Science Policy:
The History You May Not Know

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About Me

- **Vice President for Policy at the AAU**
- **Research Funding and Science Policy Issues**
  - Focus on innovation, competiveness and energy issues
  - Advocacy, lobbying and coalition building
    (Co-chair, Energy Sciences Coalition)
  - Federal regulations and compliance
  - Proactively shape government
    and university policy
  - e.g. Undergraduate STEM Education Initiative
- **“Cross cultural communications”**
  *The business of making the work of scientists and engineers relevant to the “layperson”.*
Two Cultures: Politicians & Scientists

“I double majored in history and English and then went to Harvard Law. How about you?”
A Brief History Lesson in Science Policy
“There is nothing new in the world except the history you do not know.”

–Harry Truman
"History doesn't repeat itself, but it does rhyme."

– Mark Twain
The Federal Government and U.S. Research Universities Prior to World War II

• Little federal support of university research outside of agriculture and aeronautics (USDA and the Natl. Council for Aeronautics)

• Focus of federal support for universities was primarily upon applied, not basic, research

• Universities feared government interference in research and believed it jeopardized academic freedom

• Basic research was primarily supported by private funding sources, particularly large corporate foundations (e.g. Rockefeller, Carnegie)
The Emergence of the Partnership Between the Federal Government and Universities

- 1933 - President Roosevelt’s New Deal Relief Programs expanded the federal government’s role in many areas
- Capital funds of the major foundations were depleted by the depression
- Universities faced significant financial challenges resulting from state cutbacks, losses in endowment yields, and reductions in private support
- Significant debate within the university community about the relationship between the federal government and universities (e.g. Fall AAU meeting, 1937)
- Enter World War II and Vannevar Bush
World War II

- Federal Government seeks to involve scientists in war effort
- In 1940, President Roosevelt creates the National Defense Research Committee (NDRC)
- Roosevelt asks Vannevar Bush to serve as Chair
- NDRC structure expanded and renamed Office of Scientific Research and Development (OSRD) in 1941

Los Alamos National Lab during the Manhattan Project
OSRD and the War Effort

• OSRD operates no laboratories directly; it instead uses government contracts to support research at universities and laboratories.

• OSRD is credited with the success of the Manhattan Project, as well as many other major scientific advances developed as a part of the war effort (e.g. DDT, blood substitutes, new methods to fight infection).

• In 1944, Roosevelt asks Bush to write a report on post-war federal involvement in science.
“Science, by itself, provides no panacea for individual, social, and economic ills. It can be effective in the national welfare only as a member of the team, whether the conditions be peace or war. But without scientific progress no amount of achievement in other directions can insure our health, prosperity, and security as a nation in the modern world.”

Science - The Endless Frontier, July 1945
Defining the U.S. Science Policy Debate: Vannevar Bush & Harley Kilgore
Historical Considerations: The Bush-Kilgore Debate

Issues in the Creation of the NSF:

- Merit vs. Geographical Diversity
- Social Science Research
- Fundamental vs. Applied Industrial Research
- Ownership of Intellectual Property from Government Funded Research
- Who Appoints the NSF Director
Five Year Long Debate Over NSF Blurs Bush’s Original Vision

- NSF bill finally enacted on May 10, 1950
- DOD – ONR created in 1946; Army and Air Force follow with their own research establishments
- Atomic Energy Commission (AEC) created in 1946
- National Cancer Institute merged with the National Institute of Health in 1944 and in 1948 the National Institutes of Health was created
- By 1955, DOD accounted for 80 percent of all federal R&D expenditure, AEC for 10 percent, and HEW (including NIH) for 6.6 percent; NSF accounted for only 0.1 percent
What Happened to OSRD?

• OSRD was dismantled in December 1947
• OSRD policies defined the nature of future university-federal research relationships
  – Merit Based vs. Geographical Funding
  – Preserved Academic Autonomy
  – Contracts and Grants as the Funding Mechanisms
  – Payment of University Overhead
The U.S. Innovation Ecosystem is Unique
Thank you for your attention...
Additional Reading


