






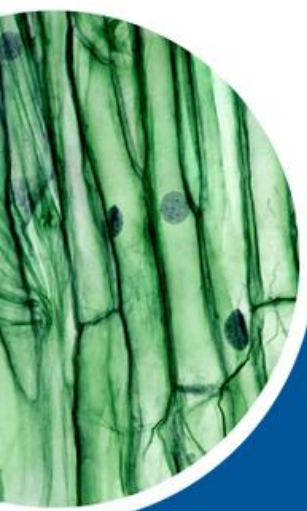
## Scholarships in STEM (S-STEM)

# Using Tools/Measures for Assessing EBPs For Your NSF SSTEM Grants

July 25, 2024  
4:00-5:00 p.m. ET



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NSF Award #2224093: AAAS-NSF S-STEM  
Resource & Evaluation Center

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

# Welcome Activity

In the chat, please share your name,  
role, affiliation, and a favorite summer  
thing to do



# S-STEM REC Team



NSF Scholarships in STEM Network Solicitation



S-STEM REC

NSF Award #2224093: AAAS-NSF S-STEM Resource & Evaluation Center

MNA



AIR®



Quality Education for Minorities (QEM) Network



CERSE



This material is based upon work supported by the National Science Foundation (NSF) under Grant No. DUE-2224093. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the NSF.

# S-STEM REC Vision

The AAAS S-STEM Resources & Evaluation Center (REC) seeks to cultivate a network of S-STEM stakeholders and further develop the infrastructure needed to promote the exchange of ideas, resources, opportunities, and knowledge related to the effective strategies and practices to increase the number of talented low-income students obtaining degrees in STEM and entering the STEM workforce.

## AAAS S-STEM REC Goals



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To **build the capacity of S-STEM Network programs** by identifying program leadership needs and supporting their growth by leveraging context-conscious support, communication, resources, and knowledge across S-STEM projects with the aim of increasing their program effectiveness.



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To **build the capacity of S-STEM Scholars** through professional development and connection to career-building opportunities aimed at increasing their ability to successfully navigate pathways into the STEM workforce or graduate studies.



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To **increase the effectiveness of the S-STEM portfolio** by synthesizing evidence of outcomes and impacts across the entire network and disseminating those findings to support evidence-based decision-making across the STEM ecosystem to increase the access and success of academically talented students from low-income backgrounds.



S-STEM REC

[sstemrec.aaas.org](https://sstemrec.aaas.org)

-  [s-stem-program](https://www.linkedin.com/company/s-stem-program)
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NSF Award  
 #2224093

# Using Tools/Measures for Assessing EBPs For Your NSF SSTEM Grants

## Team MNA

Kavita Mittapalli, Ph.D.

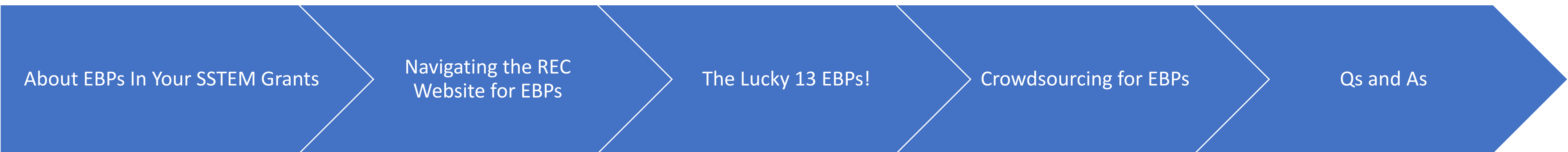
Nina de las Alas

Steven Petritis, Ph.D.

Peter Goldie, (Ph.D.)



# Agenda Outline



# Introduction to EBPs in NSF SSTEM Grants: Why EBPs Matter (Sol. NSF 24-511)

The NSF S-STEM program provides funding to Institutions of Higher Education to support scholarships and the implementation of evidence-based practices to increase the number of low-income students with demonstrated financial need who graduate and enter the STEM workforce or graduate programs.

The program enables IHEs to establish a coherent ecosystem of effective evidence-based practices, including:

- Curricular and co-curricular activities taking place during the academic year and over the summer/winter breaks

These practices should be assessed for their effects/impacts on outcomes such as:

- Retention
- Student Success
- Academic/career pathways
- Degree attainment, including transfer and
- Entry into the U.S. workforce or graduate programs in STEM.

