

2026
ECR:Core and
ECR:BCSER
AWARDEE MEETING

June 29 – July 1, 2026



ECR Hub
EDU Core Research

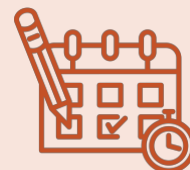
ecrhub.org/2026meeting

Click the Links to Navigate: 

Meeting Goals and Structure

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Want the Sessions by Time Slot?



[See here](#) for high-level, brief schedule of sessions organized by their assigned time slot.

Session Information

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Welcome and Overview

Welcome to the 2026 ECR:Core and ECR:BCSER Awardee Meeting! []

The U.S. National Science Foundation (NSF) and the [EDU Core Research \(ECR\) Hub](#) welcome you to this opportunity to connect with fellow NSF ECR awardees and NSF program officers (POs) at the 2026 ECR:Core and ECR:BCSER Awardee Meeting on June 29 – July 1, 2026, in Washington, D.C.



We crafted the following meeting program with three core goals in mind:

- 1. Foster relationship building** (a) across disciplinary silos but (b) united by shared interests in common topics.
- 2. Spur new ideas for future research** that would be competitive in the present context for federal funding.
- 3. Assist all awardees in navigating current grant issues and challenges.**

Responding to Community Input []

The ECR Hub used feedback from 56 attendees during a January 2026 community listening session, in addition to feedback from the 2024 ECR PI Meeting, to turn the above goals into concrete meeting activities. The following program includes ***our responses to this community input***, including the rationale for diverging if we were unable to fulfill some specific requests.



What We Heard	How We Responded
Navigating Recent Changes at NSF: Attendees had several questions about NSF funding levels, transparency in the review process, new funding programs, priority areas, and considerations for research on broadening participation.	Multiple Opportunities to Ask NSF Questions: - The opening event is structured as a Q&A with NSF EDU leadership, including options to upvote questions and discuss with peers in roundtables. - A panel session with NSF POs will feature changes introduced by the new STEM K-12 program. - The Wednesday roundtable lunch with NSF POs will also allow for intimate discussions about program-specific and topic-specific questions.



What We Heard	How We Responded
Need for Informality: • Need ample time for relationship building through informal activities. • Awardee meetings can be overscheduled with not enough time for breaks. • Also need time for rest and relaxation.	Multiple Ways to Unwind: • 30-minute breaks and 90-minute lunches. • Dedicated space for informal lounge (District B), along with a quiet room (Bunker Hill). • Set the community norm: Taking breaks from formal sessions to talk with peers or recharge is also time well spent.
Need for Structured Networking Too: • Structured networking activities are also critical; open receptions can be awkward. • Attendees want to find others with related research interests, not network generally.	Structure Around Common Research Interests: • Use natural language processing to suggest networking recommendations in advance. • Build time for peer-to-peer discussion within formal sessions on specific research topics (especially the lightning roundtable sessions).
Interested in Both Content and Process: • Want to talk and learn about specific science, technology, engineering, and mathematics (STEM) education research topics (“content”). • Also want to learn from seasoned PIs on the “process” (e.g., grant management).	Provide a Mix of Formal Sessions: • Offer “content” tracks (e.g., STEM learning topics). • Also offer “process” or how-to sessions. • Make ample use of concurrent breakout sessions to give attendees the agency to choose.



Meeting Agenda []

Monday, June 29

Time	Session
5:00 – 6:00 p.m.	Welcome Reception with Food/Light Refreshments
6:00 – 7:00 p.m.	Opening Q&A with NSF EDU Leadership on Recent Changes at NSF

Tuesday, June 30

Time	Session
9:00 – 10:15 a.m.	Breakout Session 1
10:15 – 10:45 a.m.	Break
10:45 a.m. – 12:00 p.m.	Breakout Session 2
12:00 – 1:30 p.m.	Networking Lunch
1:30 – 2:45 p.m.	Breakout Session 3
2:45 – 3:15 p.m.	Break
3:15 – 4:30 p.m.	Breakout Session 4
4:30 – 5:00 p.m.	Break
5:00 – 6:00 p.m.	Attendee-Led Discussions with Food/Light Refreshments Provided

Wednesday, July 1

Time	Session
9:00 – 9:50 a.m.	Small-Group Networking Sessions with a Program Officer's Portfolio
10:00 – 11:15 a.m.	Breakout Session 5
11:15 a.m. – 12:45 p.m.	Roundtable Lunches with NSF Program Officers
12:45 – 1:00 p.m.	Closing Remarks



Explore the Sessions by Time Slot and Download the Meeting App

See the [sessions here](#) grouped by time slot (the following document instead groups **thematically**):

Monday, June 29		Search
4:00 pm – 5:00 pm	Registration Desk Open Main Hall	Filter by date ☐ Monday, June 29 ☐ Tuesday, June 30 ☐ Wednesday, July 1
5:00 pm – 6:00 pm	Welcome Reception with Food/Light Refreshments Regency ABC Before the formal programming begins, join fellow attendees for an hour of informal conversation with light refreshments. Roundtables will be organized around specific research topics (e.g., family influences on early STEM learning) to help attendees connect... Read More	Filter by location ☐ No Specified Location ☐ Main Hall ☐ Regency ABC

We also encourage you to download the [Whova meeting app](#) to:

- See who else is coming to the meeting (more than 250 attendees)
- Add sessions to your attendee-specific calendar
- Suggest meet-ups around specific topics or social activities



2026 ECR:Core and ECR:BCSER Awardee Meeting
 Washington, DC
 Jun 29 - Jul 1, 2026

Please use the email address you registered with the event to sign up. [Email me this page](#)



