

**Audra J. Wolfe.** *Competing with the Soviets: Science, Technology, and the State in Cold War America.* Johns Hopkins Introductory Studies in the History of Science Series. Baltimore: Johns Hopkins University Press, 2013. viii + 166 pp. \$19.95, paper, ISBN 978-1-4214-0771-5.



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**Commissioned by** Margaret Sankey (Air University)

Audra J. Wolfe has written a brief but valuable overview of the US federal government's postwar effort to bring together technological innovation, the scientific community, and federal funding. The book is part of the Johns Hopkins University introductory series on the history of science, and although the book does not dive too deeply into any one topic, it is immensely readable, interesting, and thought provoking. Wolfe uses eight chapters to span the period between the end of World War Two and the fall of the Soviet Union in 1989. She presents her chapters chronologically and thematically, covering many major topics, but concentrating on nuclear power and the space race.

Chapters 1 and 2 examine the early stages of the Cold War, with the initial pages of the book dedicated to outlining the development of the atomic bomb. While Wolfe portrays the alliance of academic, government, and industrial organizations coming together for the construction of atomic components, she pinpoints the ethical questions that confronted the scientists at the

time, such as using scientific discovery to bring death and destruction to a nation's enemy. Chapter 2 is a study of the development of the military industrial complex, created through the influx of huge research grants for various federal agencies. Grants from military and civilian agencies were so large that universities and private labs became completely dependent on them. Inevitably, those funds came with "administrative subsidies" that funded university projects outside of the laboratories (p. 29).

Chapters 3, 4, and 5 focus on the political aspects of scientific discovery. Chapter 3 describes the 1957 launch of Sputnik and its effect on scientific research. Government and scientific leaders asked how they could be losing the space race, and the only answer seemed to be an insufficient number of scientists working on research projects. Graduate educational opportunities in the hard sciences grew tremendously with the 1958 National Defense Education Act, although doors for minorities and women generally remained closed. Chapter 4 demonstrates the ways

in which federal authorities used scientific discoveries to win the hearts and minds of people in the emerging third world. These developing nations were rich in natural resources that Communist and capitalist nations needed, and the United States used its scientific knowledge to assist these nations through the Peace Corps and other initiatives. In chapter 5, Wolfe points out that the massive expenditures in scientific research had yielded few civilian products by the early 1960s, and problems of race and poverty were glaring shortcomings of the promises for better lives through science made throughout the previous decade.

The scientific revolution that emerged during the Cold War culminated in the lunar landing in July 1969 (outlined in chapter 6). The evolution of that struggle forced presidential administrations in the 1960s to appreciate the propaganda value of America's achievements as well as its actual accomplishments. With hundreds of thousands of employees engaged in the project and many patents placed in the public domain, Apollo was the largest peacetime domestic public works project in American history. The public soon became bored with the Apollo program, forcing a drastic reduction in the NASA budget. The end of the era of "Big Science," as Wolfe calls it, had its beginnings in the 1950s with the seemingly rampant nuclear tests of the 1950s as depicted in chapter 7. Scientists and citizens united against such dangerous actions, and student protests and congressional review led to the banishment of military research from university campuses in the late 1960s.

Ironically, the last decade of the Cold War was the most dangerous. Soviet and American defense budgets exploded and research projects embracing new technologies pushed universities to pursue industrial patrons on a level not seen since before World War Two. When the Soviet Union collapsed in 1989, many fundamental changes to the scientific community followed. The collapse eliminated the need for large quantities of scien-

tists researching the next great weapon, and politicians adopted the tactic of ignoring the advice of scientists in favor of political ideology. Politicians had to listen to the concerns of the scientific community during the Cold War, but the issue of climate change has even brought about the complete dismissal of the scientific community in some circles.

Wolfe's book is extensively researched, yet appropriate for general audiences and survey-level courses. It is a perfect companion text for a variety of courses that examine the postwar world and a valuable source of information for professors putting together lectures on the Cold War. Finally, it is a definitive source for separating myth from reality in translating military projects into commercial products available for mass consumption.

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