



## STEM Education

### Request

- We join the larger informal science education community—including the Association of Science-Technology Centers, the Association of Zoos and Aquariums, and the Association of Science Museum Directors—in urging Congress to support informal science, technology, engineering, and mathematics (STEM) education and research by:
  - restoring Fiscal Year (FY) 2018 funding for the Advancing Informal STEM Learning (AISL) program at the National Science Foundation (NSF) to \$65 million;
  - providing funding for the NSF Directorates for Biological Sciences; Education and Human Resources; Geosciences; and Social, Behavioral and Economic Sciences to support museum research and collections, which are key to STEM education; and
  - continuing to fund informal STEM education programs at the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the National Institutes of Health (NIH).

### Introduction

The National Science Foundation is an independent federal agency responsible for about two-thirds of all federal funding for biological, geological and anthropological research at America's universities, science centers and other museums. NSF is also charged with promoting the vitality of the nation's STEM research and education enterprises.

The mission of NSF's Directorate for Education and Human Resources (EHR) is to achieve excellence in US STEM education at all levels and in all settings (both formal and informal) in order to support the development of both a well-prepared workforce and a well-informed citizenry. EHR's Advancing Informal STEM Learning program invests in research and development of innovative and field-advancing, out-of-school STEM learning, and emerging STEM learning environments.

The NSF Directorates for Biological Sciences, Education and Human Resources, Geosciences, and Social, Behavioral & Economic Sciences have all supported museums in the areas of field and collections-based research, collections improvements and digitization, database development, and educational programming.

### Talking Points

- Millions of Americans of all ages and backgrounds learn about STEM each year by visiting museums, science centers, public gardens, zoos, and aquariums.
- Museum exhibitions and educational programs and resources are built on a firm foundation of research, and museum researchers are making major original contributions to the understanding of important issues such as changes in climate, environments, biodiversity, and human culture.
- Informal STEM education programs at other agencies are also critical to helping museums attract, inspire, and educate the current and future workforce.



- NASA’s Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers (CP4SMPVC) helps the agency reach numerous outcomes identified in its current strategic plan—including inspiring student interest and achievement in STEM disciplines, as well as promoting STEM literacy through partnerships with informal organizations.
- A number of vital NOAA programs—including the Competitive Education Grant Program and Bay-Watershed Environmental Training (B-WET)—currently help zoos, aquariums, science centers, and other museums to bring real world examples of science to students nationwide.
- NIH’s Science Education Partnership Awards (SEPA) program builds relationships that improve life science literacy nationwide.
- In 2009, the National Research Council of the National Academies released a report entitled *Learning Science in Informal Environments: People, Places and Pursuits*. Findings included:
  - “Do people learn science in non-school settings? This is a critical question for policy makers, practitioners and researchers alike—and the answer is yes.”
  - “Designed spaces—including museums, science centers, zoos, aquariums and environmental centers—can support science learning. Rich with real-world phenomena, these are places where people can pursue and develop science interests, engage in science inquiry, and reflect on their experiences through sense-making conversations.”
  - “Informal environments can have a significant impact on science learning outcomes for individuals from non-dominant groups who are historically underrepresented in science.”

**Status**

- Funding for NSF, NOAA, and NASA is determined annually in the Commerce, Justice, Science, and Related Agencies appropriations bill. Funding for NIH is determined in the Labor, Health and Human Services, Education, and Related Agencies appropriations bill.
- The president’s FY 2018 budget proposes level funding of \$62.5 million for the Advancing Informal STEM Learning program at NSF.
- The president’s FY 2018 budget proposes eliminating the offices of education at both NASA and NOAA, which would mean the elimination of CP4SMPVC as well as B-WET and NOAA Competitive Education Grants. It also proposes eliminating NIH’s SEPA program.

**Informal STEM Programs Funding History (\$ in millions)**

|                     | FY 11  | FY 12  | FY 13  | FY 14  | FY 15  | FY 16  | FY 17  | FY 18 President’s Request |
|---------------------|--------|--------|--------|--------|--------|--------|--------|---------------------------|
| <b>AISL</b>         | \$64.2 | \$62.4 | \$47.8 | \$54.8 | \$55   | \$62.5 | \$62.5 | \$62.5                    |
| <b>CP4SMPVC</b>     | \$7    | \$7    | \$7    | TBD    | TBD    | TBD    | TBD    | \$0                       |
| <b>Comp. Grants</b> | \$5.8  | \$5    | \$5.1  | \$3.6  | \$4    | \$3    | \$3    | \$0                       |
| <b>B-WET</b>        | \$7.2  | \$5.5  | \$5.5  | \$7.2  | \$7.2  | \$7.2  | \$7.5  | \$0                       |
| <b>SEPA</b>         | \$18.9 | \$20.3 | \$20.3 | \$18.5 | \$18.5 | \$18.5 | \$18.5 | \$0                       |