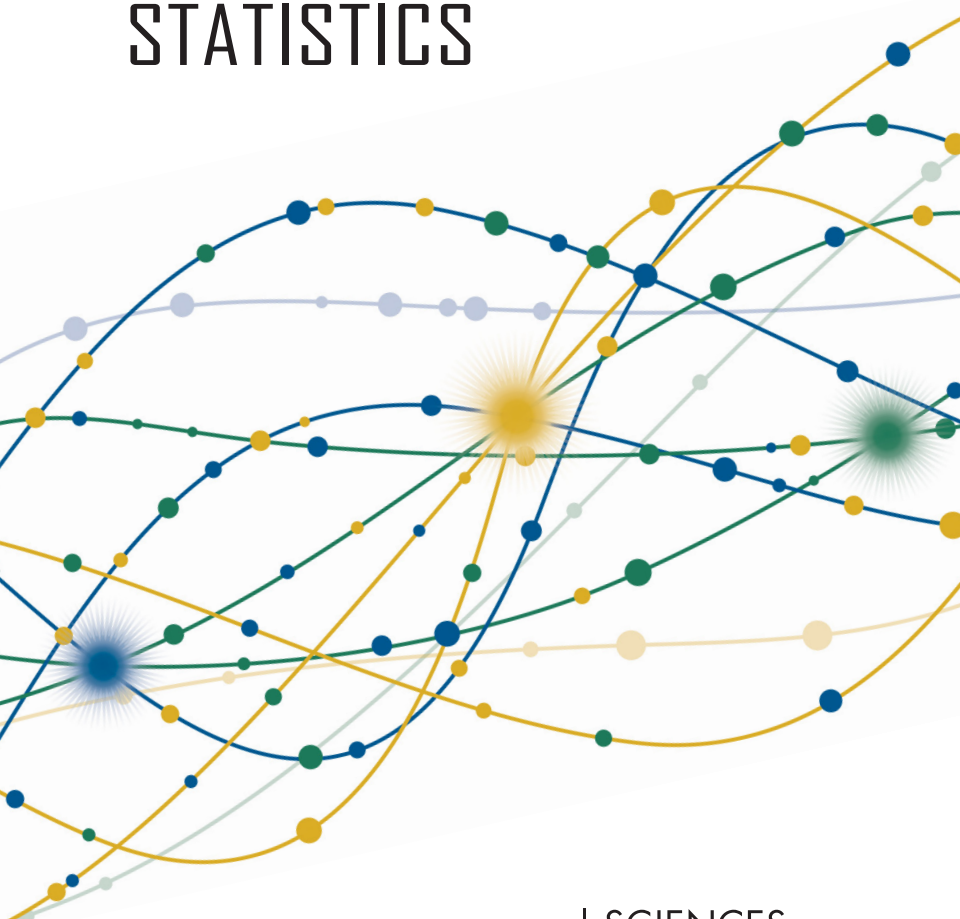
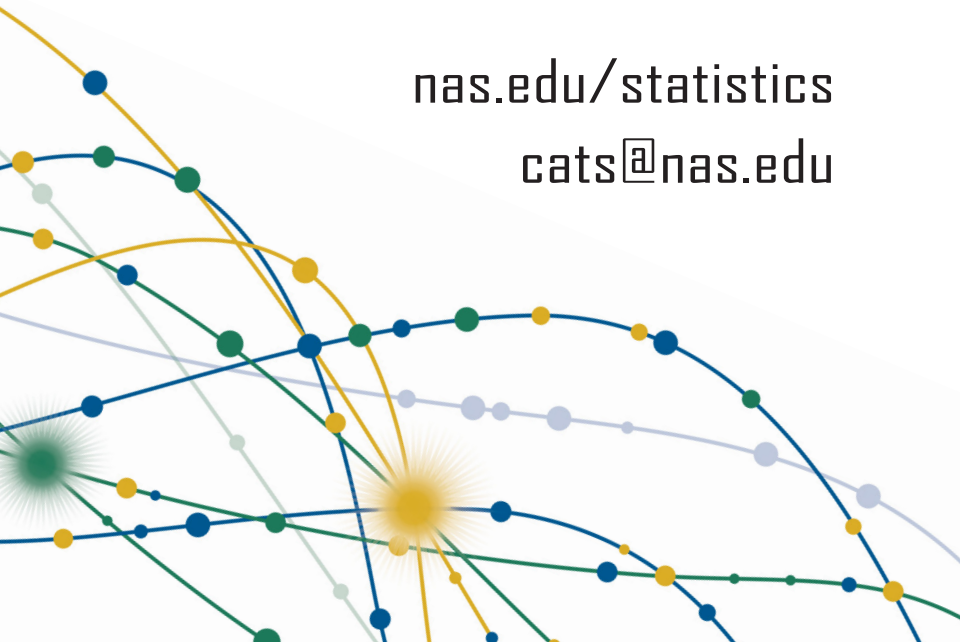
COMMITTEE ON APPLIED AND THEORETICAL STATISTICS



