

MICHELLE L STOCK

Director of Business Development and Sales, North America
TraInnovations

Education

Ph.D. in Electrical Engineering, University of Michigan
MSE and BSE in Electrical Engineering, University of Michigan

Technical Activities/Interests

- Ultrafast fiber optical lasers
- Nonlinear microscopy
- Ultrafast laser micromachining
- Ophthalmic laser surgery and medical imaging applications
- Co-founder of Arbor Photonics (start-up; 2007-2012)

Services to the Technical Community

- Public Affairs Council of OPTICA (2018-present)
- Board Member of Laser Institute of America (2015-2020)
- Past-Chair and Founding Member of the non-profit Mi-Light, Michigan's Photonics Industry Cluster (2012-2018)
- Industry Expert / Outside Judge for Luminate Accelerator (Rochester, NY) Cohort Selection and Pitch Competition (2019)
- Member of National Photonics Initiative (NPI) High Power Lasers Committee (2016-2017)
- Conference Chair for ICALEO Laser Microprocessing Conference (2015-2017)
- Member of NPI Advanced Manufacturing Subcommittee and author of draft white paper (2013)
- Member of Michigan Delegation to White House Business Council Meeting (June 2012)
- Corporate Associate Committee Member, Optical Society of America (2005-2010)
- President of Ann Arbor OSA Chapter (2006-2007)

Service to SPIE

- SPIE Maiman Award Committee Member (2020-present)
- Chair of the SPIE Fellows Committee (2020-2022)
- Member of SPIE Fellows Committee (2018-2020)
- SPIE Prism Awards Judge (2018-2019)
- SPIE Traveling Lecturer for IONS/KOALA Conference (2015)
- ESTeP (Education, Science and Technology Policy) Committee Member, SPIE (2014-2016)

Professional Honors

- Sr Member of Optica (2020)
- Fellow of SPIE (2017)
- Sr Member of SPIE (2016)

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Election Statement

After attending a Women in Science and Engineering program during high school I knew I wanted to be an electrical engineer. When a friend's science fair project introduced me to lasers, I became intrigued by these fascinating sources of light. As an undergraduate at the University of Michigan, I encountered research groups developing lasers and realized that graduate school would prepare me for the career I was seeking. During my PhD thesis work in Prof. Gerard Mourou's group, I developed ultrafast optical fiber lasers and helped demonstrate chirped pulse amplification in rare-earth doped optical fibers. These lasers became the basis for my industrial career, addressing applications spanning from microscopy to ophthalmology and micro-material processing.

My first encounter with SPIE was during that time. Membership opened access to a global community of photonics researchers, engineers, and businesspeople; meeting them at conferences as a young engineer allowed me to see beyond the narrow scope of my graduate work. SPIE conferences have been essential to my career advancement as I became more involved in commercialization of novel lasers, including when I co-founded an optical fiber amplifier start-up. Whenever I needed to connect with new applications and markets, SPIE had a relevant conference and publications that allowed me to quickly learn the state-of-the-art. Now that I am part of a medical imaging company, I am learning more about SPIE's vibrant biophotonics and medical imaging communities.

SPIE volunteer activities further broadened my perspective and network, involving me in meaningful and impactful initiatives, starting when I worked with SPIE on a project related to the launch of the National Photonics Initiative and continuing when I joined the ESTeP Committee. After becoming an SPIE Fellow, I joined the Fellows Committee, and soon afterwards, became its Chair. This position enabled me to observe the countless ways SPIE's members enrich the world with their innovations and generous volunteer work.

SPIE's Photonics West is a must-attend event on my calendar. Several years ago, working with SPIE staff, we launched the Executive Women's Meetup, providing a venue for women who have made a career in industry to mingle, make new contacts, and share experiences. And as a co-founder of the Michigan Photonics Industry Cluster, the International Photonics Cluster Reception and sessions on Market Verticals and updates on US Government policy during Photonics West keep me up to date on our global industry.

Over the past decade, I have served as a director of the LIA (Laser Institute of America) and as the Chairperson of the board of Mi-Light (the Michigan Photonics Industry Cluster). This background, along with positions in management of photonics-based start-ups and a decade-long engagement as a volunteer with SPIE, have provided me with perspectives I can bring to the SPIE Board of Directors.

If elected, I would bring my passion for the photonics community and use it to foster SPIE's excellence and further grow it by focusing on:

Stimulating interactions between various technical communities within SPIE by making them more visible to one another and providing networking opportunities at events such as Photonics West and through online forums. SPIE awards and publications may be leveraged to broaden awareness.

Increasing connections with external communities, including end-users of photonics. Many innovations emerge when different technical groups connect; in academia, there is more emphasis on interdisciplinary studies, and we can take that concept and promote it inside and outside of SPIE.

Raising awareness within the global SPIE community of the special distinction of being a Fellow of SPIE and ensuring that we are cultivating future fellows by encouraging people to get more involved as volunteers across geography, technical area, and career path.

Developing more networking opportunities and supports for women and other under-represented people in optics and photonics over the span of their careers and providing more exposure to the various career paths that are available, including entrepreneurship. There is an opportunity to engage our Fellows and Senior Members as resources in this endeavor.

SPIE has numerous resources that can be used to create even stronger and better connections between our members, to help them thrive at each stage of their careers, and to support them as they continue to meet global challenges to improve the lives of all. I would be honored to serve our diverse and essential communities as an SPIE Board Member.