Curriculum Vitae

Bruce Jason Tromberg, Ph.D.

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SUMMARY

Dr. Tromberg is the Director of the National Institute of Biomedical Imaging and Bioengineering (NIBIB) at the National Institutes of Health (NIH) where he oversees a portfolio of research programs focused on developing, translating, and commercializing engineering, physical science, and computational technologies in Biology and Medicine. In addition, he leads NIH's Rapid Acceleration of Diagnostics Technology (RADx Tech) initiative, launched April 29, 2020, to increase SARS-COV-2 testing capacity and performance. His laboratory, the Section on Biomedical Optics (SBO) in the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), develops portable, bedside, non-contact, and wearable technologies for biomedical sensing, imaging, and therapy. Prior to joining NIH in January 2019, he was a professor of Biomedical Engineering and Surgery at the University of California, Irvine (UCI). During this time he served as director of the Beckman Laser Institute and Medical Clinic (BLIMC) (2003-2018) and the Laser Microbeam and Medical Program (LAMMP), an NIH National Biomedical Technology Center at the BLIMC (1997-2018). Dr. Tromberg has co-authored more than 450 publications and holds 25 patents in new technology development as well as bench-to-bedside clinical translation, validation, and commercialization of devices. Dr. Tromberg has trained >80 students and fellows, is co-founder of the Biophotonics company Modulim, Inc, and has served on numerous advisory boards in academia, industry, government, and private foundations.

POSITIONS HELD

January 2019-present: Director, National Institute of Biomedical Imaging & Bioengineering (NIBIB), National Institutes of Health; Principal Investigator, Section on Biomedical Optics (SBO), National Institute of Child Health and Development (NCHD)

July 2007-December 2018: Director, Special Campus Research Program (SRP), Beckman Institute, UC Irvine

July 2004-Dec 2018: Co-Leader, Onco-Imaging and Biotechnology Program, Chao Family Comprehensive Cancer Center

October 2003- December 2018: Director, Beckman Laser Institute and Medical Clinic, UC Irvine

October 2003-June 2006: Chief, Beckman Division, Department of Surgery, UC Irvine

October 2002-September 2003: Interim Director, Beckman Laser Institute and Medical Clinic

July 2002-December 2018: Professor, Departments of Biomedical Engineering and Surgery

May 2002-June 2005: Vice Chair and Co-Founder, Department of Biomedical Engineering, UC Irvine

January 2002-June 2002: Acting Director, Beckman Laser Institute and Medical Clinic

October 2000-September 2004: Associate Director and Co-Founder, Center for Biomedical Engineering, UC Irvine

July 1998-July 2002: Associate Professor, Electrical and Computer Engineering, UC Irvine.

Summer 1998: Visiting Professor, Institute for Applied Optics, Swiss Federal Institute of Technology, EPFL, Lausanne, Switzerland

April 1997-December 2018: Director, Laser Microbeam and Medical Program (LAMMP), NIH-National Biomedical Technology Resource Center, UC Irvine

July 1995-July 2002: Associate Professor, Departments of Surgery and Physiology and Biophysics, UC Irvine

January 1995-March 1997: Associate Director, Laser Microbeam and Medical Program, Beckman Laser Institute and Medical Clinic, UC Irvine

September 1994-June 2004: Founding Co-Director, Optical Biology Core and Photomedicine Program, NCI-Chao Family Comprehensive Cancer Center

September 1991-June 1995: Assistant Professor, Department of Physiology and Biophysics, UC Irvine (joint appointment with Department of Surgery)

January 1990-June 1995: Assistant Professor, Department of Surgery, UC Irvine

EDUCATION

Post-Doctoral
March 1988-December 1989: Hewitt Foundation Postdoctoral Fellow, Photomedicine, Beckman Laser Institute and Medical Clinic, University of California, Irvine; Advisor: M.W. Berns

Graduate
1986-1988: Department of Energy/Oak Ridge Associated Universities Predoctoral Fellow, Oak Ridge National Laboratory, Oak Ridge, Tennessee; Advisors: M.J. Sepaniak and T. Vo-Dinh

March 1988: Ph.D., Chemistry, University of Tennessee, Knoxville. Dissertation: *Development of Antibody-Based Fiber Optic Sensors*

December 1983: M.S., Chemistry, University of Tennessee, Knoxville. Thesis: *Laser-Based Optical Fiber Fluoroprobes in Clinical Analysis*

Undergraduate
May 1979: B.A., Chemistry and Psychology, Vanderbilt University, Nashville, Tennessee

High School
June 1974: Woodrow Wilson High School, Washington, D.C.

COMMITTEES AND COUNCILS AS NIBIB DIRECTOR

2023- present: NIH HEAL Pain Executive Committee

2023- present: NIH Common Fund Venture Space Advisory Committee and Venture Board Member

2022-present: Foundation for NIH (FNIH) Biomarkers Consortium Executive Committee

2022-present: US-Israel White House-HHS Taskforce on Pandemic Preparedness and Innovation

2022-present: OSTP Steering Committee for Pandemic Innovation

2022-present: Bill & Melinda Gates Foundation-NIBIB Maternal-Fetal Health Technologies Working Group

2022-present: NICHD, ORWH, NIBIB joint RADx initiative in Maternal Health Technologies

2022-present: NICHD-NIBIB-FNIH Pediatric Medical Devices Initiative Working Group

2022-present: NEI-NIBIB-All of Us (AoU) Ophthalmic Imaging Diagnostics Initiative Working Group

2022-present: All of Us Brain Trust Advisory Committee

2022-present: HHS-Interagency Testing Coordination Group (TCG) for MPV response, NIH lead

2021-2022: Office of Science and Technology Policy, Pandemic Innovation Task Force, co-lead Diagnostics

2021-present: NSF Engineering Directorate National Advisory Committee

2021-present: HHS KidneyX Steering Committee

2021-2022: Co-Chair, Search Committee for National Center for Advancing Translational Science (NCATS) Director

2021-2022: Member ARPA-H/NIH Institute and Center (IC) Interface working group

2021-present: Co-lead for NIH Common Fund Initiative, Bridge to Artificial Intelligence (Bridge2AI)

2021-present: White House-interagency partnership on Hepatitis C elimination, co-lead POC diagnostics

2020-2023: Foundation for Innovative Diagnostics (FIND) ACT-A Dx Pillar

2020-present: Lead, NIH Rapid Acceleration of Diagnostics Technology (RADx Tech) programs

2020-present: Executive Committee, NIH Rapid Acceleration of Diagnostics Initiative (RADx)

2020-present: Executive Committee, NIH Rapid Acceleration of Diagnostics Initiative (RADx)

2020-present: HHS-Interagency Testing Coordination Group (TCG), NIH diagnostics lead

2020-2021: Operation Warp Speed (OWS), Interagency Lead for Diagnostic Technologies

2019-2020: Member, Search Committee for National Eye Institute (NEI) Director

2019-present: Member, NIH Facilities Working Group for Campus Resource and Space Allocation Planning

2019-present: NIH Lead, Bill and Melinda Gates Foundation collaboration in POC and Digital Health Technologies

2019-present: Co-lead for NIH Common Fund Initiative, Data Science and Innovation in Africa (DSI-Africa)

2019-present: NIH lead for US Department of Energy collaborative programs

2019-2022: Co-Chair, Scientific Data Council, National Institutes of Health

2019-2021: Member, Physical Sciences Sub-Committee, National Science and Technology Council, OSTP

2019-present: Member, BRAIN/Blueprint Directors Council, National Institutes of Health

2019-*present*: Member, SPARC Initiative Directors Council, National Institutes of Health

HONORS AND AWARDS

March 2023: 53rd Annual Aubrey O. Hampton Lecture, Mass General Hospital, Boston, MA

November 2022: Gold Medal, Academy for Radiology and Biomedical Imaging Research

October 2022: Elected member, National Academy of Medicine

January 11, 2022: Britton Chance Biomedical Optics Award, International Society for Optical Engineering (SPIE)

December 7, 2021: Elected Fellow, National Academy of Inventors

October 5, 2021: 60th Merrill Sosman Lecture, Mass General-Brigham Dept of Radiology, Harvard Medical School

November 19, 2020: Vanderbilt University Medical School Discovery Lecturer

October 28, 2020: University of Illinois School of Engineering Deans Distinguished Lecturer

April, 2020: Horace Furumoto Innovator Award from the American Society for Laser Medicine and Surgery (ASLMS)

May 4, 2018: UCI Institute for Clinical and Translational Science (ICTS) Career Achievement Award

November 2017: John R. and Donna S. Hall Lecture, Vanderbilt University, School of Engineering

November 2017: Plenary Lecture, 2nd International Biophotonics Conference, Nanyang Tech University, Singapore

June 2017: Invited Lecture, National Research Council of the National Academies of Science, Biomedical Engineering Materials and Applications (BEMA) Workshop, Woods Hole, MA

September2017: Plenary Speaker, Biennial Mexican Optics and Photonics Meeting, Puebla, Mexico

November 2016: Dasari Lecture, Massachusetts Institute of Technology, Boston, MA

July 2016: Honorary Professor, Research Institute of Electronics, Shizuoka University, Japan

October 2015: Elected Fellow, The Optical Society (OSA)

March 2015: Michael S. Feld Biophotonics Award, Optical Society of America (OSA)

October 2015: Plenary Speaker, International Year of Light Symposium, Optical Society (OSA) Frontiers in Optics (FiO), San Jose, CA

January 2015: Plenary Lecture, Physics of Quantum Electronics (PQE) Meeting, Snowbird, UT

July 30, 2014: Keynote Speaker, National Institute of Biomedical Imaging and Bioengineering (NIBIB) Edward C. Nagy New Investigator Symposium*,* National Institutes of Health (NIH), Bethesda, MD

July 2, 2014: Plenary Lecture, LALS 2014: International Conference on Laser Applications in Life Sciences, Ulm, Germany

December 11, 2013: Plenary Lecture, Australia New Zealand Conference on Optics and Photonics (ANZCOP), Perth, WA, Australia

May 2013: Cameron Lecture, Department of Medical Physics, University of Wisconsin, Madison, WI

March 2013: Keynote Lecture, Institute of Physics (IOP), 90th Anniversary Symposium of Measurement Science and Technology, London

September 2012: Department of Health and Human Services (DHHS) Appointment, National Advisory Council, National Institute of Biomedical Imaging and Bioengineering (NIBIB), National Institutes of Health (NIH)

April 2012: Plenary Lecture, The Optical Society (OSA) Topical Meeting on Biomedical Optics

June 2012: Keynote Lecture, International Center for Scientific Debate (B-Debate), La Caixa Foundation and the Institute of Photonic Sciences (ICFO), CosmoCaixa Museum, Barcelona, Spain

December 2011: Sackler Fellow, Department of Biomedical Engineering, School of Engineering, Tel Aviv University, Israel

August 2011: National Academies Panel Presentation, Harnessing Light: Capitalizing on Optical Science Trends and Challenges for Future Research, Beckman National Academy Center

May 2011: UC Irvine Institute for Clinical Translational Science Distinguished Faculty Mentor Award

November 2010: Royal Society Lecture, Theo Murphy meeting on Biomedical Optics-The Kavli Royal Society International Center

July 2009: Director's Award, International Society for Optical Engineering (SPIE)

July 2009: Elected Board Member, International Society for Optical Engineering (SPIE)

April 2008: McIntire Lecture, Rice University Department of Biomedical Engineering

February 2008: Keynote Address, First International Congress on Biophotonics, Sacramento, CA

July 2007: Plenary Lecture, Association of Pathology Chairs Annual Meeting, Colorado Springs, CO

July 2007: Plenary Lecture, Asia-Pacific Rim Symposium on Biophotonics, Cairns, Australia

December 2006: Elected Fellow, International Society for Optical Engineering (SPIE)

October 2006: Founders Series Lecture, Vanderbilt University Institute of Imaging Science

March 2006: Elected Fellow, American Institute for Medical and Biological Engineers (AIMBE)

May 2005: Research Associates Athalie Clarke Award for Outstanding Health Science Researcher, University of California, Irvine

April 2005: Sigma Xi Honor Society

September 2004: Joint NSF-Egypt National Research Center, Egypt-American Workshop on Lasers in Chemistry, Materials, and Biology, Cairo, Egypt

July 2004: U.S. Chair, Gordon Research Conference, Lasers in Biology and Medicine

July 2003: Elected Board Member, International Society for Optical Engineering (SPIE)

April 2003: Joint NSF-Humboldt Foundation lecture, German-American Frontiers on Engineering, Ludwigsberg, Germany

January 2003: Plenary Lecture, NIH/NIBIB Biomedical Imaging Research Opportunities Workshop

December 2002: Member, NIH/NIBIB Workshop on Future Research Directions

May 2001: OE Magazine Technology Innovator Award

Spring 2001: Chair, Optical Society of America Bio-Optics Working Group

January 2001: Appointed, Beckman Foundation Grants Advisory Council

November 2000: Coherent-Biophotonics "Young Investigator in Biophotonics" Award

April 2000: Avon Foundation Breast Cancer Research Scholar

September 1999: Cornelius Hopper Innovation Award, California Breast Cancer Research Symposium

July 1999: Appointed Editor-in-Chief, Journal of Biomedical Optics

July 1997: Elected Co-chair, Biannual meeting, The Engineering Foundation, *Advances in Optical Technology for Medicine and Surgery,* Snowbird, Utah

October 1996: Royal Society Lecture, Symposium on Near Infrared Spectroscopy and Imaging of Living Systems, London, England

May 1996: Rank Prize Funds Lecture, Diagnostic and Therapeutic Applications of Tissue Optical Properties, Symposium on Photodynamic Therapy, Grasmere, England

January 1994: National Institutes of Health, NIGMS, FIRST Award (5 years)

May 1993: Selected for 9-member National Science Foundation panel on Non-Invasive Medical Diagnostics; conducted workshops and lectures in China

August 1992: Whitaker Foundation Young Investigator Award (3 years)

March 1988: Hewitt Foundation Postdoctoral Fellowship at the Beckman Laser Institute, University of California, Irvine

1988: Co-recipient of Martin Marietta Energy Systems Outstanding Publication Award, Oak Ridge National Laboratory

1988: National Research Council Postdoctoral Fellowship at the U.S. Naval Research Laboratory, Washington, D.C. (not accepted)

1987: Research and Development top 100 technological innovations in 1987 (R&D-100 award) for dissertation research on antibody-based fiber optic sensors

June 1986-1987: Tennessee Science Alliance Academic Achievement Award

June 1986: John A. Dean Award, Outstanding Analytical Graduate Student

1986-1988: Department of Energy-Oak Ridge Associated Universities Pre-Doctoral Fellowship at Oak Ridge National Laboratory.

PROFESSIONAL SOCIETIES

International Society for Optical Engineering (SPIE, Fellow), Biomedical Optics Society (BiOs), Optica (formerly OSA) Fellow, American College of Radiology (ACR), American Society for Laser Medicine and Surgery (ASLMS), American Institute of Medical and Biological Engineers (AIMBE, Fellow)

SERVICE ACTIVITIES

Editorial

2016-2018: Guest Co-Editor, Journal of Biomedical Optics: Second Special Series on Translational Biophotonics

2013-2015: Editorial Board Member, Cancer Research

2011: Guest Co-Editor, Journal of Biomedical Optics: Special Issue on Translating Optical Technologies from Benchtop to Bedside

2011-2016: Editorial Board Member, Measurement Science and Technology

2010: Guest Co-Editor, Journal of Biophotonics, Special Issue on Topical Problems of Biophotonics,

2002-2015: Editorial Board Member, Molecular Imaging

1999-2009: Editor-in-Chief, Journal of Biomedical Optics

1996-1997: Guest Editor, Applied Optics/Journal of the Optical Society of America-A, Special Issue on Photon Migration and Imaging in Diffuse Media

1995-present: Editorial Board Member, Journal of Biomedical Optics

1995-1997: Associate Editor, Lasers in Surgery and Medicine,

1993: Guest Editor, Optical Engineering, Special Issue on Biomedical Optics

Journal Review

Journal of Biomedical Optics, Biomedical Optics Express, Applied Optics, Optics Letters, Journal of the Optical Society of America, Photochemistry and Photobiology, Lasers in Surgery and Medicine, Review of Scientific Instruments, Physics in Medicine and Biology, Proceedings of the National Academy of Science, Cancer Research, Biophysical Journal, Nature, Nature Medicine, Nature Biotechnology, Nature Photonics, Clinical Cancer Research, Technology in Cancer Research and Treatment

Grant/Program Review

2016: National Institute of Biomedical Imaging and Bioengineering (NIBIB) U.S.-India Workshop on Developing Passive, Cuffless, and Noninvasive Blood Pressure Measurement Technologies, Orlando, FL

2014: NIBIB Intramural Research Program, Strategic Direction Review Committee

2012: NIBIB P41 Research Resource External Reviewer

2012: Susan G. Komen for the Cure, Grant Advisory Committee

2012: NCI Molecular Imaging Program (MIP) External review board

2009-2010: Beckman Foundation Macular Initiative Reviewer

2007- 2008: NIBIB, Program Progress Review Group, Optical Imaging

2001-2012: Arnold and Mabel Beckman Foundation Grants Advisory Council

2000, 2004, 2008: NICHD Laboratory for Integrative Medicine and Biophysics, External Review Board

1993: NIH Biomedical Engineering and Instrumentation Program, Division of Research Resources, External Review Board, Chair, Applied Physics Track

1992-2012: Ad Hoc reviews for Keck Foundation, National Cancer Institute of Canada, Swiss National Science Foundation, National Science Foundation, and various NIH study sections and programs, including: Laser Special Study Section, Diagnostic Radiology Study Section, MRI/Optical Imaging Study Section, Biomedical Imaging Technology Study Section, General Clinical Resource Center Program, P41 Research Resource Program, Bioengineering Research Partnership (BRP) Program

National/International Advisory Committees and Boards

2018: Member, Scientific Advisory Board, NSF Engineering Research Center (ERC), Precise Advanced Technologies and Health Systems for Underserved Populations (PATHS-UP), Texas A&M University

(TAMU), University of California at Los Angeles (UCLA), Florida International University (FIU), and Rice University (RICE)

December 2017-June 2018: Member, National Institutes of Health Council of Councils (CoC), Advisory to the Director, National Institutes of Health

2017-2018: External Advisory Board, University of Illinois at Urbana-Champaign Cancer Center

2017-2018: External Advisory Board, Vanderbilt University, Department of Biomedical Engineering

2017: Strategic Planning Committee, National Institute of Biomedical Imaging and Bioengineering (NIBIB), National Institutes of Health (NIH)

2017: Search Committee member for Editor-in-Chief of the Journal of Biomedical Optics, International Society for Optical Engineering (SPIE)

2016-2018: External Advisory Board, NSF Partnership for Research and Education in Materials (PREM), Hampton University, Hampton, VA

2015-2018: Dean's Advisory Council, Chapman University Schmid College of Science and Technology

2014-2016: Chair, NIBIB Advisory Council Task Force on Strategic Funding

2013-2016: External Advisory Board, Open Photonics, Inc.

2013: International Society for Optical Engineering (SPIE), Search Committee Member and Chair for Editor-in-Chief of the Journal of Medical Imaging

2013: Search Committee member for Editor-in-Chief of the Journal of Neurophotonics, International Society for Optical Engineering (SPIE)

2012-2016: National Advisory Council, National Institute of Biomedical Imaging and Bioengineering (NIBIB), National Institutes of Health (NIH)

2012-2018: American College of Radiology Imaging Network (ACRIN), Breast Committee member

2011-2018: External Advisory Board, University of California Riverside, Department of Bioengineering

2011-2018: External Advisory Board, NIH P41 Laser Biomedical Research Lab, MIT

2011-2018: International Society for Optical Engineering (SPIE), Awards Committee member, Britton Chance Award and Technology Innovator Award subcommittee chair

2011-2013: M+Vision: MIT-Madrid Consortium, Advisory Committee member

2010-2016: American College of Radiology Imaging Network (ACRIN), Multi-Center Clinical Trial: *Diffuse Optical Imaging in Breast Cancer* (ACRIN 6691) Study Chair

2010-2011: Department of Defense, CDMRP Era of Hope, Technical Program Committee member

2009-2011: Institute for Engineering in Medicine, University of Minnesota, Scientific Advisory Board,

2009-2018: External Advisory Board, NIH P41 Center for Magnetic Resonance and Optical Imaging, Univ of Penn

2009: Co-Chair, NCRR Committee on T1 Translational Research, National Institutes of Health

2007-2018: American College of Radiology Imaging Network (ACRIN), Experimental Imaging Sciences Committee

2007-2015: Britton Chance Center for Biomedical Photonics, Huazhong University of Science and Technology, China, Business & Scientific Advisory Board member

2007-2018: External Advisory Board, Cornell University, Department of Biomedical Engineering

2007-2010: Society for Nuclear Medicine, Optical Imaging Working Group member

2007-2010: Science & Technology International, Science Advisory Board member

2005-present: Hewitt Foundation for Medical Research, Board of Directors

2005-2018: Scientific Advisory Board and co-Founder, Modulated Imaging, Inc.

