

Extramural Research

ISSUE SUMMARY:

EPA complements its robust in-house research with extramural funding, primarily through the Science to Achieve Results (STAR) program and National Priorities grants, with STAR funding of approximately \$28.6M per year over the past four years for a total of \$114M. Grant topics are aligned with EPA's Strategic Research Action Plans (StRAPs – see ORD Overview Briefing Paper 1 for more information) and are strategically developed in consultation with EPA programs and regions. EPA also funds extramural work through its People, Prosperity, and the Planet (P3) and Small Business Innovation Research (SBIR) programs.

All applications received in response to funding opportunities go through a rigorous review process including both an external peer review from a panel of independent scientific experts in the field of study, and an internal review involving experts from EPA program and regional offices. This review process is designed to evaluate each application according to its scientific merit and relevancy to EPA's mission.

Science to Achieve Results (STAR)

STAR was created in 1995 and is EPA's primary competitive, peer-reviewed extramural grants program. Since STAR's inception, it has awarded more than 3,600 grants throughout the nation. STAR stimulates and supports scientific and engineering research that advances EPA's mission to protect human health and the environment. It also provides access to the nation's best scientists and engineers in academic and other nonprofit research institutions. There are currently 133 active STAR research grants across the nation, totaling over \$147 million.

STAR grants are offered through four of EPA's National Research Programs:

- Air, Climate and Energy
- Chemical Safety for Sustainability
- Safe and Sustainable Water Resources
- Sustainable and Healthy Communities

National Priorities Grants

National Priorities grants are congressionally mandated and direct EPA to fund high-priority water quality and availability research. The National Priorities funding opportunities are developed to complement and align with EPA's broader efforts in this area. The research funded under these funding opportunities address gaps in the scientific knowledge on environmental and health impact areas related to water quality and availability.

People, Prosperity, and the Planet (P3)

[EPA's P3 program](#) is a competitive grants program that provides teams of undergraduate and graduate students an opportunity to receive a two-year award of up to \$75,000 to enhance their classroom learning with laboratory and field work to address environmental and public health issues. Every year, teams showcase their research at EPA's National Student Design Expo.

Small Business Innovation Research (SBIR)

EPA is one of 11 federal agencies that participate in the SBIR program established by the Small Business Innovation Development Act of 1982. The goal of [EPA's SBIR program](#) is to support small businesses to develop and

commercialize innovative technologies that meet the agency's mission of protecting human health and the environment. This is accomplished through an annual cycle of soliciting proposals in priority areas such as clean water, air quality, homeland security, circular economy, and safer chemicals. Projects are awarded as Phase I for proof of concept, followed by Phase II for development and commercialization.

Innovative Water Technology

America's Water Infrastructure Act (Public Law 115-270, Section 2007) of 2018 directs EPA to fund grants designed to accelerate the development and deployment of innovative water technologies that address pressing drinking water supply, quality, treatment, or security challenges of public water systems, areas served by private wells, or source waters. In accordance with this direction, EPA has issued funding opportunities each year since November 2020 to award research grants (1) to develop, test, and deploy innovative water technologies; or (2) to provide technical assistance to deploy demonstrated innovative water technologies.

UPCOMING MILESTONES:

Information on research grants can be found on EPA's website: <https://www.epa.gov/research-grants>.

The following awards will be announced soon:

- EPA expects to announce the latest round of SBIR Phase I and Phase II funding by the end of the calendar year.
- Community-Based Research for Effective Programs, Policies, and Decisions to Mitigate Cumulative Health Impacts and Environmental Health Disparities in Underserved Communities: The research from these awards will help inform solutions to be used by state, Tribal, and local governments, and communities to protect the health of underserved communities from the risks posed by environmental contaminants and other stressors.

The following funding opportunities will be announced soon:

- 22nd Annual P3 Awards: A National Student Design Competition Focusing on People, Prosperity, and the Planet: This funding opportunity will solicit applications from teams of undergraduate and/or graduate students highlighting the use of scientific principles in creating innovative technology-based projects that achieve the mutual goals of improved quality of life, economic prosperity, and environmental protection.
- Ecological Risk and Impact of UV Filters in Sunscreen on Aquatic Ecosystems: This funding opportunity will solicit proposals for research measuring the effects of UV filters on freshwater and marine organisms, advancements in analytical methods to detect and quantify UV filters in saltwater, and development of innovative metrics and modeling approaches to support evaluation of ecological risk and inform sustainable risk-based decisions.
- Enhanced Aquifer Recharge in Sole Source Aquifers: This funding opportunity will solicit groundwater research assisting local governments, universities, Tribes, and related water institutions, primarily located in rural areas, in advancing planning research, and implementation of Enhanced Aquifer Recharge (EAR) for sole source aquifers.