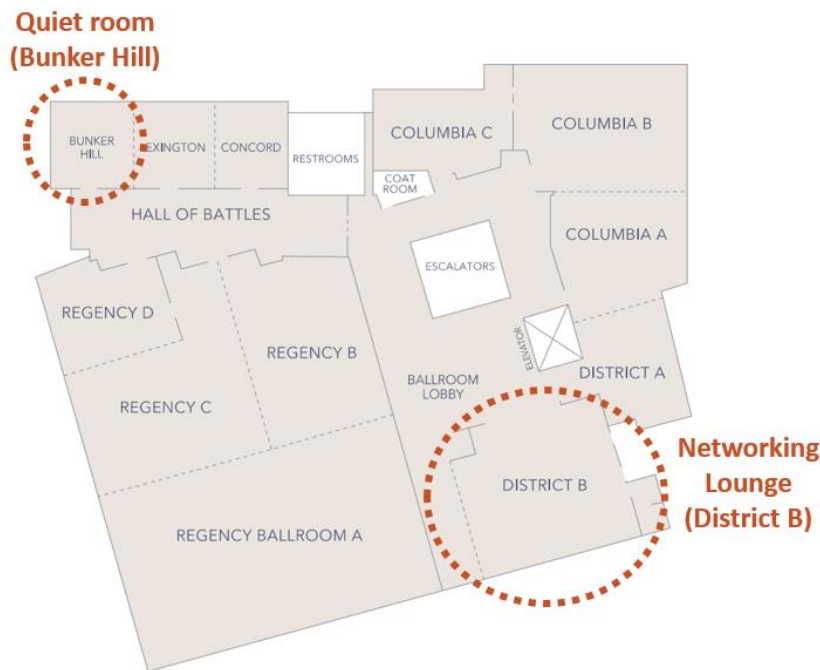

Android users: if you cannot access Google Play or cannot find Whova, please [download the Android app here](#).



Informal Socializing and Structured Networking

Meeting Space Dedicated to Informality []

Aligning with the community input, we encourage attendees to **relax and socialize in District B as a networking lounge** throughout the meeting (available during the days and nights):



Tip: Looking for a calm space to recharge? Check out the quiet room in Bunker Hill.

See [the online agenda](#) for other social activities:

- **Monday, June 29:**
 - [Informal networking hour](#) in topic-specific roundtables (5:00 – 6:00 p.m.)
- **Tuesday, June 30:**
 - [Networking lunch](#) in topic-specific roundtables (12:00 – 1:30 p.m.)
 - [Attendee-led discussions](#) (5:00 – 6:00 p.m.)

Want to Suggest Something Not Already Planned?



Maybe a morning walk? Museum visit after the meeting?

Use the Whova “meet-up” feature!

Instructions: From the app, click “Community” → “Meet-ups & Virtual Meets” → “Suggest a Meet-up” ([more details here](#)).



Three Ways to Talk with NSF Program Officers [

One theme we heard loud and clear was that awardees want to *meet and get feedback from NSF POs*.

1. Small-Group Networking Sessions With a Program Officer's Portfolio

Wed, 9:00–9:50 a.m. (Breakout Rooms)

On Wednesday morning, meet with your cognizant PO and their other assigned awardees in an optional small-group networking session (see the [room assignments here](#)).

2. Roundtable Lunches with Program Officers

Wed, 11:15 a.m.–12:45 p.m. (Regency A)

For Wednesday's lunch, ask POs questions about *future proposal ideas* by joining them at roundtables about ECR:Core or other NSF programs. See the [PO list here](#).

3. Find Program Officers by Their Name Badges

Throughout the meeting (Mon – Wed)

Strike up a conversation with POs during coffee breaks, evening receptions, roundtable discussions, and beyond. Find them by their “Program Officer” ribbons on their name badges. See also [this panel discussion](#) with NSF POs on funding opportunities for PreK-12 STEM education research.

PO–Attendee Interactions: Responding to Listening Session Input

In listening sessions, attendees expressed wanting to have one-on-one meetings with POs in-person. After exploring this option with NSF, offering those meetings at scale was not feasible given how many more attendees there are than NSF POs.

If you have lingering questions after exploring one or more of the in-person options, **email the PO for a potential follow-up, virtual one-on-one meeting.**

Build Your Next NSF Proposal Idea

As you meet with NSF POs, also consider your next NSF proposal idea ([see ECR opportunities here](#)).

Funding type	Next deadline(s)	Maximum length	Maximum amount	Email contact
ECR:Core ¹⁷	First Thursday in October	5 years	\$2,500,000	ECR@nsf.gov ¹⁸
CAREER ¹⁷	Fourth Wednesday in July	5 years	None specified	nsf-ccc@nsf.gov ¹⁸ or educareer@nsf.gov ¹⁸
Conference ¹⁷	Submit any time	1-2 years typically	\$25,000 to \$100,00 typically	ECR@nsf.gov ¹⁸ or ECRBCSER@nsf.gov ¹⁸
MCA ¹⁷	Submission window: February 1 - March 1, annually	3 years	See solicitation	MCA.info@nsf.gov ¹⁸
RAPID ¹⁷	Submit any time	1 year	\$200,000	ECR@nsf.gov ¹⁸
EAGER ¹⁷	Submit any time	2 years	\$300,000	ECR@nsf.gov ¹⁸



Networking and Program Officer Lunches []

Have Lunch With a Program Officer on Wednesday

Don't miss the closing lunch on Wednesday, July 1, at 11:15 a.m. to have an intimate roundtable discussion with a PO.

Talk about ***your future proposal ideas*** for ECR:Core and other NSF programs. Roundtables will be organized by a topic-specific focus and/or specific funding opportunities.

See the [PO list here](#).



Attendees talk with NSF POs over lunch during the 2024 ECR PI Meeting.

On Tuesday, network with your colleagues at topic-specific roundtables for lunch on at 12:00 p.m. Prior to the event, attendees received a personalized recommendation for a table (if they did not opt out during on meeting registration; [see here for more](#)).