2004-2013: External Advisory Board, NSF Center for Biophotonics Science and Technology, UC Davis

2004-2008: External Advisory Board, Washington University Small Animal Imaging Research Center

2004-2006 & 2010-2012: Board Member, International Society for Optical Engineering (SPIE)

2003-2008: Steering Committee Co-Chair, NCI, Network for Translational Research in Optical (NTROI)

2003-2004: External Advisory Board, OE magazine

2003: SPIE/OSA Joint Congressional Position Paper, committee on Biomedical Optics

2000-2008: Scientific Advisory Board, Xenogen/Caliper Corporation

1999-2012: International Society for Optical Engineering (SPIE), Publication Committee member

1999-2003 (Chair 2001-2002): Optical Society of America, Bio-Optics Advisory Committee,

1998-2018: Laboratory for Fluorescence Dynamics, NIH Biotechnology Resource Center, External Scientific Advisory Board, University of Illinois and UC Irvine,

1997-1998: Member, Joint Working Group on Functional Imaging in Cancer, U.S. Department of Health and Human Services, Office of Women's Health and National Cancer Institute Advisory Council on Optical Technologies

Conference Organization

2018: OSA Biophotonics Congress, Biomedical Optics (Optical Tomography and Spectroscopy), April 3-6, 2018, Committee Member

2017: SPIE Photonics West, San Francisco, CA, January 28-February 2, 2017, Primary Conference Chair, Optical Tomography and Spectroscopy of Tissue XII Conference

2015-2016: B3C Conference at SPIE Photonics West, San Francisco, CA, February 13-18, 2016, Program Committee

2015: SPIE/NIH Workshop: Biophotonics from Bench to Bedside, NIH, Bethesda, MD, September 24-25, 2015, Workshop Co-Chair

2015: Frontiers and Challenges in Laser-Based Biological Microscopy Workshop, Telluride, Colorado, August 3-7, 2015 Organizing Committee

2015: SPIE Biophotonics South America, Rio de Janeiro, Brazil, May 23-25, 2015, Co-Chair

2014, 2015, 2016: The International Society for Optical Engineering (SPIE), Photonics West: San Francisco, CA, Translational Research Forum, Chair

2014: Society of Nuclear Medicine and Molecular Imaging (SNMMI), and American Association for Cancer Research (AACR) 2nd Joint Conference on Molecular Imaging and Cancer Research, San Diego, CA, Program Committee Member

2014: Gordon Research Conference on Lasers in Biology and Medicine, Holderness School, New Hampshire, Tissue Spectroscopy Session Chair

2013: Engineering Conferences International: Advances in Optics for Biotechnology, Medicine and Surgery XIII, Lake Tahoe, CA, Commercializing Biophotonics Technologies, Session Chair

2013: Britton Chance Centennial Symposium, University of Pennsylvania, Philadelphia, PA, Program Committee

2012: 1st International Biophotonics Israel Conference, Tel Aviv University, Tel Aviv, Israel, Conference Co-Chair

2012: Gordon Research Conference on Lasers in Biology and Medicine, Holderness School, New Hampshire, Diffuse Optics Session Chair

2012: University of California Biophotonics Alliance Workshop, San Francisco, CA, Conference Co-Chair

2010: Canada-California Strategic Innovation Partnership (CCSIP) Workshop on Bioimaging Technologies: University of British Columbia, April 2010; UC Irvine, December 2010, Conference Co-Chair

2009: National Center for Research Resources Workshop on T1 Translational Research, National Institutes of Health, Bethesda, MD, Conference Co-Chair

2006, 2009, 2011: National Institutes of Health Workshop on Optical Diagnostic Imaging from Bench to Bedside, Natcher Conference Center, NIH Campus, Conference Co-Chair

2005-2007: NCI Network for Translational Research in Optical Imaging (NTROI), Annual Workshops on Optical Imaging in Translational Research, NIH, Bethesda, MD, Conference Co-Chair

2004-2007: NTROI Multi-Dimensional Diffuse Optical Imaging in Breast Cancer, Annual Workshops & Retreats, Newport Beach, CA, Conference Chair

2004: NIH: Optical Diagnostic Imaging from Bench to Bedside at the NIH, Program Committee and Session Chair

2004: Society for Molecular Imaging (SMI) Third Annual Meeting of SMI: Optical Tomography and Low Light Imaging, St. Louis, MO, Session Co-Chair

2004: Gordon Research Conference on Lasers in Biology and Medicine, Kimball-Union Academy, New Hampshire, U.S. Conference Chair

2003: Optical Society of America, National Meeting, *Optical Technologies in Biology and Medicine,* Tucson, AZ, Session Co-Chair

2002: Optical Society of America Topical Meeting on Biomedical Optics, Miami, FL, Conference Co-Chair

2001, 2003, 2005, 2007, 2009, 2011, 2013, 2015: Photonics West: The International Society for Optical Engineering (SPIE) and Biomedical Optics Society Annual Meeting, San Francisco, CA, *Optical Tomography and Spectroscopy of Tissues,* Conference Chair

2001: United Engineering Foundation, *Advances in Optics for Biotechnology, Medicine and Surgery*, Banff, Canada, Session Chair

2000: Gordon Research Conference on Lasers in Biology and Medicine, Advanced Microscopy Methods, Session Chair

2000: Optical Society of America Topical Meeting on Biomedical Optics-*Photon Migration and Imaging*, Miami, FL, Conference Co-Chair

1999: United Engineering Foundation, *Advances in Optics for Biotechnology, Medicine and Surgery*, Hawaii, Session Chair

1997: United Engineering Foundation, *Advances in Optical Technology for Medicine and Surgery*, Snowbird, UT, Conference Co-Chair

1997: Alexander Von Humboldt University, First International Symposium on Optical Techniques for Breast Tumor Detection, Berlin, Germany, Session Chair

1997: Optical Society of America National Meeting, Long Beach, CA, Biophotonics Technical Program Committee Chair

1996 & 1998: Optical Society of America topical meeting on Biomedical Optics, Orlando, FL, *Biomedical Optical Spectroscopy and Diagnostics,* Program Committee

1996 & 1997: Optical Society of America, Conference on Lasers and Electro-Optics (CLEO), Technical Program Committee

1996: Gordon Research Conference on Lasers in Biology and Medicine, Microscopy Session Chair

1996: American Society for Photobiology National Meeting, Atlanta, GA, Laser Diagnostics Session Co-Chair

1995: Optical Society of America National meeting (OSA/ILS '95), Portland, OR, Conference Program Committee: *Photon Migration Spectroscopy for Physiological Monitoring and Functional Imaging*

1995: American Society for Lasers in Surgery and Medicine, National Meeting, San Diego, CA, Poster Chair

1993-1999: International Society for Optical Engineering (SPIE), Biomedical Optics Society Annual Meeting, San Jose, CA: *"Functional Imaging and Optical Manipulation of Living Cells"* and *"Photon Migration and Imaging in Random Media and Tissues,"* Conference co-chair

1993: American Society for Lasers in Surgery and Medicine, National Meeting, *Basic Science and Safety,* New Orleans, LA, Session Chair.

University

2018: Member, Beall Center Multi-School Committee to improve the UCI curriculum on Innovation and Entrepreneurship and student access to courses

2017-2018: Member, University of California, Precision Health Task Force

2017: Panelist, University of California President Janet Napolitano visit, UC Irvine Applied Innovation (May 12)

2016-2018: Chair, Internal Advisory Board, Genomics and Bioinformatics Research Center

2015-2018: Member, BioENGINE Task Force, UC Irvine

2016-2018, Board Member, Applied Innovation

2017-2018: Co-Director, Engineering in Sports and Rehabilitation (E-SPAR) Initiative

2016: Search Committee Member, Managing Director for Research Translation Group, Applied Innovation

2016: Search Committee Member, Vice Chancellor for Research, Office of Research

2017-2018: Member, BME Department Leadership Team

2015-2018: Leader, Provost's High Impact Hiring Initiative (HI) in Convergence Optical Sciences Initiative (COSI); Schools of Physical Sciences, Engineering, and Medicine. Successful senior FTE

recruit in department of Physics and ongoing cluster of 4 hires in Engineering, Physical Sciences, and Medicine.

2015: Member, UCI Convergence Science Committee

2014: Search Committee Chair, Vice Chancellor for Health Affairs/Dean, School of Medicine

2014: Member, Chao Family Comprehensive Cancer Center Strategic Planning Committee

2013-2015: Member, BioEngine Executive Committee, Department of Biomedical Engineering

2013: Member, CHOC-UCI Research Strategic Planning Committee

2013: Member, Taskforce on Empowering UCI Innovators

2013: Member, Faculty Search Committee, Department of Biomedical Engineering

2012-2018: Member, Internal Advisory Board, UCI Exercise Medicine and Sports Science Center

2012: Member, Search Committee for Director, Chao Family Comprehensive Cancer Center

2011: University of California Advocacy Visits, Capitol Hill, Washington, D.C.

2010-2011: Chair, Henry Samueli School of Engineering Dean Search Committee

2010: School of Medicine Strategic Planning Committee on Research Infrastructure

2010: Campuswide Panel Discussion Moderator, S*uccess at NIH: Impact of New Scoring Criteria*

2010-2018: Member, Edwards Life Sciences Center for Advanced Cardiovascular Technology

2009-2018: Member, School of Medicine Cancer Campaign Steering Committee

2009-2010: Member, Henry Samueli School of Engineering, Strategic Planning Steering Committee

2009: Member, Office of Sponsored Projects, Internal Review Committee

2008-2018: Member, Henry Samueli School of Engineering Dean's Advisory Council

2008-2018: School of Medicine, Deans Research Council

2008-2009: School of Medicine, Clinical Research Enterprise Taskforce

2007-2018: Center for Biology of Complex Systems (CCBS) Executive Committee

2007-2008: College of Health Sciences, Representative Assembly

2007-2008: Chair, Henry Samueli School of Engineering Dean Search Committee

2007: Chair, UCI Biomedical Engineering Department Chair Review Committee

2007: Health Sciences Campaign Planning Committee

2006-2018: Institute for Clinical and Translational Science (ICTS), Translational technology core leader and steering committee member

2006: Henry Samueli School of Engineering, Dean Review Committee

2006: School of Engineering Annual Research Symposium, *Prosperity through Technology:* Co-organizer and Session chair, Ophthalmology and Vision Science

2005-2018: CalIt2 Division Council Member

2005-2007: UCI Center for Imaging Genetics, Scientific Advisory Committee

2005: Department Chair Search Committee: Dept. of Ob/GYN

2004-2006: Chao Family Comprehensive Cancer Center Executive Committee

2004-2005: Vice-chair, UCI School of Medicine Vision 2010 Committee

2003-2018: Editor, Beckman Laser Institute and Medical Clinic Newsletter

2003-2018: School of Medicine Deans Advisory Board/Leadership Council

2002-2005: Vice Chair, Department of Biomedical Engineering

2001-2006: Member, Center for Complex Systems and Mathematics in Biology

2001-2002: Co-Chair, Executive Council, Beckman Laser Institute

2001-2002: Planning Committee, Center for Exercise in Children, GCRC/UCIMC

2000-2005: Executive Committee, In Vivo Functional Onco-Imaging Center

2000-2004: Associate Director, Center for Biomedical Engineering

2000-2002: College of Medicine, Representative Assembly

1999-2000: Member, Center for Embedded Systems

1999-2000: Member, Faculty Search Committee: Radiological Sciences

1999-2002: Ph.D. written/oral exam committee, Electro Optics, Electrical and Computer Engineering

1998-2018: Medical Scientist Training Program (MSTP) training grant member

1998-1999: Member, Faculty Search Committee: Cell and Developmental Biology

1998-2004: Member, Faculty Search Committee: Biomedical Engineering

1997/1998: 2002/2003: Member of Strategic Planning Committee, UCI Clinical Cancer Center

1995-2005: Chair, Biomedical Optics Symposium Series, Beckman Laser Institute

1995-1998: Member, UCI Clinical Cancer Center Clinical Trials Protocol Review and Monitoring Committee

1994-2004: Co-leader, Photomedicine Clinical Program, Chao Family Comprehensive Cancer Center

1994-2018: Member of UCI Cancer Research Institute

1994-2018: Program Co-Leader, Onco-Imaging and Biotechnology Program (formerly Photomedicine Program and Onco-Imaging and Spectroscopy Program), Chao Family Comprehensive Cancer Center

1994-2010: Co-Coordinator, Clinical Cancer Center's Optical Biology Core Resource Facility

1994-1997: Associate Director, Laser Microbeam and Medical Program (LAMMP), BLI

1993-1998: Faculty Advisor for UCI Student Undergraduate Research Fellowship Program (SURF), and Pre-Graduate Mentorship Program (PGMP)

1993-1994: Faculty Advisor for National Science Foundation Young Scholars Program

1992-2018: Member of UCI Clinical Cancer Center Faculty

1992-2018: Ph.D. Advancement Committee Member in various departments in Schools of Engineering, Physical Sciences, Biological Sciences, and Medicine

1992-1997: M.D. /Ph.D. Program Admissions Committee

Community

2017 May: Invited Panelist: Optical Society of Southern California (OSSC), "Nexus between government, academia, industry and our professional societies in optics and photonics"

2016 June: Invited Speaker: Newport Beach Rotary Club

2016 February: Career Day Speaker, School of Our Lady, Santa Ana, CA

2015 October: Invited Speaker: UC Irvine Health Community Luncheon Breast Cancer Awareness

2014 October: Optical Society of Southern California (OSSC) / National Photonics Initiative (NPI), *Special Guest Panelist / Speaker*

2014 July: American Cancer Society Orange County Corporate Networking Event, Lecture on *Research in Breast Cancer: Hand-Held Laser Breast Scanner*

2013-2017 (each summer): Minority Undergraduate Student Initiative for Biomedical Research (USIBR): 2 hours of lectures and tours

2013 (winter): School of Medicine Deans Community Lecture Series: *Seeing is Believing: New Views on Diagnosis and Treatment of Breast Cancer*

2013 (fall): Launching Successful Biomedical Business, Community Lecture and BLI tour for Institute of Management Consultants, Orange County Chapter

2012-2017 (each summer): California State University, Long Beach, College of Business Administration for the *Enhancement of Visiting International Business Students in Entrepreneurial Business Communication*

2011, 2012, 2013, 2014, 2016 (fall): Annual lecture on *Optics in Medicine*, Osher Lifelong Learning Institute (OLLI), UCI Extension, 2 hours of lectures and tours

2011, 2012, 2014, 2016, 2017 (summer): California State Summer School for Math and Science (COSMOS) UC Irvine, 2 hours of lectures and tours

2009-2018: Advisory Committee, Optical Society of Southern California (OSSC)

2009: Invited Speaker, Susan G. Komen For The Cure, Orange County Chapter, Komen Breast Health Symposium, "The Role of Optical Imaging in Breast Cancer"

2000-2004: Pacific Club Soccer Coach and Administrator (BU10 - BU14)

1998-2004: Irvine Youth Basketball League and Irvine Little League Baseball Coach

1996-1999: Commissioner, AYSO, Region 144 Boys Soccer, Divisions 5, 6, 7

1996: Invited Speaker, Susan G. Komen for the Cure, Orange County Chapter, Annual Meeting, "Optical Techniques for the Detection of Breast Cancer"

1995: Invited Speaker, Science and Technology in Society, Orange County Science Education Association, "Lasers in Biology and Medicine"

1994-2010: (BU9-BU19): AYSO Soccer Coach, recreational and APP leagues

1993: Discipline Dialogues sponsored by the Fund for the Improvement of Post-Secondary Education

1992-1998: Speaker, Irvine Unified School District, NSF Science Career Options Conference

EXTERNAL NETWORKS AND CONSORTIA

2003-2008: Established Network for Translational Research in Optical Imaging for advancing diffuse optical spectroscopy and imaging and multi-modality imaging (e.g. optics + MRI, ultrasound, and X-ray)

in breast cancer. This NCI-supported U54 program brought multiple stakeholders and laboratories together from academics (UC Irvine, Dartmouth, University of Pennsylvania, MGH, and UC San Francisco) and industry (Siemens, GE, Phillips, ART). Major advances included identifying common platform technologies and computational methods for functional image analysis, co-registration of multimodal images, and initiating multi-center clinical studies on monitoring and predicting outcomes of pre-surgical neo-adjuvant chemotherapy (NAC) in the context of a well-defined clinical endpoint (pathological complete response).

2010: Established American College of Radiology Imaging Network (ACRIN)-6691 national multi-center trial of Diffuse Optical Spectroscopic Imaging (DOSI) technology in Breast Cancer (**NCI-ACRIN 6691,** https://www.acr.org/Research/Clinical-Research/ACRIN-Legacy-Trials**)**. Participants included UC Irvine, UC San Francisco, Dartmouth, University of Pennsylvania, Massachusetts General Hospital, MD Anderson Cancer Center, and Boston University. Affiliated non-US members include Saitama Medical University (Japan) and Dankook Medical Center (Korea). This 4-year study employed a common DOSI platform technology developed and supported at UC Irvine and delivered to 7 sites. The DOSI trial enrolled 60 patients across all sites and resulted in the identification of optical imaging endpoints for predicting outcomes to pre-surgical neo-adjuvant chemotherapy (NAC) both at mid-point and within 10 days of initiation of treatments.

2013: Established Beckman Laser Institute-Korea Consortium with Korean PI (P. Chung) Dankook Medical Laser Center, Dankook University, Lutronic Medical Laser Corporation, and the Korean Ministry of Education, Science and Technology. This 6-year program supports collaborative research and exchange in Biophotonics between BLI, Dankook, and Korean partner institutions. A second phase of the program was awarded in 2019 and runs through 2025.

2015: Established Biophotonics research training and collaboration between Shizuoka University Research Institute of Electronics (RIE), Hamamatsu School of Medicine, Hamamatsu Graduate Institute, and Hamamatsu Photonics, Inc. This ongoing program involves faculty research exchange visits with UCI and regular journal club meetings in Japan designed to promote interdisciplinary collaborations and new technology development in Optics and Photonics in Biology and Medicine. A new combined Engineering and Medicine academic training program was established between Hamamatsu School of Medicine and Shizuoka University in 2018. A joint commercial venture between Hamamatsu Photonics and the Beckman Laser Institute was launched in 2017.

2016: Established Pathways to Biophotonics and Biomedical Engineering (PBBE), a partnership between BLI/UCI and three historically black colleges and universities (HBCU), Hampton University, Albany State University, and Clark Atlanta. This program enrolls 10 undergraduate science and technology scholars each summer for a two-month research and graduate school prep immersion program at the BLI and selected laboratories across the UCI campus. Up to 3 faculty from participating institutions also visit BLI in order to work with UCI faculty to establish continuing research and academic collaborations. This program is funded by the University of California Office of the President (2016-2019).

CONTRACTS AND GRANTS

Previous Awards – Principal Investigator

National Institutes of Health/NIBIB (P41EB015890): *A Laser Microbeam and Medicine Biotechnology Resource*, 04/15/13-03/31/19, $5,870,984 (Total Cost)
The Laser Microbeam and Medical Program (LAMMP) is a National Biomedical Technology Center dedicated to the development, application, and dissemination of optical technologies in biology and medicine.

National Institutes of Health/NCI (1R01CA142989): *Developing DOSI Technology for Monitoring Response to Breast Cancer Chemotherapy,* 01/01/14-6/30/19, $2,960,248 (Total Cost)

Diffuse optical spectroscopic imaging is developed for clinical translational studies to monitor and predict pre-surgical neoadjuvant chemotherapy response early in treatment.

National Institutes of Health/NCI (R01CA195466): *Quantitative multiphoton microscopy for non-invasive diagnosis of melanoma,* 03/01/16-02/28/19, $722,288 (Total Cost)

Quantitative in vivo multiphoton microscopy (MPM) is developed for label-free detection and diagnosis of pigmented lesions suspected of melanoma in a small-scale clinical translational study.

