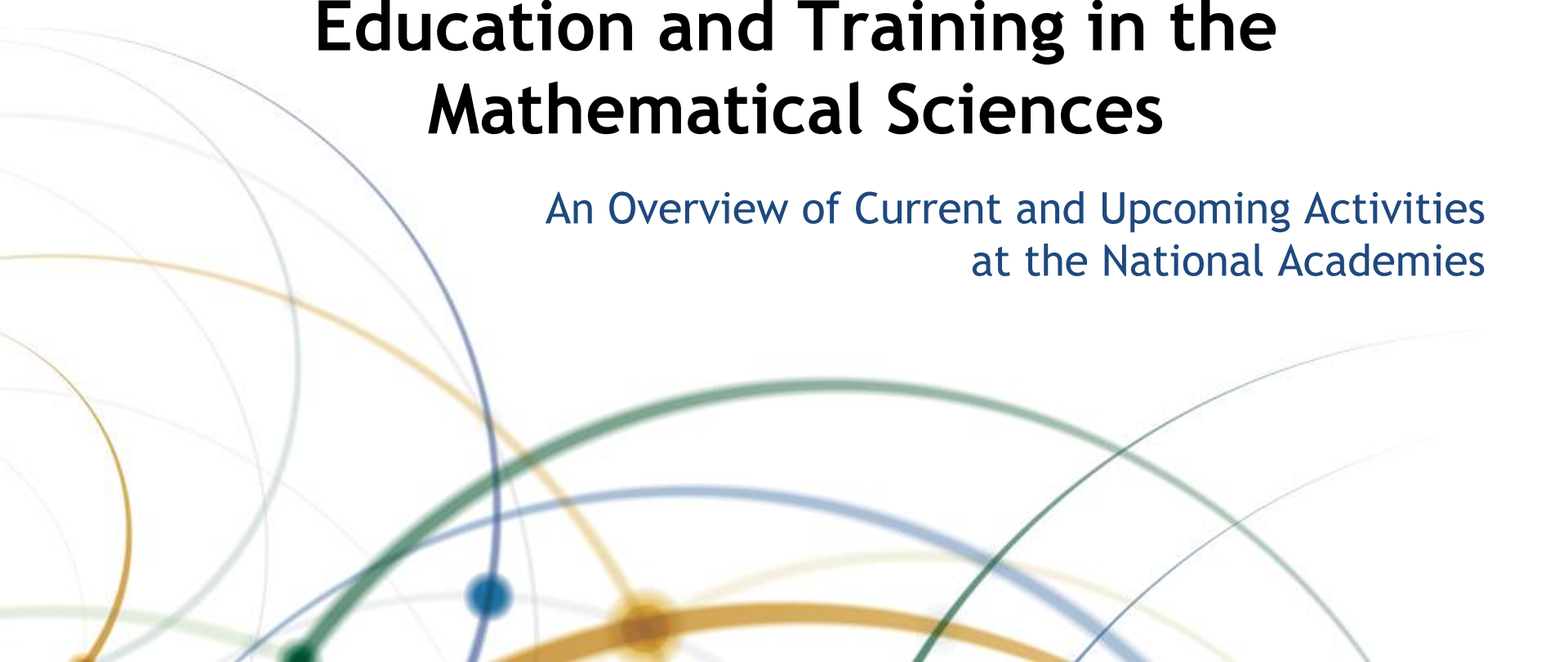


Education and Training in the Mathematical Sciences

An Overview of Current and Upcoming Activities
at the National Academies



The National Academies (1863) – An Overview

The National Academies of Sciences, Engineering, and Medicine is a nonprofit, nonpartisan, and nongovernmental institution providing high quality, objective, evidence-based advice on science, engineering, and health matters.