Topic-specific roundtables:

1. Family Engagement & Early STEM Learning
 2. Early STEM Learning & Scientific Inquiry
 3. Early Learning of Numbers and Fractions
 4. Early Numeracy, Math Anxiety, & Family Engagement
 5. Collaborative Learning and Peer Interactions
- ...Click the link above for full list



Plenary Evening Sessions

Welcome Event on Monday, 6–7 p.m. (Regency ABC) [[BACK](#)]

Opening Q&A Discussion with NSF EDU Leadership on Recent Changes at NSF



Dr. Charisse Carney-Nunes
Deputy Directorate Head
NSF Directorate for STEM Education (EDU)

Hear from NSF EDU leadership on recent changes at NSF during this opening Q&A session. This session consists of three parts:

1. First, EDU Deputy Directorate Head Dr. Charisse Carney-Nunes will provide opening remarks and an overview.
2. Second, attendees will discuss in small-group roundtables what questions they have and then submit those questions through the Slido platform.
3. Third, Dr. Carney-Nunes will address the top-voted questions during a moderated Q&A discussion with ECR Hub Co-PI Dr. Danielle Ferguson.

Join other attendees for informal conversation beforehand at 5–6 p.m. with food/light refreshments provided. Roundtables will be organized around specific research topics. Prior to the event, attendees received a personalized recommendation for a table (if they did not opt out during on meeting registration; [see here](#)).



Tuesday Night Networking, 5–6 p.m. [

Attendee-Led Discussions with Food/Light Refreshments Provided

Continue the conversation on Tuesday evening with an informal, attendee-driven session.

Participants can propose discussion topics, join conversations aligned with their interests, and connect with colleagues across institutions and career stages. Whether you want to explore a research idea, discuss professional challenges, or expand your network, this flexible session offers dedicated time for meaningful peer-to-peer engagement over light refreshments.

Create a discussion topic [here](#).

Your name *

Meet-up title *

Meet-up description *

Location *

- Select a numbered table if you anticipate 8 or fewer attendees (most common).
- Select an entire breakout room if you want to facilitate a larger gathering (see bottom of list).
- This list is dynamically updated as tables/rooms are picked by others.

View others' topics [here](#) (dynamically updated).



Attendees discuss over lunch in topic-specific roundtables at the 2024 ECR PI Meeting.



Breakout Session Formats

Lightning Roundtables []

For each content track, lightning roundtable sessions will structure peer-to-peer networking:

- Presenters will deliver a **2-minute elevator speech** to an entire room of attendees.



- Presenters will then join the attendees at roundtables for further discussion with attendees who are most interested in a presenter's project, using a [one-page infographic](#) as a resource.



Lightning Roundtables: Responding to Listening Session Input

The lightning roundtable format responds to several PI listening session themes:

- **Desire for interaction and networking:** Many PIs stressed having roundtables organized around specific topics as “important spaces of conversation.”
- **Minimize “show off”:** PIs valued interactions where “you can truly bounce off ideas and not need to show off how great you are” and discuss “problems of practice.”
- **Short talks can still be useful:** Several PIs noted how “flash talks” or “mini-spotlights” are still effective and efficient ways for hearing about others’ projects.

Some attendees also wanted a poster session as a low-stakes way to share your research. Though we are not offering a poster session, we believe this lightning roundtable format still responds to the underlying interest in a low-stakes presentation opportunity. We are also now encouraging attendees to switch tables midway through the session, allowing for interactions with multiple presenters, as in poster sessions.



Forward-Thinking Panel Discussions []

For each content track, multiple topic-specific panels will respond to attendee interest in discussions for **fostering proposal ideas** and forming connections between scholars **across disciplinary boundaries**. These panel discussions aim to be more forward thinking than traditional “paper presentations.”



Panelists discuss grant management tips during the 2024 ECR PI Meeting.

The panel discussion format has three components as follows:

- Panelists provide **brief opening remarks** grounding the panel topic in their ECR projects.
- A moderator **facilitates discussion** among panelists, especially about future directions.
- Audience members **can pose questions** to panelists through a platform called [Slido](#).

Transparency: How Were the Topics and Panelists Selected?

The ECR Hub team first conducted topic modeling of all active ECR award abstracts, forming an initial list of possible panel topics. The ECR Hub team then worked with the planning committee and NSF POs to identify the most promising topics and select the active ECR awardees who could speak to the topic well.

We placed particular attention on ensuring disciplinary diversity within each panel, while also attending to other dimensions of diversity across panels in terms of institution type, ECR project type, awardee demographics, and awardee career stage.



Content Track Sessions

STEM Learning and Learning Environments (Innovative Approaches) [[← BACK](#)]

Panel Discussion: Using AI and Natural Language Processing as Data Analysis Tools

Tue, 3:15–4:30 p.m. (Columbia B): Alejandra Magana, Ha Nguyen, Hamid Karimi, and Denise Wilson (Moderator)

This panel will discuss how natural language processing (NLP) can provide powerful tools for analyzing large amounts of textual and other qualitative data. The case examples will include intercultural team cognition, multimodal formative feedback, and computer programming assignments. Beyond showcasing their work, the panelists will describe how they developed or deepened their NLP expertise, including how recent advances in large language models (e.g., GPT) provide novel approaches and present new needs for growing researchers' methodological skills.



Lightning Roundtable: Advances in Research Synthesis and Meta-Analysis of STEM Learning

Tue, 9:00–10:15 a.m. (Columbia A)

This lightning roundtable session highlights advances in research synthesis and meta-analysis in STEM education research. Specific topics include new tools for evidence synthesis, psychosocial interventions in postsecondary mathematics, heterogeneity in mathematics interventions, and meta-analytic models linking engagement and achievement.

Presenter	Award	Award Title
Carlton Fong	2300030	ECR:Core: Psychosocial Interventions to Improve Postsecondary Student Mathematics Attainment: A Meta-Analysis Exploring What Works and for Whom
Jonte Myers	2501105	Exploring Sources of Heterogeneity in Supplemental Interventions for Students with Mathematics Difficulties within Multi-tiered Systems of Support: A Meta-Analysis
Megan Austin	2400530	ECR:Core: Advances in Research Synthesis through Expansion of MetaReviewer's Functionality



Qi Zhang	2300738	ECR:Core: Meta-Analysis of the Instructional-Relational Model of Student Engagement and Math Achievement: A Moderation and Mediation Approach
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Lightning Roundtable: Longitudinal Research on Early STEM Learning

Tue, 10:45 a.m.–12:00 p.m. (Columbia C)

This lightning roundtable session highlights longitudinal research on the development of early STEM learning and achievement.

Presentations examine methodological advances for longitudinal STEM education research, the early roots of scientific literacy and interest, the development of number and spatial skills across childhood, and foundational learning processes related to fractions.



Presenter	Award	Award Title
Heather Bachman	2400078	ECR:Core: Number and Spatial Skill Development From 2 Years To 2nd Grade: Examining Associations with Home Math Environments in Early and Middle Childhood
Jihye Bae	2300024	ECR:Core: Science Sprouts 2.0: Extending and Replicating a Longitudinal Investigation of the Roots of Scientific Literacy and Interests
Stephanie Carlson	2201888	ECR:Core: Aligning Measurement of Personal Attributes for Predicting STEM Education Outcomes
Wei Li	2339353	ECR-CAREER: Statistical Power Analysis and Optimal Sample Size Planning for Longitudinal Studies in STEM Education

Lightning Roundtable: Measuring Learning Constructs and Processes in Innovative Ways

Wed, 10:00–11:15 a.m. (Regency C-D)

This lightning roundtable session explores innovative approaches to measuring learning constructs, instructional quality, and student outcomes in STEM education research. Specific topics include outcome measure sensitivity, design fixation and learning preferences, three-dimensional science assessments, measurement of personal attributes, observations of classroom instruction, and computer-assisted approaches to evaluating lesson plans.



Presenter	Award	Award Title
Bill Therrien	<u>2201464</u>	ECR:Core: Science Education Instruction for Elementary Students with Learning Disabilities
Cari Herrmann Abell	<u>2201438</u>	ECR:Core: Exploring the Validity of Three-Dimensional Assessments for Understanding Student Learning of Science
Evangelia Chrysikou, John Gero	<u>2100138</u>	ECR:Core: Learning Preferences and Domain Differences in Design Fixation
Peter Halpin	<u>2400864</u>	ECR:Core: Statistical Methods and Sensitivity Analyses: How the Choice of Outcome Measures Affects the Conclusions of STEM Education Research Studies
Rachel Ayieko	<u>2300291</u>	ECR:Core: Integration of Computer-Assisted Methods and Human Interactions to Understand Lesson Plan Quality and Teaching to Advance Middle-Grade Mathematics Instruction



STEM Learning and Learning Environments (Focused Research Topics) [[← BACK](#)]

Panel Discussion: AI in Education: Advancing Theory, Responsible Use, and Funding Priorities

Tue, 1:30–2:45 p.m. (Regency B): N Sanjay Rebello, Zhen Bai, Victor Lee, and Kevin Clark (Moderator)



Artificial intelligence opens new opportunities for advancing fundamental theories of learning, cognition, and instruction, while also raising critical ethical questions about responsible use. Yet, to date, only relatively few ECR projects have examined AI as an educational tool within theory-driven, fundamental research. This panel's ECR-funded researchers will therefore explore how both student-facing and teacher-facing AI tools can generate new insights into learning processes, refine theoretical models, and support rigorous inquiry across varying educational contexts. An NSF program officer will also offer a field-wide perspective on emerging research directions and NSF's current funding priorities for AI in education.

Panel Discussion: Early Math Learning: Translating Between Basic Insights and Applied Research

Wed, 10:00–11:15 a.m. (Columbia B): Bethany Rittle-Johnson, Geetha Ramani, Melissa Gresalfi, and Nancy Jordan (Moderator)

This panel discussion will explore how foundational research on early mathematics learning can inform and be informed by applied interventions. Case examples include fraction understanding in early elementary grades and playful learning at home and in classrooms. Together, these projects bridge basic and applied perspectives, highlighting how insights about children's thinking can inform the next phases of translational research on effective instructional and family practices. Panelists will also discuss how recent funding changes (e.g., the new STEM K-12 program) have informed and shifted their plans for future proposals.



Lightning Roundtable: Fundamental Research on Digital Learning Environments

Tue, 9:00–10:15 a.m. (Lexington-Concord)

This lightning roundtable session ([see session type here](#)) explores fundamental research on digital and technology-supported STEM learning environments. Specific topics include video-based statistics instruction, online credit recovery classes in high school, contextual factors in asynchronous online physics courses, virtual reality for civil engineering education, and reasoning with multidimensional datasets.

Presenter	Award	Award Title
Fei Dai	2526873	BCSER IID: Building Material Impact-Aware Civil Engineers: Virtual Reality as a STEM Education Tool
Jason Morpew	2400568	ECR:Core: Understanding Cueing Gesture within Video Learning Environments for Statistics Education
Louis Leblond	2422432	BCSER IID: Connecting Contextual Factors to Academic Outcomes in Asynchronous Online Physics Courses
Lynn Stephens	2201177	ECR:Core: Supporting Reasoning with Multidimensional Datasets: Leveraging Student Intuitions Through Collaborative Data Production
Samantha Viano	2237703	ECR-CAREER: Second Chance STEM: Uncovering School Policies Structuring Access to and Engagement in High School STEM Credit Recovery

Lightning Roundtable: Investigating Motivation and Engagement in STEM Learning

Tue, 9:00–10:15 a.m. (Regency C-D)

This lightning roundtable session ([see session type here](#)) explores motivation, engagement, and learning processes across STEM education contexts. Specific topics include curiosity-driven science learning, motivation in general education science courses, the effects of alternative grading strategies, and motivating math learning through revision and rough drafts.