National Institutes of Health/NIBIB (R01EB026705): *Development of a fast scanning, extended field-of-view multiphoton microscope for clinical skin imaging*, 07/01/18-06/30/22, $1,951,166 (Total Cost)
A fast scanning, wide FOV MPM platform (ev-MPM) is will be developed with unique technical features and a compact footprint optimized for clinical skin imaging.

UC-HBCU Tromberg: *Pathways to Biophotonics and Biomedical Engineering (PBBE),* 12/06/16-12/30/19, $503,568 (Total Cost)
This is a partnership with three historically black colleges and universities (HBCU) to attract 10 undergraduate science and technology scholars each summer for a two-month research and immersion program at the Beckman Laser Institute.

VINNOVA/Linkoping University (LU-208009) Stromberg (PI): *A biooptical method for microcirculation assessment as an early predictor of cardiovascular disease*, 02/01/14-08/31/18, $20,000 (Total Cost)
This work supports the validation of an Enhanced Perfusion and Oxygen Saturation (EPOS) system developed at Linköping University (LiU) using standardized BLI technologies.
Role: Subaward PI

Halyard Health, Inc. (HHI-209776): *Development of optical technology for needle tracking in thick tissues*, 10/27/17-10/26/18, $50,000 (Total Cost)

The goal of the project is to develop an optical method to track the position of a needle catheter inside of tissue and co-register the information with ultrasound visualization of a buried target.

NIH/Colorado State University (R21EB20953) Bartels (PI): *High Speed Single Pixel Hyperspectral Spatial Frequency Domain Imaging.* 08/15/15-05/31/18, $169,966 (Total Cost) Role: Subaward PI
This supports the development of a high-speed, inexpensive hyperspectral spatial frequency domain imaging (SFDI) platform, which uses spatial frequency modulation for imaging (SPIFI) to image with a single pixel detector.

NIH/Laser Associated Sciences - R43GM122132-01 Rice (PI): *Improved pulse oximetry performance using transmission optical flowmetry,* 03/15/17-03/14/18, **$49,337 (Total Cost)** Role: Subaward PI
The aim of this SBIR subcontract is to work with Laser Associated Sciences, Inc. in developing a clinically viable dual-wavelength flowmeter that can accurately measure SpO2 using a novel volumetric flow signal.

Unilever Corporation (UNI-103699): *Evaluation of Photo-Aging, Chronological Aging and Cosmetic Treatments on Skin Microstructure and Appearance,* 01/01/14-12/31/16, $50,000 (Total Cost)
Multi-modality Optical imaging technologies are used to quantitatively evaluated skin structure and metabolism.

LG Electronics, Inc. (C2013024043): *Developing DOSI Technology,* 06/01/14-05/31/15, $449,968
This research is focused on the development of a next-generation mini DOSI system capable of broadband, real time, multi-channel DOSI measurements.

National Institutes of Health/NIBIB (R21EB014440): *Multi-Frequency Synthesis and Orientation Control in SFDI,* 07/01/12-06/30/15: $389,074 (Total Cost)
This supports the development of advanced Spatial Frequency Domain technologies for bedside Medical and Biological imaging.

National Institutes of Health/NINDS (R21NS078634): *Spectroscopic Localization of Hemodynamic Signals in the Rat Cortex*, 05/01/12-04/30/15, $367,723 (Total Cost)
Broadband Spatial Frequency Domain Imaging is developed for quantitative tomographic localization of cortical metabolic activity in vivo.

National Institutes of Health/NIDCR, Beth Israel Deaconess Medical Center (R01DE022820) Frangioni (PI): *Real-Time Flap Viability Monitoring during Facial Transplantation using SFDI*, 02/01/13-01/31/15, $136,648 (Total Subcontract Cost)
This subaward supports the optimization of SFDI technology for intraoperative guidance during facial transplant. Dr. Tromberg is the subcontract PI, from Beth Israel Deaconess, Harvard Medical School.

American College of Radiology Imaging Networks (ACRIN) (ACR-6691): *Monitoring and Predicting Breast Cancer Neoadjuvant Chemotherapy Response Using Diffuse Optical Spectroscopic Imaging,* 07/01/12-12/31/14, $269,450 (Total Cost)
This supports data management and patient care infrastructure for the ACRIN 6691 multi-center clinical trial.

National Institutes of Health/NCI (1R01CA142989-01): *Developing DOSI Technology for Monitoring Response to Breast Cancer Chemotherapy,* 01/01/10-12/31/13, $1,882,945

NIH-NCRR (P41-RR001192): *Laser Microbeam and Medical Program,* 05/01/08-03/31/13, $5,369,183

NIH-NCRR (P41-RR01192-32S1) *Laser Microbeam and Medical Program: "Development of Medical Biophotonic Technologies for Imaging and Therapy"* 09/01/11 – 08/31/12, $796,357

NIH-NCRR (P41-RR01192-30S1): *Laser Microbeam and Medical Program: Biophotonics Summer Undergraduate Research Program,* 06/04/09-09/30/10. Principal Investigator: B. J. Tromberg, $163,453

NIH-NCRR (P41-RR01192-30S2): *Laser Microbeam and Medical Program: Development of Medical Biophotonic Technologies for Imaging and Therapy*, 09/01/09-08/31/12, $517,481

NIH-NCRR (P41-RR01192-30S3): *Laser Microbeam and Medical Program: Development of Bedside Medical Biophotonic Diagnostic Devices*, 09/01/09-08/31/12, $1,013,617

NIH-NCI (U54CA136400): *Monitoring Breast Cancer Chemotherapy Response Using Diffuse Optical Spectroscopic Imaging (DOSI), MRI, and Biomarkers*, 07/01/09-06/30/12, $1,391,957

American College of Radiology Imaging Networks (ACRIN), ACR-50185-01: *Monitoring and Predicting Breast Cancer Neoadjuvant Chemotherapy Response Using Diffuse Optical Spectroscopic Imaging (DOSI)*, 01/1/09-06/30/12, $138,919

University of California, Office of the President, UC Discovery Grant, UC-212122 *"A Handheld Tomographic Laser Breast Scanner (t-LBS),"* 09/01/11-08/31/12*,* $249,610

NIH-NCI (U54 CA105480): *A Network for Translational Research in Optical Imaging: Multi-Dimensional Diffuse Optical Imaging in Breast Cancer,* 09/29/03-08/31/09, $7,179,817

California Breast Cancer Research Program (10EB-0208): *Breast Cancer Functional Imaging with Optics and MRI,* 07/01/04-06/30/07, $500,000

U.S. Environmental Protection Agency (68-C-03-088): *Development of a High-Throughput Methods for the Separation of Live and Dead/Compromised Cell and/or Spores,* 05/01/03-12/31/04, $249,984

California Breast Cancer Research Program (6EB-0123): *Non-Invasive Optical Characterization of Breast Physiology,* 07/01/00-06/30/03, $499,915

NIH-NICHD (R01HD34091-01A1): *Photodynamic Treatment of Benign Uterine Disease*, 07/03/98-06/30/03, $750,767

NIH-NCRR (5P41RR01192): *Laser Microbeam and Medical Program,* 04/01/03-03/31/08. Principal Investigator: B. J. Tromberg, $5.2 million.

NIH-NCRR (5P41RR01192): *Laser Microbeam and Medical Program,* 04/01/98-03/31/03. Principal Investigator: B. J. Tromberg, $5.0 million.

National Science Foundation (UCI grant # 27414): *Fiber Optics Confocal Module for Biomedical Application (SBIR - Intelligent Optical Systems),* 02/01/00-02/01/02, $59,302

NIH-NIGMS (R29GM50958): *Diagnostic Applications of Photon Density Waves*, 01/01/94 - 12/31/99, $500,000

Beckman Instruments (J920331): *Quantitative Clinical Analysis using Frequency Domain Photon Migration,* 05/01/92-03/31/96, $253,160

California Breast Cancer Research Program (21B-0183): *Non-Invasive Optical Detection of Breast Cancer,* 06/09/96-05/31/97, $50,000

NIH-NCRR (R01-RR06961): *Optical Laser Trap for Biological Cell Studies,* 09/30/94-09/29/97, $107,598

U.S. Army (BC972457): *Measurements of Breast Tissue Optical Properties*, 09/30/98-10/30/01. Principal Investigator: B. J. Tromberg, $122,120

Whitaker Foundation: *Properties of Photon Density Waves in Biological Tissues,* 08/01/92-07/31/95. Principal Investigator: B. J. Tromberg, $150,000

Previous Awards – Co-Investigator

DOD-AFOSR (FA9550-10-1-0538) M. Berns (PI), *Military Photomedicine Program,* 04/01/17-03/31/20, $4,451,867 (Total Cost)
This is a core grant for the Beckman Laser Institute. Dr. Tromberg's collaborative project involves development of optical diagnostic technologies for trauma and critical care monitoring.
Role: Co-Investigator and Project Leader

NSF 1532125 Potma (PI) *MRI: Acquisition of an Ultrafast Amplified Laser System,* 09/01/15-08/31/18, $443,022 (Total Cost), No salary support
This grant supports purchase of an ultrafast multimodal spectroscopy system that enables advanced time-resolved spectroscopy experiments, a key capability in material and molecular research. Role: Co-PI

NSF-IGERT (DGE1144901) V. Venugopalan (PI) *IGERT: Biophotonics across Energy, Space, and Time (BEST),* 07/01/12-06/30/18, $2,999,531 (Total Cost)

The BEST IGERT is a training grant that provides graduate trainee support to participate in a new interdisciplinary model for graduate student education and training in Biophotonics.

Role: Co-PI

NIH-NCI (P30CA62203) R. Van Etten (PI), *University of California, Irvine Cancer Center Support Grant,* 02/01/16-01/31/21, $12,433,000 (Total Cost)

Supports the research and clinical programs of the UC Irvine Chao Family Comprehensive Cancer Center. Dr. Tromberg is Onco-imaging and Biotechnology.

Role: Co-Program Leader

NIH (1R21EB024793-01) Y. Akbari (PI)*, Multimodal Optical Imaging of Hyperdynamic Cerebral Responses to Cardiac-Arrest and Resuscitation*, 08/15/17-05/31/20, $604,104 (Total Cost)
This grant supports projects to develop high-speed (video rate) multi-modal optical imaging techniques to study the rapid changes occurring in the brain during CA and cardiopulmonary resuscitation (CPR).

NIH/NCI (U54CA217378) Lander, Waterman, Lowengrub (MPIs), *Complexity, Cooperation and Community in Cancer*. 04/01/18-03/31/23, $7,026 (annual salary support)
Fosters scientific research and outreach focused on advancing the hybrid field of cancer systems biology
Role: Co-Investigator, Project 2, Understanding the Cellular of Melanoma

NIH/NIGMS (R25GM103811) *A National Short Course in Computational Biophotonics,* 01/01/13-12/31/17, Principal Investigator: Vasan Venugopalan, $51,040 (annual direct costs)

This grant supports the development and execution of a week-long, open-access annual short course at UCI for the training of scientists with interests in acquiring computational skills to model biophotonics processes.

NIH-NIGMS (P50GM076516), *Systems Biology of Morphogenesis and Spatial Information Flow*, 08/02/13-07/31/17, Principal Investigator: Arthur Lander, $10,503,542 (Total Cost)

The center supports a program of interdisciplinary research, technology development, training, and outreach aimed at furthering the development of the spatial side of systems biology.

NIH-NCRR/NCATS (UL1RR031985) D. Cooper (PI) *Institute for Clinical and Translational Science*, 07/01/10-06/30/15, $16,832,963 (Total Cost)

This center grant supports clinical translational research at UC Irvine. Dr. Tromberg is the leader of the Translational Technology Core program.

NIH-NHLBI (R01HL067954) George (PI), *Linking Optical, Mechanical, and Biological Properties of the Airway Mucosa*, 08/01/09-07/31/13, $3,664,984 (Total Cost)

NIH-NIGMS (P50GM076516), *Systems Biology of Morphogenesis and Spatial Information Flow,* 08/31/07-07/31/12: Principal Investigator: Arthur Lander, $14,500,000 (Total Cost)

NIH-NCI (R21CA129758), *Spatially Modulated Near-Infrared Light for Image-Guided Cancer Surgery,* 09/17/07-08/31/11: (PI John V. Frangioni, Beth Israel Deaconess, Harvard Medical School), subcontract total: $271,050

NIH-NCI (R21CA153594), *Neoadjuvant Photodynamic Immunomodulation for Colon Cancer,* 07/1/10-06/30/12, Principal Investigators: R. Holcombe and E. Nelson, $609,689 (Total Cost)

NIH-NCRR (R21RR024411), *Spatially Modulated Scatter Imaging System to Detect Tumor-Associated Stroma,* 07/29/09-06/30/12, (PI: W. Wells, Dartmouth University), subcontract total: $116,265

UC Office of the President, Canada-California Strategic Innovation Partnership (CCSIP) Award, *Bioimaging technologies for enhanced healthcare,* 9/2009-12/2010, Principal Investigators: M. J. Deen, McMaster University; W. Grundfest, UCLA, $100,000 total cost (subproject total: $25,000)

Department of Defense/Air Force (FA9550-08-1-0384), 07/01/09 -06/31/11: *Military Photomedicine Program.* Principal Investigator: M. Berns, $1,750,000 total cost (subproject total: $160,000)

National Institutes of Health/NCI (2P30CA62203), 02/01/09-01/31/12: *University of California, Irvine Cancer Center Support Grant.* Principal Investigator: F. Meyskens, $11,798,011 total cost (subproject total: $18,850)

Doris Duke Charitable Foundation, Doris Duke Clinical Interface Award 2005 (2005057): *A Mitochondrial Basis for Metabolic Syndrome,* 12/01/05-11/30/10. Principal Investigator: Doug Wallace, $2,250,000

Air Force Office of Scientific Research (F49620-00-1-0371): *A Center for Free Electron Laser-Related Biomedical Research,* 01/01/04-12/31/08. Principal Investigator: M. W. Berns, $8,380,674, Sub-projects: 1) Photon Migration Spectroscopy for Critical Care Monitoring, and 3) Imaging Neurotrauma (subprojects total $1,910,980)

NIH-NCI (R21/R33-CA-101139): *Combined MR-Diffuse Optics for Functional Imaging,* 03/01/04-03/31/10. Principal Investigator: O. Nalcioglu, $1,416,489

NIH-NCI Phase II SBIR with Praevium Corporation: *Compact Multi-Wavelength Probe for Quantitative Tissue Spectroscopy*, 12/01/05-05/30/09. Principal Investigator: Albert Cerussi, $200,000

NIH-NIBIB (R0192063): *Photon Migration for Measurements of Small Tissue Volumes,* 07/01/01-09/30/07. Principal Investigator: V. Venugopalan, $1,341,721

NIH-NCI (P20-CA-86182): *Center for In-Vivo Molecular Functional Onco-Imaging,* 03/01/00-08/28/03. Principal Investigator: O. Nalcioglu, $1,399,082

DARPA: *Using Hyperspectral Images for Human Identification at a Distance*, 12/01/00-11/30/02. Principal Investigator: Glen Healey, $133,413

Department of Energy (DE-FG-3-91-ER61227): A Center of Excellence for Laser Applications in Medicine. Laser Medical Facility Program Grant. Sub-Project: *Non-Invasive Tissue Diagnostics Using Frequency Domain Photon Migration*, 09/91-12/00. Principal Investigator: M. W. Berns. $1,500,000

Previous Awards – Mentor

NIH/NHLBI 1F30HL132481 Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral MD/PhD or Other Dual-Doctoral Degree Fellowship (Parent F30) Award: *Quantitative Optical Metabolic Imaging of Peripheral Arterial Disease,*06/01/16-05/31/21, $34,920 (annual), $191,252 (total award), Trainee: Michael Ghijsen

Hewitt Foundation Postdoctoral Fellowship: 06/15/17-06/14/20, $191,800 (Total Cost), Trainee: Timothy Quang

National Institutes of Health/NCI (3R01CA195466-02S1) Diversity Supplement: *Quantitative multiphoton microscopy for non-invasive diagnosis of melanoma,* 03/01/17-07/01/18, $102,455 (Total Cost) Trainee: Joshua Williams

NIH/ICTS TL1 Post-Doctoral Training Fellowship Award: *Clinically translatable multimodal optical imaging platform for quantitative assessment of cerebral hemodynamic response to cardiac arrest and resuscitation,* 01/25/16-01/14/18, $60,542 (annual), Trainee: Robert Wilson

NIH/ICTS TL1 Pre-Doctoral Training Fellowship Award: *Monitoring Vascular Health with Diffuse Optical Spectroscopy,* 01/25/16-11/12/17, $36,620 (annual), Trainee: Robert Warren

Army Materiel Command Hq DOD-CDMRP, W81XWH-13-1-0001 Postdoctoral Fellowship Award: *Development of a Quantitative Tissue Optical Index of Breast Density for Prediction of Hormone Therapy Response,* 12/01/12-06/30/16, $399,000, Trainee: Thomas O'Sullivan

Hewitt Foundation Postdoctoral Fellowship: 09/12-08/15, $150,000, Trainee: Robert Wilson

NIH/NIDDK K01-DK-093603 R*eal-Time Optical Diagnosis of Inflammatory Bowel Disease using SFDI, is focused on developing novel technology to detect inflammation in the intestinal mucosa and to adapt this technology onto endoscopes for improved screening of IBD.* 2012-2015, Trainee: Sylvain Gioux

NIH-NIBIB K25EB007309: *A Virtual Tissue Simulator for Biomedical Optics,* 08/01/08-07/31/15, $580,000, Trainee: Carole Hayakawa

NIH-NIA F30AG039949: *Novel translatable optical imaging platform for staging vascular impairment in Alzheimer's disease,* 07/01/11-06/30/14, $180,000, Trainee: Alexander Lin

National Cancer Institute *Carcinogenesis Training Grant Postdoctoral Fellowship,* 12/10-11/12 Trainee: Thomas OSullivan

DOD- CDMRP Postdoctoral Fellowship Award: *Predicting Pathological Response within the First Week of Neoadjuvant Chemotherapy Using Functional Parameters Measured with Diffuse Optical Spectroscopic Imaging (DOSI),* 11/01/10-10/31/13, $375,254, Trainee: Darren Roblyer

Hewitt Foundation Postdoctoral Fellowship: 08/08-07/11, $150,000, Trainee: Soren Konecky

DOD- Era of Hope Postdoctoral Award: *Respiratory Challenges in Breast Cancer: Potential for Enhanced Diagnostics and Therapy,* 07/01/08-06/30/11, $405,099*,* Trainee: Jae Kim

National Cancer Institute *Carcinogenesis Training Grant Postdoctoral Fellowship,* 05/09-10/10 Trainee: Darren Roblyer

Rothschild Foundation Fellow: *Spatially Modulated Imaging of Neural Function,* 09/01/05-08/31/06, $46,700, Postdoctoral Fellow: David Abookasis

California Breast Cancer Research Program: *Combined Optical and Ultrasound Imaging for Breast Cancer,* 07/01/03-06/30/05, $58,304, Graduate Student: Sean Merritt (Physics)

National Science Foundation Predoctoral Fellowship: *Modulated Imaging of Subsurface Structure and Function,* 07/01/04-06/30/07, Graduate Student: David Cuccia (Biomedical Engineering)

Department of Defense: *Career Development Award,* 07/02-06/05*,* Assistant Professor: David Hsiang

Hewitt Foundation: Postdoctoral Fellowship, 11/03-10/06, Postdoctoral Fellow: Julia Lyubovitsky

Hewitt Foundation: Postdoctoral Fellowship, 01/02-02/03, Postdoctoral Fellow: Vanitha Sankaran

National Cancer Institute: *Carcinogenesis Training Grant Postdoctoral Fellowship,* 01/01/00-12/31/02, Postdoctoral Fellow: Alvin Yeh

Hewitt Foundation: Postdoctoral Fellowship, 08/98-07/01, Postdoctoral Fellow: Andrew Berger

The Whitaker Foundation: Graduate Bioengineering Fellowship, 01/31/96-05/31/99, M.D./Ph.D. Student: Tuan Pham

Swiss National Science Foundation: Postdoctoral Fellowship, 03/99-02/00, Postdoctoral Fellow: Frederic Bevilacqua

Swiss National Science Foundation: Postdoctoral Fellowship, 02/94-01/95, Postdoctoral Fellow: Olivier Coquoz

German National Science Foundation: Postdoctoral Fellowship, 03/93-02/95, Postdoctoral Fellow: Karsten Koenig

Human Subjects Protocols

2015-2355: *Monitoring and predicting breast cancer neoadjuvant chemotherapy response using diffuse optical spectroscopic imaging in a multi-center setting.* Principal Investigator: B. J. Tromberg