BACKGROUND:

Recent Extramural Awards

- In September 2024, [EPA awarded nearly \\$500,000](#) in research funding to five college teams to further develop their innovative technologies to help address urgent environmental and public health challenges.

Winning projects address high priority issues such as developing PFAS-free alternatives and ensuring cleaner water by reducing lead, microplastics, and nutrient runoff.

- In September 2024, [EPA awarded \\$1 million](#) in research grant funding to evaluate the effectiveness of common manganese treatment technologies. This will provide states, Tribes, and small utilities with an improved ability to adopt and implement these treatment technologies in small drinking water systems.
- In September 2024, [EPA awarded \\$15 million](#) to ten institutions for research to reduce on PFAS exposure from food and protect our farmlands and farming communities. These community-engaged research projects will collect PFAS bioaccumulation data in agricultural plants and livestock and explore strategies for reducing PFAS exposure.
- In August 2024, [EPA awarded \\$1.5 million](#) to develop and demonstrate nanosensor technology to detect, monitor, and degrade PFAS in groundwater and surface water that may be used as drinking water sources.
- In August 2024, [EPA awarded \\$9 million](#) in grant funding to four institutions for research to address knowledge gaps and better identify and manage antimicrobial resistance risk. Antimicrobial resistance is a major public health concern and can make it harder to treat certain infections in animals and people. Wastewater treatment facilities are potential receptors and sources for antibiotic resistant bacteria and genes.
- In 2024, EPA celebrated the 20th anniversary of the P3 program. In March 2024, EPA [announced](#) nearly \$1.2 million in funding to 16 college student teams to research and develop innovative solutions that address environmental and public health challenges as part of the agency's P3 program.
- In November 2023, EPA announced \$4.6 million in grant funding to five institutions for research to quantify and mitigate emissions from municipal solid waste landfills. This research will help advance methods for monitoring and quantifying landfill emissions of methane and other pollutants, evaluate strategies for reducing these emissions, and improve understanding of how municipal solid waste landfill emissions may change due to future climatic conditions, including extreme weather events.
- In September 2023, EPA announced \$7.8 million in funding to four institutions to research the use and risks of enhanced aquifer recharge (EAR) to improve groundwater availability and quality. EAR is the practice of using water sources to replenish and supplement existing groundwater supplies for storage, potential reuse, and to restore streamflow. This research will assist communities throughout the United States in evaluating whether and how to invest in safe and sustainable EAR strategies for many goals including enhancing water supplies, protecting water quality, maintaining aquatic ecosystems, reducing sinking land, and avoiding sea water intrusion.
- In August 2023, EPA awarded \$8.5 million to four institutions for research to improve our understanding of the occurrence and concentration of opportunistic pathogens (OPs) and disinfection by-products (DBPs) in drinking water distribution systems. The goal of this research is to identify environmental conditions and niches favorable to colonization, microbial growth, and propagation of these contaminants in drinking water distribution systems.
- In 2023, EPA awarded nearly \$5.7 million in grant funding to three research centers. Their research will investigate the cumulative health impacts of early lifstage (prenatal and childhood up to adolescence) exposures to pollutants and the added effect of non-chemical stressors among children in underserved, rural agricultural communities in the United States.

KEY EXTERNAL STAKEHOLDERS:

☒ Congress

☐ Industry

☒ States

☒ Tribes

☐ Media

☐ Other Federal Agency

☐ NGO

☒ Local Government

☐ Other (Local unions)

States, Tribes, local governments, and Congress are all interested in extramural grants. Note that EPA made non-competitive congressionally directed research grants in FY22 (4 awards, \$2.9M), FY23 (8 awards, \$13.2M) and FY24 (4 pending awards, \$2.0M).

MOVING FORWARD:

ORD will continue to fund extramural research that aligns with the agency's priorities.

LEAD OFFICE/REGION: ORD
REGIONS

OTHER KEY OFFICES/REGIONS: