



## **PRESIDENT’S PROPOSED SCIENCE RESEARCH & DEVELOPMENT BUDGET**

### *Support Increases & Oppose Cuts*

President Barack Obama is requesting \$152.3 billion for science research and development (R&D) in his Fiscal Year (FY) 2017 budget, a four percent increase over FY 2016 levels. Notably, the president proposes R&D activities be funded through a combination of discretionary and mandatory spending.<sup>1</sup>

Stable investments in science R&D programs are critical for the advancement of our society, economy, national security and the future of our nation. Optics and photonics – the science and application of light – benefit greatly from federal R&D investments and, in turn, contribute to innovations that reach beyond scientific discovery. Photonics generates, controls and detects particles of light to advance manufacturing, robotics, medical imaging, next-generation displays, defense technologies, biometric security, image processing, communications, astronomy and much more.

**Support FY 2017 science and technology increases** - The National Photonics Initiative (NPI) urges Congress to support the president’s FY 2017 budget request for increased science R&D funding within the National Science Foundation (NSF), National Institute of Standards and Technology (NIST), National Institute of Health (NIH) and Department of Energy (DOE).

**Oppose FY 2017 proposed cuts** - The NPI urges Congress to reject proposed cuts to the Department of Defense’s (DOD) Science and Technology Program.

### **FY 2017 Proposed Budget**

#### **Support increases to NIH budget**

**\$33.1 billion**

NIH’s mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life and reduce illness and disability. NIH is the lead agency for the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative and National Cancer Moonshot.

#### **Support increases to NSF budget**

**\$8 billion**

NSF is a key funder of optics and photonics research. An example is the Laser Interferometer Gravitational-Wave Observatory (LIGO), which recently measured gravitational waves from a binary black hole merger. This discovery, enabled by photonics, confirms Einstein’s Theory of General Relativity. Another example is work being done by researchers to make solar cells that can be used on almost any surface, including windows, walls, computer bags and clothing.

#### **Support increases to DOE Office of Science**

**\$5.6 billion**

The Office of Science is the nation’s largest funder of research in the physical sciences and plays a dominant role in underwriting engineering, mathematics and computer research. It supports discoveries in new fields such as biotechnology, nanotechnology and supercomputing that will be critical to our 21st century economy. The office has provided grants to researchers and facilities in all 50 states and the District of Columbia, at DOE laboratories and more than 300 higher education institutions.

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<sup>1</sup> Historically, R&D has been funded through annual appropriations or “discretionary” spending. Mandatory spending requires congressionally dedicated revenue and is not subject to annual appropriations.

**Support increases to NIST budget****\$826 million**

NIST is the lead agency for the National Network for Manufacturing Innovation (NNMI) – a public-private partnership between the federal government, local governments, universities, research institutes and industry to accelerate US manufacturing innovation in technologies with commercial applications by leveraging resources that bridge the gap between basic research and product development. Within the NNMI are a series of Institutes for Manufacturing Innovation (IMIs). Advanced optics and photonics can be leveraged across a wide range of disciplines and applications and are ideally suited for IMIs.

**Oppose cuts to DOD's Science and Technology Programs****\$12.5 billion**

DOD is a key federal supporter of research in the physical sciences. The R&D supported by DOD's Science and Technology Program plays a direct role in protecting and equipping our nation's armed forces to carry out their present and future missions and is the source of many of the innovations that drive our high technology economy. Recent breakthroughs in optics and photonics at the agency include bringing directed-energy weapons systems closer to deployment. These systems could provide efficient, cost-effective countermeasures in an age of drones and other airborne threats.

Despite the overall increases for Department of Defense Research Development Testing and Evaluation (RDT&E), the president's FY 2017 request cuts DOD's Science and Technology Program by \$500 million, representing a 4.1% decrease. **We urge Congress to reject the proposed cuts in the FY2017 budget request and use FY2016 enacted levels as the basis for writing the FY2017 Defense Appropriations bill.**

**About the NPI**

The NPI is a collaborative alliance among industry, academia and government seeking to raise awareness of photonics and the impact of photonics on our everyday lives; increase cooperation and coordination to advance photonics-driven fields; and drive US funding and investment in areas of photonics critical to maintaining US economic competitiveness and national security. The initiative is led by a coalition of scientific societies, including the American Physical Society (APS), the IEEE Photonics Society (IPS), the Laser Institute of America (LIA), The Optical Society (OSA) and SPIE, the International Society for Optics and Photonics (SPIE).

For more information, visit [www.LightOurFuture.org](http://www.LightOurFuture.org) or contact Laura Kolton at 202.416.1499 or Krisinda Plenkovich at 360.483.8786.