2014-1505: *Breast tumor oxygenation during exercise.* Principal Investigator: B. J. Tromberg

2012-9158: *The use of diffuse optical spectroscopy to characterize adipose tissue oxygenation and vascular reactivity in response to weight-loss intervention.* Principal Investigator: Shaista Malik and B. J. Tromberg

2012-8714: *Development of a quantitative tissue optical index of breast density for prediction of hormone therapy response.* Principal Investigator: B. J. Tromberg

2010-7812: *Monitoring and predicting breast cancer neoadjuvant chemotherapy response using diffuse optical spectroscopic imaging (DOSI)* (NCI-ACRIN 6691, National Multi-Center Trial Protocol, https://www.acr.org/Research/Clinical-Research/ACRIN-Legacy-Trials). Principal Investigator: B. J. Tromberg

2010-7789: *Predicting pathological response within the first week of neoadjuvant chemotherapy using functional parameters measured with diffuse optical spectroscopic imaging (DOSI)*, Principal Investigator: David Hsiang and B. J. Tromberg

2007-5832: *Characterization of Familial Myopathy and Paget Disease of Bone*. Principal Investigator: Virginia Kimonis and B. J. Tromberg

2004-3626: *Measurement of the distribution of optical properties in adult human muscle*, Principal Investigator: B. J. Tromberg

2002-2608: *Mitochondria Inborn errors of metabolism and ANT defect in mitochondrial diseases: a master protocol.* Principal Investigator: Virginia Kimonis and B. J. Tromberg

1995-563: *Measurements of breast tissue optical properties*. Principal Investigator: B. J. Tromberg

TEACHING

Undergraduate

BioSci 130: “Photomedicine” (1.5 lecture hours), Fall 1995-2010; Fall 2016, Fall 2017

BME 136: “Engineering Medical Optics” (4 units, lecture + lab, Winter), 2003-present

BME 180: “Senior Design” (4 units fall, winter and spring) Team mentor in AYs 2015/16, 2014/15, 2013/14

ECE 176: "Engineering Optics for Biomedical Research" (3 unit course), Spring 2001-2002

ECE 199, BioSci 199, BME 199: Undergraduate Research, Winter 1991-present

BioSci 25: Guest Lecturer, The Biology of Cancer: Lasers in Cancer Research, Winter 1993 and 1994

Graduate

Physics 146B/240B: "Biophysics of Molecules and Molecular Machines" Z. Siway (1.5 lecture hours, 10 students), Spring 2017

BME 252(formerly BME 295): "Critical Thinking in Biophotonics" with V. Venugopalan, (1 unit), Spring 2013-2017

BME 251 (formerly BME 236): "Engineering Medical Optics" (4 units, lecture + lab, Winter), 2015-present

Mol Bio 293A (formerly 293B): "Cancer Biology Journal Club," 2011, 2012, 2015

BME 295: "Cancer Imaging" (1 unit), Winter 2011

BME 236: "Engineering Optics for Biomedical Research" (4 units, lecture + lab, Winter), 2003-2014

ENGR 298/BME 298: "Seminars in Biomedical Engineering" (1 unit), Fall, Winter, Spring 2000-Spring 2008

ECE 298: "Special Topics in Biomedical Optics" (3 units), Spring 2000

BME C270: Guest lecturer, "Biomedical Optics" course in Department of Biomedical Engineering, UCLA (2 lecture hours), Spring 2001

Physics 147C/Electrical and Computer Engineering 237C: "Medical Physics" and "Biophysics with Light" (4.5 lecture hours), Spring 1997-1999

Physiology and Biophysics 204C: *Optical Spectroscopy in Biophysics* (9 lecture hours and 10 laboratory hours) , Spring 1991-1995

Physiology small group discussions: Endocrinology, June 1995 and 1996

Physiology/Biophysics 200, 299, and BME 299: Graduate Research

Medical Student Research Elective Teaching, Summer 1991, Fall 1992

Grand Rounds, Department of Radiation Oncology, UCI Medical Center, October 27, 2016

Other Teaching Activities

July 2018: University of California, Irvine: NSF/NIH Sixth Annual National Short Course in Computational Biophotonics, 23-27 July 2018, 2 lecture hours and demonstrations, *Biomedical Applications of Diffuse Optics*.

August 2017: University of California, Irvine: Paul Merage School of Business-St. Gallen Executive MBA Program, 22-August 2017, 2 lecture hours and demonstrations, *Biophotonics and Biomedical Optics: Innovative technologies for human health*.

July 2017: University of California, Irvine: NSF/NIH Fifth Annual National Short Course in Computational Biophotonics, 24-28 July 2017, 2 lecture hours and demonstrations, *Biomedical Applications of Diffuse Optics*.

August 2016: University of California, Irvine: NSF/NIH Fourth Annual National Short Course in Computational Biophotonics, 1-5 August 2016, 2 lecture hours and demonstrations, *Biomedical Applications of Diffuse Optics*.

August 2015: University of California, Irvine: NSF/NIH Third Annual National Short Course in Computational Biophotonics, 10-14 August 2015, 2 lecture hours and demonstrations, *Biomedical Applications of Diffuse Optics*.

June 2015: International Graduate Biophotonics Summer School, Ven, Sweden, (4 lecture hours), Medical Imaging In Thick Tissues Using Diffuse Optics*, sponsored by the University of Lund, Sweden, and Technical University of Denmark. http://www.biop.dk/Biophotonics15/*

August 2014: University of California, Irvine: NSF/NIH Second Annual National Short Course in Computational Biophotonics, 4-8 August 2014, 2 lecture hours and demonstrations, *Biomedical Applications of Diffuse Optics*.

December 2013: Refresher Course on Emerging Breast Imaging Strategies, Radiological Society of North America (RSNA) Annual Meeting, Chicago, (CME and ARRT credit, 1 lecture hour) *Breast Cancer Detection and Chemotherapy Monitoring using Diffuse Optical Spectroscopy and Imaging (DOSI).*

November 2013: Workshop on Optics and Photonics Technologies, African Spectral Imaging Network (AFSIN), Institute National Polytechnique Felix Houphouet Boigny, Yamoussoukro, Côte d'Ivoire, Africa: *Medical Imaging with Diffuse Optics,* 4 lecture hours and hands-on laboratory demonstrations.

October 2013: Harvard University Advanced Molecular Imaging and Clinical Translation Workshop, Fairmont Copley Plaza, Boston (1 lecture hour) *Medical Imaging Using Spatially and Temporally Modulated Light.* https://centerforadvancedimaging.harvard.edu

August 2013: Institute of Physics (IOP), PhysicsWorld.com multimedia education: Physics in 100 seconds, "How do we see beneath the surface of tissue with light?" https://physicsworld.com/a/how-do-we-see-beneath-the-surface-of-tissue-with-light/

August 2013: University of California, Irvine: NSF/NIH Short Course on Computational Biophotonics, 2 lecture hours and demonstrations, *Medical Imaging in Thick Tissues Using Diffuse Optical Spectroscopy and Imaging*. https://education.virtualphotonics.org/shortcourse2013

June 2013: International Graduate Biophotonics Summer School, Ven, Sweden, (4 lecture hours), *Medical Imaging Using Spatially and Temporally Modulated Light,* sponsored by the University of Lund, Sweden, and Technical University of Denmark. https://www.biop.dk/about-the-school

April 2013: Biophotonics Brazil Workshop: San Carlos Institute of Physics, University of Sao Paulo-Brazil (3 lecture hours), *Medical Optical Imaging: Theory, Instrumentation, Applications.* https://www.ifsc.usp.br/cepof/biofotonica/

October 2012: Harvard University Advanced Molecular Imaging and Clinical Translation Workshop, Fairmont Copley Plaza, Boston (CME credit, 1 lecture hour), *Medical Imaging Using Spatially and Temporally* Modulated Light.

June 2011: International Graduate Biophotonics Summer School, Ven, Sweden, (4 lecture hours), *Medical Imaging In Thick Tissues Using Diffuse Optics,* sponsored by the University of Lund, Sweden, and Technical University of Denmark.

September 2010: 3rd International Biophotonics and Imaging Graduate Summer School (BIGG'S 10), The Burren, Ireland, sponsored by The University of Limerick, Ireland (4 lecture hours), *Medical Photonic Imaging.*

June 2009: International Graduate Biophotonics Summer School, Ven, Sweden, (4 lecture hours), *Medical Imaging in Thick Tissues Using Diffuse Optics,* sponsored by the University of Lund, Sweden, and Technical University of Denmark.

June 2004: International Graduate Biophotonics Summer School, Ven, Sweden, (4 lecture hours), *Biophotonics in Breast Cancer,* sponsored by the University of Lund, Sweden, and Technical University of Denmark https://www.biop.dk/about-the-school

1999-2001 (spring): Ph.D. written/oral advancement exam committee in Electro Optics, Department of Electrical and Computing Engineering.

June 19, 1995: Biomedical Optics, 1/2 day short course for Department of Electrical Engineering, UC Irvine.

June 25-30, 1995: Digital Imaging and Laser Applications in Microscopy, hands-on short course with lectures and laboratories, Northwestern University. Course directors: D. L. Farkas and B. J. Tromberg.

January 26, 1994: Biomedical Optics for Diagnostics and Imaging, 1/2 day short course developed for International Society for Optics and Photonics (SPIE), Los Angeles.

Graduate Trainees or (Primary or Co-Advisor)

Student	Degree Awarded	Current Position
Angelique Louie	Ph.D. (1994), Cell Biology (Co-advisor with M. Berns)	Professor, Biomedical Engineering, UC Davis
Xunbin Wei	Ph.D. (1999), Physiology and Biophysics	Professor, School of Medicine, Fudan University, Shanghai, China
Tuan Pham	Ph.D. (2000), Electrical & Computer Engineering, M.D. (2002), MSTP program	Pediatric Surgeon, Phoenix, AZ, Adjunct Professor, Arizona State University
Dorota Jakubowski Wisner	Ph.D. (2002), Physics, M.D. (2004) MSTP program	Diagnostic Radiologist, Kaiser Permanente, Napa-Solano
Mariah Coleno	Ph.D. (2001), Chemical Engineering	Senior Scientist, BioRad, Inc.
Thorsten Spott	Ph.D. (1999), Electrical Engineering, NTNU Trondheim (co-advisor with L. Svaasand)	Senior Engineer, Siemens Corporation
Natasha Shah	M.S. (2000), Chemistry	Project Manager, Health IQ, Inc.
Aikaterini Zoumi	Ph.D. (2002), Biomedical Engineering	Consultant, Biomedical Optics, Athens, Greece
Sean Merritt	Ph.D. (2005), Physics	Senior Scientist, Masimo Corp.
David Cuccia	Ph.D. (2006), Biomedical Engineering	CEO/CTO, Modulated Imaging, Inc.
So Hyun (Sophie) Chung	Ph.D. (2009), Biomedical Engineering	Senior Engineer, Samsung Electronics, Korea

Jessie Weber	Ph.D. (2009), Biomedical Engineering	Research Scientist, Institute National d'Optique (INO), Quebec, Canada
Amaan Mazhar	Ph.D. (2010), Biomedical Engineering	Director of Research, Modulated Imaging, Inc.
Jing Liu	Ph.D. (2010), Physics	Assistant Professor, Shanghai Advanced Research Institute, China
Ryan Lim	Ph.D. (2011), Physiology and Biophysics	Research Scientist, Peregrine Pharmaceutical, Inc., Tustin, CA
Hosain Hagany	Ph.D. (2012), Physics	Research Scientist, Cutera, Inc., Brisbane, CA
Alexander Lin	Ph.D. (2013), Biomedical Engineering, M.D. (2015), MSTP program	Radiation Oncology Residency at Washington University in St. Louis (2016-)
Tyler Rice	Ph.D. (2013), Physics	CTO LAS, Inc. (acquired by Medtronic, Inc)
Jeffrey Suhalim	Ph.D. (2013), Biomedical Engineering (Co-advisor with E. Potma)	Engineer, Apple Inc.
Soroush M. Mirzaei Zarandi	Ph.D. (2014), Biomedical Engineering	New Product Introduction (NPI) Staff Engineer, Illumina, Inc., San Diego, CA
Kyle Cutler	MS (2014), Biomedical Engineering	Software Systems Engineer, Illumina, Inc., San Diego, CA
Kyle Nadeau	Ph.D. (2015), Biomedical Engineering	Research Scientist, Apple, San Jose, CA
Goutham Ganesan	Ph.D. (2015), Pharmacology, M.D. (2017), MSTP program (Co-advisor with P. Gallasetti)	Psychiatry Residency at UNC Hospitals (2017-)
Alexander Jabbari	M.S. (2016), Biomedical Engineering	Research Engineer, IPG Photonics, Inc.
Michael Ghijsen	Ph.D. (2017), Biomedical Engineering, M.D. (2018 expected), MSTP program	Radiology Resident, Stanford University School of Medicine
Abraham Chiu	Ph.D. (2017), Pharmacology (Co-advisor with D. Cooper)	Scientist, Edwards Life Sciences, Inc., Irvine, CA
Jue Hou	Ph.D. (2017), Biomedical Engineering	Post-doctoral Fellow, Harvard Medical School, Wellman Center

Drew Reilly	M.S. (2017), Biomedical Engineering, UC Irvine	Algorithm Engineer, Edwards Lifesciences
Robert Warren	Ph.D. (2017), Biomedical Engineering	Project Manager, Hamamatsu Inc.
Mayer Saidian	Ph.D. (2018), Biomedical Engineering (Co-advisor with R. Cohen, Hebrew University)	Assistant Specialist, BLI
Mohammad Torabzadeh	Ph.D. (2018), Biomedical Engineering	Senior Optical Engineer, Alcon Laboratories, Inc.
Jesse Lam	Ph.D. (2020), Biomedical Engineering	Postdoctoral Fellow, Korea Research Fellowship, Dankook University
Hossein Seddighzadeh Yazdi	Ph.D. (2019), Biomedical Engineering	Bioemedical Engineer, Masimo Inc.
Richard Prince	Ph.D. (2022 expected), Biomedical Engineering (Co-advisor with E. Potma)	Graduate student
Griffin Lentsch	Ph.D. (2021 expected), Biomedical Engineering (Co-advisor with V. Venugopalan)	Graduate student

Graduate Student Committee Member

Student	Degree Awarded	Current Position
Zhihong Pan	Ph.D. (2003), Electrical Engineering and Computer Science	Application Scientist, Galileo Group
Joon You	Ph.D. (2005), Biomedical Engineering	CTO, Praxis Inc., Irvine, CA
Stefan Carp	Ph.D. (2005), Chemical Engineering	Instructor, Martinos Ctr., Biomedical Imaging, Massachusetts General Hospital
Alan Lee	Ph.D. (2005), Biomedical Engineering	
Hyle Park	Ph.D. (2005), Biomedical Engineering	Associated Professor, Biomedical Engineering, UC Riverside
Subhadra Srinivasan	Ph.D. (2005), Engineering Sciences, Dartmouth College	Assistant Professor, Dartmouth College
Sheng-Hao Tseng	Ph.D. (2006), Electrical Engineering	Associate Professor, Tainan University, Tainan, Taiwan

Hermann Frieboes	Ph.D. (2006), Biomedical Engineering	Assistant Specialist, Dept. of Mathematics, UC Irvine
Inseouk Seo	Ph.D. (2007), Chemical Engineering	
Cyrus Gajhar	Ph.D. (2008), Biomedical Engineering	Postdoctoral Fellow, UC Berkeley, Lawrence Berkeley National Laboratory
Chris Raub	Ph.D. (2009), Biomedical Engineering	Instructor, UC San Diego
Chris Rutherglen	Ph.D. (2009), Electrical & Computer Engineering	Postdoctoral Fellow, UC Irvine
Sylvain Gioux	Ph.D. (2009), Biomedical Engineering, Boston University	Associate Professor, University of Strasborg, France
Giulia Ossato	Ph.D. (2009), Biomedical Engineering	Engineer, Masimo, Inc.
Nicholas Gunn	Ph.D. (2010), Biomedical Engineering	Postdoctoral Fellow, UC Irvine
Suzanne Genc	Ph.D. (2011) Physics	
Nivedan Tiwari	Ph.D. (2011), Mechanical & Aerospace Engineering	Research engineer, Bausch and Lomb, Inc.
Melissa Davis	Ph.D. (2011), Neurobiology & Behavior	Graduate student
David Thayer	Ph.D. (2011), Biomedical Engineering	MSTP student, UCI
Adam Gardner	Ph.D. (2012), Chemical Engineering & Materials Science	Postdoctoral Fellow, UCI
Ashley Laughney	Ph.D. (2012), Thayer School of Engineering, Dartmouth College	Postdoctoral Fellow, Harvard Medical School
Ylenia Santoro	Ph.D. (2012), Biomedical Engineering	Research Engineer, Masimo, Inc.
Cosimo Arnesano	Ph.D. (2012), Biomedical Engineering	Research Engineer, USC
Anais LeProux	Ph.D. (2012), Applied Physics, University of Amsterdam (Co-promoter)	Postdoctoral Fellow, UCI
Shanshan Xu	Ph.D. (2012), Biomedical Engineering	

Viera Crosignani	Ph.D. (2013), Biomedical Engineering	Development Engineer, Zeiss, Inc.
Austin Moy	Ph.D. (2013), Biomedical Engineering	Research Engineer, Edwards Lifesciencs, Inc.
Salar Saroori	Ph.D. (2013), Biomedical Engineering	CEO, Datavia Systems, Inc.
Jonathan Compton	Ph.D. (2013), Chemical Engineering	Postdoctoral Fellow
Richa Mittal	Ph.D. (2014), Chemical Engineering	Postdoctoral Fellow, Michigan State
Christine Lee	M.S. (2014), Biomedical Engineering, Ph.D. (2018)	Ph.D. student, BME at UCI
Jiawen Li	Ph.D. (2014), Biomedical Engineering	Research Fellow, University of Western Australia, Perth, Australia
Richard Hill	Ph.D. (2014), Chemistry	Research Scientist, Fjord Ventures
Hanna Jonasson	Ph.D. (2016), Biomedical Engineering, Biomedical Instrumentation, Linköping University (Doctoral Thesis Opponent)	Postdoctoral Fellow, Linköping University, Sweden
David M. McClatchy III	Ph.D. (2017), Dartmouth University (External Advisor)	Graduate Student
Yan Zhao	Ph.D. (2018 expected), Dartmouth University (External Advisor)	Graduate Student
Michael Marks	M.S. (2018), Biomedical Engineering, UC Irvine	Graduate Student
Dimitra Pouli	Ph.D. (2018), Biomedical Engineering, Tufts University (External Advisor)	Postdoctoral Fellow, Tufts University
Logan Hubbard	Ph.D. (2018) Biomedical Engineering	Medical student at UCI

Postdoctoral Fellow Trainees

Fellow	Period	Current Position

Tatiana Krasieva, Ph.D.	1990-1995	Research Scientist, Beckman Laser Institute
Tsong-Tseh Tsay, Ph.D.	1991-1993	Senior Scientist, Beckman-Coulter, Inc.
Satoshi Shimizu, M.S.	1991-1993	Engineer, Canon Corporation
Curtis Chapman, Ph.D.	1991-1997	Faculty, Science, Mathematics, Engineering, Modesto Jr. College
Rolf Steiner, M.D.	1992-1993 (Co-advisor with Y. Tadir, M.D.)	Chairman, Dept. of OB/Gyn, Chur Regional Hospital, Switzerland
Steen J. Madsen, Ph.D.	1992-1994	Professor, Chair, Dept. of Health Physics, University of Nevada, Las Vegas
Karsten König, Ph.D.	1993-1995	Professor, Engineering Physics, Saarbrucken University, Fraunhoffer Institute, Germany
Pius Wyss, M.D.	1993-1994 (Co-advisor with Y. Tadir, M.D.)	Professor, Dept. of OB/Gyn, University of Zurich, Switzerland
Mathias Fehr, M.D.	1994-1995 (Co-advisor with Y. Tadir, M.D.)	Professor, Dept. of OB/Gyn, University of Zurich, Switzerland
Attila Major, M.D.	1994-1996 (Co-advisor with Y. Tadir, M.D.)	Dept. of OB/Gyn, University Hospital, Geneva, Switzerland
Olivier Coquoz, Ph.D.	1994-1997	Senior Scientist, Danaher Corp., Geneva, Switzerland
Joshua Fishkin, Ph.D.	1995-1998	Senior Scientist, Boeing Corp.
Rene Hornung, M.D.	1996-1997 (Co-advisor with Y. Tadir, M.D.)	Professor, Dept. of OB/Gyn, University of Zurich, Switzerland
Vasan Venugopalan, Sc.D.	1996-1997	Professor, Chemical Engineering, UC Irvine
Jeffrey Gross, M.D.	1996-1997	Director, Dept. of Neurosurgery, Mission Regional Hospital, Mission Viejo, CA

