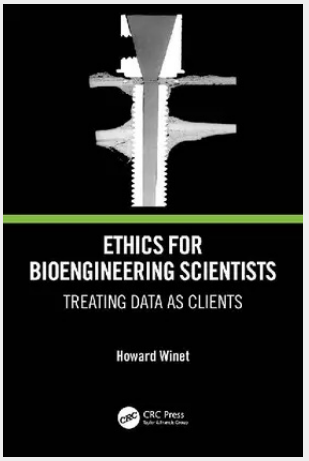
Winet

Ethics for Bioengineering Scientists

Treating Data as Clients



This book introduces bioengineers and students who must generate and/or report scientific data to the ethical challenges they will face in preserving the integrity of their data. It provides the perspective of reaching ethical decisions via pathways that treat data as clients, to whom bioengineering scientists owe a responsibility that is an existential component of their professional identity. The initial chapters lay a historical, biological and philosophical foundation for ethics as a human activity, and data as a foundation of science. The middle chapters explore ethical challenges in lay, engineering, medical and bioengineering scientist settings. These chapters focus on micro-ethics, individual behavior, and cases that showcase the consequences of violating data integrity. Macro-ethics, policy, is dealt with in the Enrichment sections at the end of the chapters, with essay problems and subjects for debates (in a classroom setting). The book can be used for individual study, using links in the Enrichment sections to access cases and media presentations, like PBS' "Ethics in America". The final chapters explore the impact of bioengineering science ethics on patients, via medical product development, its regulation by the FDA, and the contribution of data integrity violation to product failure. The book was developed for advanced undergraduate and graduate students in bioengineering. It also contains much needed material that researchers and academics would find valuable (e.g., FDA survey, and lab animal research justification). - Introduces an approach to ethical decision making based on treating data as clients - Compares the ethics of three professions; engineering, medicine and bioengineering - Provides five moral theories to choose from for evaluating ethical decisions, and includes a procedure for applying them to moral analysis, and application of the procedure to example cases. - Examines core concepts, like autonomy, confidentiality, conflict of interest and justice - Explains the process of developing a medical product under FDA regulation - Explores the role of lawyers and the judiciary in product development, including intellectual property protection - Examines a range of ethical cases, from the historical Tuskegee autonomy case to the modern CRISPR-Cas9 patent case. Howard Winet, PhD is an Adjunct Professor recall, Orthopaedic Surgery and Bioengineering at University of California, Los Angeles.

98,30 €
98,30 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781032053547
Medium: Buch
ISBN: 978-1-032-05354-7
Verlag: CRC Press
Erscheinungstermin: 22.12.2021
Sprache(n): Englisch
Auflage: 1. Auflage 2021
Produktform: Kartoniert
Gewicht: 524 g
Seiten: 342
Format (B x H): 156 x 234 mm