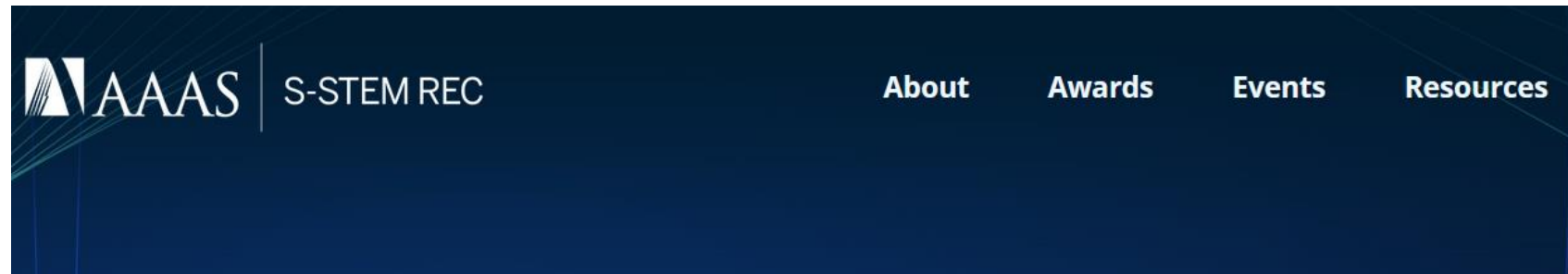
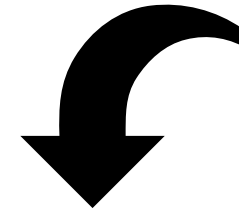
Therefore, there is a big need for rigorous assessment of the EBPs to demonstrate program effectiveness and impact on the Scholars.

# Overview of EBPs for SSTEM

- The list of the **13 EBPs** identified for this presentation are:
  - Sense of Belonging
  - Faculty Mentoring
  - Proactive/Intrusive Advising
  - Peer-Led Tutoring and Learning
  - Social and Intellectual Integration
  - Internship Efficacy/Satisfaction
  - Academic Life and General Program Satisfaction
  - Academic and General Self-Efficacy
  - Engineering Self-Efficacy
  - Engineering and Computer Science Identity
  - STEM Identity
  - Imposter Syndrome/Phenomenon
  - Living-Learning Community

# Navigating The REC Website For EBPs

- <https://sstemrec.aaas.org/resources>



## STEM Identity EBP Repository

Description: Students' self-perception as members of the broader STEM community. A strong STEM identity motivates students to persist in challenging coursework...

June 28, 2024

Evidence-Based Practices

## Social & Academic Integration EBP Repository

Description: Helping students feel connected to their peers, faculty, and the broader academic community. This integration fosters a sense of belonging where S...

June 28, 2024

Evidence-Based Practices

## Sense of Belonging EBP Repository

Description: A sense of belonging is about feeling part of something bigger. It's the extent to which students feel accepted, respected, and included...

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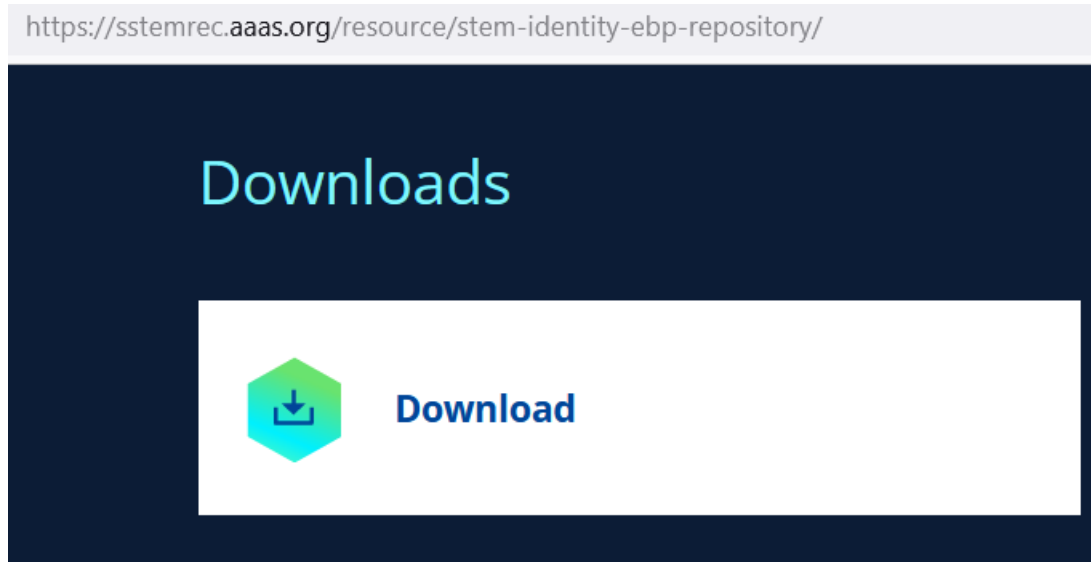
Evidence-Based Practices

## Peer Led Tutoring EBP Repository

Description: Providing academic support and building a sense of community through peer-led tutoring. Students learn from each other, build confidence, and real...