Presenter	Award	Award Title
Amanda Jansen	2400492	ECR:Core: Motivating Mathematics in the Middle Grades by Learning Through Rough Drafts and Revising
Andrea Goering	2526856	BCSER IID: Investigating Motivation and Engagement in General Education Science Courses using Mixed Methods
Emily Peterson	2239591	ECR-CAREER: Investigating Curiosity-Driven Visual Processing during Science Learning
Karla Rivera Caceres	2321167	BCSER IID: Evaluating the Effect of Alternative Grading Strategies on Goal Orientation, Motivation, Self-Efficacy, and Content Learning



Lightning Roundtable: AI and Emerging Technologies in STEM Learning

Tue, 10:45 a.m.–12:00 p.m. (Columbia A)

This lightning roundtable session ([see session type here](#)) explores the role of AI and emerging technologies in supporting STEM learning at K–12 and undergraduate levels. Specific topics include machine learning education, AI instructional tools in biology, adaptive spaced retrieval, learning temporally structured concepts, and AI-supported multimodal formative feedback.

Presenter	Award	Award Title
Bruce Maki	2422463	BCSER IID: Effectiveness of AI-based Instructional Tools in Improving Undergraduate Biology Student Learning
George Veletsianos	2526452	BCSER Institute: Expanding STEM Education Researchers' Generative AI Capacities
Ha Nguyen	2422286	BCSER IID: Supporting Ambitious and Equitable Science Learning: Leveraging Artificial Intelligence in Developing Multimodal Formative Feedback
Paulo Carvalho	2301130	ECR:Core: Improving STEM K-12 Learning Using Optimal Spaced Retrieval in an Existing Educational Technology Platform
Zachariah Reagh	2452556	ECR:Core: Learning Temporally Structured Concepts
Zhen Bai	2238675	ECR-CAREER: Towards Embodied Learning for K-12 Machine Learning (ML) Education

Lightning Roundtable: Collaborative Learning and Peer Interactions

Tue, 10:45 a.m.–12:00 p.m. (Regency C-D)

This lightning roundtable session ([see session type here](#)) examines collaborative learning, peer interactions, and team processes across STEM education contexts. Specific topics include metacognitive skill development in collaborative learning, student interactions in belonging-oriented mathematics classrooms, and collaborative programming in elementary computer science, intercultural team cognition in STEM.

Presenter	Award	Award Title
Alejandra Magana	2219271	BCSER IID: An AI-Augmented Phenomenographic Approach to Conceptualizing Undergraduate Students Experiences of Intercultural Team Cognition in STEM
Arif Rachmatullah	2500509	ECR:Core: TogetherCS: A Systematic Investigation of Collaborative Programming Models for Upper Elementary School



Julie Stanton	1942318	ECR-CAREER: Characterizing the Development of Metacognitive Skills in Life Science Undergraduates and How They Use Metacognition to Learn Independently and Collaboratively
Nancy Kress	2400903	ECR:Core: Exploring Student Interactions in Small Groups in Belonging-Oriented Undergraduate Mathematics Classrooms

Lightning Roundtable: Conceptual Development and Reasoning in Undergraduate STEM Courses

Tue, 10:45 a.m.–12:00 p.m. (Lexington-Concord)

This lightning roundtable session ([see session type here](#)) examines conceptual development and reasoning in undergraduate STEM learning. Specific topics include systems thinking in environmental science, epistemological messaging, principle-based reasoning, conceptual change related to natural selection, and student understanding of linear algebra in quantum information science.



Presenter	Award	Award Title
Jennifer Doherty, Safana Ismael	2400798 , 2400797	ECR:Core: Investigating How Students Develop Principle-Based Reasoning in Undergraduate Physiology: Mechanisms for Conceptual Change
Julia Svoboda	2300437	ECR:Core: Modeling the Conceptual Dynamics of College Students' Reasoning about Natural Selection
Megan Wawro	2500569	ECR:Core: Student Understanding of Linear Algebra across Quantum Information Science
Rosemary Aviste	2400411	ECR:Core: Cognitive Foundations of Environmental Science Education: Exploring Impacts of Human Exceptionalism on Marine Social-Ecological Systems Thinking
Ryan Stowe	2452886	ECR:Core: Modeling Epistemological Messaging in College Science Courses

Lightning Roundtable: Mathematical Cognition in Elementary and Middle School

Tue, 1:30–2:45 p.m. (Lexington-Concord)



This lightning roundtable session ([see session type here](#)) examines cognitive, instructional, and neurobiological processes underlying mathematics learning in elementary and middle school. Specific topics include numeracy development through game-based learning, the malleability of mature number sense, conceptual mathematics discussions with English learners, and the role of gesture in mathematical learning.



Presenter	Award	Award Title
Bethany Rittle-Johnson	2400562	ECR:Core: Leveraging Numerical Patterns in a Modified Board Game to Improve Numeracy Knowledge in Primary School Students
Haiwen Chu	2400767	ECR:Core: Investigating Novel Mathematics Tasks for Engaging in Conceptual Talk with English Learners
Marine Wang	2055420	ECR:Core: The Neurobiological Mechanisms Underlying Gesture's Role in Mathematical Learning
Nicole McNeil	2400686	ECR:Core: Assessing the Malleability and Impact of Third Through Eighth Grade Students' Mature Number Sense

Lightning Roundtable: Spatial Thinking in STEM

Tue, 1:30–2:45 p.m. (Columbia A)

This lightning roundtable session ([see session type here](#)) explores spatial thinking and reasoning across STEM learning contexts. Specific topics include spatial skill development in early childhood, learners' understanding of spatiotemporal data, instructional analogies in geoscience learning, dynamic measurement for area, and spatial skills assessments.

