NSF Methods Training Institute for STEM Education Research

Project Team
University of Chicago

- Guanglei Hong (PI)
- Yanyan Sheng (Co-PI, Executive Director)
- Stephen Raudenbush (Co-PI)
- Darnell Leatherwood (Project Coordinator)

Michigan State University

- Ken Frank (PI)
- Kaitlin Torphy (Co-PI)
- Jiliang Tang (Co-PI)

Goshen Education Consulting, Inc.

- Matt Feldmann (Evaluator)

Project Advisory Board

- Dorinda Carter Andrews (Michigan State University)
- Philip J. Bowman (University of Michigan)
- Malik S. Henfield (Loyola University Chicago)
- Janine Janosky (City Colleges of Chicago)
- Odis Johnson (Washington University in St. Louis)
- David Kirkland (New York University)
- Na'ilah Suad Nasir (The Spencer Foundation)
- Charles Payne (Rutgers University-Newark)
- Michael Rodriguez (University of Minnesota)
- Alfred Tatum (University of Illinois at Chicago)
- Ivory A. Toldson (Howard University; QEM Network)
- Rochelle Williams (National Society of Black Engineers)

Housed at the University of Chicago, and a joint effort with Michigan State University, the summer institute in advanced research methods for Science, Technology, Engineering, and Mathematics education research (SIARM for STEM) is funded via a 3-year grant from the National Science Foundation (2020-2023).

The project team includes leading experts of different disciplines who have developed cutting-edge quantitative and computational methods and directly contributed to STEM education research.

The advisory board consists of distinguished scholars and leaders of organizations who have made major contributions to research and practice concerning educational equity and institutional diversity.

The team will select a diverse cohort of 22 NSF Fellows of STEM Education Research among early- and mid-career scholars, especially those under-represented in STEM, with the goals of:

- helping Fellows master rigorous and novel applications of advanced methods to STEM education research,
- providing continuous methodological support in research planning, data analysis, and publication,
- creating a community that prepares Fellows to take leadership in advancing STEM education research and effectively serving as role models for the next generation of a diverse population of students.

FOCUS OF TRAINING

The training will focus on methodological challenges that arise in studies that aim to improve STEM education, with a particular focus on understanding the sources of unequal access to STEM learning opportunities and evaluating strategies for transforming STEM education to advance equity and inclusion.

In pursuing these questions, some of the greatest methodological challenges include

- research designs and causal inference,
- measurement,
- social network analysis,
- multilevel modeling,
- causal mediation analysis, and
- computational methods for analyzing qualitative and social media data.

OVER A 3-YEAR PROGRAM, FELLOWS WILL:

- Attend summer courses in cutting-edge methods with broad applicability in STEM education research

- Discuss research plans, grant applications, and ongoing studies with the project team and peers over daily round-table lunch during each summer session

- Receive continuous methodological support from the project team between the summers

- Complete and present a high-quality capstone project for publication in impactful venues

- Meet with advisory board members and other guest speakers, expand professional networks, and develop leadership visions and skills

- Obtain a certificate in advanced quantitative and computational methods for STEM education research upon completion of the program

- Receive travel support (transportation + lodging) and an additional $500 stipend per year for offsetting other expenses associated with summer training

WHO IS ELIGIBLE?

- **US citizens or permanent residents with a PhD Degree**

HOW TO APPLY

- **Visit the program website: https://voices.uchicago.edu/nsf-siarm/**

- **Fill out the expression of interest form on the website: https://apply-grad.uchicago.edu/register/SIARMforSTEM**

- **We will then contact you with information on the application process**

CONTACT INFORMATION

Aasha Francis, Administrative Specialist, Committee on Quantitative Methods in Social, Behavioral, and Health Sciences
EMAIL: afrancis1@uchicago.edu

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