June 28, 2024

Evidence-Based Practices



# Downloaded Datasheet and Metrics

Article Title	Author(s)	APA reference	Publication Date	DOI (add https)	Participants (Population)	Keywords	Abstract	Validated tool? (Y/N)
Sense of Belonging in Science, Technology, Engineering, and Mathematics Domains Measure	Ahlqvist, Sheana; London, Bonita; Rosenthal, Lisa	Ahlqvist, S., London, B., & Rosenthal, L. (2013). <i>Sense of Belonging in Science, Technology, Engineering, and Mathematics Domains Measure</i> [Database record]. APA PsycTests. <a href="https://doi.org/10.1037/t55080-000">https://doi.org/10.1037/t55080-000</a>	2013	<a href="https://doi.org/10.1037/t55080-000">https://doi.org/10.1037/t55080-000</a>	Measurement; Human Females; Internal Consistency; Mathematics; Sciences; Sex Role Attitudes; Technology; Test Construction; Test Reliability; Belonging; Emotional Assessment; Engineering; STEM; Adulthood (18 yrs & older); Female; Human; Female	Female STEM Majors; Internal Consistency; Sense of Belonging in Science, Technology, Engineering, and Mathematics Domains Measure; Test Development	Sense of Belonging in Science, Technology, Engineering, and Mathematics Domains Measure is an 8-item questionnaire. It was adapted from another scale to assess one's perceived fit in their STEM major and comfort with peers and instructors. Participants respond to items on a Likert-type scale. Cronbach's alpha was .93 in the initial validation study.	Y
Affective Commitment Scale--Modified	Shin, Jiyun Elizabeth L.; Levy, Sheri R.; London, Bonita	Shin, J. E. L., Levy, S. R., & London, B. (2016). <i>Affective Commitment Scale--Modified</i> [Database record]. APA PsycTests. <a href="https://doi.org/10.1037/t56867-000">https://doi.org/10.1037/t56867-000</a>	2016	<a href="https://doi.org/10.1037/t56867-000">https://doi.org/10.1037/t56867-000</a>	College Students; Educational Measurement; Internal Consistency; Student Attitudes; Student Characteristics; Test Construction; Test Forms; Test Reliability; Belonging; Adulthood (18 yrs & older); Male; Female; Human; Male; Female	Academic Sense of Belonging; Affective Commitment Scale--Modified; Internal Consistency; Test Development; College Students	The Affective Commitment Scale--Modified assesses students' academic sense of belonging on a Likert-type scale. Items assess perceived belongingness in one's major, department or program, and school. Cronbach alphas were .85 or higher.	Y
Sense of Belonging Measure	Stillman, Tyler F.; Hicks, Joshua A.; Kamble, Shanmukh; Baumeister, Roy F.; Fincham, Frank D.	Lambert, N. M., Stillman, T. F., Hicks, J. A., Kamble, S., Baumeister, R. F., & Fincham, F. D. (2013). <i>Sense of Belonging Measure</i> [Database record]. APA PsycTests. <a href="https://doi.org/10.1037/t32463-000">https://doi.org/10.1037/t32463-000</a>	2013	<a href="https://doi.org/10.1037/t32463-000">https://doi.org/10.1037/t32463-000</a>	College Students; Internal Consistency; Life Experiences; Meaningfulness; Self-Report; Social Acceptance; Test Construction; Test Reliability; Belonging; Adulthood (18 yrs & older); Male; Female; Human; Male; Female	Test Development; Sense of Belonging Measure; Internal Consistency; Life Meaning; Undergraduate Students; Self-Report	The Sense of Belonging Measure measures one's experience of belongingness. There are five items, such as "There are places I can go where I feel like I belong." The measure demonstrated high reliability, with alphas of .81 or higher. In addition, it has demonstrated discriminant validity (e.g., with loneliness) and convergent validity (e.g., with self-esteem).	Y
General Belongingness Scale	Malone, Glenn P.; Pillow, David R.; Osman, Augustine	Malone, G. P., Pillow, D. R., & Osman, A. (2012). <i>General Belongingness Scale (GBS)</i> [Database record]. APA PsycTests. <a href="https://doi.org/10.1037/t37005-000">https://doi.org/10.1037/t37005-000</a>	2012	<a href="https://doi.org/10.1037/t37005-000">https://doi.org/10.1037/t37005-000</a>	Discriminant Validity; Factor Structure; Internal Consistency; Predictive Validity; Rating Scales; Self-Perception; Social Acceptance; Test Construction; Test Reliability; Test Validity; Belonging; Adulthood (18 yrs & older); Male; Female; Human; Male; Female	Convergent Validity; Discriminant Validity; Factor Structure; General Belongingness Scale; Internal Consistency Reliability; Predictive Validity; Sense of General Belonging; Test Development; University Students	The General Belongingness Scale contains 12 items, to which participants respond on a Likert-type scale. This measure has demonstrated high reliability and validity among college student samples.	Y
University Belonging Questionnaire	Slaten, Christopher D.; Elison, Zachary M.; Deemer, Eric D.; Hughes, Hayley A.; Shemwell, Daniel A.	Slaten, C. D., Elison, Z. M., Deemer, E. D., Hughes, H. A., & Shemwell, D. A. (2018). <i>University Belonging Questionnaire (UBQ)</i> [Database record]. APA PsycTests. <a href="https://doi.org/10.1037/t75836-000">https://doi.org/10.1037/t75836-000</a>	2018	<a href="https://doi.org/10.1037/t75836-000">https://doi.org/10.1037/t75836-000</a>	Educational Measurement; Social Acceptance; Social Support; Student Attitudes; Student Engagement; Teacher Student Interaction; Belonging; Adulthood (18 yrs & older); Male; Female; Human; Male; Female	College Students; Divergent Validity; Faculty and Staff Relations; University Affiliation; University Support and Acceptance; University Belonging	The University Belonging Questionnaire was created to assess students' sense of belonging in their universities. The measure contains 24 items and has been validated in two samples of university students.	Y