Presenter	Award	Award Title
Ariel Starr	2201033	ECR:Core: Promoting Spatial Skill Development
Jennifer Wiley	2300990	ECR:Core: Effects of instructional analogies on illusions of understanding in Introductory Geoscience
Joni Lakin	2500659	ECR:Core: Assessing Spatial Skills in Cognitive Science and STEM Education Research
Katherine Miller	2201154	ECR:Core: Data in Space and Time: Supporting Learners in Understanding and Analyzing Spatiotemporal Data
Nicole Panorkou	2321234	BCSER IID: Designing an Equitable Approach to Multiplicative Reasoning through Dynamic Measurement for Area (DYME-A)

Lightning Roundtable: Parent and Family Influences on Early STEM Learning

Tue, 3:15–4:30 p.m. (Lexington-Concord)

This lightning roundtable session ([see session type here](#)) examines how parent and family interactions shape early STEM learning and engagement. Specific topics include over-engaged parenting and science achievement, the role of picture books in supporting scientific conversation, science-related storytelling, and parent-child interactions that foster STEM engagement.



Presenter	Award	Award Title
David Sobel	2300459	ECR:Core: Fostering STEM Engagement from Parent-Child Interaction
Julia Leonard	2247807	ECR:Core: Over-Engaged Parenting and Science Achievement in Early Childhood
Katie Leech	2339516	ECR-CAREER: The Role of Picture Books in Promoting Parent-Child Scientific Conversation and Learning
Maureen Callanan	2055426	ECR:Core: Latinx Families' Talk about Science in Stories with Young Children

Lightning Roundtable: Teacher Reasoning, Identity, and Development

Tue, 3:15–4:30 p.m. (Regency C-D)

This lightning roundtable session ([see session type here](#)) examines how K-12 teachers and undergraduate faculty develop expertise, professional identity, and instructional reasoning across STEM learning contexts. Specific topics include teacher tolerance for ambiguity, AI's impact on the work of teaching, online professional development, teacher expertise in scientific observation, and instructional behavior and faculty identities in course-based undergraduate research experiences.

Presenter	Award	Award Title
Jing Zhang	2321218	BCSER IID: Faculty Professional Identity in Community Networks for Course-based Undergraduate Research Experiences
Lauren Barth-Cohen	2201764	ECR:Core: Learning to Observe: Unpacking Teachers Development of Expertise in Scientific Observation
Matt Wu	2526716	BSCER IID: Developing Expertise in Survey Design to Identify Advancements for Effectiveness and Excellence in Chemistry Instructional Laboratories
Michelle Perry	2301272	ECR:Core: Examining Elementary Mathematics Teachers' Behaviors and Learning with an Online Professional Development Platform
Victor Lee	2500101	ECR:Core: Exploration and Adaptation of Experience Sampling to Understand the Impact of Artificial Intelligence Tools on the Work of Teaching



Broadening Participation in STEM [[BACK](#)]

Panel Discussion: Pursuing Broadening Participation Research in a New Funding Environment

Tue, 10:45 a.m.–12:00 p.m. (Columbia B): Arash Esmaili Zaghi, Karin Jensen, Meta Brown, and Kendra Cheruvelil (Moderator)

This panel discussion focuses on how researchers are navigating new constraints and evolving expectations for research on broadening participation in STEM in light of recent shifts in NSF priorities. Case examples include learners with disabilities, socioeconomic challenges, and faculty mental health, representing both projects funded within the past year and earlier. Together, these perspectives offer practical strategies for sustaining rigorous, impactful broadening participation research under new funding conditions.



Lightning Roundtable: Research on Broadening Participation in Academic STEM Careers

Tue, 9:00–10:15 a.m. (Columbia C)

This lightning roundtable session ([see session type here](#)) brings together research examining how academic environments, institutional processes, and professional experiences shape participation and persistence in academic STEM careers. Specific topics include faculty mental health and well-being, fairness in promotion and tenure evaluation, early-career climate experiences, interdisciplinary PhD training environments, and engineering identity development in scholars with imposter feelings.

Presenter	Award	Award Title
Andrew Hanks	2100234	ECR:Core: Examining Training Environments and Career Outcomes of Interdisciplinary STEM PhD Students
Christiane Spitzmueller	2100034	ECR:Core: External Review Letters in Promotion and Tenure Decision Making: Validity and Fairness
Karin Jensen	2400386	ECR:Core: Understanding STEM Faculty Mental Health and Well-Being: Impacts on Equity in Higher Education
Kendra Cheruvelil	2300710	ECR:Core: Broadening Participation of Marginalized Scholars In STEM: The Longitudinal Influence of Early-Career Climate Experiences on Professional Pathways
Rajashi Ghosh	2421846	ECR-MCA: Towards a Theory of Engineering Identity Development & Persistence of Minoritized Students with Imposter Feelings: A Longitudinal Mixed-methods Study of Developmental Networks



Lightning Roundtable: Undergraduate STEM Persistence, Identity, and Pathways

Tue, 1:30–2:45 p.m. (Regency C-D)

This lightning roundtable session ([see session type here](#)) examines factors influence undergraduate persistence and pathways in STEM fields, including topics such as adversity experiences, self-selection into entrepreneurship education, AI-supported career exploration, and factors that predict undergraduate STEM persistence.

Presenter	Award	Award Title
Aramati Casper	2422358	BCSER IID: Developing Advanced Statistical Modeling Skills to Understand the Complexities of Student Persistence in STEM
Prateek Shekhar	2321175	BCSER IID: Leveraging Machine Learning to Examine Engineering Students Self-selection in Entrepreneurship Education Programs
Yuko Okado	2237924	ECR-CAREER: Improving Persistence of Underserved Students in Psychological Science Using an AI-Based, Personalized Career Exploration Platform

Lightning Roundtable: Using Informal Learning Environments to Broaden Participation in STEM

Wed, 10:00–11:15 a.m. (Lexington-Concord)

This lightning roundtable session ([see session type here](#)) explores how informal and community-based learning environments can broaden participation in STEM. Presentations examine culturally responsive engineering instruction, efforts to expand access to regional science fairs, bio-inspired robotics for STEM engagement, and family routine-based interventions to support preschool math learning.

