



# A Decade of Advocacy and Impact

2012 - 2022

# The National Photonics Initiative

**Created as an umbrella organization to identify and advance areas of optics and photonics critical to maintaining U.S. competitiveness and national security, the National Photonics Initiative has been impacting public policy for a decade.**

In 1998, the National Research Council released a report, "Harnessing Light: Optical Science and Engineering for the 21st Century," that presented a comprehensive view of the potential impact of optics and photonics on important industries. In response, several economies – including Germany, China, and the European Union – developed their already strong optics and photonics sectors. The United States, however, did not, leaving it behind.

Action was essential. Opportunities in fields like solar power, high-efficiency lighting, genome mapping, high-tech manufacturing, nuclear threat identification, cancer detection, and new fiber optics vital to supporting the Internet's growth offered the potential for even greater societal impact over the next few decades. Investment in photonics was essential to growing our economy, protecting and improving lives, and positioning the United States as a global technology leader.

In 2012, the National Research Council released a sequel to "Harnessing Light" that called for the creation of a National Photonics Initiative (NPI) to increase collaboration and coordination among US industry, government and academia to identify and further advance areas of photonics critical to regaining US competitiveness and maintaining national security. This follow-up report, titled "Optics and Photonics: Essential Technologies for our Nation," urged collaborative action.

Soon after, leading optics and photonics societies Optica (formerly OSA) and SPIE, alongside the American Physical Society, IEEE Photonics Society, and Laser Institute of America, formed the NPI to advocate on behalf of the optics and photonics community.

Over the past 10 years, the NPI has brought together experts from industry, academia and government to help guide US funding and investment in five key photonics-driven fields:

- Advanced Manufacturing
- Communications & IT
- Defense & National Security
- Energy
- Health & Medicine



NPI Advocates on  
Capitol Hill

# Our story so far

## Our Sponsors



## Key Priorities Past & Present

The NPI works with the community to advocate for select priorities. Our work has successfully influenced public policy over the past decade.

PRIORITIES	TIMELINE
Congressional Visits	Ongoing
Congressional Optics and Photonics Caucus	2021-Present
National Quantum Initiative	2017-Present
Education/Workforce Development	2012-present
R&D Funding	2012-Present
CHIPS and Science Act	2021-2022
High Intensity Lasers	2018-2022
Cancer Moonshot	2015-2018 On Watch
Brain Initiative	2014-2016
AIM Photonics	2013-2015



# Priority Initiatives

## Congressional Visits

Throughout the past decade, the NPI has helped thousands of NPI advocates connect with their members of Congress through Congressional Visit Days or local events. These include both in-person and virtual meetings with key members and staff as well as local visits including recently with Senator Daines (R-MT) and Senator Roger Wicker (R-MS). These direct communications have been the foundation of NPI's impact on the broader policy debate.

## Optics and Photonics Caucus

Working with Representative Joe Morelle (D-NY), the NPI supported the establishment of a bipartisan, bicameral Congressional Optics and Photonics Caucus in 2021. The Caucus is co-chaired by Representative Morelle, Representative Brian Mast (R-FL), and Senators Kyrsten Sinema (I-AZ) and Steve Daines (R-MT). The Caucus continues to be a resource for members of Congress and staff and has held events focused on the importance of optics and photonics and workforce development.



Left to right: Travis Green, PFG Precision Optics President; Amber Contant, PFG Optics Sales & Marketing Specialist; Gayle Wicker; Senator Roger Wicker (R-MS); Courtney Green, PFG Precision Optics Vice President; and Trevor Green, PFG Optics Production Manager.



NPI members meet with Congressional Optics and Photonics Caucus Co-Chair Senator Steve Daines (R-MT) in Montana.



# Priority Initiatives

## National Quantum Initiative

The NPI, along with our quantum stakeholders, successfully advocated for passage of the National Quantum Initiative (NQI) Act in 2019. The NQI Act authorized \$1.275 billion over five years for quantum research and development in key scientific agencies. Since the passage of the NQI Act, the NPI has been successfully engaged in the appropriations process to ensure adequate funding to support these efforts. As a result, funding for the NQI Act has exceeded the original authorization for a total of nearly \$1.9 billion. Although the intent of the legislation is a 10-year program, the second five years requires reauthorization. NPI has made reauthorization for the next five years a priority and has begun collecting input on areas of success and opportunities for improvement.



NPI Advocates meet with Senate Majority Leader Chuck Schumer (D-NY).

## Education/Workforce Development

Workforce issues continue to be a priority for the NPI. The current supply of workers in the optics and photonics industry is not meeting current demand and is not sufficient to sustain future growth. This is true at every level, from PhD physicists to engineers to skilled technicians. The NPI will continue to advocate for the government to adopt innovative and bold solutions to tackle this critical need.



NPI Advocates on Capitol Hill.



# Priority Initiatives

## Optics and Photonics R&D Funding

Expanded support for optics and photonics research and development (R&D) has been a priority since the beginning of the NPI. The NPI has followed legislation, authorizations and appropriations identifying opportunities to maintain and increase optics and photonics R&D funding. The NPI has focused its efforts on expanding funding for key scientific agencies including the Department of Energy (DOE) Office of Science, the National Science Foundation (NSF), and the National Institute of Standards and Technology (NIST).



NPI Advocates on Capitol Hill.

## CHIPS and Science Act

NPI strongly advocated for the CHIPS and Science Act which was signed into law in 2022. The law provides \$52 billion focused on establishing investments and incentives to support US semiconductor manufacturing, R&D, supply chain security, and workforce development. The science portions authorized increased funding levels for the NIST, the DOE Office of Science and the NSF and establish support for US-based manufacturing in the advanced technology sectors. It also calls for the establishment of 20 geographically distributed "regional technology hubs" that will focus on expanding US innovation capacity.



NPI Advocates meet with Congresswoman Sheila Jackson Lee (D-TX).



# Priority Initiatives

## High-Intensity Lasers

NPI advocated for US high-intensity laser science and engineering communities and companies, including scientists, engineers, research universities, national labs, the laser industry, and federal agencies, to implement the recommendations of the National Academy of Sciences consensus report on the opportunities of high intensity science. The NPI also helped to establish and lead a “Brightest Light Initiative” (BLI) Coalition. The NPI facilitated the formation of the coalition and the BLI Workshop which hosted over 100 leading scientists.

## Brain Initiative

The NPI launched the Photonics Industry Neuroscience Group in 2014 which committed upwards of \$30 million in existing and future research and development spending over three years to advance optics and photonics technology in support of the BRAIN Initiative.

## Cancer Moonshot

In 2016, the NPI organized a consortium of scientific communities, leading members of medical technology industry, over 350 hospitals and major patient advocacy groups to leverage the more than \$3 billion annual private investments in cancer research toward early detection technologies of the most aggressive cancers. We continue to watch this issue since the announcement of a new cancer initiative in 2022.

## AIM Photonics

The NPI successfully advocated for a Manufacturing USA Institute focused on optics and photonics. AIM Photonics was launched in 2015 and initially funded in part by \$110 million from the Department of Defense (DoD) as part of a budget totaling \$600 million in public and private commitments. The success of AIM 1.0 led the DoD to authorize additional support for an AIM 2.0 in 2021. AIM 2.0 includes public and private support totaling \$321 million.



# Thank you for your support.

As the NPI begins its next decade of advocacy for the optics and photonics community, our team will continue to focus on the needs of our community today, and those of tomorrow. As technology advances, so will our efforts.

## CONTACT US

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