Mathematics Education at the National Academies

Board on Science Education (BOSE)

Heidi Schweingruber, Director

Board on Mathematical Sciences and Analytics (BMSA)

Michelle Schwalbe, Director

Mark Green, Chair

Committee on Applied and Theoretical Statistics (CATS)

Tyler Kloefkorn, Director

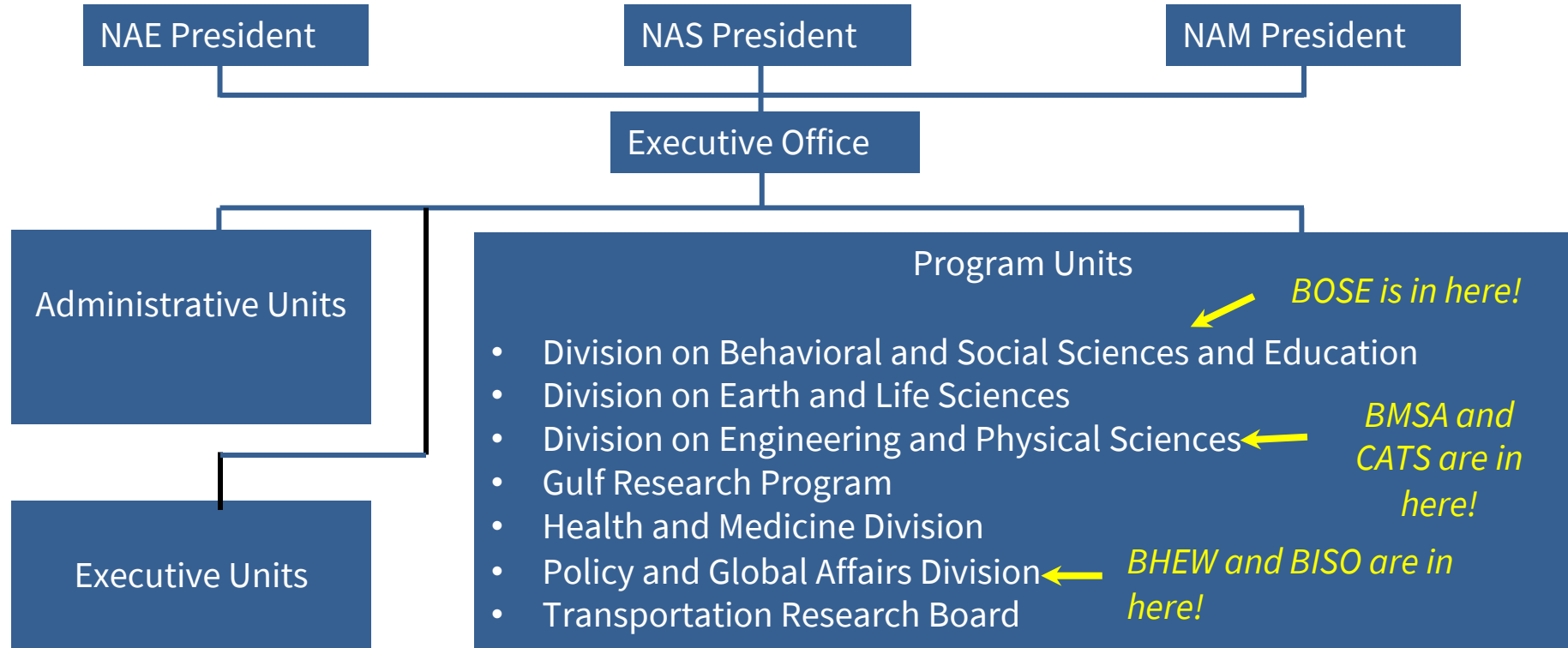
Board on Higher Education and Workforce (BHEW)

Tom Rudin, Director

Board on International Scientific Organizations (BISO)

Kathie Bailey, Director

National Academies Structure



Types of Activities (BOSE, BMSA, BHEW, CATS)

Activity	Basic Features	Products
In-Depth/Consensus Studies	Resolve complex questions by enlisting experts in to gather information and provide consensus recommendations	Peer reviewed reports containing conclusions, findings, and recommendations
Workshops	Gather information, share ideas, and discuss issues with a detailed written summary	Publication summarizing the proceedings of the workshop; webcast and video recordings (optional)
Roundtable, Forums, Colloquia, and Action Collaboratives	Gather information, share ideas, and discuss issues, generally without a written summary	No formal written products; webcast and video recording (optional)
Webinar(s)	Engage a broad audience on a diverse topics through live webinars and recorded videos	Webcast and video recording posted

Types of Activities (USNC/Math & USNC/Math Instruction)

