

**NPI****NATIONAL PHOTONICS INITIATIVE**

## **CONTINUED FEDERAL SUPPORT CRITICAL TO STUDY, APPLICATION OF OPTICS AND PHOTONICS IN PUBLIC AND PRIVATE SECTORS**

### **KEY PROGRAMS NEED SUSTAINED SUPPORT**

The NPI thanks Congress for its recent show of support for federal research and development agencies and programs in the Consolidated Appropriations Act, H.R. 1625. Optics and photonics – the science and application of light – benefit greatly from federal research and development (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.

Now more than ever, it is important to maintain meaningful federal investments in photonics research to expand innovation, competitiveness and economic opportunity. The NPI encourages Congress to oppose cuts and support, at a minimum, 4 percent growth over inflation in funding for the nation’s science research.

Several science agencies and programs of interest to the NPI include:

**NIST** - The National Institute of Standards and Technology (NIST) was created to ensure America’s scientific and economic competitiveness throughout the world. Promoting innovation and advancement in measurement, standards and technology, NIST has enhanced U.S. economic markets and everyday lives for more than a century. NIST is the lead agency for two key manufacturing programs: the Manufacturing Extension Partnership Program (MEP) and National Network for Manufacturing Innovation (NNMI).

**President’s FY19 Budget Proposal** - \$629 million for NIST **FY18 Omnibus** - \$1.2 billion

**MEPs** – Manufacturing Extension Partnerships (MEPs) are public-private partnerships that foster innovative collaborations among industry, academia and state and local governments to provide small- and medium-sized manufacturers in all 50 states access to resources that help them identify growth opportunities and tools and services to improve their processes and create new products.

**President’s FY2019 Budget Proposal** - eliminates MEPs **FY18 Omnibus** - \$140 million

**DOE Office of Science** - The Department of Energy’s (DOE) 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 – enabled by optics and photonics – and is critical to our nation’s economy and competitiveness. The Office of Science has provided grants to researchers and facilities in all 50 states and the District of Columbia, to DOE’s national laboratories and to more than 300 higher education institutions. The president has also proposed eliminating critical programs such as the Advanced Research Projects Agency-Energy (ARPA-e).

**President’s FY19 Budget Proposal** - \$5.4 billion **FY18 Omnibus** - \$6.26 billion

**NIH** - The mission of NIH 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 cancer research and the BRAIN Initiative, which is authorized to fund increases over the next decade through the enacted 21st Century Cures Act.

**President's FY19 Budget Proposal** - \$34.8 billion **FY18 Omnibus** - \$37.3 billion

**NSF** – The National Science Foundation (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.

**President's FY19 Budget Proposal** - \$7.47 billion **FY18 Omnibus** - \$7.8 billion

**DOD's Science and Technology Program** – The Department of Defense (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.

**President's FY19 Budget Proposal** - \$13.7 billion **FY18 Omnibus** - \$14.86 billion

## ABOUT THE NPI

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

For more information, visit [www.lightourfuture.org](http://www.lightourfuture.org) or contact Emily Pappas at 231.357.6330 or Krisinda Plenkovich at 360.483.8786.