The National Academies of | SCIENCES ENGINEERING MEDICINE

ABOUT CATS

Established in 1978, the Committee on Applied and Theoretical Statistics (CATS) leads activities relating to the statistical sciences, statistical education, and statistics applications at the National Academies. CATS organizes workshops, webcasts, roundtables, and in-depth studies to help improve the visibility and practice of statistics within government agencies, identify bottlenecks impairing agency analysis capabilities, and bring attention to statistical issues related to big data and data science. CATS members are experts from statistics and related fields as well as leaders in diverse areas of interdisciplinary research, including the analysis of large-scale data, computational biology and bioinformatics, spatial data, environmental science, neuroscience, health care policy, and complex computer experiments. Find out about upcoming CATS events and learn more about our work by signing up for our mailing list at **nas.edu/statistics**.



nas.edu/statistics
cats@nas.edu

ABOUT THE NATIONAL ACADEMIES

The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide expert advice on some of the most pressing challenges facing the nation and the world. Our work helps shape sound policies, inform public opinion, and advance the pursuit of science, engineering, and medicine. The National Academies do not receive direct appropriations from the federal government, although many of our activities are mandated and funded by Congress and federal agencies. Our work extends well beyond fulfilling federal government requests, however. Foundations, state governments, the private sector, and philanthropy from individuals enable us to address critical issues on behalf of the nation.

OUR PRODUCTS

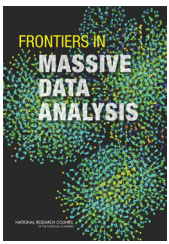
CATS facilitates independent, objective, and knowledgeable advice from members of the National Academies; other leaders of the science, engineering, and medical communities; and distinguished associates from the academic, private, and public sectors.

ACTIVITY	BASIC FEATURES	TYPICAL SCHEDULE	PRODUCTS
In-Depth/Consensus Studies	Provide a means to resolve complex questions by enlisting the foremost experts in a given area to gather information and provide consensus recommendations	6-36 months, depending on scope	Peer reviewed reports containing conclusions, findings, and recommendations
Workshops	Provide a means for sponsors and participants to gather information, share ideas, and discuss issues	4-12 months	Publication summarizing the proceedings of the workshop; webcast and video recording (optional)
Roundtables, Forums, Colloquia, and Meetings of Experts	Provide a means for representatives of government, industry, and academia to gather periodically to discuss specific topics	Varies, depending on the number of meetings requested	No formal written products are produced; webcast and video recording (optional)

MAKING AN IMPACT

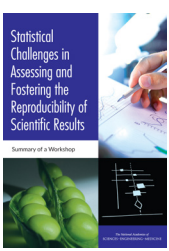
Our Roundtable on Data Science Postsecondary Education brings together data science stakeholders from across academia, government, professional societies, and industry to discuss data science education at the undergraduate, graduate, and postgraduate levels. The roundtable, which meets quarterly, offers a space in which members of these various communities can share their experiences in the emerging field of data science and compare strategies for preparing current and future professionals to work in this domain. During roundtable meetings, speakers and members from a variety of domains and disciplines explore various aspects of data science, evaluate innovative data science training programs offered in academic and workplace settings, and identify ways to improve accessibility and diversity within data science. Roundtable meetings are always open to the public and webcast live. Watch videos of meeting presentations, read meeting summaries, and find out about upcoming events at **nas.edu/dsert**.

FEATURED PUBLICATIONS

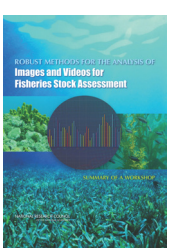


Frontiers in Massive Data Analysis explores the new tools, skills, and approaches that are necessary for analyzing large amounts of data and identifies promising future research directions. Download the report at **nap.edu/18374**.

