- BMSA HOME
- ABOUT BMSA
- MISSION
- CURRENT THEMES
- COMMITTEE ON APPLIED & THEORETICAL STATISTICS
- MEMBER BIOS
- PUBLICATIONS
- PAST EVENTS
- STAFF AND CONTACT INFO
- DEPS HOME

Statistical Challenges in Assessing and Fostering the Reproducibility of Scientific Results: A Workshop

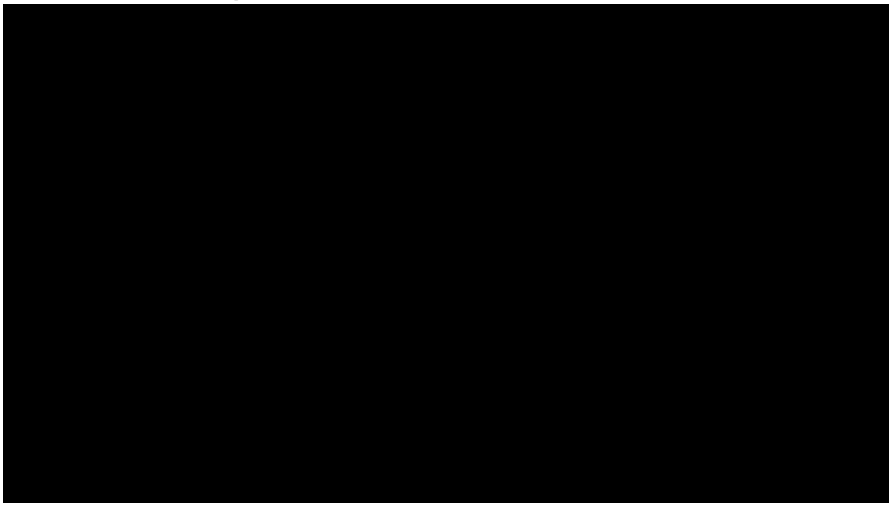
February 26-27, 2015

National Academy of Sciences Building
2101 Constitution Ave., NW
NAS Lecture Room
Washington, DC

Committee on Applied and Theoretical Statistics

View the workshop agenda.

Videos of Workshop



View a playlist of the full workshop recording.

Workshop Objectives

Address statistical challenges in assessing and fostering the reproducibility of scientific results by examining three issues from a statistical perspective: the extent of reproducibility, the causes of reproducibility failures, and potential remedies.

Specifically:

- What are appropriate metrics and study designs that can be used to quantify reproducibility of scientific results?

Variability across studies is a well-known phenomenon and has given rise to the field of research synthesis and meta-analysis. How should this variability be assessed? What degree of variability would lead to concerns about lack of reproducibility?

- How can the choice of statistical methods for study design and analysis affect the reproducibility of a scientific result?

How does routine statistical hypothesis testing with widely used thresholds for test significance affect the reproducibility of results? How do standard methods for study design and choice of sample size affect reproducibility?

- Are there analytical and infrastructural approaches that can enhance reproducibility, within disciplines and overall?

Do we need new conceptual/theoretical frameworks for assessing the strength of evidence from a study? Do we need broad adoption of practices for making study protocols and study data available to the scientific community? How can this be achieved?