



ECR Hub
EDU Core Research



Proposal Workshop

Interested in NSF Funding to Train STEM Education Researchers Across the Nation?

BCSER:IMP Solicitation (NSF 22-548) | November 8, 2024



Agenda

1. ECR Hub Overview
2. Overview of BC SER:IMP Solicitation
3. Current BC SER Institutes
4. Workshopping
5. Breakout Rooms
6. Closing



ECR Hub Overview

- 5-year resource center funded by the National Science Foundation (Award Abstract # 2208422)
- **ECR Hub Leadership**
 - American Institutes for Research
 - Georgia State University
 - Morgan State University
 - Northwestern University



Overarching Goals and Target Audiences

Two overarching goals:

- Extend the influence and reach of existing ECR investments
- Build career development opportunities, especially for underrepresented institutions and scholars

Three target audiences:

- Current ECR grantees
- Prospective ECR grantees
- Stakeholders in other NSF EDU programs (reached via other NSF EDU resource hubs)



ECR Hub Goals

- **Identify the needs of a diverse ECR grantee community** through interviews and surveys of key stakeholders such as current and prospective ECR grantees.
- **Catalogue and synthesize past and current ECR research** through building interactive data tools and topic-specific evidence snapshots for finding specific kinds of ECR projects and learning about their results.
- **Strengthen research networks and information sharing for more than 400 current grantees** through organizing grantee meetings and workshops, creating a centralized website, and sharing information and engaging the community via social media.
- **Conduct outreach and broaden participation of prospective grantees** through proactive efforts to reach scholars and institutions underrepresented in the current ECR portfolio through targeted workshops, webinars, and communities of practice.
- **Consolidate and disseminate resources from existing ECR training institutes** by creating an efficient, one-stop, location on the ECR Hub website for users to access methodological training content (e.g., slides, videos, upcoming events).
- **Build collaborations with other NSF STEM education resource hubs** to advance long-term ECR program goals, such as realizing the potential of fundamental research to inform the next phases of more applied research.



Presenters

BCSER:IMP PIs

Dr. Terri Pigott

[Modern Meta Analysis Research Institute \(MMARI\)](#)

Dr. Karen Nylund-Gibson

[Mixture Modeling for Discipline-Based Education Researchers \(MM4DBERS\)](#)

Dr. Odis Johnson

[Institute in Critical Quantitative, Computational, and Mixed Methodologies \(ICQCM\)](#)

Dr. Tracy Sweet

[Quantitative Researcher Methods for STEM Education Scholars Program \(QRM Scholars\)](#)

NSF Program Officers

Dr. Jennifer Lewis

Dr. Jessie DeAro



Overview of BC SER:IMP Solicitation





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

Solicitation NSF 22-548

Supports projects that build investigators' capacity to carry out high-quality STEM education research that will enhance the nation's STEM education enterprise

ECR: BCSEER supports projects that build investigators' capacity to carry out high-quality STEM education research.

Individual Investigator Development (IID)

Open to researchers at any career stage to build STEM education research competencies

Funding: Up to \$350,000 over a maximum of 3 years

Institutes in Methods and Practices (IMP)

To support investigators with knowledge and expertise to design and implement institutes to provide training and support for STEM education research methodologies and practices

Funding: Up to \$1,000,000 over a maximum of 3 years



ECR: BCSEER supports projects that build investigators' capacity to carry out high-quality STEM education research.

Institutes in Methods and Practices (IMP)

To support investigators with knowledge and expertise to design and implement institutes to provide training and support for STEM education research methodologies and practices

Funding: Up to \$1,000,000 over a maximum of 3 years



What are Institutes?

Institutes in Methods and Practices:

Institutes provide participants with training and support in the use of cutting-edge methodological techniques and/or practices that advance the participants' knowledge, skills, and competencies in STEM education research.

https://ecrhub.org/ecr-projects?sf=&submitform=Search&l=search&f_2=y&sa=&sortby=date#ecrprojectssearch

Participants may include investigators at any stage in their career development.

Proposals are strongly encouraged to include substantive involvement of researchers who are members of groups historically underrepresented in STEM and/or those affiliated with minority serving institutions as participants and/or project personnel.



Proposal Preparation for Institutes in Methods and Practices (IMP)

Institutes in Methods and Practices (IMP) proposals should articulate:

- Description of prioritized participants and recruitment/selection plans
- Articulation of the specific methods and/or practices in which capacity will be built
- Evidence that the prioritized participants need the proposed knowledge, skills, and competencies
- Relevance to ECR: BCSEER program goals
- The scope and significance of the institute's mission and goals
- Detailed description of the curriculum, training plan, schedule of activities, and expected outcomes
- Description of organization's (investigator's) capabilities, evidence of prior success, and detailed project management plan
- Mechanisms to assess the success of the project, both formative and summative.



