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Autore	Vallero Daniel A
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the Butterfly Effect; "SMALL" ERROR AND DEVASTATING OUTCOMES;  
TECHNOLOGY, ENGINEERING, AND ECONOMICS  
Teachable Moment: The Dismal Scientist versus the Technological  
Optimist ENGINEERING COMPETENCE; ENGINEERING: BOTH INTEGRATED  
AND SPECIALIZED; WHO IS A PROFESSIONAL?; WHAT IS TECHNICAL?;  
SYSTEMATICS: INCORPORATING ETHICS INTO THE DESIGN PROCESS;  
NOTES AND COMMENTARY; Chapter 2 Bioethics and the Engineer;  
MAJOR BIOETHICAL AREAS; CLONING AND STEM CELL RESEARCH;  
Teachable Moment: Nanog; HUMAN ENHANCEMENT; PATENTING LIFE;  
Teachable Moment: Patenting Germplasm; NEUROETHICS; ORGAN  
TRANSPLANTATION; RESPONSIBLE CONDUCT OF HUMAN RESEARCH;  
ANIMAL TESTING; Is the Research Worth It?  
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Transgenic Species; Food; ENVIRONMENTAL HEALTH: THE ETHICS OF  
SCALE AND THE SCALE OF ETHICS; TEMPORAL ASPECTS OF BIOETHICAL  
DECISIONS: ENVIRONMENTAL CASE STUDIES; Agent Orange; Japanese  
Metal Industries; Minamata Mercury Case; Cadmium and Itai Itai  
Disease; SCALE IS MORE THAN SIZE; Love Canal; Times Beach;  
Teachable Moment: The Whole Is Greater than the Sum of Its Parts;  
ACTIVE ENGINEERING; ETHICAL THEORIES: A PRIMER; Truth;  
Psychological Aspects of Ethics  
Teachable Moment: The Physiome Project: The Macroethics of  
Engineering toward Health Fairness; Value as a Bioethical and  
Engineering Concept; Technical Optimism versus Dismal Science;  
NOTES AND COMMENTARY; Chapter 3 An Engineered Future: Human  
Enhancement; PROFESSIONAL ZEITGEIST: HOW ENGINEERS THINK;  
IMPROVEMENT VERSUS ENHANCEMENT; Engineering Intuition; Engineers  
versus Economists; Intuiting Value; Deductive and Inductive Reasoning;  
Precursors to Intuition; Creativity; MORAL COHERENCE; CREATIVITY  
AND BIOETHICS; THE ETHICAL QUANDARY OF ENHANCEMENT;  
SCIENTIFIC DISSENT; NOTES AND COMMENTARY  
Chapter 4 The Bioethical Engineer

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Sommario/riassunto

Biomedical Ethics for Engineers provides biomedical engineers with a new set of tools and an understanding that the application of ethical measures will seldom reach consensus even among fellow engineers and scientists. The solutions are never completely technical, so the engineer must continue to improve the means of incorporating a wide array of societal perspectives, without sacrificing sound science and good design principles. Dan Vallero understands that engineering is a profession that profoundly affects the quality of life from the subcellular and nano to the planetary scale. Protect

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