

Reproducibility in Biomedical Research

Epistemological and Statistical Problems

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Reproducibility in Biomedical Research: Epistemological and Statistical Problems explores the ideas and conundrums inherent in scientific research. Reproducibility is a significant concern within biomedical research. How can any biomedical researcher be sure her or his research will not be found irreproducible or been compromised by the potentially irreproducible work of other scientists on which she or he depends? Within this concern lies the question of multiple types of reproducibility and how research becomes irreproducible. Contributing factors have often been confined to considerations of fraud, transparency, or statistical rigor; however, there is evidence of other factors including experimental design and logic used. This book explores factors of reproducibility including an expanded view of logic with the necessary use of logical fallacies, and distinguishing valuable productive from unproductive irreproducibility. The scientific method, and the use of statistics are analyzed as constructs in logic. In multiple examples and detailed case studies, this book demonstrates the misuse of logic resulting in unproductive irreproducibility, allowing researchers to expand their sense of logic and strategies. Biomedical researchers, clinicians, administrators of scientific institutions and funding agencies, journal editors, philosophers of science and medicine will find the arguments and explorations of *Reproducibility in Biomedical Research* a valuable addition to their libraries.

- Considers the meaning and purpose of reproducibility to help design research
- Reviews famous case studies of alleged irreproducibility to determine if these could be reproducible
- Provides a theoretical aspect to the practical issues surrounding research design and conduct

Related Titles

- Markovac, *Medical and Scientific Publishing: Author, Editor, and Reviewer Perspectives*, Nov 2017, 356 pp., 9780128099698.
- Williams, Curtis, and Mullano, *Research in the Biomedical Sciences: Transparent and Reproducible*, Oct 2017, 382 pp., 9780128047255.
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ACADEMIC PRESS

An imprint of Elsevier
elsevier.com/books-and-journals

ISBN 978-0-12-817443-2



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