BRIAN W. POGUE

Chair & Professor, Department of Medical Physics, University of Wisconsin-Madison
Co-Founder, DoseOptics LLC; Adjunct Professor, Engineering Science, Dartmouth College

Education:

- 1989 – B.Sc. Honors, Physics, York University, Canada
- 1991 – M.Sc. Laser Physics, York University, Canada
- 1995 – PhD, Nuclear & Medical Physics, McMaster University, Hamilton ON Canada
- 1996 – Research Fellow Biomedical Optics – Mass Gen Hosp, Harvard Medical School, Boston

Technical activities/interests:

Optical systems in medicine, optical imaging, Cherenkov imaging in radiation therapy, surgical molecular imaging, radiation-optical interactions, ultrafast radiotherapy

Service to the technical community:

- Study Section Member of >100 NIH grant review panels in tech areas of medical imaging
- Past Editorial Board Member: Optics Letters, Medical Physics, Physics in Medicine and Biology, Photochemistry and Photobiology B: Biology, Breast Cancer Research.
- Deputy Editor, Optics Letters 2008–2012
- Guest Editor - 15 special issue journals
- Conf General Chair: OSA Biomed 2006, Eur Conf Biomed Opt SPIE/OSA 2007; Gordon Conf in Lasers Med Biol 2010; OSA Biomed 2014; Eng Conf Intl Optics Biotech, Surg Med 2019;
- Conf Prog Chair: OSA Annual 2006, Eur Conf Biomed Opt. SPIE/OSA Prog Chair 2009, 2011;
- Group Chair for Biomedical Optical Imaging, OSA, 2002–2004.
- Advisory Board - Biophotonics Summer School, Ven Sweden – 2018–present
- Advisory Board Chair – Multiscale Biophotonics Short Course, UC Irvine – 2019–present
- AAPM Task Group Chair #311 – Standards for Fluorescence Guided Surgery 2020–2023
- Advisory Board - NIH Nat Ctr Interven. Biophotonics Tech. (NCIBT) – (2022–present)
- Advisory Committee - National Academy of Inventors (NAI) Fellows– 2022, 2023
- Review Committee - AIMBE Fellow– 2022, 2023
- Founded Summer Undergrad Diversity Intern Progs - Dartmouth Col & U Wisconsin
- Dean of Graduate Studies, Dartmouth College, 2008–2012
- Founded – Emerging Leaders of Academic Medical Physics, on Advancement, Diversity, Mentoring & Visioneering for young or emerging faculty – U Wisconsin

Service to SPIE:

- Editor-in-Chief, Journal of Biomedical Optics, SPIE Publications (2018–present)
- Chair SPIE BiOS conference: Molec Guided Surg (2015–24); SPIE Eur Clin Bioph 2022, 2024

Professional honors:

- Fellow - International Society of Optics and Photonics (SPIE)
- Fellow - National Academy of Inventors (NAI)
- Fellow - Optica (formerly OSA)
- Fellow - American Association of Physicists in Medicine (AAPM)
- Fellow - American Institute of Medical & Biological Engineers (AIMBE)

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Election Statement

The SPIE has been the primary professional society affiliation in my career, representing an ideal nexus between optics/imaging & medicine balancing both academics & industry. I joined SPIE in 1993 to attend the BiOS conference, and have continued to attend every year, relishing the Photonics West tech show. Publishing with SPIE has been a major part of my career, with >120 papers in JBO alone. As my career developed, I was invited to SPIE conferences and eventually chaired program committees and conferences in biomedical optics and biophotonics.

Discoveries in technologies should be developed side by side with training and development of the people involved. Because of this, I am active in both research and education initiatives. I founded internship programs at both Dartmouth and Wisconsin for undergrad students, diversifying the pathways that will shape our field. I created new graduate programs in engineering and medical physics, where students discover new techniques and invent new tools with optics and imaging systems. My commitment to SPIE parallels my commitment to applied medical device research, having completed >$50million in NIH funded work and mentoring a diverse group of >180 students & scientists.

It has been an honor for me to serve as Editor-in-Chief the Journal of Biomedical Optics published by SPIE (2018–24), the oldest and most cited journal in this field. SPIE has a major role here, and we need to provide the opportunity for authors and readers to interact with the Society through peer-review, publishing, webinars, sponsorship opportunities, and symbiosis with their conference attendance.

Additionally, as an entrepreneur in a startup company, DoseOptics LLC, I know how critically important it is for engineers and physicists in industry to have conference venues and professional development that enhances what they do and provides them with scientific/engineering exchange and networking. SPIE needs to maintain the right balance between engineering R&D and scientific academic support.

In the future, as a Director, I would continue to build opportunities for the Society interact with optical and imaging researchers & developers, building not just in optics but also imaging science. As chair of the largest medical physics graduate program in the country, I can see that optics and imaging need to be more symbiotic and more equally developed. Optics is the single largest technology sector in medicine today, and I have researched and published on this fact over the years. Advocating for NIH support that matches the trends in industry R&D is critical, and biomedical optics is an underfunded area of federal support, as compared to many other device-based sectors. This area needs work.

Also in the future, I would advocate growth in the symbiosis of conferences and publications. Publishing has completely transitioned from being one that focuses on journals to one that has become divergent in two directions, towards extremely high impact factors or towards journals that do not represent a society nor even a recognized scientific editorial board. This role is very important for SPIE, where conferences and publications can better support each other. We need to adopt modern approaches to publishing with data/code transparency, interactive webinars, electronic archives of presentations, and more professional development courses online. We live in a world which has radically changed in terms of our approach to science, academics and industry, where scientists today are often more devoted to their social media feeds than they are to their professional societies and publications. The SPIE must act to preserve their version of scientific publishing as a respected field, where people want to be a part of it. This will involve adapting to new methods of scientific exchange that will be more driven by search engines, yet we must preserve the role of scientific editorial boards and peer-support.