- Article title
- Author(s)
- APA reference
- Publication date
- Digital Object Identifier (DOI)
- Target participants
- Keywords
- Abstract of the article/publication
- Tool- Validated or Not validated

# NOTE

Several of the cited resources/tools are proprietary (copyright). Please access them through your institution's library system(s)/paywall, or work with your PI/Co-PI (institution's affiliates) to request access to the articles/tools.

The use of some of the instruments may require direct permission from the author(s)/creator(s).

Please fully cite the author(s)/original source when you adapt/adopt any of the tools/measures.

Neither MNA, AAAS REC, nor the NSF is endorsing any tools/measures!

# Sense of Belonging

## Definition

## Theoretical Frameworks of Sense of Belonging

## Effect/Impact of Sense of Belonging on Outcomes

## Measure/Tool (Duffy, et al, 2020)

### Items

#### Campus discrimination

I feel there is a general atmosphere of prejudice among students

I have encountered racism while attending this institution

I have heard negative words about people of my own race or ethnicity while attending classes

#### Financial stress

I feel stressed about my personal finances in general

I worry about being able to pay monthly expenses

I worry about having enough money to pay for school

#### Sense of belonging

I see myself as part of the university community

I feel a sense of belonging to this university

I feel that I am a member of the university community

#### Work volition

I will be able to choose the jobs I want

I feel total control over my future job choices

I will be able to do the kind of work I want to, despite external barriers

#### Career choice satisfaction

I know what occupational path I want to pursue when I get out of school

I have a firm sense of what type of work I would like to do for a living

It is clear to me what I want to do for a living after I graduate

#### Life satisfaction

In most ways, my life is close to my ideal

The conditions of my life are excellent

I am satisfied with my life

# Faculty Mentoring

Strategy

Forms of Mentorship

Effect/Impact of Faculty Mentoring on Outcomes

Measure/Tool (Berk, 2002/Nursing)

**Mentorship Effectiveness Scale Developed by the Ad Hoc Faculty Mentoring Committee, Johns Hopkins University School of Nursing**

Your name: \_\_\_\_\_

**Directions:** The purpose of this scale is to evaluate the mentoring characteristics of \_\_\_\_\_, who has identified you as an individual with whom he/she has had a professional, mentor/mentee relationship. Indicate the extent to which you agree or disagree with each statement listed below. Circle the number that corresponds to your response. Your responses will be kept confidential.

- 0 = Strongly Disagree (SD)
- 1 = Disagree (D)
- 2 = Slightly Disagree (SID)
- 3 = Slightly Agree (SIA)
- 4 = Agree (A)
- 5 = Strongly Agree (SA)
- 6 = Not Applicable (NA)

SAMPLE: My mentor was hilarious.	0	1	2	3	4	5	⑥
	<b>SD</b>	<b>D</b>	<b>SID</b>	<b>SIA</b>	<b>A</b>	<b>SA</b>	<b>NA</b>
1. My mentor was accessible.	0	1	2	3	4	5	6
2. My mentor demonstrated professional integrity.	0	1	2	3	4	5	6
3. My mentor demonstrated content expertise in my area of need.	0	1	2	3	4	5	6
4. My mentor was approachable.	0	1	2	3	4	5	6
5. My mentor was supportive and encouraging.	0	1	2	3	4	5	6
6. My mentor provided constructive and useful critiques of my work.	0	1	2	3	4	5	6
7. My mentor motivated me to improve my work product.	0	1	2	3	4	5	6
8. My mentor was helpful in providing direction and guidance on professional issues (e.g., networking).	0	1	2	3	4	5	6
9. My mentor answered my questions satisfactorily (e.g., timely response, clear, comprehensive).	0	1	2	3	4	5	6
10. My mentor acknowledged my contributions appropriately (e.g., committee contributions, awards).	0	1	2	3	4	5	6
11. My mentor suggested appropriate resources (e.g., experts, electronic contacts, source materials).	0	1	2	3	4	5	6
12. My mentor challenged me to extend my abilities (e.g., risk taking, try a new professional activity, draft a section of an article).	0	1	2	3	4	5	6

**Please make additional comments on the back of this sheet.**  
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# Proactive/Intrusive Advising

## Appendix A. Proactive and Developmental Advising Scales

### PROACTIVE ADVISING BEHAVIORS

*How often advisor uses student data outside of appointments to identify students*