Andrew Dunn, Ph.D.	1997-1999	Professor, Biomedical Engineering, Cockrell School of Engineering, University of Texas at Austin
Vincent Wallace, Ph.D.	1997-2000	Senior Lecturer, Department of Physics, The University of Western Australia
Andrew Berger, Ph.D.	1998-2000	Professor, Dept. of Optics, Institute of Optics, University of Rochester
Albert Cerussi, Ph.D.	1999-2001	Researcher Engineer, Apple
Frederic Bevilacqua, Ph.D.	1999-2003	Research Scientist, IRCAM, Paris, France
Alvin Yeh, Ph.D.	2000-2003	Associate Professor, Texas A&M
David Hsiang, M.D.	2000-2002	Associate Professor, Dept. of Surgery, UC Irvine
Sam Im, M.D.	2000-2002 (Co-advisor with P. DiSaia)	Fellow, Stanford University
Anthony Durkin, Ph.D.	2001-2003	Associate Professor, Beckman Laser Institute, UC Irvine
Jangwoen Lee, Ph.D.	2002-2004	Research Scientist, Beckman Laser Institute, UC Irvine
Shuo Tang, Ph.D.	2003-2006	Assistant Professor, Dept. of Electrical & Computer Engineering, Univ. of British Columbia
Philippe Zatta, Ph.D.	2003-2005	Consultant, LabView Software
Julia Lyubovitsky, Ph.D.	2003-2006	Research Scientist, City of Hope
Ang Li, Ph.D.	2005-2008	Assistant Professor, Beihang University, China
David Abookasis, Ph.D.	2005-2008	Associate Professor, Dept. of Electrical Engineering, Ariel University Center, Israel
Zhongping Jian, Ph.D.	2008-2009	Senior Engineer, Edwards LifeSciences, Irvine, CA
Jae Kim, Ph.D.	2006-2011	Assistant Professor, Gwangju University of Science and Technology, Korea
Mihaela Balu, Ph.D.	2007-2011	Research Scientist, Beckman Laser Institute, UC Irvine

Soren Konecky, Ph.D.	2008-2011	Senior Engineer, KLA-Tencor
Darren Roblyer, Ph.D.	2009-2012	Assistant Professor, Department of Biomedical Engineering, Boston University
Lonnissa Nguyen Ponticorvo, Ph.D.	2013-2014	Regulatory Affairs Scientist, Astex Pharmaceuticals
Viera Crosignani, Ph.D.	2013-2016 (Co-advisor with E. Botvinick)	Research Engineer, Carl Zeiss, LLC
Ylenia Santoro, Ph.D.	2013-2016 (Co-advisor with E. Gratton)	Algorithm Engineer, Masimo Corp.
Thomas O'Sullivan, Ph.D.	2010-2016	Assistant Professor, Electrical Engineering, University of Notre Dame
Robert Wilson, Ph.D.	2012-2018	Postdoctoral Fellow, BLI
Anais LeProux, Ph.D.	2012-2018	Postdoctoral Fellow, BLI
Inga Saknite, Ph.D.	2016-2017	Postdoctoral Fellow, Vanderbilt University, Nashville, TN
Timothy Quang, Ph.D.	2017-present	Hewitt Foundation Postdoctoral Fellow, BLI
Robert Warren, Ph.D.	2017-2018	Engineer, Hamamatsu Photonics, Inc.

INTELLECTUAL PROPERTY

Patents Issued

1) Apparatus and method for qualitative and quantitative measurements of optical properties in turbid media using frequency domain photon migration (FDPM)
Patent: 5,424,843 Issued: 06/13/95
Co-inventors: Bruce Tromberg, Richard Haskell, Michael W. Berns, Lars O. Svaasand

2) Intrauterine device for light diffusion
Patent: 5,478,339 Issued: 12/26/95
Co-inventors: Yona Tadir, Bruce Tromberg, Michael Berns

3) Vaginal speculum for photodynamic therapy
Patent: 5,458,595 Issued: 10/17/95
Co-inventors: Yona Tadir, Bruce Tromberg, Brad Monk, Glen Profeta

4) Flourophore-polymer based illuminator for conventional light microscopy
Patent: 5,734,498 Issued: 03/31/98
Co-inventors: Tatiana Krasieva, Bruce Tromberg, Alexander Dvornikov, Michael W. Berns

5) High resolution biosensor for in-situ microtherometry
Patent: 5,631,141 Issued: 5/20/97
Co -inventors: Greg Sonek, Bruce Tromberg, Yagang Lui

6) Fast Controllable laser lysis of cells for analysis
Patent: 6,156,576 Issued: 12/05/00
Co-inventors: Nancy Allbritton, Bruce Tromberg, Chris Sims, Gavin Meredith, Tatiana Krasieva, Michael W. Berns

7) Method and apparatus for detecting enzymatic activity using molecules that change electrophoretic mobility
Patent: 6,335,201 Issued: 01/01/02
Co-inventors: Nancy Allbritton, Chris, Sims, Gavin Meredith, Bruce Tromberg, Tatiana Krasieva, Michael W. Berns

8) Diffuse optics for reflectance microscopy
Patent: 6,661,574 Issued: 12/09/03
Co-inventors: Bruce Tromberg, Tatiana Krasieva, Alexander Dvorinik, Michael W. Berns

9) Method and Apparatus for performing quantitative analysis and imaging surfaces and subsurfaces of turbid media using spatially structured illumination
Patent: 6,958,815 Issued: 10/25/05
Co-inventors: Fred Bevilacqua, Bruce Tromberg, Anthony Durkin, David Cuccia

10) Method and apparatus for detecting enzymatic activity using molecules that change electrophoretic mobility
Patent: 7,157,223 Issued: 01/02/07
Co-inventors: Nancy Allbritton, Christopher Sims, Michael W. Berns, Gavin Meredith, Tatiana Krasieva, Bruce J. Tromberg, Chao L. Lee

11) Method and apparatus for dynamically monitoring multiple in vivo tissue chromophores
Patent: 7,248,909 Issued: 07/24/07
Co-inventors: Jangwoen Lee, Bruce Tromberg, Albert Cerussi, Matthew Brenner

12) Quantitative broadband absorption and scattering spectroscopy in turbid media by combined frequency-domain and steady-state methodologies
Patent: 7,428,434 Issued: 09/23/08
Co-inventors: Andrew Berger, Fred Bevilacqua, Bruce Tromberg, Albert Cerussi, Dorota Jakubowski

13) Method and apparatus for spatially modulated fluorescence imaging and tomography
Patent: 7,729,750 Issued: 06/01/10
Co-inventors: Anthony Durkin, David Cuccia, Frederic Bevilacqua, Bruce Tromberg

14) Three-dimensional breast anatomy imaging system
Patent: 8,244,332 Issued: 08/14/12
Co-inventors: Bruce J. Tromberg, Albert Cerussi, Fred Azar, Ali Khamene, Frank Sauer

15) Method and apparatus for performing qualitative and quantitative analysis of produce (fruit, vegetables) using spatially structured illumination
Patent: 8,014,569 Issued: 09/06/11

Co-inventors: Anthony Durkin, David Cuccia, Bruce J. Tromberg, Fred Bevilacqua

16) Apparatus and method for wide field functional imaging (wifi) using integrated structured illumination and laser speckle imaging
Patent: 8,509,879 Issued: 08/13/13
Co-inventors: Anthony Durkin, David Cuccia, Bruce Tromberg, Amaan Mazhar, Bernard Choi
Combined with UC Case 2007-381-2

17) System and method for efficient coherence anti-stokes Raman scattering endoscopic and intravascular imaging and multimodal imaging
Patent: 8,582,096 Issued: 11/12/13
Co-inventors: Z. Chen, G. Liu, M. Balu, B. J. Tromberg, E. Potma

18) Portable broadband diffuse optical spectroscopic imaging device for non-invasive tissue characterization
Patent: 9,772,280 Issued: 09/26/17
Co-inventors: Albert Cerussi, Keun No, Brian Hill, Bruce J. Tromberg, Pai Chou

19) Method for extraction of spatial frequency information for quantitative tissue imaging
United States Patent 10,438,346
K. Nadeau , et al. October 8, 2019

20) Imaging platform based on nonlinear optical microscopy for rapid scanning large areas of tissue
United States Patent 10,595,770
M. Balu , et al. March 24, 2020

21) Hand-held optical scanner for real-time imaging of body composition and metabolism
United States Patent 10,653,346
S. Zarandi , et al. May 19, 2020

22) Non-invasive hemodynamic assessment via interrogation of biological tissue using a coherent light source
United States Patent 10,813,597
T. Rice , et al. October 27, 2020

23) Predicting weight loss and fat metabolism using optical signal changes in fat
United States Patent 10,827,974
R. Warren , et al. November 10, 2020

24) Motion tracking apparatus and method
United States Patent 11,160,470
B. Tromberg, et al. November 2, 2021

25) Optical Biopsy applicators for treatment planning, monitoring, and image-guided therapy
United States Patent 11,517,194
Z. Chen, et al. December 6, 2022

Applications

Spreading depolarization and repolarization as biomarkers of neurological recovery after cardiac arrest
US-20220032074-A1, Y. Akbari, et al., 02-03-2022

Real-time methods to enable precision-guided CPR to improve neurological outcome and predict brain damage after ischemic injury and reperfusion.
US-20220192919-A1, R. Wilson, et al., 06-23-2022

Inactive

UC Case 2002-431-1 Inactivated by OTA Final rejection from USPTO
Methods for assessing the condition of bone in vivo using non-ionizing radiation
Co-inventors: Albert Cerussi, Bruce Tromberg, Anthony Durkin, Sean Merritt, Natasha Shah
Status: Patent application filed: 1/18/06

UC Case 2002-062-1
Perturbation/differential Monte Carlo solutions of inverse problems in particle transport
Co-inventors: Jerry Spanier, Vasan Venugopalan, Fred Bevilacqua, Joon You, Carol Hayakawa, Bruce Tromberg
Status: Provisional patent filed 8/24/01 Decided not to pursue full application.

UC Case 2005-114-2 Inactivated by OTA-Patent application withdrawn
Monitoring Temperature Non- Invasively Using Broadband Diffuse Optical Spectroscopy (DOS)
Co-inventors: Anthony Durkin, Sean Merritt, Bruce Tromberg, Albert Cerussi
Status: Patent application filed: 10/07/05

UC Case 2005-424-1 Abandoned by OTA 08/14/06.
Method for the non-invasive measurement of cellular apoptosis using endogenous tissue signals
Co-inventors: Bruce Tromberg, Albert Cerussi, Dorota Jakobowski, David Hsiang, John Butler
Status: Disclosure filed

UC Case 2006-639-2 Inactivated by OTA-Final rejection by USPTO
A Method for determination of intrinsic spectroscopic tumor markers by broadband frequency domain technology
Co-inventors: Enrico Gratton, Bruce Tromberg, Albert Cerussi, Shwayta Kukreti
Status: Patent application filed: 05/16/07

UC Case 2006-070-1 Abandoned by USPTO 09-24-2010
Methods for assessing the molecular water binding of deep tissue in vivo using non ionizing radiation
Co-inventors: Sean Merritt, Bruce Tromberg, Albert Cerussi, Anthony Durkin, SoHyun Chung
Status: Patent application filed: 06/04/07

UC Case 2008-328-1 Abandoned by OTA 11/01/08.
Probe for non-linear optical microscopic imaging of joints and tissues
Co-inventors: Nivedan Tiwari, George Peavy, Bruce Tromberg, Brian Andrews, Zhongping Chen
Status: Provisional patent application filed 11/07/07

UC Case 2008-700-1
A fast (2D) Diffuse optical imaging (DOI) algorithm to recover lesions' optical spatial signature based on physiologically realistic models of lesion optical properties
Co-inventors: Ang Li, Jing Liu, Albert Cerussi, Bruce Tromberg
Status: Provisional patent application filed 06/29/09. No activity.

UC Case 2011-663-2

Frequency domain imaging using custom patterns
Co-inventors: Kyle Nadeau, Tyler Rice, Soren Konecky, Anthony Durkin, Bruce Tromberg
Status: PCT/US 15/10201

UC Case 2015-297-2
Handheld surface motion tracking apparatus and method
Co-inventors: Bruce J. Tromberg, Kyle Cutler, Zach DeStefano, Chris Van Wagenen, Sueng-ha Lee, Thomas O'Sullivan, Gopi Meenakshisundaram
Status: Full US patent application filed 05/13/16 # 15/169,426

UC Case 2018-222-1
Localization and characterization of subsurface objects using temporally resolved photon density waves
Co-inventors: Bruce J. Tromberg, Jesse Lam, Timothy Quang
Status: No activity

COMMERCIALIZATION

2017-2018: Co-Founder, InfraDerm, LLC. UCI startup based on extended field of view, fast scanning multi-photon microscopy (MPM) technology for clinical skin imaging.

2017-2018: Photonics technology consultant, Advanced Elemental Technologies, Inc., Atherton, CA tech startup.

2016-2018: Scientific Advisory Board Member, Infit, Inc (http://infit.xyz). Korean spinoff from LG, Inc., to commercialize DOSI technology developed in Tromberg lab.

2015-2018: Board Member, Scientific Advisory Board Member, Datavia Systems, Inc. (http://www.dataviasystems.com) UCI start-up for hardware and computation in management of big data.

2015-2018: Scientific Advisory Board Member, Laser Associated Sciences (LAS), Inc, A BLI start up for commercializing FlowMet, a wearable blood flow sensor (https://www.medtronic.com/us-en/healthcare-professionals/products/cardiovascular/intraprocedural-monitoring/flowmet.html).

2015-2018: Biophotonics Technology Consultant, Hamamatsu Photonics, Inc., Japan.

2009-2013: Co-Founder, Scientific Advisor, Volighten, Inc., A start-up for commercializing Diffuse Optical
Spectroscopic Imaging Technologies (shares divested in 2013)

2005-2018: Co-Founder, Scientific Advisor, Board Member: Modulated Imaging (MI), Inc (now Modulum, Inc.) ., a start-up for commercializing Spatial Frequency Domain Imaging Technologies (https://modulim.com). FDA cleared technologies: OxImager and Clarifi.

2000-2008: Scientific Advisory Board Member, Xenogen/Caliper Corporation. Helped guide the development of in vivo molecular imaging systems (IVIS) for bioluminescence and fluorescence tomography in small animal models. Acquired by Perkin-Elmer corporation.

PUBLICATIONS: Google Scholar H-index = 96, Citations 32,692 (04/23)
Peer-Reviewed Journals

J1. Huff PB, Tromberg BJ, Sepaniak MJ. Sequentially excited fluorescence detection in liquid chromatography. Anal Chem. 1982; 54(6):946-50.

J2. Sepaniak MJ, Tromberg BJ, Eastham JF. Optical fiber fluoroprobes in clinical analysis. Clin Chem. 1983; 29(9):1678-82.

J3. Tromberg BJ, Eastham JF, Sepaniak MJ. Optical fiber fluoroprobes for biological measurements. Appl Spectrosc. 1984; 38(1):38-42.

J4. Fung KW, Matthews TG, Tromberg BJ. Surface emission monitoring of pressed-wood products containing urea-formaldehyde resins. Environ Int. 1986; 12:301.

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P154. Cochran JM, Busch DR, Leproux A, Tromberg BJ, Yodh AG. *Tissue Oxygen Saturation Predicts Response to Breast Cancer Neoadjuvant Chemotherapy within 10 Days.* OSA Technical Digest (online) (Optical Society of America, 2018), paper OTh4D.

P155. Wilson R, Crouzet C, Torabzadeh M, Bazrafkan A, Donga D, Zaher S, Alcocer J, Choi B, Tromberg BJ, Akbari Y. A Multimodal Optical Imaging Platform that Predicts Neurological Recovery after Cardiac Arrest in an "Animal Neuro-Intensive Care Unit" (S42. 003). Neurology. 2018 Apr 10.

P156. Quang, T., Xu, J. Z., Frey, I., Jaroszynski, K., Berning, E. M., Conrey, A., ... & Tromberg, B. J. (2022). Feasibility of Near-Infrared Spectroscopy for Monitoring Hemodynamic Changes in Patients with Sickle Cell Disease Treated with Mitapivat. Blood, 140(Supplement 1), 2526-2527.

P157. Jaroszynski, K., Quang, T., Xu, J., Frey, I., Berning, E., Hill, B., ... & Tromberg, B. (2023, March). Optical characterization of vascular health in sickle cell disease. In Optical Biopsy XXI: Toward Real-Time Spectroscopic Imaging and Diagnosis (p. PC123730L). SPIE.

P158. Opem, N., Sadikov, A., Chen, S. F., Quang, T., Hill, B., Warren, R. V., ... & Tromberg, B. (2023, March). Smartphone-compatible NIRS for sleep apnea monitoring. In Biophotonics in Exercise Science, Sports Medicine, Health Monitoring Technologies, and Wearables IV (p. PC123750E). SPIE.

Popular Press Articles/Video (Prior to joining NIH)

PP1. "Beyond mammography: Handheld laser scanner improves detection and treatment of breast

cancer." Phys.org. 16 Feb 2010. https://medicalxpress.com/news/2010-02-mammography-handheld-laser-scanner-treatment.html#google_vignette PP2. Susan Johnson, "Shining New Light on Tumors" NCRR Reporter

PP3. Photonics Media: "Streak Camera, Cool Optoelectronics & The Beckman Laser Institute", uploaded 12/21/2011. http://www.youtube.com/watch?v=0RHuNm2YSAs

PP4. American College of Radiology Imaging Network: ACRIN Trial Activates, posted https://www.acr.org/Research/Clinical-Research/ACRIN-Legacy-Trials

PP5. Chris Barylick, "Grad students forge digital light projector into medical imaging device", Engadget, Posted online Jan 6, 2012. https://www.engadget.com/2012-01-06-grad-students-digital-light-projector-into-medical-imaging-device.html

PP6. Susan Reiss, "LAMMP lights the way from bench to bedside". Bioptics World. Posted 7/1/11, https://www.laserfocusworld.com/biooptics/biophotonics-tools/article/14190308/biomedical-imaging-laser-tissue-interaction-lammp-lights-the-way-from-bench-to-bedside

PP7. Aaron Rowe, "Lights and Lasers Invade the Clinic". Volume 90 Issue 1. January 2, 2012. pp. 25-27. Chemical and Engineering News. https://cen.acs.org/articles/90/i1/Lights-Lasers-Invade-Clinic.html

PP8. Nancy Schute, "Beyond Mammograms: Research Aims to Improve Breast Cancer Screening, Conventional breast cancer screening tests are far from perfect. The next scans could focus on sound, light, breath and elasticity". Scientific American, Posted 5/10/2011. https://www.scientificamerican.com/article/beyond-mammograms/

PP9. SPIE Newsroom Video, "Applying Photonics to Develop New Medical Treatments" posted November 29, 2011 https://spie.org/news/uci-beckman-video?ArticleID=x83288

PP10. Joana Pereira, "Traffic Lights for Chemotherapy", Optics and Photonics Focus, posted 1/25/2012,

PP11. Biocat E-News, July/August 2012: International Center for Scientific Debate: Interview with Dr. Bruce Tromberg, http://www.biocat.cat/en/enews/juliol-i-agost-2012-english

PP12. Dayton Fandray, "Medical Innovations: Twenty First century technology is giving physicians powerful new tools" Alaska Airlines Magazine, November 2012.