Presenter	Award	Award Title
Deeksha Seth	2422459	BCSER IID: Use of a Bio-Inspired Educational Snake-Jaw Robot to Enhance STEM Engagement
Dina Verdín	2225306	BCSER IID: Empowering Children of Migratory/Seasonal Farmworkers with Gamification and Culturally-Responsive Engineering Design Instruction
Emily Mortimer, Javen Weston	2422507	BCSER IID: Investigating Barriers to and Designing Activities and Tools for Broadening Participation in the Tulsa Regional Science Fair among Underrepresented Students in Northeast Oklahoma
Rebecca Reiner	2400454	ECR:Core: Improving Preschoolers' Math Skills by Designing Math Interventions for Family Routines and Children's Math Skills



STEM Workforce Development []

Panel Discussion: Career Formation in STEM Undergraduates via Research and Design Experiences

Tue, 9:00–10:15 a.m. (Regency B): Cedrick Kwuimy, Philip Vieira, Yuko Okado, and Jing Zhang (Moderator)

This panel discussion explores how research and experiences among undergraduates contribute to advancing theory on STEM career development and identity formation. Panelists examine the integration of design thinking with course-based undergraduate research, the learning processes from cooperative education experiences, and AI-driven personalized career exploration tools. These projects aim to uncover the mechanisms through which undergraduates develop career interests, professional identities, and trajectories in STEM.



Lightning Roundtable: Emerging Competencies and Workforce Pathways in STEM

Tue, 3:15–4:30 p.m. (Columbia A)

This lightning roundtable session ([see session type here](#)) identifies emerging competencies (e.g., in AI, product design, troubleshooting) and explores career pathways (e.g., with microcredentials or job ladders) in the evolving STEM workforce.

Presenter	Award	Award Title
Ahmet Can Sabuncu	2422510	BCSER IID: Developing a Troubleshooting Learning Environment
Michael Schultz	2622136	ECR:Core: Job Ladders in the STEM Skilled Technical Workforce
Ning Sui	2526759	BCSER IID: STEM Education Research Capacity Building Individual Investigator Development: Building Computational Capacity in Biochemistry Education for the AI+ Era
Rob Moore	2440077	ECR-CAREER: The Aligning Learners' Intentions with Goals and Needs (ALIGN) Model: Connecting Learners to STEM Careers Through STEM Microcredentials
Rui Liu	2443014	ECR-CAREER: Enhancing Situated Cognition in Product Design and Manufacturing Education through Visual Experiential Learning



Lightning Roundtable: Career Interests and Identity Development Among STEM Undergraduates

Wed, 10:00–11:15 a.m. (Columbia C)

This lightning roundtable session ([see session type here](#)) explores how STEM undergraduates develop career interests, professional identities, and self-efficacy for future science and engineering careers.

Presenter	Award	Award Title
Cedrick Kwuimy	2500693	ECR:Core: Exploring Engineering Students' Journey of Transformative Learning through Their First Cooperative Education Industry Experiences
Dina Zohrabi Alaei	2500744	ECR:Core: Developing a Causal Map Assessment Tool for Undergraduate Career Interest Formation and Decision-Making
Gabriel LeBlanc	2422520	BCSER IID: Developing Skills in Qualitative Analysis for a New STEM Education Researcher through the Evaluation of Science Identity in Student-Workers
Monica Palomo	2526581	BCSER IID: Invitational Teams in Civil Engineering for Self-efficacy Increase and Effective Workforce Development



How-to Sessions

Career Development and Grant Management Sessions []

Discussion: How Should I Spend My Time in This New Funding Landscape? Roundtable Breakouts by Career Stage

Tue, 9:00–10:15 a.m. (Regency A): David Miller

The funding environment is changing rapidly, creating new challenges and opportunities for researchers at every career stage. In this interactive session, attendees will join small-group discussions organized by career stage to share concerns, exchange strategies, and discuss how to prioritize research, proposal development, networking, and career planning in the current landscape. Come ready to learn from peers and contribute your own experiences.

Panel Discussion: Grant Management Tips From Seasoned PIs

Tue, 9:00–10:15 a.m. (Regency A): Andrea Beach, Elizabeth Gunderson, Ilaria Berteletti, Susan Goldin-Meadow, and Maura Borrego (Moderator)

Learn practical tips from seasoned NSF PIs on managing budgets, using your institution's administrative support staff, submitting annual reports, requesting supplemental funds, obtaining no-cost extensions, and closing out grants. The PI panelists will discuss how the tips may vary based on the individual PI, the institution, and the grant management situation.

Panel Discussion: What Can Newer BCSER Individual Investigator Development PIs Learn from More Experienced Ones?



**EDU Core Research:
Building Capacity in STEM Education Research
(ECR: BCSER)**

Tue, 10:45 a.m.–12:00 p.m. (Regency B): Dina Verdin, Nicole Panorkou, Ryan Stowe, and Terri Pigott (Moderator)

For many BCSER Individual Investigator Development (IID) PIs, their award is their first as an NSF PI and often their first STEM education research project. For others, their project entails venturing into new methodological or content areas. In this panel discussion, experienced BCSER:IID PIs in their third grant year and beyond will discuss challenges encountered along the way and lessons learned. The session offers practical advice, candid insights, and actionable strategies to help newer PIs position themselves for long-term success, including for future extensions after the BCSER award ends.