<u>Proactive Data Use</u> (Cronbach's alpha = 0.85)	Correlation with Total
Who had not yet completed something important	0.68
Who may be struggling or need support	0.84
Who are improving or excelling	0.85

### DEVELOPMENTAL ADVISING BEHAVIORS

*How often advisor typically discusses each topic with students during advising appointments*

<u>Academic Planning</u> (Cronbach's alpha = 0.67)	Correlation with Total
Major/minor exploration	0.67
Progress toward their degree	0.63
Academic standing or probation status	0.62
Dropping or adding courses	0.62
Planning courses for future terms	0.62
Content of courses	0.60

## Appendix B. Interview Protocol

1. Can you begin by telling me what you understand to be your main purpose, or function, as an advisor here at this university?
2. What is your own personal approach or philosophy about your role as an advisor?
  - a. How has this changed over time, if at all?
3. Can you walk me through a typical advising meeting and what it would entail?
4. How would you describe an ideal advisor/student relationship? An ideal advisor/student interaction?
5. In terms of your job duties, describe your duties and the time you tend to spend on each type of task as an advisor.
6. Is there anything you do to prepare for your advising meetings with students?
7. Can you describe what you do to prepare?
8. Is there any way you ever reach out to students and why do you do that?
9. What do you see as students' greatest needs?
10. In what ways do you feel capable or not capable to meet those needs?
11. Can you talk with me about the challenges you face in your efforts to advise students here?
  - a. What types of things have you done in the past in order to address any of those challenges?
12. What are the greatest rewards you get from your position as an advisor?
13. What technologies do you routinely use in working with students?
14. Can you talk about your familiarity with or awareness of the advising dashboard?

Definition

Forms of Mentorship

Effect/Impact of Faculty Mentoring on Outcomes

Measure/Tool (Berk, 2002/Nursing)

# Peer-Led Tutoring and Learning

## Concept

- Trained peers provide academic support
- Small group settings
- Leverages peer relationships

## Benefits

- Tutees: Improved understanding, confidence, and community connection
- Tutors: Reinforced knowledge and leadership skills
- Support Areas
- Coursework, study skills, emotional support
- Success Metrics
- Scholar satisfaction, grade impact, tutor training quality
- Case Study: Pharmacy Students (Nwaesei & Liao, 2023)
- Reduced dismissals, improved study habits, and confidence

# Social and Intellectual Integration

- Definition
- Connection to peers, faculty, and academic community
- Creating a sense of belonging
- Importance for S-STEM Scholars
- Addresses feelings of isolation
- Provides support network
- Promotion Methods

APPENDIX A	
Scale	Items
Campus climate	<p>I have observed discriminatory words, behaviors or gestures directed at minority students at <i>this institution</i>.*</p> <p>I feel there is a general atmosphere of prejudice among students.</p> <p>I have encountered racism while attending <i>this institution</i>.</p> <p>I have heard negative words about people of my own race or ethnicity while attending classes.</p>
Prejudiced attitudes of faculty & staff	<p>I feel there is a general atmosphere of prejudice among faculty at <i>this institution</i>.</p> <p>I feel there is a general atmosphere of prejudice among academic staff at <i>this institution</i>.</p>
In-class discriminatory experiences	<p>I have been singled out in class and treated differently than other students.</p>
Parental encouragement	<p>My family approves of my attending <i>this institution</i>.</p> <p>My family encourages me to continue attending <i>this institution</i>.</p> <p>My family encourages me to get a college degree.</p>
Concerned faculty & staff	<p>Most of the faculty members I have contact with are willing to spend time outside of class to discuss issues of interest and importance to students.</p> <p>Most of the faculty members I have had contact with are genuinely outstanding or superior teachers.</p> <p>Most faculty I have contact with are genuinely interested in teaching.</p>

Herrero and Gracia, 2007

# Internship Efficacy/Satisfaction

## Benefits

- Real-world experience
- Skill development
- Career confidence

## Key Elements

- Quality experiences
- Career relevance
- Growth opportunities

## Assessment

- Scholar satisfaction
- Skills gained
- Mentorship quality

## Research: Haag et al. (2006)

- Industry feedback positive
- Students well-prepared

## Impact

- Career readiness
- Professional networking

Table 2. Internship ABET Alignment: ABET Criteria, survey results

ABET competency used	Mean	Standard deviation
ABET a: Interns were equipped with a strong foundation in mathematics and basic engineering	4.23	0.677
ABET c: Interns were able to design systems, devices, and components as needed	4.12	0.857
ABET f: Interns maintained a sense of commitment to professionalism and ethical responsibility	4.33	0.797
ABET d: Interns work effectively in teams and in multidisciplinary environments	4.28	0.716
ABET g: Interns were able to communicate effectively in oral, written, computer-based, and graphical forms	4.02	0.698
ABET h: Interns are aware of and sensitive to social and political issues pertinent to their discipline	3.81	0.811
ABET i: Interns had an understanding of and interest in continued life long learning of technologies	4.13	0.875
ABET j: Interns were aware of societal, political, and community issues	3.79	0.687