Proposal Preparation for Institutes in Methods and Practices (IMP)

Institutes in Methods and Practices (IMP) proposals should articulate (simplified version):

- Who is the intended audience?
- What knowledge, skills, and/or competencies will they gain?
- What evidence suggests they need to gain in these specific areas?
- How will these gains lead to improved capacity for high-quality STEM education research for the nation?
- How many participants will be served, and why is this a good number?
- What will these participants experience, and what will success look like?
- What evidence suggests that the project team will succeed?
- How will the project team uncover and address threats to success?

Reviewers tend to value a high degree of specific detail.



What are Practices?

https://ecrhub.org/ecr-projects?sf=&submitform=Search&l=search&f_2=y&sa=&sortby=date#ecrprojectssearch

Practices in addition to those mentioned in the NSF 22-548 (brainstorm):

- Open science
- Study pre-registration
- Data management
- Participant recruitment
- Knowledge mobilization
- Culturally-competent approaches
- Establishing partnerships
- Working with restricted data



Office hours and other resources in “Updates and Announcements”

<https://beta.nsf.gov/funding/opportunities/ehr-core-research-building-capacity-stem-education>

Questions?
ECRBCSER@nsf.gov

Me: Jenny Lewis (jenlewis@nsf.gov)



Current BC SER:IMP PIs



Modern Meta-Analysis Research Institute (MMARI)

About: This 5-day workshop provides STEM researchers with a comprehensive, introductory meta-analysis workshop focused on state-of-the-art methods including use of the program R.

Who: MMARI is targeted at early-career researchers with no previous experience with meta-analysis.

PI: Dr. Terri Pigott

Co-PIs: Dr. Josh Polanin, Dr. Ryan Williams

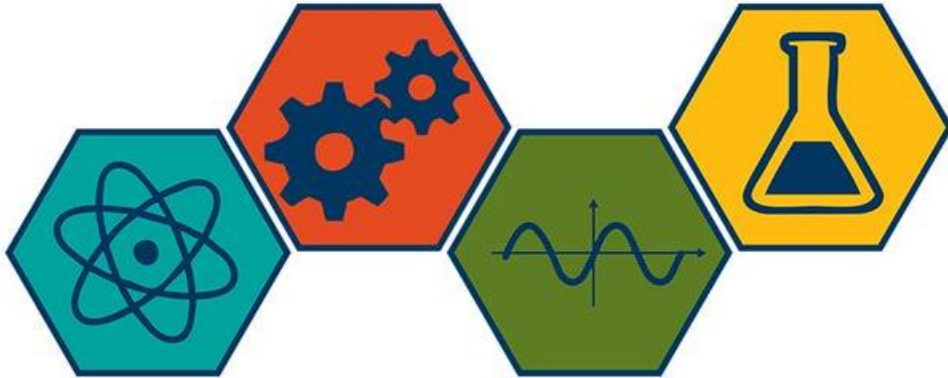
Website: <https://www.meta-analysis-research-institute.com/>

Note. Placeholder for notes, sources, and permissions (if needed). "Note." (including a period) is italicized.



Mixture Modeling Training for Discipline-Based Education Researchers (MM4DBERS)

mm4dber



About: MM4DBERS is a training program that provides online training and mentoring to support the application of mixture modeling to participants' own research questions.

Who: This training is available to Discipline-Based Education Researchers (DBERs) who are actively conducting research on critical questions in STEM education around diversity, equity, and inclusion.

PI: Dr. Karen Nylund-Gibson

Co-PI: Dr. Marsha Ing

Website: <https://mm4dbers.education.ucsb.edu/>



Institute in Critical Quantitative, Computational, & Mixed Methodologies (ICQCM)

