AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

Talking Points on Natural History Collections for the 2019 Biological Sciences Congressional District Visits

This information is provided for your reference and to help you craft a clear and well-informed message. You do not need to repeat these points verbatim; use those that are appropriate or comfortable for you and convey them in your own words.

• Scientific collections are critical elements of our national research enterprise.

- Scientific collections, whether held at museums, government managed labs or archives, university science departments, field stations or botanic gardens, contain data (for example, genetic, tissue, species, image/recording, and environmental) that are a unique and irreplaceable foundation from which scientists study and explain life and living systems.
- The institutions and professionals who care for scientific collections enable scientists to conduct research that informs our understanding of life – current and historic – on earth, and to understand how life will be affected by changing environmental conditions – from the genetic and cellular level to the regional and continental scale. We are also able use what we learn about these species to identify new bio-based products – from pharmaceuticals to more productive crops.

• Federal research programs provide essential funding support for biological research and natural history collections.

- Federal funding from the National Science Foundation, as well as other federal research agencies, is vitally important to supporting the research and education conducted at natural history collections.
- NSF provides about two-thirds of federal support for fundamental biological and environmental research conducted at colleges, universities, and non-profit research centers across the nation.
- NSF funding supports the Advancing Digitization of Biodiversity Collections (ADBC) program that enables digitization of biological collections across the U.S., thereby increasing access to this digitized information to enable research and improve STEM education.
- The Collections in Support of Biological Research (CSBR) program, also funded by NSF, strives to secure existing collections, improve the accessibility of digitized specimen-related data, and develop better tools for collection curation and management.
- The Institute of Museum and Library Services (IMLS) provides grants to help museums with public outreach programs that strengthen the capacity of museums to improve the well-being of their communities. IMLS also conducts critical research, facilitates state and regional collaboration, and supports national initiatives that benefit museums. Its Office of Museum Services awards grants to museums for preserving and digitizing collections, educational programming, professional development, and community outreach.
- *Speak about the federal program that funds your museum/collections.*

• **New investment in scientific collections are in our national interest.**

- Research specimens and the vast amounts of data and samples associated with them are used to solve current problems and are helping to predict threats to human health, methods for ensuring food security, and understand and mitigate the impacts of future environmental changes.
- A recent report by the Biodiversity Collections Network, "Extending US Biodiversity Collections to Promote Research and Education," called for the development of a digital network of extended specimen data that represents the depth and breadth of biodiversity collections. This Extended Specimen Network (ESN), which would include both the physical specimens and their associated genetic, phenotypic, and environmental data, will stimulate new research endeavors, particularly in areas where biology intersects with other fields and engages students and the public. The ESN enables scientific discovery that could potentially answer questions of national interest, such as how diseases are transmitted from animals to humans, how crops can be more effectively and efficiently grown in changing climates, and how we can sustain and use biological resources in our ocean. Long-term investments are required to support this important endeavor.

• **Public investments in museums and research yield positive returns.**

- Museums strengthen our national economy. They provide core educational and outreach programs to engage the public and contribute more than $50 billion to the U.S. economy every year, support more than 726,000 American jobs, and generate $12 billion in tax revenue.
- Since 1960, growth in U.S. employment in science and engineering has increased by an average rate of 3 percent per year, outpacing the annual growth rate in total employment.
- 19.4 million U.S. jobs require science or engineering expertise at the bachelor's level.
- With few exceptions, workers in science and engineering occupations have for decades had lower unemployment than workers in other kinds of jobs.
- In FY 2018, an estimated 386,000 people (researchers, postdoctoral fellows, trainees, teachers and students) were supported directly by NSF. Nearly 58,000 graduate students have been supported by NSF Graduate Research Fellowships since 1952.
- Federal research funding has given rise to numerous successful companies, such as Genentech, Allylix, Chromatin, and Google – to name only a few. Federal investments have also created entire new fields, such as genomics and its applications in forensics, agriculture, and medicine.
- *Include an example from your state.*

• **All scientific disciplines contribute to innovation and economic growth.**

- Research is an interdisciplinary endeavor where tools from one field are borrowed by another, and insights from one discipline help guide research in another (e.g. neuroscience, psychology, artificial intelligence and systems biology).
- To enhance our global competitiveness, we need a strong foundation of basic research across all scientific disciplines.

• **Federal support for research has declined.**

- Since 1976, federal investment in research and development (R&D) as a share of Gross Domestic Product has declined from 1.23 percent to 0.7 percent. Over the past decade, federal R&D as a share of the U.S. economy decreased by 30 percent.

- Meanwhile, other countries are increasing investments in science. China, India, and other countries in Asia are ramping up investments in R&D.

• **Sustained investment in research is required if we are to solve our greatest problems.**

- Fluctuations in funding result in a backlog of unfunded but highly competitive research. This demoralizes researchers and slows the pace of discovery. Predictable annual investments allow federal research managers, scientists, and industry executives to plan wisely in setting research priorities.

• **Thank you for supporting scientific research.**

- The President's FY 2020 budget request would cut many research programs by 20% or more and terminate the IMLS. Such cuts are devastating and do permanent damage to U.S. science and innovation.
- We urge you to support additional federal investments in scientific research and infrastructure.

FY 2020 Budget Numbers Relative to FY 2019 level:

Agency/Program	President's Request	Senate Bill	House Bill
IMLS*	-90%	NA	+6%
IMLS OMS	-100%	NA	+23%
NSF	-12%	NA	+7%
NSF RRA (including BIO or CISE)	-13%	NA	+9%
Smithsonian	-6%	NA	+3%
USGS	-15%	NA	+7%
USGS Ecosystems**	-10%	NA	+7%

*Agency slated for closure under President's Budget Request for FY 2020.
**Under the new structure proposed in the agency reorganization plan, the Ecosystems Mission area would be cut by 35%.

FY 2020 Asks for Federal Agencies and Programs:

Agency/Program	Our Ask	President's Request	FY 2019 Enacted	House Bill
NSF	$9 billion	$7.1 billion	$8.1 billion	$8.6 billion
USGS	$1.2 billion	$984 million	$1.16 billion	$1.24 billion
IMLS	$257 million	$23 million	$242 million	$257 million
IMLS OMS	$42.7 million	$0	$34.7 million	$42.7 million

IMLS: Institute of Museum and Library Services
NSF: National Science Foundation
BIO: Biological Sciences Directorate
NMNH: National Museum of Natural History
OMS: Office of Museum Services
RRA: Research and Related Activities
CISE: Computer and Information Science Engineering
USGS: U.S. Geological Survey