Table 3. Intern competency in communication skills

Survey item	Mean	Standard deviation
Interns appropriately plan, prepare, write and assess written reports	3.95	0.783
Interns appropriately plan, prepare, deliver and assess formal and informal oral presentations	3.83	0.737
Interns communicate effectively across the technical boundaries of engineering with transfer into work settings	4.15	0.670
Interns prepare appropriate computer-based and graphical materials	4.36	0.537

### **Academic Program Life and General Program Satisfaction**

- Overall student contentment with academic experience
- Satisfaction with a specific program of study
- Key indicator of student engagement
- Predictor of program completion likelihood
- Factors influencing satisfaction:
  - Curriculum relevance
  - Teaching quality
  - Availability of support services

### **General/Academic Self-Efficacy**

- Students' belief in their ability to succeed in:
  - Academic tasks
  - Life challenges
- Associated with:
  - Greater persistence in difficult situations
  - Higher academic achievement
- Influences:
  - Choice of activities
  - Effort levels
  - Resilience in challenging situations

## **Academic Program Life and General Program Satisfaction**

Students' overall contentment with their academic experience and specific program of study. This satisfaction is a key indicator of student engagement and the likelihood of program completion. It encompasses factors such as curriculum relevance, teaching quality, and the availability of support services.

## **General/Academic Self-Efficacy**

Students' beliefs in their ability to succeed in academic tasks and life challenges. High self-efficacy is associated with greater persistence in the face of difficulties and higher academic achievement. It influences students' choices of activities, effort levels, and resilience in challenging situations.

# Engineering Self-Efficacy

Students' confidence in their ability to succeed specifically in engineering-related tasks and careers. This specialized form of self-efficacy is crucial in retaining students in engineering programs, which are often rigorous and challenging. It can significantly impact a student's choice to persist in engineering studies and pursue related careers.

Table 2  
*Funds of knowledge survey items used in this study.*

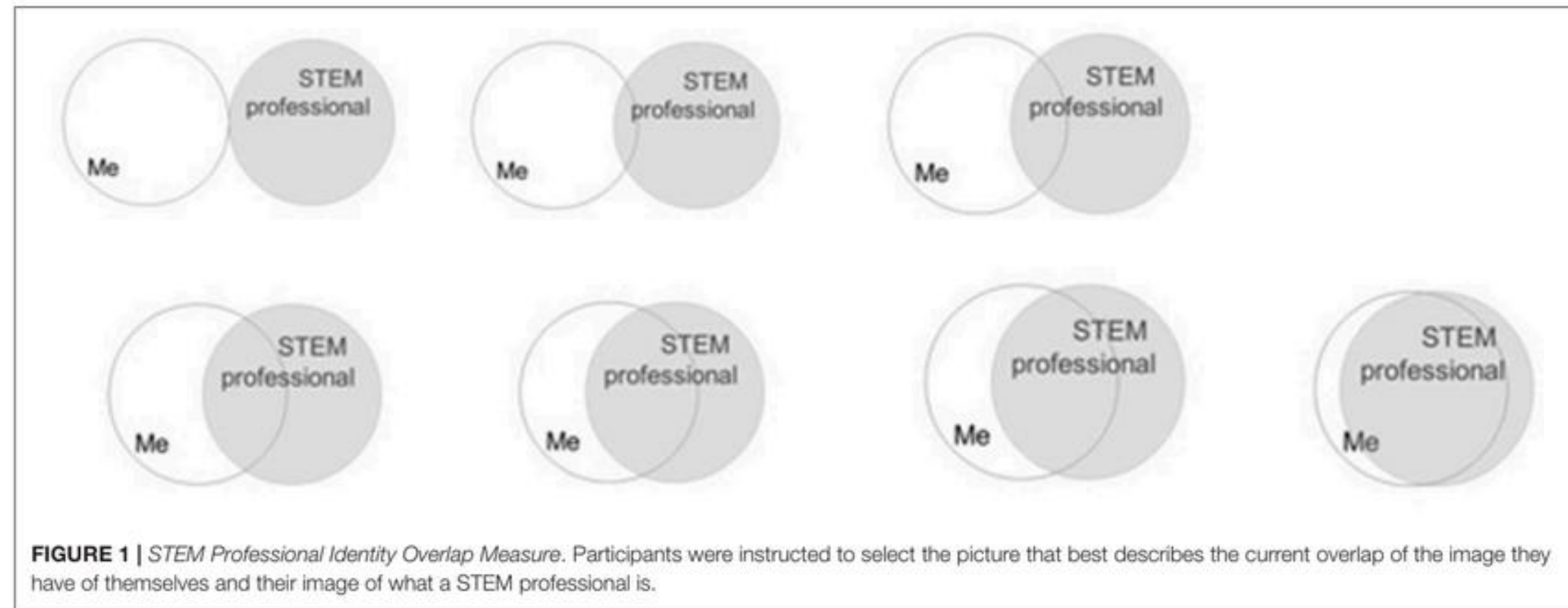
Construct	Survey items used to create composite score	Rating scale
Tinkering knowledge from home	<ul style="list-style-type: none"> <li>• At home, I learned to use tools to build things.</li> <li>• At home, I worked with machines and appliances (considered broadly, e.g., gym equipment, sewing machines, lawn mower, bikes, etc.).</li> <li>• I learned to fix things around the house (considered broadly, e.g., plumbing, furniture, electrical wiring, etc.).</li> <li>• At home, I learned to assemble and disassemble things.</li> </ul>	Seven-point anchored numeric scale ranging from 0—“strongly disagree” to 6—“strongly agree”
Perspective taking	<ul style="list-style-type: none"> <li>• I am open to listen to the point of view of others.</li> <li>• I consider other people’s point of view in discussions.</li> <li>• I like to view both sides of an issue.</li> </ul>	Seven-point anchored numeric scale ranging from 0—“very inaccurately” to 6—“very accurately”
Mediational skills	<ul style="list-style-type: none"> <li>• Help someone else adjust to unfamiliar social situation.</li> <li>• Help different groups of people better understand each other.</li> <li>• Help different individuals on a team understand each other better.</li> </ul>	Seven-point anchored numeric scale ranging from 0—“not at all likely” to 6—“extremely likely”
Connecting experiences	<ul style="list-style-type: none"> <li>• I see connections between experiences at home and what I am learning in my engineering courses.</li> <li>• I draw on my previous experiences at home when little instruction is given on how to solve an engineering task.</li> </ul>	Seven-point anchored numeric scale ranging from 0—“not at all likely” to 6—“extremely likely”