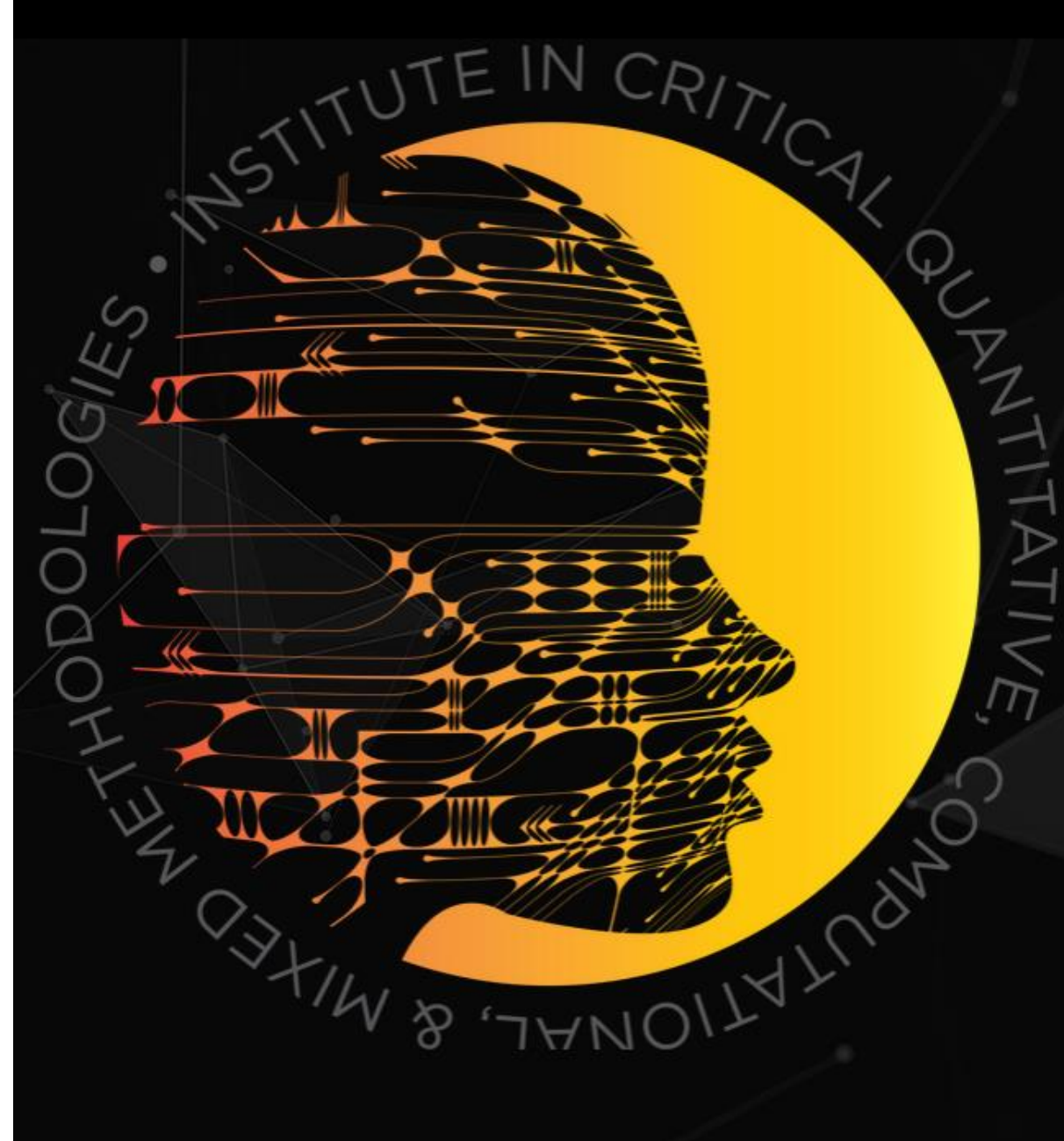
About: ICQCM advances the presence of scholars of color among those using data science methodologies, and challenge researchers to use those methods in ways that can dismantle the structural barriers to enable human flourishing for underrepresented communities, professionals, and young people.

Who: This training program is available to faculty, research professionals, and postdocs.

PI: Dr. Odis Johnson

Co-PI: Dr. Ebony McGee

Website: <https://www.icqcm.org/>



Quantitative Research Methods for STEM Education Research Scholars Program (QRM Scholars)



NSF QRM scholars program

About: The NSF QRM Scholars Program pairs early-career education researchers with quantitative mentors to help develop skills in design, measurement, and analysis. The program includes a year-long training that includes a 3-day virtual Fall Institute and a 2-day in-person Winter Institute, on-going live-stream workshops, and one-on-one research support with the assigned quantitative mentor.

Who: Early career scholars with a research focus related to issues of access and equity of underrepresented populations in STEM within either PK-12 or postsecondary settings.

PI: Dr. Laura Stapleton

Co-PIs: Dr. Tracy Sweet, Dr. Gregory Hancock

Website:

<https://education.umd.edu/academics/departments/hdqm/research/nsf-qrm-scholars-program>



Workshopping



Workshopping – ~3 min

Based on what you have heard from current BC SER:IMP PIs

- **Option A:** Early in proposal development process
 - Refine idea(s) based on what you have learned from current PIs
 - Questions: How does your idea align with the solicitation? What aspects of your idea do you need to explore more?
- **Option B:** Further along in proposal development process
 - Refine structure and rationale based on what you have learned from current PIs
 - Questions: How does your idea reflect a need in the field? What are your ideas for recruiting participants?



Breakout Rooms



Breakout rooms – 20 min

ROOM 1

Not familiar with BCSE:IMP - here to learn about it! OR Somewhat familiar with BCSE:IMP - here to learn and potentially develop an idea

- Ask questions about BCSE:IMP program
- Receive feedback on potential BCSE:IMP idea; provide feedback to others

ROOM 2

Pretty familiar with BCSE:IMP - here to workshop an idea I have

- Receive feedback on potential BCSE:IMP structure and rationale; provide feedback to others

ROOM 3

Very familiar - I am currently working on a proposal

- Receive feedback on potential BCSE:IMP structure, recruitment, and evaluation; provide feedback to others



Closing



Thank you!

Have additional questions about your BCSER:IMP proposal?

- Join us for the BCSER:IMP Office Hour:
 - **When:** December 13 | 2:00 – 3:00 p.m. ET
 - **Hosted by ECR Hub and NSF**
 - **Register:** <https://ecrhub.org/public-event/nsf-bcser-imp-office-hour>

Want to give feedback about this workshop?

- Fill out our brief feedback survey: <https://tinyurl.com/BCSERIMP>