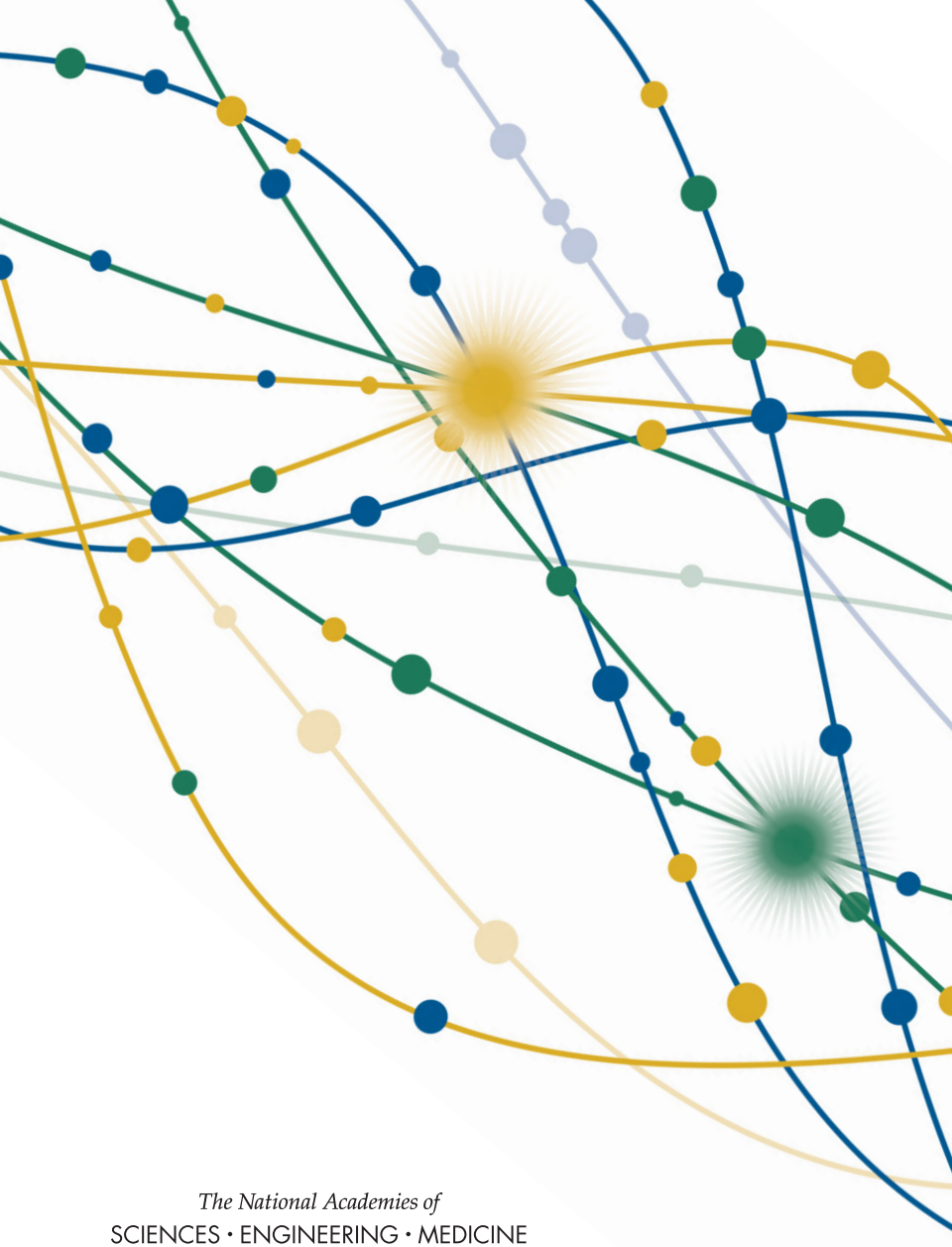
Refining the Concept of Scientific Inference When Working with Big Data summarizes a CATS workshop where participants discussed critical challenges associated with producing actionable scientific knowledge from large, complex data sets using statistical models. Download the proceedings at **nap.edu/24654**.



Statistical Challenges in Assessing and Fostering the Reproducibility of Scientific Results summarizes a CATS workshop where participants discussed statistical issues that can cause reproducibility failures and potential remedies. Download the proceedings at **nap.edu/21915**.



Robust Methods for the Analysis of Images and Videos for Fisheries Stock Assessment summarizes a CATS workshop that focused on analysis and automation techniques for images and videos that could make fisheries stock assessment more accurate and efficient. Download the proceedings at **nap.edu/18986.**



The National Academies of
SCIENCES • ENGINEERING • MEDICINE

The nation turns to the National Academies of Sciences, Engineering, and Medicine for independent, objective advice on issues that affect people's lives worldwide.

www.national-academies.org