# Engineering, Computer Science Identity/ Sense of Belonging in Engineering

- Professional identity in engineering/computer science enhances STEM persistence
- Identity development involves skills, values, and cultural assimilation
- Engineering self-efficacy measures validated by Mamaril et al. (2016)
- Two key scales: General Engineering Self-Efficacy and Engineering Skills Self-Efficacy
- Scales show validity and reliability for assessing student self-efficacy
- Belongingness is a fundamental human need (Baumeister & Leary, 1995)
- Sense of belonging in college includes perceived support, connectedness, and feeling valued
- Strayhorn (2016) emphasizes the importance of acceptance and respect in the campus community

# STEM Identity

- McDonald et al. (2019) developed a single-item STEM identity measure
- Measure validated through three studies with Alabama college students
- Demonstrates reliability in distinguishing STEM from non-STEM students
- Correlates with persistence in STEM majors
- Designed for quick and efficient assessment
- Evaluates STEM identity, attitudes, self-efficacy, agency, and goals
- Provides a time-effective tool for researchers and educators
- Useful for tracking STEM identity development over time.



# Imposter Syndrome/Phenomenon

Young Imposter Syndrome Quiz with "Yes" or "No" answers

- Questions about worrying others will discover one's perceived lack of capability
- Inquires about avoiding challenges due to self-doubt
- Asks about downplaying one's accomplishments
- Explores feelings about making mistakes or being imperfectly prepared
- Questions reactions to constructive criticism
- Probes thoughts of luck or deception when succeeding
- Asks about the belief that others are smarter or more capable

## Appendix 1.

### Young Imposter Syndrome Quiz ("Yes" or "No")

1. Do you secretly worry that others will find out that you're not as bright and capable as they think you are?
2. Do you sometimes shy away from challenges because of a nagging self-doubt?
3. Do you tend to chalk your accomplishments up to being a "fluke," "no big deal" or the fact that people just "like" you?
4. Do you hate making a mistake, being less than fully prepared, or not doing things perfectly?
5. Do you tend to feel crushed even by constructive criticism, seeing it as evidence of your "ineptness?"
6. When you do succeed, do you think "Phew, I fooled them this time, but I may not be so lucky next time?"
7. Do you believe that other people (students, colleagues, competitors) are smarter and more capable than you?
8. Do you live in fear of being found out, discovered, or unmasked?

# Living-Learning Community/Sense of Community

- Integrate academic content with community living
- Create immersive learning environments
- Enhance student engagement and performance
- Foster a sense of belonging
- Often focus on specific disciplines or themes
- Provide targeted support and collaborative learning
- Hurtado & Ponjuan (2005): Study on Latino educational outcomes
- Five-item measure for assessing sense of belonging in communities.

## COLLEGIATE PSYCHOLOGICAL SENSE OF COMMUNITY

Table 1  
*Items Comprising the Collegiate Psychological Sense of Community (PSC) Scale with Item–Total Correlations*

Item	Item-total correlation
Regarding this college university:	
I really feel like I belong here.	.71
There is a sociable atmosphere on campus.	.56
I wish I had gone to another college instead of this one. (R)	.68
Students feel they can get help if they are in trouble.	.47
I would recommend this college to students in my high school.	.80
My parents like this college.	.49
There is a strong feeling of togetherness on campus.	.60
I someday plan to give alumni contributions to this college.	.62
I really enjoy going to school here.	.79
Students here really care about what happens to this college.	.56
I feel very attached to this college.	.79
Campus life is very stimulating.	.59
If I am/were going to college next year, I would go here.	.65
There is a real sense of community here.	.66

*Note.* (R) indicates reverse scoring. Each item-total correlation was computed with the item not included in the total score. All of the item-total correlations are significant at the  $p < .01$  level.

