



Science and Technology Policy in the United States

Open Systems in Action

by Sylvia Kraemer

DESCRIPTION

During the latter half of the twentieth century, federal funding in the United States for scientific research and development increased dramatically. Yet despite the infusion of public funds into research centers, the relationship between public policy and research and development remains poorly understood.

How does the federal government attempt to harness scientific knowledge and resources for the nation's economic welfare and competitiveness in the global marketplace? Who makes decisions about controversial scientific experiments, such as genetic engineering and space exploration? Who is held accountable when things go wrong?

In this lucidly-written introduction to the topic, Sylvia Kraemer draws upon her extensive experience in government to develop a useful and powerful framework for thinking about the American approach to shaping and managing scientific innovation. Kraemer suggests that the history of science, technology, and politics is best understood as a negotiation of ongoing tensions between open and closed systems. Open systems depend on universal access to information that is complete, verifiable, and appropriately used. Closed systems, in contrast, are composed of unique and often proprietary features, which are designed to control usage.

From the Constitution's patent clause to current debates over intellectual property, stem cells, and internet regulation, Kraemer shows the promise-as well as the limits-of open systems in advancing scientific progress as well as the nation's economic vitality.

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Sylvia Kraemer earned her Ph.D. in history from Johns Hopkins University and later served in various policy capacities for NASA, including chief

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