PP13. Gary Boas, "The Age of the Tricorder" Biophotonics Magazine, September 2012, https://www.photonics.com/Article.aspx?AID=51900

PP14. Sherri Cruz, "Beckman's portable laser breast scanner detects cancer and guides treatment", Orange County Register, posted November 29, 2013, http://www.ocregister.com/articles/cancer-539418-dosi-laser.html

PP15. Tim Hayes, "Translational research: the path from bench-top to bedside," Photonics West Show Daily, February 4, 2014, pg 9

PP16. Biomedical Optics & Medical Imaging, Hot Topics presentation: Diffuse Optical Methods for Assessing Breast Cancer Chemotherapy, Presented at SPIE Photonics West 2014; 4 March 2014, SPIE Newsroom. DOI: 10.1117/2.3201403.12, https://spie.org/news/pw14-_hottopics_tromberg

PP17. The Optical Society Bestows Fifteen Prestigious Awards for 2015, March 9, 2015 http://www.businesswire.com/news/home/20150319005426/en/Optical-Society-Bestows-Fifteen-Prestigious-Awards-2015#.VRXYEMZCTvg

PP18. NIBIB-funded team develops a new way to image fat metabolism: Could one day help determine if diet and exercise regime is working. Science Highlight. July 7, 2016. National Institute of Biomedical Imaging and Bioengineering. https://www.nibib.nih.gov/news-events/newsroom/nibib-funded-team-develops-new-way-image-fat-metabolism

PP19. *Currents*, UCI Applied Innovation, Faculty Spotlight: https://innovation.uci.edu/2016/09/facultyspotlightbruce-tromberg/

PP20. "Beyond," Documentary Series on EBS TV, South Korean National TV Network Production: https://docuprime.ebs.co.kr/docuprime/vodReplayView?siteCd=DP&prodId=124333&courseId=10027453&stepId=10030459&lectId=10738688

PP21. UC Systemwide video series course on academic disciplines: Biophotonics 1 https://www.youtube.com/watch?v=rm9SjO4XNrc&list=PLZw43eNXOaTqeJvMxxFWfYJjoGIJu4M2D&index=7; Biophotonics 2 https://www.youtube.com/watch?v=JrBhNQZlZlk&list=PLZw43eNXOaTqeJvMxxFWfYJjoGIJu4M2D&index=8; Biophotonics 3; https://www.youtube.com/watch?v=MSFLvO_Ojts&list=PLZw43eNXOaTqeJvMxxFWfYJjoGIJu4M2D&index=9

INVITED LECTURES

Seminars/Colloquia (Prior to joining NIH)

C1. Beckman Instruments, Diagnostic Systems Group, Development of Antibody-Based Fiber Optic Sensors, Brea, CA, June 1, 1989.

C2. Southern California Pharmacology Group, City of Hope National Medical Center, Tumor Oxygen Tension During Photodynamic Therapy, Duarte, CA, December 1, 1989.

C3. University of California, Irvine Department of Chemistry, Physical Chemistry Seminar Series, Optical Spectroscopy in Cancer Therapy and Diagnosis, April 17, 1990.

C4. Vestar Pharmaceutical Company, Inc., Laser-Based Optical Imaging and Therapeutics in Cancer. San Dimas, CA, June 28, 1990.

C5. UCI Drug Resistance Affinity Group Winter Retreat, Measurement of Anthracycline Efflux From Single Multidrug Resistant MCF-7 Cells, January 7, 1991.

C6. Beckman Instruments, Diagnostic Systems Group, Optical Spectroscopy in turbid media: Frequency-domain photon migration,. Brea, CA, May 3, 1991.

C7. Beilinson Medical Center, Department of Obstetrics and Gynecology, Tel Aviv University, Principles of Photodynamic Therapy, Tel Aviv, Israel, May 29, 1991.

C8. Technion-Israel Institute of Technology, Department of Chemistry Colloquium, Optical Properties in the Multiple-scattering Regime Using Frequency-domain Photon Migration, Haifa, Israel, May 30, 1991.

C9. University of Tennessee, Knoxville, Department of Chemistry Colloquium, Optical Spectroscopy in Tissues, Knoxville, TN, August 9, 1991.

C10. Stanford University, Hansen Experimental Physics Lab Lecture Series, Photon Migration in Biological Tissue, Stanford, CA, December 2, 1991.

C11. Advanced Monitoring Development Group, Health and Safety Research Division Seminar Series, Oak Ridge National Laboratory, Oak Ridge, TN Photon Flux Measurements in Biological Tissues, March 30, 1992.

C12. University of California, Irvine, Department of Chemistry, Physical Chemistry Seminar Series, Propagation of Photon Density Waves in Biological Tissues, April 21, 1992.

C13. Kaiser Permanente, General Surgical Applications of Lasers, Panorama City, California, April 22, 1992.

C14. University of California, Irvine, Annual Cancer Research Symposium, Optical Spectroscopy in Cancer Diagnosis, May 2, 1992.

C15. University of California, Irvine, Drug Resistance Affinity Group Summer Retreat, Imaging and Pharmacokinetics in Single Multi-drug Resistant Cells, June 13, 1992.

C16. Spectroscopic Approaches to Analysis of Biological Tissue, Conference Organized for Corporate Office of Science and Technology, Johnson and Johnson Corporation, Determination of Tissue Optical Properties Using Frequency-Domain Photon Migration, Albuquerque, New Mexico, July 1 and 2, 1992.

C17. Johnson Foundation Seminars, University of Pennsylvania, Properties of Photon Density Waves in Biological Tissues, Philadelphia, PA, August 13, 1992.

C18. Photomedicine Lecture Series, Wellman Laboratories of Photomedicine, Massachusetts General Hospital, Harvard University, Properties of Photon Density Waves in Tissues, Boston, MA, October 13, 1992.
C19. University of California, Irvine, College of Medicine, Department of Radiology, General Seminar, Photon Migration in Radiology, May 27, 1993.
C20. Optical Society of San Diego, Medical Diagnostics Using Photon Density Waves, San Diego, CA, February 17, 1994.
C21. Lawrence Livermore National Laboratory, Medical Diagnostics Using Photon Density Waves, LLNL laser colloquium, Livermore, CA, June 7, 1994.
C22. University of California, Irvine, College of Medicine, Department of Pathology, Seminar, Optical Properties of Tissues, October 17, 1994.
C23. Southern California Confocal Microscopy Users Group, Advanced Confocal Imaging Workshop, Two-Photon Processes in Laser Microbeams, April 25, 1995.
C24. University of California, Los Angeles, Mathematics Department, Colloquium on Mathematical Modelling in Biology and Medicine Tissue Characterization using Photon Migration, Los Angeles, CA, November 8, 1995.
C25. University of California, Irvine, Radiological Sciences Department, Winter Colloquia Non-Invasive Optical Diagnosis in Medicine, March 5, 1996.
C26. Oncotech, Inc., Diagnostic Applications of Tissue of Properties, Irvine, CA, March 27, 1996.
C27. Oregon Health Sciences University, OMLC Lecture Series, Diagnostic and Therapeutic Applications of In-Vivo Tissue Optical Properties, August 23, 1996.
C28. University of California, Irvine, Department of Epidemiology and Biostatistics Lecture Series, Non-Invasive Optical Detection of Breast Cancer, March 1997.
C29. National Institutes of Health, NCRR annual council meeting, Optical Detection of Breast Tumors using Frequency Domain Photon Migration, Washington, D.C., May 1997.
C30. Food and Drug Administration, Center for Devices and Radiological Health, Electro-Optics Branch, Frequency-Domain Photon Migration for Non-invasive Characterization of Breast Tumors, May 1997.
C31. Swiss Federal Institute of Technology (EPFL), Quantitative Measurements of Breast Tissue Optical and Physiological Properties, Lausanne, Switzerland, June 1997.
C32. Boehringer-Mannheim, Factors Affecting Accuracy and Precision in Calculating Optical Properties using Frequency Domain Photon Migration, Mannheim, Germany, June 1997.
C33. Max Delbruck Center for Molecular Medicine, Robert Roessle Hospital, Combining Optical and Molecular Techniques for Imaging and Manipulating Function in Living Cells, Berlin, Germany, June 1997.
C34. NCRR BECON (bioengineering consortium), Monitoring and Imaging Tissue Function Using Biophotonic Devices, February 1998.
C35. UCI College of Medicine Faculty Research Poster Session, Non-Invasive Optical Detection of Breast Cancer Using Frequency-Domain Photon Migration (FDPM), April 1998.
C36. Joint Photomedicine Lecture Series, Wellman Laboratories, Harvard Medical School and MIT, Optical and Physiological Properties of Breast Tumors, June 1998.
C37. FDA workshop on Biomedical Optics, Baltimore, Principles of Light Propagation in Tissue: Diagnostic and Therapeutic Techniques, September 1998.
C38. Johnson & Johnson Corporate Office: Medical Optics Symposium, Principles of Tissue Optical Spectroscopy for Biomedical Diagnostics, San Jose, CA, January 1999.
C39. Cedars-Sinai Clinical Neuroscience Lecture, Near-Infrared Optical Diagnostics in Human Tissues: Applications to Brain and Breast Functional Imaging, Los Angeles, CA, February 1999.
C40. Lund Institute of Technology, Department of Physics, Imaging, Wound Healing and Collagen Synthesis in Artificial Tissues Using 2-Photon Microscopy, Lund, Sweden, May 1999.
C41. SIAM Math-In-Industry Workshop, Claremont Graduate School, Characterizing Tissue Function Using Near Infrared Spectroscopy And Imaging, June 1999.

C42. Molecular Imaging Symposium, Mt. Zion Cancer Center, UCSF, Functional Imaging in Tissues Using Quantitative Near infrared Optical Spectroscopy, June 1999.
C43. NTNU, Norwegian Technical University, Two-Photon Imaging in Thick Tissues, Trondheim, Norway, August 1999.
C44. Inter-Institute Workshop on In Vivo Optical Imaging at the NIH, Photon Migration Spectroscopy of Normal and Tumor Containing Breast Tissue: Effect of Menopausal Status, Menstrual Cycle and Malignant Transformation, Bethesda, MD, September 1999.
C45. Fluorescence Optical Techniques in Modern Biology Symposium, Cedars-Sinai Medical Center, Applications of Two-Photon Microscopy to Imaging in Tissues, October 1999.
C46. UCSF Breast Oncology Program research meetings, Detecting Breast Cancer with Light, December 1999.
C47. UCLA Crump Institute for Biological Imaging, Detecting Breast Cancer with Light, February 2000.
C48. Oregon Medical Laser Center's Advisory Board Meeting,, The Future of Photons for Medical Diagnosis, June 2000.
C49. Advanced Optical Technologies in Medical Diagnostics, Berlin, Germany, June 2000.
C50. NIH Workshop on Benchtop to Bedside Technologies, Biomedical Optics as the Translational Research Ideal, September 2000.
C51. UCI, Department of Physiology and Biophysics 2000-2001 Seminar Series, October 2000.
C52. UCI/AVON Breast Cancer Research and Care Symposium, Photon Migration Spectroscopy as a New and Unique Diagnostic Modality, New York City, November 2000.
C53. University of Arizona, Workshop on Angiogenesis: Detection, Therapy, and Function, Photomedicine and Cancer: Unique Opportunities for Translational Research, November 2000.
C54. Beckman Institute Workshop, University of Illinois, Urbana-Champaign, Lasers in Biology and Medicine, November 2000.
C55. Duke University, Fitzpatrick Photonics Center Convocation, Photonics in Biology and Medicine, April 2001.
C56. UCLA Crump / General Electric / LSI Molecular Imaging Seminar Series, Functional Diffuse Optical Spectroscopy of Human Breast Tissue, February 2002. (webcast at http://video.crump.ucla.edu/)
C57. University of Tennessee, Dept. of Chemistry departmental seminar series, Functional Diffuse Optical Spectroscopy of Thick Tissues: Towards the Development of Optical Mammography, February 2002.
C58. Oak Ridge National Laboratory, Functional Diffuse Optical Spectroscopy of Thick Tissues: Towards the Development of Optical Mammography, February 2002.
C59. Chao Family Comprehensive Cancer Center: Advances in the Therapy of Cancer, Non-Invasive Chemotherapy Monitoring of Breast Cancer using Bedside Optical Probes, June 2002.
C60. NIH Interagency workshop on Optical Imaging: The Role of Optical Methods in the Clinical Management of Breast Cancer, September 2002.
C61. Cedars Sinai Department of Surgery Colloquium: Modern Techniques in Optical Imaging, November 2002.
C62. NIH Biomedical Imaging Research Opportunities Workshop, Optical Imaging Across Spatial Scales, January 2003.
C63. UPenn BCMCXC Symposium, Development of Diffuse Optical Spectroscopy for Quantitative Characterization of Thick Tissues, July 2003.
C64. The City of Hope Comprehensive Cancer Center, The Role of Optical Imaging in Breast Cancer Detection, December 2003.
C65. Washington University Small Animal Imaging Resource Advanced Symposium: Molecular Imaging of Cancer, Functional Optical Imaging of Breast Cancer, March 2004.
C66. Rice University Dept. of Bioengineering Seminar Series, Multi-Dimensional Optical Imaging, March 2004.

C67. University of Tennessee Dept. of Chemistry Honors Day, Tissue Optical Spectroscopy: Turning People into Cuvettes, May 2004.
C68. UCLA Dept. of Physics and Astronomy Seminar Series, Multi-Dimensional Optical Imaging in Thick Tissues: Contrast across spatial scales, May 2004.
C69. Northwestern University Biomedical Engineering Seminar, The Role of Diffuse Optics in Breast Cancer Detection, May 2004.
C70. Beckman Fellows Symposium, California Institute of Technology, Optical Spectroscopy & Imaging in Thick Tissues, May 2004.
C71. National Cancer Institute/NTROI Breast Cancer Retreat, Broadband Measurements of Malignant Tumors: Development of a Tissue Optical Index, June 2004.
C72. Medical Free Electron Laser/AFOSR Investigator Meeting, Harvard Medical School, Optical Technologies in Wound Healing: Imaging Across Spatial Scales, December 2004.
C73. University of Texas, Austin, Biomedical Engineering Departmental Seminar, March 2005.
C74. NIH NCRR/NIBIB joint P41 Center Principal Investigators Meeting, Multi-Dimensional Optical Imaging: Contrast Across Spatial Scales, June 2005.
C75. Medical Free Electron Laser/AFOSR, Stanford University, Diffuse Optical Spectroscopy for Monitoring Wounds and Trauma, September 2005.
C76. NIH National Center for Research Resources Advisory Council Meeting, Translating Optical Technologies from Bench to Bedside May 18, 2006.
C77. Founders Series Lecture, Vanderbilt University Institute of Imaging Science, Medical Imaging in Thick Tissues using Diffuse Optics, October, 2006.
C78. Biomedical Photonics Symposium in Toyko, Biomedical Photonics in 21st Century: Potential in Optical Device, plenary lecture: Medical Imaging with Light, December 2006.
C79. Molecular Imaging Program Seminar Series, Stanford University, Medical Imaging in Thick Tissues using Diffuse Optics, June 2007. https://med.stanford.edu/mips/events/previous-seminars/mi_seminar/2007.html
C80. Washington University, Department of Biomedical Engineering 10th Anniversary Symposium lecture: Medical Imaging in Thick Tissues using Diffuse Optics, June 2007.
C81. Broadcom Corporation, Engineering Optical Technologies in Medicine, Newport Beach, CA, July 31, 2007.
C82. Rice University, McIntire Lecture, Medical Imaging in Thick Tissues using Diffuse Optics, April 2008.
C83. University of Arizona, Optical Science College Colloquium, Medical Imaging in Thick Tissues using Diffuse Optics, May 2008. https://www.optics.arizona.edu/colloquium
C84. Stanford University, OSA Student Chapter, Multi-Dimensional Optical Imaging in Thick Tissues: Contrast across Spatial Scales, May 2008.
C85. University of Pennsylvania, Chemical Biophysics Mini-Symposium, Spectroscopy and Imaging in Medicine: Moving Benchtop Optical Technologies to the Bedside, March 19, 2009.
C86. Rochester Institute of Technology, Imaging Science Seminar, Spectroscopy and Imaging in Medicine: Moving Benchtop Optical Technologies to Bedside, May 13, 2009.
C87. University of Rochester, Institute of Optics and Department of Biomedical Engineering, Joint Colloquium Speaker, May 14, 2009. https://www.hajim.rochester.edu/optics/news-events/events/archives/2009/051409-tromberg.html
C88. Boston University Photonics Center, Future of Light Symposium, Medical Imaging in Thick Tissues using Spatially and Temporally Modulated Light, November 16, 2009.
C89. University of Minnesota, Department of Biomedical Engineering Seminar Series, March 29, 2010.
C90. Dartmouth University, Norris Cotton Cancer Center, Grand Rounds, Diffuse Optical Spectroscopy and Imaging of Breast Cancer, July 22, 2010.
C91. University of California, Riverside, Bioengineering Distinguished Speaker Colloquium Series, November 3, 2010.

C92. University of St. Andrews, Scotland, Cancer Colloquium, The role of diffuse optical imaging in breast cancer detection and treatment, November 11, 2010.
C93. Texas A&M University, Department of Biomedical Engineering Seminar Series, November 19, 2010.
C94. University of Pennsylvania, Department of Physics, Advances in Biomedical Optics Colloquium Series, March 1, 2011.
C95. University of Pennsylvania, Britton Chance: His Life Times and Legacy, "Bio-economics: Supply and Demand According to Chance", June 4, 2011.
C96. National Academies "Harnessing Light" Panel Presentation on Biophotonics and Biomedical Optics, Beckman National Academy Center, August 23, 2011.
C97. MD Anderson Cancer Center, University of Texas, Houston Texas, Department of Radiology Colloquium, "Optical Imaging in Breast Cancer Detection and Treatment", October 10, 2011.
C98. University of Virginia, Department of Biomedical Engineering Seminar Series, October 20, 2011.
C99. University of California, San Francisco, Departments of Radiology and Physical Sciences Oncology Center, October 26, 2013.
C100. Cornell University, Department of Biomedical Engineering Seminar Series, November 10, 2011.
C101. Saitama University Medical Center, Cancer Colloquium, Saitama, Japan, December 1, 2011.
C102. Tokyo National Defense Medical College, Optics and Photonics Seminar Series, December 2, 2011.
C103. Hamamatsu Corporation Lecture Series, Hamamatsu, Japan, December 5, 2011.
C104. Sackler Lecturer, Department of Bioengineering, School of Engineering, Tel Aviv University, Tel Aviv, Israel: December 20 and 22, 2011.
C105. University of Amsterdam, Department of Bioengineering, April 3, 2012.
C106. UC Systemwide Tech Transfer Office, Proof of Concept Awards Symposium, April 5, 2012.
C107. Institute of Photonic Sciences (ICFO), Barcelona, Spain, June 5, 2012.
C108. Keynote Lecture, International Center for Scientific Debate (B-Debate), La Caixa Foundation, Barcelona, Spain, June 6, 2012.
C109. Dankook Medical Laser Center, Departments of Biomedical Engineering and Otolaryngology Dankook University, Cheonan, Korea, July 10, 2012.
C110. Gwangju Institute of Science and Technology (GIST), Department of Biomedical Engineering, Gwangju, Korea. July 11, 2012.
C111. Korea University, Departments of Biomedical Engineering and Otolaryngology, Seoul, Korea, July 12, 2012.
C112. 30th Anniversary Celebration, Institute of Ultrafast Spectroscopy and Lasers, City College of New York, October 9, 2012.
C113. University of Birmingham, Physical Sciences of Imaging in the Biomedical Sciences Lecture Series, March 18, 2013.
C114. Cranfield University, Department of Engineering Photonics, Bedfordshire, UK, March 19, 2013.
C115. University of Texas, Austin, Department of Biomedical Engineering Seminar Series, April 11, 2013.
C116. Advanced School on Biophotonics Brazil: Sao Carlos Institute of Physics, University of Sao Paulo, Brazil, April 15-20, 2013.
C117. University of California NanoSystems Institute Seminar Series, April 23, 2013.
C118. LG Electronics Advanced Research Institute, Materials & Components Laboratory, Seoul, Korea, April 26, 2013.
C119. First International BLI-Korea Workshop, Jeju Island, Korea, April 28-29, 2013.
C120. BLI-Korea Dedication Ceremony, Dankook University, Cheonan, Korea, April 30, 2013.
C121. Cameron Lecturer, Department of Medical Physics, University of Wisconsin, Madison, May 2013.
C122. International Graduate Biophotonics Summer School, Ven, Sweden, University of Lund, Sweden, and Technical University of Denmark, June 8-15, 2013.