Proposal Development Sessions []

Workshop: Responding to Declination: Strategies for Revising a Declined Proposal

Tue, 1:30–2:45 p.m. (Columbia B): Roni Ellington and Danielle Ferguson (Facilitators)

This workshop is targeted for prospective grantees whose recent submission to an ECR solicitation was declined. Facilitators will also share their tips on dealing with the painful initial sting of declination. Facilitators will also walk attendees through (a) an overview of the ECR:Core program, (b) separating useful reviewer feedback from idiosyncratic feedback, (c) creating a plan of what to revise, (c) deciding if the proposal needs additional personnel or co-PIs to address gaps in expertise, and (d) building a list of who to solicit feedback from before submitting the revised proposal (e.g., NSF program officers, peers, mentors, advisory board members).



Discussion: Creative Ways for Doing Research with Less Money

Tue, 1:30–2:45 p.m. (Regency A): David Miller (Facilitator)

How can researchers continue producing high-quality work amid funding constraints? This session highlights practical, creative approaches for conducting impactful research with limited resources. Topics may include leveraging existing data, building collaborations, sharing infrastructure, using emerging technologies, and designing cost-efficient studies. Attendees will exchange ideas, lessons learned, and strategies for sustaining productive research programs in challenging funding environments. [See specific discussion topics here.](#)



NSF Funding Opportunities for PreK-12 STEM Education Research: A Panel with Program Officers

Tue, 3:15–4:30 p.m. (Regency A): David Daniel, Margret Hjalmarson, Rob Ochsendorf, Amanda Merritt (moderator), and Jessaca Spybrook (moderator)

This panel discussion with NSF program officers focuses on funding opportunities at NSF to support research relevant to formal PreK-12 STEM education teaching and learning. The session will include an opportunity for participants to engage in the conversation and ask questions. The session will be moderated by the Center for STEM Education Research and Translation (SERT), a resource center funded to support the development and use of research funded by the National Science Foundation among PreK-12 STEM education communities.



Workshop: Turning Proposal Ideas Into Full-Fledged Winning ECR Proposals

Wed, 10:00–11:15 a.m. (Regency A): Erin Lynch (Facilitator)

This workshop is designed for attendees without prior funding as an ECR PI and assumes they have already developed a one-pager for their ECR proposal idea. Facilitators will share their pearls of wisdom on turning a one-page proposal idea into a full-fledged competitive proposal. Facilitators will also discuss topics such as grant writing, partnership formation, and budget planning through hands-on activities, group discussions, and peer-to-peer networking opportunities. The workshop content will especially focus on the initial phases of turning an idea into an outline for a 15-page project description, while directing attendees to existing online resources for later proposal development stages after the Awardee meeting.

Proposal Development: Responding to Listening Session Input

These proposal development sessions respond to PIs' universal interest in sustaining their funded research portfolio, while addressing the distinct needs of different groups. For instance, many BCSER IID PIs expressed interest in scaling up their pilot project to ECR:Core, whereas ECR:Core PIs noted how "NSF programs and opportunities are kind of confusing to navigate" beyond the ECR program.

Further Resources on Proposal Development

Explore the ECR Hub website to better understand [what ECR funds](#) and [learn practical tips](#).

1. Consider what *fundamental research* means in your context ([see description here](#)).
2. Explore [example ECR projects](#) for the funding opportunity that most interests you below.
3. Read the [ECR:Core](#) or ECR Building Capacity in STEM Education Research ([ECR:BCSER](#)) solicitations.
4. Use [this recorded ECR Hub workshop](#) to develop a one-pager of your idea.
5. Contact an NSF program officer with your one-pager ([see contact details below](#)).
6. Subscribe to [the ECR Hub Mailing List](#) for updates of future community events and resources.



Learning Series Sessions []

Discussion: Methods Resources for Teaching and Research from BCSER Institutes



**EDU Core Research:
Building Capacity in STEM Education Research
(ECR: BCSER)**

Tue, 10:45 a.m.–12:00 p.m.

***(Regency A): Terri Pigott and other
BCSER institute leaders***

Attendees will have the opportunity to consult with BCSER Institute PIs on various research methods. Attendees will participate in roundtable discussions where BCSER Institute PIs will share resources to deepen understanding of methods relevant for STEM education research. These BCSER Institutes span many quantitative and qualitative approaches (see the [presenting institute list here](#)). Any attendee is welcome to come, and BCSER IID PIs are especially encouraged to come.

Workshop: Bringing Education Core Research Questions to SafeInsights

Wed, 10:00–11:15 a.m. (Regency B): JP Slavinsky

SafeInsights, NSF's largest investment in education research infrastructure, opens new possibilities for education researchers to answer K-16+ through workforce questions. SafeInsights assists edtech platforms and educational institutions in setting up secure enclaves for their data. With our help, researchers send their questions to the enclaves and get answers that traditional sources don't support, without ever accessing students' personal data. In this session, we'll demo the researcher portal end-to-end and extend the opportunity to join our beta program launching this fall. If you have a question waiting for the right data, come talk with us. Learn more at safeinsights.org.

Workshop: Venturing Into Systematic Review and Meta-Analysis

Wed, 10:00–11:15 a.m. (Columbia A): Beth Tipton

In this workshop, we will provide an overview of systematic review and meta-analysis methods for STEM education researchers. The workshop will emphasize freely available resources designed to support the stages of systematic review and meta-analysis. The workshop will illustrate systematic review and meta-analysis principles using a published meta-analysis on the effectiveness of math interventions. Participants will also have the opportunity to discuss their on-going projects.

BCSER Institute Leaders Brainstorm How to Share and Sustain Resources

Tue, 1:30–2:45 p.m. (Columbia C): Terri Pigott (Facilitator)

This closed session will allow BCSER Institute PIs to share experiences and discuss dissemination strategies.



Learn More About the ECR Data Hubs and BCSER Institutes

Explore the [ECR Hub website](#) for more information, including links for the two ECR Data Hubs and the BCSER institutes.

Partner Hubs and Institutes

The ECR Hub advances shared goals with other ECR-funded hubs and institutes that focus on specific methods and practices, as well as with the resource centers for other NSF programs.

