

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

## LABORATORY FOR LASER ENERGETICS DESERVES CONTINUED FEDERAL SUPPORT

### ABOUT THE LLE

The Rochester, NY-based Laboratory for Laser Energetics (LLE) is one of three major facilities supported by the inertial-confinement fusion (ICF) program, which falls within the National Nuclear Security Administration at the Department of Energy (DOE). These three labs comprise LLE's Omega Laser Facility, Sandia National Laboratories' Z machine and Livermore National Laboratory's National Ignition Facility. Research at these facilities supports the U.S. nuclear weapons stockpile, both in maintenance and modernization, as well as training scientists capable of assessing the nuclear capabilities of other countries. In addition to furthering nuclear weapon science through the research it performs, LLE is the largest National Nuclear Security Administration (NNSA) training facility for graduate students, providing a critical pipeline of specialized experts. The Omega laser is also critical to maintaining the U.S. position in laser technology by increasing our scientific knowledge key to industrial progress and to non-nuclear defense applications.

The National Photonics Initiative (NPI) is deeply concerned with the President's FY19 budget proposal to cut 20 percent of the ICF program, and a three-year phase out of funding for the Omega Laser Facility. Such a cut would negatively impact the ICF's ability to achieve its mission as a whole, depriving our nation of the significant contributions of the LLE facility.

### CRITICAL CONTRIBUTIONS

The LLE is a vital contributor to national security, an invaluable source of scientific education and leadership and key to strategic work on an independent energy future. The OMEGA lasers (Omega and Omega EP) are the largest and most capable found at any academic institution, both in the United States and worldwide. A recent report from the National Academies of Sciences, Engineering, and Medicine, titled "**Opportunities in Intense Ultrafast Lasers: Reaching for the Brightest Light,**" points out that the U.S. is losing ground in a second laser revolution of highly intense, ultrafast lasers that have broad applications in manufacturing, medicine and national security. Currently, between 80 to 90 percent of the high-intensity laser systems are overseas, and all of the highest-power research lasers currently in construction or already built are overseas as well. The report makes recommendations that would improve the nation's position in the field, including for the U.S. DOE to create a broad network to support science, applications and technology of these lasers. Enacting the drastic cuts proposed in the President's FY19 budget would further undermine the U.S.'s ability to regain its previous leadership in this important space.

Over 360 skilled scientists, engineers and technicians are currently involved in the program. The DOE has also designated the LLE as the National Laser User's Facility (NLUF), which allows the LLE to host more than 400 scientists and 100 graduate students from 55 universities, to carry out fundamental research,

training and education. The proposed budget reduction will affect the training of the current and future workforce working in high-energy-density physics who are highly qualified to evaluate the safety and reliability of our nuclear stockpile.

## **CONTINUED FEDERAL SUPPORT IS NECESSARY**

Therefore, we ask that the subcommittees continue to build on the support provided in the FY 2018 omnibus by providing \$80 million for the LLE Omega Laser Facility and \$555 million for the ICF program in the FY 2019 Energy and Water Appropriations bill.

## **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.