# We Need Your Help!

- Peer-led tutoring in STEM Education
- Tutoring
- Cohort-building
- Living Learning Community

Share Knowledge & Effective Practices



Request a follow-up to learn more or ask questions!

Technical Assistance Request Form

# Q&A



This material is based upon work supported by the National Science Foundation (NSF) under Grant No. DUE-2224093. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the NSF.

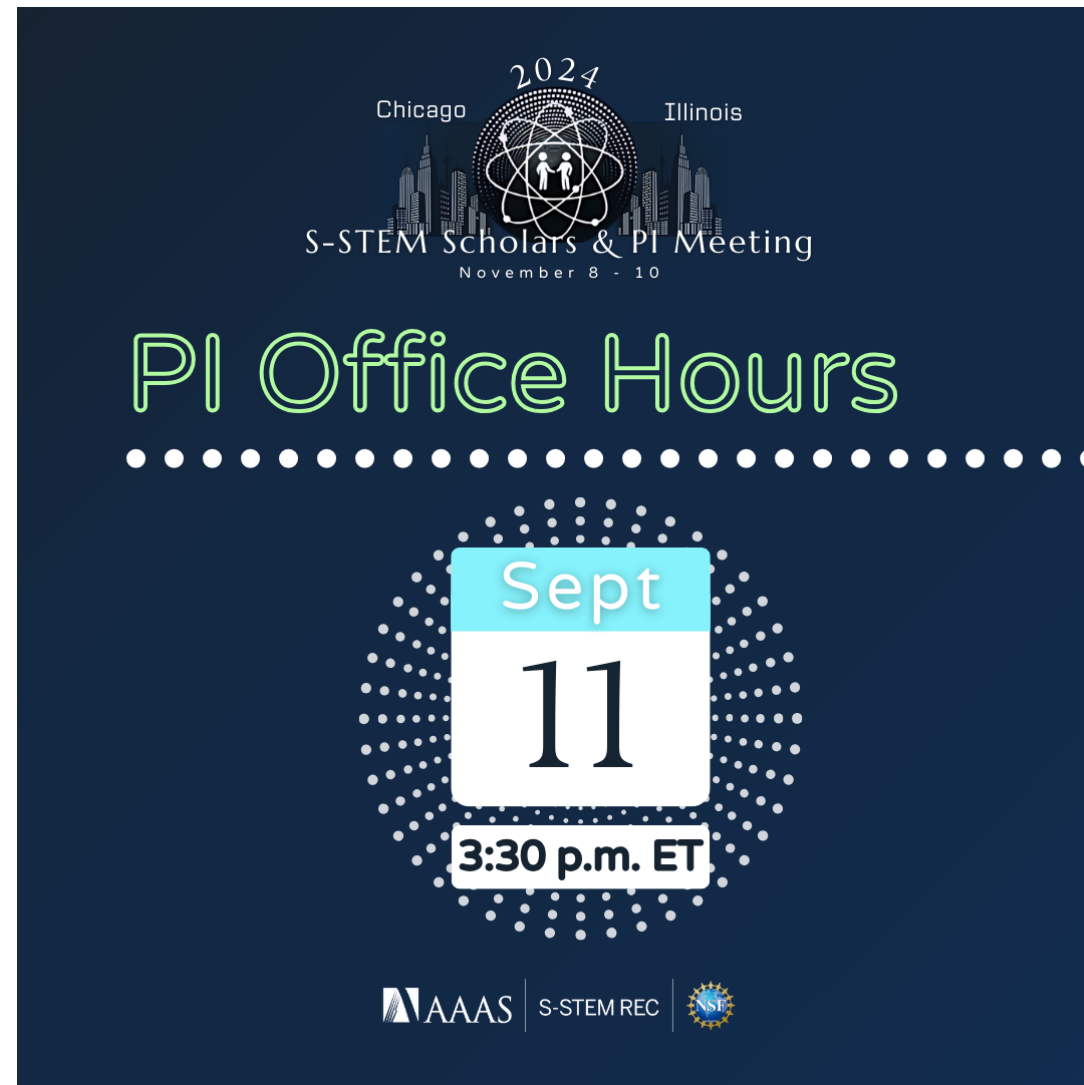
# Provide your Feedback on Today's Session!

Survey link:

<https://airtable.com/apppdMGh3G3wwC2IJ/shrWuaJ00qxyCB4jX>



# Upcoming Events



September 11  
October 22



September 17  
October 29

<https://sstemrec.aaas.org/events/>



Thank you!

Connect with the AAAS S-STEM REC!

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