

GAO Highlights

Highlights of [GAO-24-106297](#), a report to the Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

The federal government invests in basic and applied scientific research to drive innovation, promote economic competitiveness, and enhance national security. The National Science Foundation estimates that 32 federal agencies funded over \$85 billion in basic and applied research in fiscal year 2021.

Scientific program managers at federal agencies that sponsor basic and applied research play a critical role in guiding and shaping the research funded by their agencies.

In this report, GAO describes key practices that federal program managers use to manage their research.

GAO held 14 group discussions with 79 program managers from seven selected agencies that funded over 90 percent of basic and applied research obligations in fiscal year 2021. GAO asked the program managers to describe the practices they use when managing projects in their basic and applied research portfolios. GAO conducted qualitative analysis to identify common themes and distilled them into 10 key practices. These key practices were cited by multiple program managers or agencies and could be used by program managers across the federal government when managing projects in their basic and applied research portfolios.

GAO also conducted a literature review to help corroborate the key practices. GAO sought and incorporated feedback on these practices from the selected agencies as well as experts identified by the National Academies of Sciences, Engineering, and Medicine.

View [GAO-24-106297](#). For more information, contact Candice N. Wright at (202) 512-6888 or wrightc@gao.gov.

April 2024

FEDERAL RESEARCH

Key Practices for Scientific Program Managers

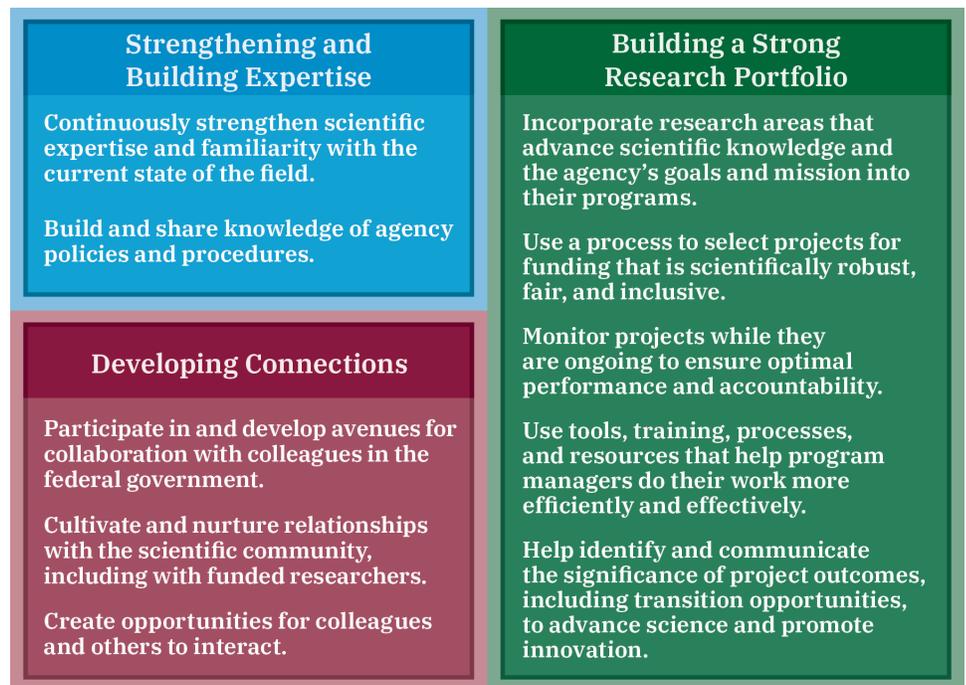
What GAO Found

To oversee basic and applied research at federal agencies, scientific program managers are typically responsible for managing award selection, monitoring ongoing awards, and coordinating with awardees and the research community. Program managers GAO interviewed from selected agencies identified key practices they used to carry out these responsibilities. They said these practices helped advance their agencies' goals, further science, and avoid unnecessary duplication. Further, the practices may help program managers, agencies, and others assess and improve management of basic and applied research.

As outlined in the figure below, the key practices fall into three areas.

- **Strengthening and building expertise**—Practices that help program managers maintain scientific and management expertise.
- **Developing connections**—Practices that help program managers enhance collaboration with the scientific community and the public, as well as within their own agencies and in other agencies.
- **Building a strong research portfolio**—Practices that help program managers advance their agencies' research mission and scientific knowledge in general, while ensuring their own accountability and that of federally funded researchers.

Key Practices for Federal Program Managers to Select, Coordinate, and Monitor Scientific Research



Sources: GAO analysis of discussions with scientific program managers. | [GAO-24-106297](#)