



REAUTHORIZE THE HIGHER EDUCATION ACT IN THE 114TH CONGRESS

Hands-on Learning Needed for a Trained Photonics US Workforce

Higher Education Act

US industry, academia and government recognize the fundamental role that optics and photonics — the science and application of light — plays in national security, economic competitiveness, and personal and environmental health. Future defense and commercial opportunities arising from the development of photonics technologies include the growth of the Internet, next generation high performance computing, nuclear threat identification, cancer detection and breakthroughs in neuroscience, offering the potential for even greater societal impact within the next few decades.

However, our nation's ability to achieve the full potential of optics and photonics technologies depends on the preparedness of the American workforce in the physical sciences and engineering. According to a 2012 study by OP-TEC, the National Center for Optics and Photonics Education, only 300 optics and photonics technicians are graduated in the United States each year for an industry that demands 800 annually. Continued development of photonics technologies and applications across economic sectors will increase demand for specialized optics and photonics technicians in the United States and worldwide.

Targeted private and federal investment can establish and fuel an optics and photonics-focused, nationally networked partnership in technician education. Successful but isolated individual internship programs currently exist between community colleges and the optics and photonics industry in a few areas of the country. Providing federal internship grants to community college students across the United States will create a nationwide employment pipeline and bring together qualified optics and photonics technical students with US industry. In addition, the expected reduction in the size of the military services — particularly the planned reduction of 40,000 soldiers in the Army — creates the opportunity for a qualified pool of candidates to enter into the optics and photonics industry. The result will be increased opportunities for hands-on apprenticeships and a workforce pipeline that keeps both well-trained talent and critical technology in the United States.

The Higher Education Act of 1965 is the law that governs federal student aid programs. The Act has been reauthorized several times with the current law expiring in 2013; Congress extended this latest law through 2015. Reauthorizing efforts are underway in the Senate and House of Representatives.

The National Photonics Initiative (NPI) requests that the Higher Education Act reauthorization include private-public optics and photonics vocational objectives within existing US Department of Education community college initiatives, such as Title III Part A. This will enable a national and geographically diverse vocational optics and photonics model to grow and help meet demands for a trained US photonics workforce.

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).

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