C123. Vanderbilt University, Department of Biomedical Engineering, Nashville, TN, July 17, 2013.
C124. Workshop on Optics and Photonics Technologies, African Spectral Imaging Network (AFSIN), Institute National Polytechnique Felix Houphouet Boigny, Yamoussoukro, Côte d'Ivoire, Africa, November 4-8, 2013.
C125. University of Western Australia, School of Electrical, Electronic and Computer Engineering and Centre for Microscopy, Characterization and Analysis, December 13, 2013.
C126. University of Pennsylvania, Center for Magnetic Resonance and Optical Imaging (CMROI) Workshop on Imaging Biomarkers, March 18, 2014.
C127. University of Colorado, Boulder, Colorado Computational Optical Sensing and Imaging (COSI) Seminar Series, April 7, 2014.
C128. Cedars-Sinai Medical Center-Department of Surgery/UCI Workshop Retreat, Los Angeles, CA, June 2, 2014.
C129. University of California Systemwide Bioengineering Symposium Dinner, Keynote Speaker, Newport Beach, CA, June 19, 2014.
C130. NIBIB's Second Edward C. Nagy New Investigator Symposium, Bethesda, MD, July 30, 2014, Plenary Speaker.
C131. National Institute of Standards and Technology (NIST), U.S. Department of Commerce, Gaithersburg, MD, September 15, 2014.
C132. Shizouka University, Hamamatsu, Japan, Joint Colloquium on Optics and Photonics in Biology and Medicine, March 25, 2015.
C133. International Graduate Biophotonics Summer School, Ven, Sweden, University of Lund, Sweden, and Technical University of Denmark, June 6-13, 2015.
C134. Invited Talk on June 16, 2015: "Cancer Imaging with Light," Universidad Internacional Menéndez Pelayo (UIMP), *Light Sciences and Technologies for a New World*, (June 15-19, 2015), Santander, Spain.
C135. Department of Mechanical Engineering Colloquium, University of California, Riverside, January 8, 2016.
C136. Bioengineering Department Seminar, University of California, Los Angeles, March 31, 2016.
C137. Distinguished Biophotonics & Bioimaging Seminar, Department of Biomedical Engineering, University of California, Davis, CA, March 2, 2016.
C138. Fitzpatrick Institute for Photonics and Medical Imaging Training Program Joint campus wide lecture, Duke University, April 6, 2016.
C139. Keynote Lecture: The Third Annual Bench to Bedside Symposium, Gavin Herbert Eye Institute, UC Irvine, April 1, 2016.
C140. NSF-PREM Symposium, Hampton University, Hampton, VA, May 20, 2016
C141. Department of Biomedical Engineering, Linkoping, University, Sweden, June 10, 2016
C142. Colloquium, Télécom Physique Strasbourg and Institut de Physique Biologique, University of Strasbourg, France, June 14, 2016
C143. Dasari Lecture, Laser Biomedical Engineering Laboratory, Massachusetts Institute of Technology, November 1, 2016.
C144. Resident lecture, Opportunities in Biomedical Optics, Department of Surgery, UCI Medical Center, December 1, 2016.
C145. 20th Annual Future of Light: Optics for Cancer Imaging, Boston University Photonics Center, December 7, 2016.
C146. Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), Puebla, Mexico, September 6-8, 2017
C147. Colorado State University School of Biomedical Engineering Seminar Series, December 4, 2017.
C148. UCI Chief Executive Roundtable, Winter Forum: "Maximizing Athletic Performance and Health" February 8, 2018, Invited Panel Discussion Speaker and Leader.
C149. Kavli Foundation Workshop: Sensing the Future, the Future of Sensing, Rice University, Houston, TX, May 7-8, 2018.

C150. The Second Britton Chance International Symposium on Metabolic Imaging and Spectroscopy, University of Pennsylvania, Perelman School of Medicine, PA, June 11, 2018.
C151. The University of Arkansas, Department of Biomedical Engineering, Fayetteville, AK, September 21, 2018
C152. Hamamatsu Photonics Corporation, Photon Fair, Keynote Lecture: Wearable and Bedside Biophotonics for Personalized Health, Hamamatsu, Japan, November 1, 2018
C153. Hampton University, NSF PREM Center Annual Retreat, Hampton, VA, November 16, 2018

Professional Meetings (Prior to joining NIH)

PM1. International Society for Optics and Photonics, Synchronous Fluorescence Studies of Anthracycline Anti-tumor Drugs, Los Angeles, CA, January 1989.
PM2. International Society for Optics and Photonics, Singlet Oxygen Generation of Porphyrin and Phthalocyanin Photosensitizers, Los Angeles, CA, January 1989.
PM3. American Society for Photobiology, Workshop on Photodynamic Therapy, Transcutaneous Oxygen Electrodes for the Evaluation of the Efficiency of Photodynamic Therapy, Boston, MA, July 1989.
PM4. International Society for Optics and Photonics Institute on Photodynamic Therapy, Oxygen Monitoring During Photodynamic Therapy, San Diego, CA, January 1990.
PM5. International Society for Optics and Photonics, Laser-Tissue Interaction Session: Monitoring the Efficiency of Photodynamic Therapy in Tissue, Los Angeles, CA, January 1990.
PM6. American Society for Photobiology National Meeting, Vancouver, Fiber Optic Chemical Sensors in Bio-Analysis, British Columbia, Canada, June 1990.
PM7. International Society for Optics and Photonics, Laser-Tissue Interaction Session: Indirect Spectroscopic Detection of Singlet Oxygen during Photodynamic Therapy, Los Angeles, CA, January 1991.
PM8. MedTech-91, Determination of Tissue Optical Properties Using Multifrequency Phase and Modulation Spectroscopy, Berlin, Germany, May 1991.
PM9. Pacific Conference on Chemistry and Spectroscopy, Optical Property Measurements in the Multiple-scattering Regime Using Frequency-domain Photon Migration, Anaheim, CA, October 1991.
PM10. International Society for Optics and Photonics, Laser-Tissue Interaction Session: Monitoring Photochemistry in Tumors Using Frequency Domain Photon Migration, Los Angeles, CA, January 1992.
PM11. International Society for Optics and Photonics, Photon Migration and Imaging in Random Media: Properties of Photon Density Waves at Boundaries, Los Angeles, CA, January 1993.
PM12. American Urological Association, Eighty-Eighth Annual Meeting, Diagnostic Applications of Lasers, San Antonio, TX, May 1993.
PM13. Optical Society of America, Advances in Optical Imaging and Photon Migration Topical Meeting, Frequency-Domain Photon Migration Spectroscopy in Turbid Media, Orlando, FL, March 1994.
PM14. American Society for Lasers in Surgery and Medicine Annual Meeting, Principles of Laser-Based Diagnostics, Toronto, Canada, April 1994.
PM15. Gordon Research Conference on Lasers in Medicine and Biology, What Does Microirradiation Really Do To Cells?, Meriden, NH, July 1994.
PM16. International Society for Optics and Photonics, Photon Migration and Imaging in Random Media: Frequency Domain Photon Migration in Small Volumes, San Jose, CA, February 1995.
PM17. American Society for Lasers in Medicine and Surgery, Light and Drug Dosimetry during Photodynamic Therapy, San Diego, April 1995.
PM18. Life Sciences Industry Council: Second Annual Technology Showcase, Photon Migration: A new optical technique for non-invasive medical diagnostics, Irvine, CA, September 1995.

PM19. Engineering Foundation, Frequency-Domain Photon Migration for Tissue Spectroscopy, Snowbird, UT, July 1995.
PM20. Rank Prize Funds Lecture, Diagnostic and Therapeutic Applications of Tissue Optical Properties, Grasmere, England, May 1996.
PM21. American Society for Photobiology National Meeting, Monitoring Tissue Optical and Physiological Properties Using Frequency-Domain Photon Migration, Atlanta, GA, June 1996.
PM22. Optical Society of America, Topical Meeting on Biomedical Optical Spectroscopy and Diagnostics, Frequency-Domain Photon Migration (FDPM) Measurements of Tissue Optical Properties for Biomedical Diagnostics, Orlando, FL, 1996.
PM23. Biomedical Optics Society, Annual Meeting, Characterization of Breast Tumor Optical and Physiological Properties using Frequency Domain Photon Migration, San Jose, CA, February 1997.
PM24. Humboldt University, First International Symposium on Advances in Optical Techniques for Breast Tumor Detection, Relationship between Optical and Physiological Properties in Breast Tumors, Berlin, Germany, June 1997.
PM25. Engineering Foundation Meeting, Advances in Optical Technologies for Medicine and Surgery, Photon Migration Methods for Characterizing Breast Tumor Optical and Physiological Properties, July 1997.
PM26. Radiological Society of North America, Non-Invasive Optical Detection of Breast Cancer Using Frequency-Domain Photon Migration (FDPM), Chicago, IL, December 1997.
PM27. First World Congress of Photomedicine in Gynecology, Frequency Domain Photon Migration for Tissue Diagnostics, and Light and Photosensitizer Dosimetry in the Endometrium. Zurich, Switzerland; February 1998.
PM28. PM28. Optical Society of America, Non-invasive Characterization of Breast Lesion Optical and Structural Properties using multi-wavelength, multi-frequency photon density waves co-registered with ultrasound imaging, Orlando, FL, March 1998.
PM29. Optical Society of America, Optical and Physiological properties of Tumors, Baltimore, MD, October 1998.
PM30. International Society for Optics and Photonics, The Future of Optical Tomography, San Jose, CA, February 1999.
PM31. International Society for Optics and Photonics, In-vivo Measurements of Human Breast Optical Properties Reveal Menopausal-Dependent Absorption and Scattering Variations, San Jose, CA, February 1999.
PM32. United Engineering Foundation, Two-Photon Imaging in Thick Tissues: How Deep Can We Go? Kona, HI, August 1999.
PM33. Optical Society of America, Annual Meeting, Strategies for Optimizing Sensitivity of Remitted Light Signals to Dysplastic Transformation, Santa Clara, CA, September 1999.
PM34. Optical Society of America, Annual Meeting, Photon Migration Spectroscopy of Normal and Tumor-Containing Breast Tissues: Effects of Menopausal Status, Estrous Cycle and Malignant Transformation, Santa Clara, CA, September 1999.
PM35. Optical Society of America, Biomedical Topical Meeting, Intralipid or Patient, IRB or Not to Be, Miami, FL, April 2000.
PM36. Gordon Research Conference on Lasers in Biology and Medicine, Advances in Intravital Imaging, June 2000.
PM37. Radiological Society of North America, Optical Imaging: A New Diagnostic Technique, Chicago, IL, November 2000.
PM38. A. E. Profio Memorial Lecture, International Photodynamic Association 8th World Congress on Photodynamic Medicine, Optical Diagnostics: Past, Present, and Future, Vancouver, BC, Canada, June 2001.
PM39. Association of University Radiologists 50th Anniversary meeting, Optical Diagnostics, Phoenix, AZ, April 2002.

PM40. Society of Nuclear Medicine: Modern Imaging Technology: Basic Science in Medical Applications workshop, Modern Techniques in Optical Imaging, Los Angeles, CA, June 2002.
PM41. SPIE-Biomedical Optics Society Annual Meeting, "Hot Topics" Lecture: Optical Methods in Breast Cancer, San Jose, CA, January 2003.
PM42. ASLMS Optical Diagnostic Imaging Workshop, Diffuse Optical Spectroscopy and Imaging, Anaheim, CA, April 2003.
PM43. German-American Frontiers of Engineering Symposium, Quantitative In-Vivo Optical Imaging, Germany, April 2003.
PM44. Society for Molecular Imaging Annual Meeting, Defining Contrast in Optical Mammography Using Broadband Diffuse Optical Spectroscopy (DOS), San Francisco, CA, August 2003.
PM45. 2nd Annual UCSD Symposium on Biomedical Imaging and Bioengineering, The Role of Optical Imaging in Breast Cancer Detection, San Diego, CA, November 2003.
PM46. American Institute of Medical and Biological Engineers (AIMBE) Annual Event: Imaging and Bioengineering: Partners for the Future, Multi-Dimensional Tissue Optical Imaging, Washington, DC, February 2004.
PM47. UC Systemwide Bioengineering Symposium, Optics in Breast Cancer Detection, Irvine, CA, June 2004.
PM48. National Science Foundation US - Egypt workshop, Laser Chemistry and Applications to Materials and Biomedical Research, Cairo, Egypt, October 2004.
PM49. International Conference on Tumor Progression and Therapeutic Resistance, Functional Optical Imaging of Breast Cancer, Philadelphia, PA, November 2004.
PM50. SPIE 18th Annual Symposium-Photonics West, Workshop on Molecular Imaging, San Jose, CA, January 2005.
PM51. St. Andrews University Cancer Colloquium, The Role of Optics in Breast Cancer Detection and Clinical Management, St. Andrews, Scotland, February 2005.
PM52. International Laser Safety Conference 2005, Medical Imaging Using Lasers, Marina del Rey, CA, March 2005
PM53. Institut Pasteur EuroConference, Tissue repair and ulcer/wound healing: Molecular mechanisms, therapeutic targets and future directions, Paris, France, March 2005.
PM54. National Cancer Institute Special Programs of Research Excellence (SPORE) Investigators Workshop, Clinical Trials Consortium: Optical Technologies in Breast Cancer, Washington. DC, July 2005.
PM55. Molecular Imaging in 2020, Monitoring and Predicting Chemotherapeutic Response in Breast Cancer, Jackson Hole, WY, September 2005.
PM56. American Institute for Medical and Biological Engineering (AIMBE) 15th Annual Event, Plenary Session Lecture, Optical Imaging Across Spatial Scales, Washington, DC, February 2006.
PM57. Biophotonics in Australia: Showcase and Strategic Planning, Plenary Session Lecture, Medical imaging in Thick Tissues using Diffuse Optics, Sydney, Australia, February 2006.
PM58. Optical Diagnostic Imaging from Bench to Bedside at the National Institute of Health, Overcoming Barriers to the Translation of Optical Technologies, Bethesda, MD, September 25-27 2006.
PM59. Association of Pathology Chairs, New Frontiers for Pathology Education, Plenary lecture, Optical Imaging: Gross Examination without an Excised Specimen, Colorado Springs, CO, July 18-21 2007.
PM60. 3rd Asian and Pacific Rim Symposium on Biophotonics, Plenary lecture, Multi-Dimensional Optical Imaging in Thick Tissues: Contrast Across Spatial Scales, Cairns, Australia, July 9-11, 2007.
PM61. Advanced Technology Applications for Combat Casualty Care (ATACCC), In-Vivo Optical Imaging of Cerebral Ischemia and Perfusion in a Brain Injury Model, St. Petersberg, FL, August 2007.

PM62. San Antonio Breast Cancer Meeting, Molecular Imaging Mini Symposium: Non-Invasive Optical Methods for Breast Cancer Detection and Management, December 13-16, 2007, Plenary Speaker.
PM63. International Society for Optics and Photonics (SPIE), Hot Topics Session, Monitoring and Predicting Chemotherapy Using Diffuse Optics, San Jose, CA, January 19, 2008, Plenary Speaker.
PM64. 1st International Congress on Biophotonics (ICOB), Engineering Optics from Benchtop to Bedside, Sacramento, CA, February 3-7, 2008, Keynote Address.
PM65. Optical Society of America, Biomedical Topical Meeting, Clinical Translational Impact of Diffuse Optics in Breast Cancer, St. Petersburg, FL, March 16-19, 2008, Invited Speaker.
PM66. Experimental Biology Meeting, Microscopy Symposium, Label-free Molecular Imaging of Blood Vessels using Multi-dimensional Non-linear Microscopy, San Diego, CA, April 6, 2008, Invited Speaker.
PM67. National Center for Research Resources, Annual Principal Investigators Meeting, National Institutes of Health, Tissue Optical Imaging Using Spatially Modulated Structured Illumination, Bethesda, MD, November, 2008, Invited Speaker.
PM68. San Antonio Breast Cancer Meeting, Optical Imaging and Spectroscopy in Breast Cancer Detection and Management, San Antonio, TX, December 2008, Invited Poster Symposium Lecture and Moderator.
PM69. The Arnold & Mabel Beckman Foundation and Keck Initiatives Conference, Vision for the Future through Interdisciplinary Discovery, Advances in Tissue Optical Spectroscopy and Imaging, Irvine CA, January 23-25, 2009, Invited Speaker.
PM70. 56th Annual Western Spectroscopy Association Conference, Spectroscopy and Imaging in Medicine, Moving Benchtop Optics to the Bedside, Pacific Grove, CA, January 28-30, 2009, Plenary Speaker.
PM71. National Institutes of Health Workshop on Optical Diagnostic Imaging from Bench to Bedside, Barriers to Clinical Translation of Optical Technologies, Bethesda, MD, October 2009, Invited Speaker.
PM72. International Symposium on Topical Problems of Biophotonics, Diffuse Optical Spectroscopic Imaging using Spatially and Temporally Modulated Light, Nizhny Novgorod, Russia, July 19-24, 2009, Plenary Speaker.
PM73. The Pittsburgh Conference (PITTCON 2010), Technical Program, Spectroscopy and Imaging in Medicine: Moving Benchtop Optical Technologies to the Bedside, February 27-March 3, 2010, Orlando FL, Invited Speaker.
PM74. Optical Society of America, Biomedical Topical Meeting, Bio-Optics in Clinical Applications, Clinical Metabolic Imaging using Diffuse Optics, Miami, FL, April 11-14, 2010, Invited Speaker.
PM75. Future Diagnostics Conference, Optical Imaging of Cancer Therapies, Cambridge Healthtech Institute, UC Irvine, April 27, 2010, Invited Speaker.
PM76. Laser Applications in the Life Sciences (LALS), Medical Imaging using Spatially and Temporally Modulated Light, Oulu Finland, June 2010, Plenary Speaker.
PM77. Gordon Research Conference on Lasers in Biology and Medicine, Diffuse Optical Imaging of Chemotherapy Response, New Hampshire, July 25-29, 2010, Invited Speaker.
PM78. World Molecular Imaging Conference Satellite Meeting, Medical Imaging in Thick Tissues with Light, Seoul, South Korea, September 6, 2010, Invited Speaker.
PM79. International Congress on Biophotonics (ICOB), Biophotonics in drug discovery, Quebec, Canada, September 27, 2010, Invited Panel Discussion Speaker and Leader.
PM80. American College of Radiology Imaging Network (ACRIN) National Meeting, Experimental Imaging Sciences Committee, DOSI technology in Breast Cancer Imaging, Washington, D.C., October 1, 2010.

PM81. Royal Society Lecture, Theo Murphy meeting on Biomedical Optics-The Kavli Royal Society International Center, England, DOSI in Breast Cancer Detection and Treatment, November 8-10, 2010.
PM82. American Society for Clinical Oncology (ASCO) Annual Meeting, Chicago, IL, ACRIN Trial of Optical Imaging for Predicting Breast Cancer Chemotherapy Response. June 6, 2011.
PM83. California Biophotonics Alliance/CBST Retreat, Lake Tahoe, CA, Engineering Optics from Blackboard to Bedside. July 11-13, 2011.
PM84. Plenary Lecture, International Photonics Conference, National Cheng Kung University (NCKU), Tainan, Taiwan, Medical Imaging Using Spatially and Temporally Modulated Light. December 10, 2011.
PM85. PM85. Plenary Lecture, The Optical Society (OSA) Topical Meeting on Biomedical Optics, Miami, FL, April 29, 2012.
PM86. World Molecular Imaging Society-Harvard Medical School, Molecular Imaging: Advanced Molecular Imaging and its Clinical Translation, Fairmont Copley Plaza, Boston, October 15, 2012.
PM87. International Society for Optical Engineering (SPIE), Photonics West, Conference 8577-Optical Biopsy, San Francisco, CA, February 6, 2013.
PM88. Keynote lecture, Institute of Physics (IOP), London, Measurement Science and Technology 90th Anniversary Symposium, March 21, 2013.
PM89. Britton Chance Centennial Symposium on Metabolic Imaging and Spectroscopy, University of Pennsylvania, Philadelphia, PA, June 18, 2013.
PM90. Vanderbilt University Frontiers of Biomedical Imaging Science IV, Vanderbilt University Institute of Imaging Science, Nashville, TN, July 16, 2013.
PM91. Frontiers and Challenges in Laser-Based Biological Microscopy Conference, Telluride Science Center, Telluride, CO, August 5, 2013.
PM92. World Molecular Imaging Society-Harvard Medical School, Molecular Imaging Course: Advanced Molecular Imaging and its Clinical Translation, Fairmont Copley Plaza, Boston, October 27-30, 2013.
PM93. American College of Radiology Imaging Network (ACRIN), ECOG-ACRIN National meeting, Experimental Imaging Sciences Committee, Hollywood, FL, November 15, 2013.
PM94. International Medical Innovation Technology Conference, Tel Aviv University, Tel Aviv, Israel, November 21, 2013.
PM95. Radiological Society of North America (RSNA) National Meeting, Refresher Course in Breast Imaging, Chicago, IL, December 5, 2013.
PM96. Australia New Zealand Conference on Optics and Photonics (ANZCOP), Perth, Australia, December 11, 2013, Plenary Lecturer.
PM97. International Society for Optical Engineering (SPIE), BiOS/Photonics West Hot Topics, Photonics West, Conference, San Francisco, CA, February 1, 2014, https://spie.org/news/pw14-_hottopics_tromberg, Plenary Speaker.
PM98. International Society for Optical Engineering (SPIE), BiOS/Photonics West, 25th Anniversary Session on Laser Tissue Interactions, February 2014, Invited Lecturer.
PM99. LALS 2014: International Conference on Laser Applications in Life Sciences, Ulm, Germany, July 2, 2014, Plenary Lecturer.
PM100. San Antonio Breast Cancer Symposium (SABCS) San Antonio, TX, December 2014, General Session Speaker.
PM101. International Society for Optical Engineering (SPIE), BiOS/Photonics West, Dynamics and Fluctuations in Biomedical Photonics XII, February 2015, Invited Lecturer.
PM102. Physics of Quantum Electronics (PQE), Snowbird, Utah, January 4-8, 2015, Plenary Speaker.
PM103. 10th Workshop and Conference on Advanced Multiphoton and Fluorescence Lifetime Imaging Techniques FLIM2015. Saarland University, Saarbrücken, Germany, June 17-19, 2015

"In Vivo Multi-Photon Microscopy Studies in Human Skin," Plenary Lecturer.

