



UNIVERSITÀ
DEGLI STUDI
DI PADOVA



PHD COURSE
IN STATISTICS

Specialist Course | Cycle XXXIX

8-10 July, 2024 | Campus Santa Caterina

Replicability crisis in science?

Giovanni Parmigiani

Harvard University

Branden Fitelson

Northeastern University

Filippo Gambarota

University of Padova

Monday	July 8	09:00 – 12:00 14:30 – 16:30	Room SC60
Tuesday	July 9	09:00 – 12:00 14:30 – 16:30	Room SC60
Wednesday	July 10	09:00 – 11:00 14:30 – 16:30	Room SC60

<https://www.stat.unipd.it/ricerca/courses-202324-xxxix-cycle>

Anyone interested is invited to contact <phd@stat.unipd.it>

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REPLICABILITY CRISIS IN SCIENCE?

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Topics

When evaluating the reliability of scientific findings and predictions, a major concern is about their replicability, that is their consistency across different studies aimed at answering the same question. A 'replicability crisis' has been claimed in the last decades, denouncing that a large part of published research findings, especially in applied sciences, such as psychology or medicine failed to be confirmed by subsequent studies. Difficulties in moving from empirical evidence and data analysis to a scientific result push towards the need to clarify various aspects, such as rigorous definitions, the possible tools for understanding and communicating the uncertainty inherent in most scientific conclusions, the definition of non-questionable research practices.

The main objective of the course is to provide a broad and interdisciplinary view, as well as the tools that may enable individual participants to focus on specific aspects of replicability that are relevant to their own discipline of interest. The epistemological, philosophical and scientific/statistical bases of replicability and of its so-called crisis will be addressed in lectures by the teachers. Guided group activities will then be proposed to the students, to discuss basic questions and apply the ideas emerged during the course to some real data analysis.