

Biological Science: An Investment in America's Future



Biological research and education contribute to the development of sustainable and cost-effective solutions for society's most pressing issues.

- **Economic Growth:** Research creates jobs, drives innovation, increases productivity, and returns roughly \$10 for every \$1 invested.

- **Climate Change:** Unprecedented environmental changes warrant research on the impacts of climate change, including habitat loss, invasive species, and emerging infectious diseases.

- **Human Health:** Fundamental cell and molecular research leads to the development of medical innovations.

- **Environment:** Pollution, loss of biodiversity, invasive species, and climate change threaten our natural resources.

- **Security:** Research enables us to prevent, detect, and recover from agro- or bio-terror attack.

Federal support for research is essential to ensure our nation's competitiveness in a global market.

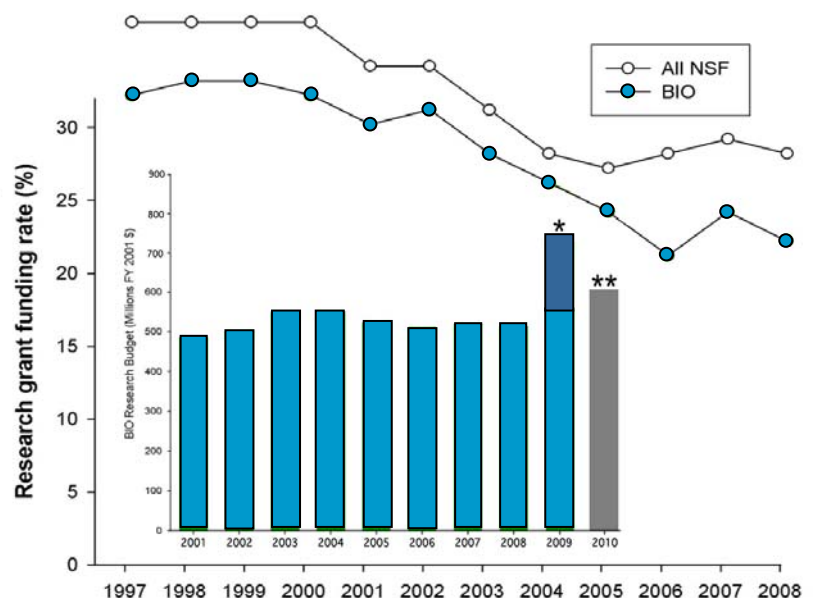
Addressing Inconsistent Funding for Biological Research

Research is not a short-term expense; it is an investment for the future.

Federal support for the competitive, peer-reviewed grant programs that fund biological research, such as the National Science Foundation's (NSF) Biological Sciences Directorate (BIO) and the U.S. Department of Agriculture's (USDA) Agriculture and Food Research Initiative (AFRI), has been stagnant for many years.

BIO provides roughly 66% of extramural, competitive grant funding for basic biological and environmental research in fields such as botany, ecology, microbiology, zoology, and basic molecular and cellular biology. In 2008, the average grant award from the BIO directorate was for 2.73 years and totaled \$128,999. Yet even at this modest size, **nearly 80% of applications were rejected**, many of which were highly competitive and potentially transformative.

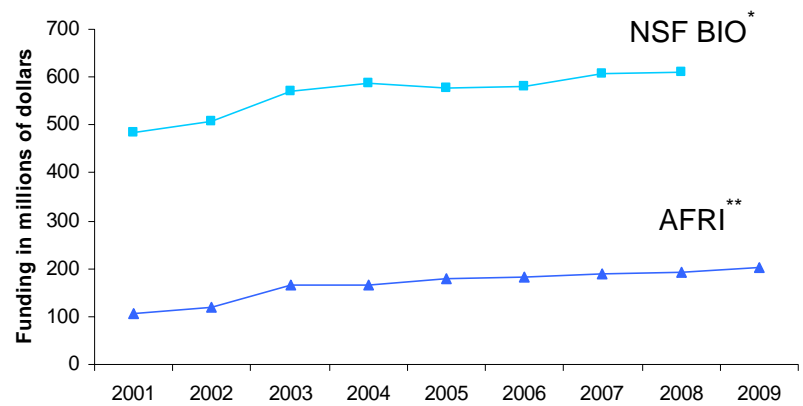
Awards for extramural, competitive research have stagnated at other agencies. In 2008, only 24% of AFRI proposals were funded. The rate of awards at the National Institutes of Health (NIH) has hovered around 20% for several years. The number of Science to Achieve Results (STAR) Graduate Fellowships at the Environmental Protection Agency (EPA) has declined by 74% since 2004.



* Plus ARRA funding
** House passed budget

Addressing a Funding Shortfall

Funding in the American Recovery and Reinvestment Act is intended to support many of these high-quality grants. These funds will directly support scientific research, ease a backlog of scientific equipment and instrumentation needs, and allow for needed repairs and construction of research facilities. However, **annual appropriations must become predictable and provide appropriate growth to prevent another backlog of unfunded, quality grants.**



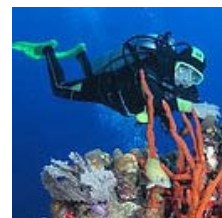
* 2009 data not yet available; ** National Research Initiative before 2009

President Obama's budget request for NSF BIO, USDA AFRI, and other agencies will enable these programs to fund highly competitive research grants in fiscal year (FY) 2010. Although the appropriations bills currently being debated in Congress generally differ from the President's budget, the spending levels Congress is considering are appropriate, needed, and appreciated.

Please help to ensure that federal investments in the biological sciences are sustained.

- **Fund NSF at \$6.937 billion in FY 2010, the same as passed by the House of Representatives.** This would allow NSF to fund important research on the impacts of climate change to human and natural systems, systems and synthetic biology, infectious diseases, and other critical biology-based research.
- **Fund AFRI at \$295 million in FY 2010, the same as passed by the Senate.** This would increase funding for competitive, extramural research on food security, climate change, and energy independence.
- **Support the funding levels passed by the House of Representatives for other important biological science programs,** including programs administered by the Department of Energy Office of Science, NIH, EPA, and the U.S. Geological Survey.

Thank you for your consideration of this request. We greatly appreciate the support of Congress on this important issue.



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