the racial and ethnic groups they identify with, and answer questions to determine if they are financially stressed. This allows us to see data for each of these student groups. It is considered an equity gap if there is a difference of 10% or more between groups.</p> <p>End-of-semester student feedback survey To identify specific practices that have the greatest impact on our students, we will administer a survey in Canvas at the conclusion of the semester to obtain quantitative and qualitative feedback. We will provide students with interventions created and tested throughout the semester and ask them to rate their impact.</p>	<p>Copilot-Ascend survey</p> <ul style="list-style-type: none"> • Students can choose to identify with one or more of 17 different race-ethnicity groups. • Students are considered to have high financial stress if they say (1) that they “sometimes” or “often” did not have enough money for food, or (2) if they reported financial problems leading to one of the following: having to underpay tuition, being unable to pay rent or mortgage, or having to move in with other people. <p>End-of-semester student feedback survey The survey questions will ask students to rate specific interventions using a Likert scale ranging from strongly agree to strongly disagree. Examples include:</p> <ul style="list-style-type: none"> • Working in a group during Thursdays’ class activities made me feel like part of the class community. • Feature Friday provided me with useful information about the campus and activities I could get involved with. • Mini topic assessments helped me feel confident about doing well in this class. • The module checklists helped me feel confident about doing well in this class.
<p>Do workshop participants gain tangible, data-driven strategies that can be easily implemented in a variety of courses to build equitable learning environments?</p>	<p>The overall success of this project will be defined as one workshop at UNC Charlotte and three local/regional workshops. Each workshop will have 10-15 participants.</p>	<p>Surveys will be administered at the end of each iteration to guide workshop improvement and resource development. Sample questions will include:</p> <ul style="list-style-type: none"> • On a scale of 1-5, how useful was this workshop? • Describe one implementation that you learned or developed today that you will employ to build equitable learning environments in your course(s).

E. KNOWLEDGE DISSEMINATION

- Campus: Facilitate the workshop at UNC Charlotte.
- Local/Regional: Facilitate the workshop at three local/regional institutions of higher education.
- In addition to the workshops, we anticipate presenting the survey findings at one conference, such as the SEP Convening.

F. HUMAN SUBJECTS

If our proposal is funded we will submit IRB approval.

G. EXTRAMURAL FUNDING

While no extramural funding is currently being sought for this study, the results from this study may be used as a pilot study to seek additional future funding.

H. TIMELINE

Fall 2021-Spring 2022	Create and implement practices to increase student belonging, identity safety, growth mindset, self efficacy, and social connectedness.
Summer 2022	<ul style="list-style-type: none">● Analyze data collected through student feedback and CoPilot-Ascend surveys to measure impacts, specifically for structurally disadvantaged or numerically underrepresented groups in STEM (structurally disadvantaged races, those with high financial stress, and women).● Utilize data collected and analyzed to create a professional development workshop.● Compile resources and best practices that will be accessible to workshop participants.● Reach out to professional networks and contacts to plan the workshop schedule.
Fall 2022-Spring 2023	Facilitate the workshop at Charlotte and local/regional institutions of higher education.

References

- Canning, E. A., Muenks, K., Green, D. J., & Murphy, M. C. (2019). STEM faculty who believe ability is fixed have larger racial achievement gaps and inspire less student motivation in their classes. *Science advances*, 5(2), eaau4734. <https://doi.org/10.1126/sciadv.aau4734>
- Daly, Alan J. (2010) *Social Network Theory and Educational Change*. Cambridge, Mass: Harvard Education Press.
- Ferren, A. S., Dolinsky, R., & McCambly, H. (2015) Collaborative, faculty-led efforts for sustainable change. *Peer Review*, 16/17(4), 30-32.
- Rodriguez, A.J., Ciftci, A., Howell, K. *et al.* (2021) Promoting Equity, Diversity and Social Justice Through Faculty-Led Transformative Projects. *Innov High Educ*. <https://doi.org/10.1007/s10755-021-09560-y>