Activity	Basic Features	Products
Nominations to International Organizations	Have an ear and a U.S. voice in global math and math ed. decisions/initiatives	International Studies where U.S. research is included, newsletters, regional reports
U.S. Delegations to Congresses	Represent the voice of the entire U.S. math and math ed. community at the General Assembly every 4 years	U.S. resolutions, reports that inform NASEM leadership and the U.S. federal government on the U.S. interests
Nominations for International Awards and U.S. Receptions	Promote U.S. experts, their research, and expose U.S. practitioners to networking	None
Travel Fellowships	Expose U.S. early careers and teachers to global research and foster international collaborations	Reports from travel fellows, publications, and conference presentations

K-12 Activities

Recent:

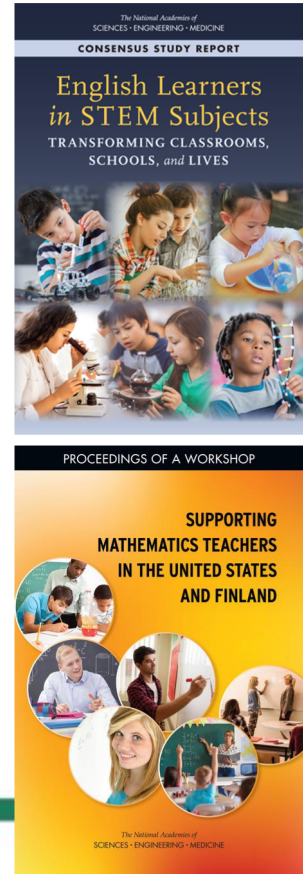
- English Learners in STEM Subjects (2018)
- Supporting Mathematics Teachers in the U.S. and Finland (2018)

Current:

- Equity in Prek-12 STEM Education (starting in January 2021)

In Development:

- Workshop on data science in K-12 education
- Workshop on statistics in K-12 education
- Consensus study for a research agenda on the foundations for AI and data science in K-12



Undergraduate Activities

Recent:

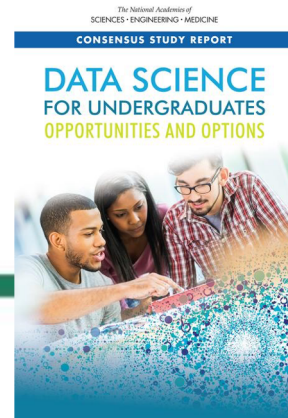
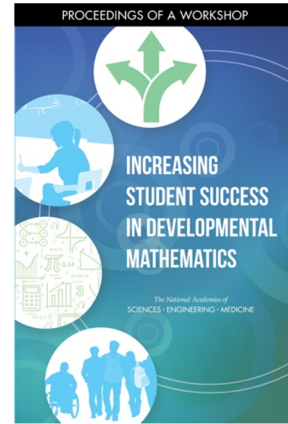
- Workshop on Increasing Student Success in Developmental Mathematics (2019)
- Data Science for Undergraduates (2018)

Current:

- Symposium on the future of undergraduate STEM Education
- Roundtable on systemic change in undergrad STEM education

In Development:

- Consensus study to develop a framework for effective teaching in undergraduate STEM



Workforce Activities

Current:

- Improving Defense Acquisition Workforce Capability in Data Use Consensus Study

In Development:

- Best practices for joint academia-industry positions
- Increasing diversity and inclusion in mathematical research communities

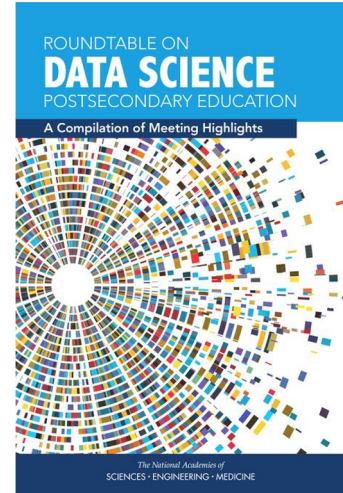
Cross-Cutting Activities

Recent:

- Roundtable on Data Science Postsecondary Education
- Minority Serving Institutions: America's Underutilized Resource for Strengthening the STEM Workforce (2019)

In Development:

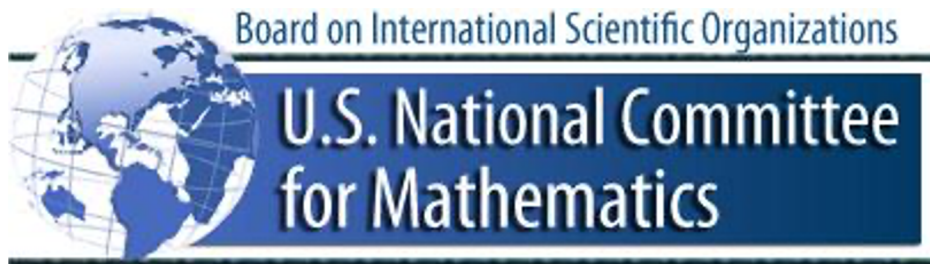
- Mathematics Education Action Collaborative
- Consensus study on faculty promotion and tenure



USNC/Math (IMU) UPDATE

In Development:

- Potential U.S. Bid for the 2026 to be held in NYC
- Bid organized by a group in NYC (Deane Yang and Simons Foundation)
- AMS and Eric Friedlander, USNC/Math Chair, are involved in the conversation
- Catherine Roberts from AMS, would you like to add anything?



USNC/Math Instruction (ICMI) UPDATE

Recent:

- Marta Civil elected member at large of ICMI (2021-2024)
- NCTM received the 2020 Emma Castelnuovo Medal (ICMI)

Current:

- USNC/MI elections took place last week, and the new membership will start on January 1, 2021 (greatest diversity)

In Development:

- The 14th International Congress on Mathematical Education (ICME-14) has been postponed to July 11-18, 2021 and will be held in a hybrid mode (in-person and virtually)
- The USNC/MI will decide in the Spring if host the U.S. reception at the Congress.

COVID-19 Related Projects (USNC/MI Webinar Series)

Moving Forward in the Midst of a Pandemic International Lessons for Math Teachers

Recent:

- Three webinars held in July (experts from the Netherlands, Israel, and Chile) - videos and slides available in the USNC/MI website

Current:

- Next Thursday, **December 10**, 7 pm (EDT), Patricio Felmer (Univ. of Chile), **Chile** - Mathematics Problem Solving and Professional Development Under the Covid-19 Pandemic

COVID-19 Related Projects (USNC/MI Webinar Series)

In Development:

- Building Classrooms - Peter Liljedahl (Univ. of Vancouver), **Canada** - Thursday, Jan. 14, 2021, 7 pm (EDT)
- How to Spark Curiosity with Problem Based Lessons - Kyle Pearce (Consultant) and John Orr (Math Teacher) in Ontario, **Canada**, Tuesday, Feb. 16, 2021, 7 pm (EDT)
- Teachers' Perspectives of Strength Based Mathematics Learning Before and During the Pandemic - Roberta Hunter (Professor), Jodie Hunter and Rachel Restani (teacher educators/researchers) in Auckland, **Australia**, Wednesday, March 10, 2021, 7 pm (EDT)

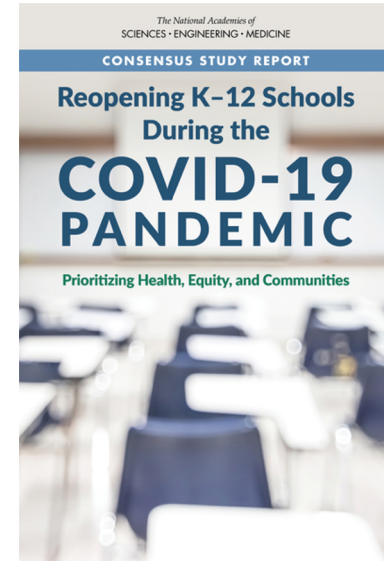
COVID-19 Related Projects

Recent/Current:

- Re-opening K-12 Schools During the COVID-19 Pandemic
- Teaching K-12 Science and Engineering During a Crisis
- Webinar series on the response of higher education to COVID: Impact on undergraduate and graduate students

In Development:

- Consensus study on the impact of COVID-19 on higher education and lessons for the future



Stay Updated and Get Engaged

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Thank you!