PM104. Keynote Lecturer: "Advanced Imaging of Cutaneous Lesions." PanAmerican Society for Pigment Cell Research (PASPCR) Conference 2015: The Melanocyte and Its Multiple Niches– New Biology in Health and Disease. September 27-30, 2015, Orange, California. Plenary Lecturer.

PM105.Frontiers and Challenges in Laser-Based Biological Microscopy Conference, Telluride Science Center, Telluride, CO, August 3-7, 2015.

PM106.Optical Convergence Technology Conference, Gwangju, Korea, October 8, 2015, Keynote Speaker.

PM107.Hamamatsu West Coast Workshop on Wearables and POC, October 20-21, 2015, Keynote Speaker.

PM108.2015 Optical Society (OSA) Annual meeting, Frontiers in Optics (FiO) - Oct 18-22, 2015, San Jose, CA, Invited Talk: "Biophotonics and the Future of Personal Health Care".

PM109.The Optical Society (OSA), Clinical and Translational Biophotonics, April 25-28, 2016, Fort Lauderdale, FL. Invited Speaker: "Predicting Chemotherapy Response in Breast Cancer using Diffuse Optical Spectroscopic Imaging (DOSI): Results from the ACRIN 6691 Multi-Center Trial."

PM110.International Society for Optical Engineering (SPIE), Translational Biophotonics 2016 (Rice Symposium) May 15-16, 2016, Houston, TX. Invited Speaker: "Biophotonics and the future of personal health care."

PM111.Invited Speaker and Session Co-Chair, Imaging in 2020, 2016 Conference, Jackson Lake, Wyoming, September 19, 2016.

PM112.International Symposium of Biomedical Engineering, Tokyo Medical and Dental University, Nov. 10-11, 2016

PM113.SPIE Photonics West, San Francisco, CA, Biophotonics Executive Forum: "Wearables, Wireless, and Biophotonics: Novel Opportunities in Point-of-Care Testing" January 28-February 2, 2017.

PM114.American Physical Society March Meeting 2018, "Development of Wearable and Bedside Biophotonics Technologies for Personalized Health" March 5-9, 2018, Invited Speaker.

PM115.The Optical Society Biophotonics Congress Biomedical Optics Meeting, Hollywood, FL, April 3-6, 2018. Invited Talk: "Developing Quantitative Optical Imaging Endpoints for Clinical Medicine"

PM116.Gordon Conference: Lasers in Medicine and Biology, Lewiston, ME, July 8-13, 2018.

PM117.MHSRS Meeting, Kissimmee, FL, August 20-23, 2018

Lectures as NIBIB Director (2019-present)

1. ASEE 2019 Engineering Deans Council, Keynote, Washington, D.C., February 4, 2019
2. National Advisory Council, Fogarty International Center, NIH, Bethesda, MD February 12, 2019
3. IMAG Multi-Scale Modeling Consortium, NIH Bethesda, MD, March 6, 2019
4. AAPM Data Science Workshop, Alexandria, VA March 21, 2019
5. Innovation in Technologies to Extend the Golden Hour Workshop, Bethesda, MD, March 21, 2019
6. AIMBE 2019 Annual Meeting, Keynote, Washington, D.C., March 24, 2019
7. UC Irvine Institute for Clinical and Translational Science, Translational Science Day, Keynote, May 1, 2019
8. 2019 BMES Biomedical Engineering Education Summit, Case Western Reserve University, Cleveland, Keynote, May 30, 2019
9. Academy for Radiology and Biomedical Imaging Research, Congressional Reception, Keynote, June 4, 2019

10. UC Systemwide Bioengineering Symposium 2019, Keynote, UC Merced, June 30, 2019
11. BRAIN Multi-Council Working Group, NIH, Bethesda, MD, August 20, 2019
12. National Advisory Council, National Institute for Arthritis Musculoskeletal and Skin Diseases, September 10, 2020
13. Carnegie Mellon Forum on Biomedical Engineering, Carnegie Mellon University, Keynote, Sept 20, 2019
14. Institute for Engineering in Medicine Annual Symposium, Univ of Minnesota, Keynote, Sept 23, 2019
15. Sweden National Biomedical Engineering Symposium, Keynote, Linkoping, Sweden, October 2, 2019
16. NAM 2019 Annual Meeting: Health and Technology Interest Group (IG18): Technology in the Future of Health and Healthcare, Washington, D.C., October 20, 2019
17. National Advisory Committee on Research on Women's Health, NIH, Bethesda, MD, October 23, 2019
18. Synthetic Biology Consortium Meeting, NIH, Bethesda, MD, October 28, 2019
19. Diabetes Technology Society Annual Meeting, Keynote, Bethesda, MD, November 15, 2019
20. Memorial Sloan Kettering Cancer Center, Department of Radiology Grand Rounds, November 18, 2019
21. National Advisory Council, National Institute of General Medical Sciences, January 16, 2020.
22. 20th Anniversary Demystifying Medicine Lecture, NIH, Bethesda, MD, January 21, 2020
23. Engineering Giant Leaps in Medicine, Keynote, Purdue University, Weldon School of Engineering, January 31, 2020.
24. SPIE Photonics West Annual Meeting, Wearable and implantable technologies in human health, Keynote, February 1, 2020
25. SPIE Photonics West Annual Meeting, Photonics Commercialization Keynote, February 1, 2020.
26. SPIE Photonics West Annual Meeting, BiOS Neurotechnologies Plenary Session Keynote, February 2, 2020
27. John Hopkins University, Department of Biomedical Engineering Lecture, February 10, 2020.
28. University of Arizona, Department of Biomedical Engineering and BIO5 Institute Lectures, February 18, 2020.
29. Virtual Trans-NIH COVID-19 Science Meeting, Point of Care Diagnostics, March 25, 2020.
30. 120th National Advisory Committee to the Director (ACD), NIH, RADx Tech Briefing, June 10, 2020
31. Fogarty Global Health Program for Fellows & Scholars, July 15, 2020.
32. Data Science and Innovation in Africa Workshop, "Harnessing Innovation & Entrepreneurship in Data Science for Health", August 12, 2020.
33. Cold Spring Harbor Meeting on Genome Engineering: CRISPR Frontiers, RADx briefing and panel, August 18, 2020
34. Scientific Dialogs, COVID-19 Diagnostics: NIBIB, FIND, The Global Fund, Nat Acad of Medicine, September 25, 2020
35. Rockefeller Foundation Convening, The Path Forward: Maximizing the Impact of COVID-19 Testing, October 1, 2020.
36. 51st Meeting of the NIH Advisory Committee on Research on Women's Health Lecture, October 20, 2020.
37. NIH IC Directors' 2020 Leadership Forum, October 23, 2020.
38. APHA Special Session Webinar on Covid19 Testing, Rapid acceleration of diagnostic technologies (RADx), Keynote Lecture, October 27th, 2020.
39. Dean's Distinguished Lecturer, School of Engineering, University of Illinois Urbanan-Champaign, October 28, 2020.

40. US Department of Energy, National Virtual Biotechnology Laboratory Symposium, October 28, 2020.
41. 7th Annual Bill & Melinda Gates Foundation/NIH Workshop, Nov 9, 2020.
42. Vanderbilt University Medical Center Discovery Series Lecture, November 19, 2020.
43. Academy of Radiology CIBR steering committee meeting, December 2, 2020.
44. APHL All Lab COVID meeting, Speaker, December 2, 2020
45. 121st National Advisory Committee to the Director (ACD), NIH, Speaker, December 10, 2020
46. University of California Irvine, Beall Center for Applied Innovation, Keynote, December 15, 2020.
47. National Center for Complementary and Integrative Health (NCCIH), Advisory Council January 15, 2021.
48. Berlin Institute of Health & Science Translational Medicine: Translate! 2021, Keynote Lecture, January 26, 2021.
49. National Academy of Engineering, Biomedical Engineering Materials and Applications (BEMA) workshop, Keynote Speaker, February 1, 2021.
50. National Institute of Child Health and Human Development (NICHD) Advisory Council, February 2, 2021.
51. Washington University Open BME 7-department Seminar speaker, February 4, 2021.
52. Office of AIDS Research (OAR), National Advisory Council, February 25, 2021.
53. BRAIN Transformative Non-Invasive Imaging Technologies Workshop, Speaker, March 9, 2021.
54. Georgetown University, Dean's Seminar Series Presentation, March 25, 2021.
55. Illinois Health Data Summit: Vaccination & Post-COVID Health Challenges, Keynote Lecture, April 9, 2021.
56. "Diagnostics and Disease Management Tools for Use in Underserved Populations: An NHLBI Research & Implementation Workshop", April 15, 2021.
57. A Year of RADx Tech Town Hall, April 29, 2021.
58. RADx One Year Celebration, Emory ACME-POCT center, May 4, 2021.
59. Congressional Delegation, National Institutes of Health: RADx briefing and demonstrations, May 17, 2021.
60. Arizona State University, National COVID-19 Diagnostics Summit, Speaker and Panelist, May 20, 2021.
61. DOE Interagency Workshop: The Role of Nanotechnology in the COVID-19 Response, Keynote Speaker, May 25, 2021.
62. Senate Appropriations Committee Congressional Hearing, IC director Panelist, May 26, 2021.
63. Workshop on Multi-Cellular Engineered Living Systems: Keynote Speaker, June 2, 2021.
64. American Society for Artificial Internal Organs (ASAIO) Annual Meeting Keynote Speaker, June 10, 2021.
65. American Association of Physicists in Medicine (AAPM) Annual Keynote Speaker, June 26, 2021.
66. NIBIB Stakeholders for ARPA-H Listening Session, August 11, 2021.
67. Osher Life Long Learning Institute (OLLI), Lecturer, University of California Irvine, August 23, 2021.
68. The MedTech Conference, RADx Tech Special Session Speaker, August 27, 2021.
69. National Institute of Diabetes & Digestive & Kidney Diseases Council Presentation, September 9, 2021.
70. White House Conference on Historically Black College and Universities, Speaker, September 9, 2021
71. Tissue Engineering Next Generation Conference, Keynote speaker, September 23, 2021
72. Point Of Care Technology Research Network, All-Hands Meeting, RADx briefing speaker, September 27, 2021.

73. Academy of Radiology Research Roundtable, Speaker, September 28, 2021.
74. The Great Scientific Exchange (SCIX) Tuan Vo-Dinh Award Symposium Speaker, September 30, 2021.
75. Merrill C. Sosman Lecturer, MGB Radiology, Harvard Medical School, October 5, 2021.
76. NIH Office of Research on Women's Health "Pearls of Wisdom" series, October 4, 2021.
77. Global Health Security Action Group: RADx COVID-19 Testing and Research, Speaker, October 15, 2021.
78. National Nanotechnology Initiative Presentation for NNI Strategic Plan, October 18, 2021.
79. UC Radiology Systemwide Grand Rounds Speaker, November 15, 2021.
80. Data Science-Innovation in Africa: NIH Common Fund Kick-off Meeting, November 30, 2021.
81. NIH Advisory Committee to the Director, RADx briefing speaker, December 10, 2021.
82. NIH/Bill & Melinda Gates Foundation Annual Workshop, December 16, 2021.
83. American Society for Lasers in Medicine and Surgery, Annual Meeting Keynote Lecture, Anaheim, CA, April 30, 2022.
84. NIH Office of Research on Women's Health, Women in Bioengineering, Technology, and Data Science Summit", Speaker and Session Moderator, May 11, 2022.
85. National Academies Board on Life Sciences, Spring Board Meeting Lecture, June 7, 2022.
86. Council on Strategic Risk, RADx briefing speaker, June 8, 2022.
87. Robert M. Nerem Symposium Keynote Speaker, Georgia Tech, July 29, 2022
88. University of Wisconsin, Madison, Department of Medical Physics, Emerging Leaders Symposium Keynote Lecture, August 31, 2022
89. SPIE Photonics Industry Summit, Washington, D.C., Keynote Speaker, September 21, 2022.
90. NAE Section 2 Meeting, Plenary session speaker, Washington, D.C., October 3, 2022.
91. Society for Functional Near-Infrared Spectroscopy (SfNIRS) Meeting, Plenary Speaker, Boston, MA, October 9, 2022.
92. Infectious Disease (ID) Week 2022, Special COVID Symposium, Keynote Speaker, Washington, D.C., October 19, 2022
93. NIH Scientific and Clinical Directors Meeting, Speaker, November 16, 2022.
94. CHI Molecular and Precision Medicine, Tri-Con Meeting, Keynote Speaker, San Diego, CA, March 7, 2023
95. CHI Molecular and Precision Medicine, Tri-Con Meeting, Plenary Panelist, San Diego, CA, March 8, 2023
96. 53rd Annual Aubrey O. Hampton Lecturer, Hampton Symposium, Frontiers in Imaging, Mass General Hospital, Boston, MA, March 17, 2023
97. White House COVID-19 Response Team, RADx Briefing Speaker, NIH Vaccine Research Center, March 23, 2023
98. US and Canadian Government Dialogue on Innovation for Pandemics and Outbreaks Meeting, OSTP, RADx briefing speaker, April 4, 2023
99. Bridge to AI Common Fund leadership meeting, NIH IC director presentation & panel discussion, April 17, 2023
100. All of Us, NEI, NIBIB: Opportunities for Ophthalmology Research in Large Research Cohorts Workshop, NIBIB speaker, April 20, 2023
101. North Carolina A&T SRPP Seminar Series Speaker, June 7, 2023
102. ASU/Thermo Fisher Biomedical Diagnostics Webinar Speaker and Panelist, June 14, 2023
103. AIMBE/NIBIB Congressional Briefing and Technology Showcase Speaker, June 27, 2023
104. NIDCD Director's Seminar Series: Technologies and Marketplace Innovations to Improve Health Care Access and Outcomes, Panelist, June 28, 2023
105. NHLBI Sleep Center External Advisory Board, Speaker, August 3, 2023
106. NIDCR National Advisory Council Meeting, Speaker, September 13, 2023
107. FDA CDRH OHT6 Orthopedic Rounds Speaker, October 4, 2023
108. 2023 BMES Biomedical Engineering Education Summit, Seattle Convention Center, Keynote, October 12, 2023
109. 13th Annual Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences (ENDURE) Meeting, Speaker, November 11, 2023
110. Nexus of Neurotech Innovation Meeting, Speaker, November 16,2023

111. Research and Innovation Translation Partnerships in Point-of-Care Technologies Conference and Technology Showcase, Speaker, November 28, 2023
112. University of Texas Southwestern Medical Center, Inaugural David Shiu-Wai Kam Family Lecturer in Biomedical Engineering in Dallas, "Biomedical Engineering Solutions to Medical Challenges in the 21st Century," Speaker, December 6,2023
113. SPIE Photonics West Biophotonics Focus Plenary: Clinical Applications San Francisco, CA Plenary Speaker, January 25, 2024
114. Academy of Radiology Research Roundtable, Speaker, March 5, 2024
115. 2024 School of Engineering and School of Medicine Joint Faculty Research UC Irvine, Keynote, March 11,2024
116. Society for Interventional Radiology Plenary Session Talk Monday, March 25, 2024

News & Media as NIBIB Director (2019-present)

1) **Bruce Tromberg appointed director of NIBIB:** HealthImaging, by Melissa Rohman, Jan. 9, 2019
2) **Bruce J. Tromberg begins term as director of NIBIB:** Radiology Business, by Subrata Thakar https://www.radiologybusiness.com/topics/leadership/bruce-j-tromberg-director-nibib-imaging January 09, 2019
3) **At the Nexus of Contemporary Science:** Bruce Tromberg on the rise of biophotonics, merging multi-disciplinary approaches, and his new role at the NIH
SPIE, by Daneet Steffens
https://spie.org/news/bruce-tromberg_at-the-nexus-of-contemporary-science?SSO=1 March 4, 2019
4) **The BRAIN Initiative: Changing Neuroscience:** Neuroscience Quarterly
https://www.sfn.org/publications/neuroscience-quarterly/summer-2019/the-changing-execution- of-science
Summer 2019
5) **Less Margin for Error:** Radiology Today, by Beth W. Orenstein
https://www.radiologytoday.net/archive/rt0919p10.shtml
Sept. 2019
6) **Listen: Bruce Tromberg, Director, National Institute of Biomedical Imaging and Bioengineering**
Government CIO GovCast
https://govciomedia.com/the-future-of-biomedical-imaging-tech-for-health-care/
Feb. 12, 2020
7) **The many valleys of death for healthcare photonics:** Physics World, by Margaret Harris
https://physicsworld.com/a/the-many-valleys-of-death-for-healthcare-photonics/
Feb. 3, 2020
8) **NIH launches $1M prize challenge to encourage disease diagnostics**
https://homelandprepnews.com/stories/44912-nih-launches-1m-prize-challenge-to-encourage- disease-diagnostics/
Homeland Preparedness News, by Chris Galford Feb. 8, 2020
9) **Bioengineering: A New Frontier for the NIH:** The NIH Catalyst
https://irp.nih.gov/catalyst/v28i2/from-the-deputy-director-for-intramural-research March/April 2020
10) A million volunteers in view
Photonics, by Douglas Farmer
https://www.photonics.com/Articles/A_million_volunteers_in_view/p1/vo181/i1202/a65635 March/April 2020
11) **NIH Launches $1M Competition Targeting Global Health Via Hand-held Diagnostics** Photonics, by Douglas Farmer
https://www.photonics.com/Articles/NIH_Launches_1M_Competition_Targeting_Global/p6/vo185/i1237/a65642
March 16, 2020
12) Celebrating 20 years of the National Institute of Biomedical Imaging and Bioengineering
https://magazine.medlineplus.gov/article/celebrating-20-years-of-the-national-institute-of-biomedical-imaging-and-bioengineering NIH MedLinePlus Magazine

April 6, 2020

13) COVID-19 Testing Gets Boost from NIH Funding Initiative
Genetic Engineering & Biotechnology News
https://www.genengnews.com/news/covid-19-testing-gets-boost-from-nih-funding-initiative/ April 30, 2020
14) **NIH launches $1.5B national initiative meant to hasten COVID-19 tests:** Homeland Preparedness News, by Chris Galford
https://homelandprepnews.com/stories/48411-nih-launches-1-5b-national-initiative-meant-to- hasten-covid-19-tests/
May 1, 2020
15) **Competition for Coronavirus Testing:** Cheddar TV
May 6, 2020
16) **US considering rapid-fire scientific vetting for virus tests:** With August goal in mind, diagnostic development could get TV-based model
Times Higher Education, by Paul Basken
May 7, 2020
17) HHS announces leadership team for Operation Warp Speed
Becker's Hospital Review, by Maia Anderson https://www.beckershospitalreview.com/pharmacy/hhs-announces-leadership-team-for-operation- warp-speed.html
May 15, 2020
18) **Race Is On to Create Rapid Covid-19 Tests for the Fall:** Hundreds of teams are competing a la 'Shark Tank' for NIH funding to develop at-home diagnostic strips and other options
Wall Street Journal, by Brianna Abbott and Amy Dockser Marcus, May 26, 2020
19) Dr. Bruce Tromberg Discusses NIH Offering Seed Money to Entrepreneurs Creating Rapid Testing Technology
20) CNN News with John King http://transcripts.cnn.com/TRANSCRIPTS/2005/27/cnr.05.html May 27, 2020
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