

Curriculum Vitae

David W. Piston

Department of Cell Biology and Physiology

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Education

B.A. Physics 1984 Grinnell College, Grinnell, Iowa

M.S. Physics 1986 University of Illinois, Urbana, Illinois

Ph.D. Physics 1989 University of Illinois, Urbana, Illinois

Thesis: Dynamics of Biological Macromolecules Investigated by Fluorescence Depolarization

Advisor: Prof. Enrico Gratton

Postdoctoral Applied Physics 1989-1992 Cornell University, Ithaca, New York

Research: Quantitative Biophysical Imaging by Two-Photon Excitation Microscopy

Advisor: Prof. Watt W. Webb

Professional Experience

January 2015 to Present: Edward J. Mallinckrodt Jr. Professor and Head, Department of Cell Biology & Physiology, Washington University, St. Louis, Missouri.

January 2015 to Present: Professor of Physics, Professor of Biomedical Engineering, Washington University, St. Louis, Missouri.

January 2015 to March 2017: Adjoint Professor, Department of Molecular Physiology and Biophysics, Vanderbilt University, Nashville, Tennessee.

April 2011 to December 2014: Louise B. McGavock Professor Vanderbilt University School of Medicine, Nashville, Tennessee.

September 2002 to December 2014: Professor, Departments of Molecular Physiology and Biophysics and Biomedical Engineering, Vanderbilt University Medical Center, Nashville, Tennessee.

July 2010 to December 2014: Director, Program in Quantitative Systems Biology, Vanderbilt University, Nashville, Tennessee.

July 2010 to December 2014: Director, Quantitative and Chemical Biology Graduate Program, Vanderbilt University.

July 2004 to December 2014: Co-Director, Advanced Computing Center for Research and Education (ACCRE), Vanderbilt University, Nashville, Tennessee.

June 2009 to December 2014: Scientific Director, Vanderbilt University Cell Imaging Resource, Vanderbilt University, Nashville, Tennessee.

September 2002 to December 2014: Professor, Department of Physics and Astronomy, Vanderbilt University, Nashville, Tennessee.

July 2011 to December 2014: Professor, Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, Tennessee.

July 2000 to June 2011: Director, W.M. Keck Foundation Free Electron Laser Center, Vanderbilt University, Nashville, Tennessee.

August 1999 to September 2002: Associate Professor, Department of Physics and Astronomy, Vanderbilt University, Nashville, Tennessee.

August 1999 to July 2002: Associate Professor, Department of Biomedical Engineering, Vanderbilt University, Nashville, Tennessee.

September 1998 to September 2002: Associate Professor, Department of Molecular Physiology and Biophysics, Vanderbilt University Medical Center, Nashville, Tennessee.

January 1995 to August 1999: Assistant Professor, Department of Physics and Astronomy, Vanderbilt University, Nashville, Tennessee.

July 1993 to June 2009: Director, Vanderbilt University Medical Center Cell Imaging Resource, Vanderbilt University Medical Center, Nashville, Tennessee.

December 1992 to September 1998: Assistant Professor, Department of Molecular Physiology and Biophysics, Vanderbilt University Medical Center, Nashville, Tennessee.

July 1992 to December 1992: Research Associate, Developmental Resource for Biophysical Imaging Opto-electronics, School of Applied and Engineering Physics, Cornell University, Ithaca, New York.

August 1989 to July 1992: Postdoctoral Associate, Developmental Resource for Biophysical Imaging Opto-electronics, School of Applied and Engineering Physics, Cornell University, Ithaca, New York.

May 1989 to August 1989: Postdoctoral Associate, Laboratory for Fluorescence Dynamics, Department of Physics, University of Illinois, Urbana, Illinois.

May 1985 to May 1989: Research Assistant, Frequency Domain Fluorescence Studies of Biological Macromolecules, Department of Physics, University of Illinois, Urbana, Illinois.

May 1984 to September 1984: Research Scientist, Optical Storage Group, IBM Research Division, San Jose, California.

Honors

Beckman Young Investigator, 1993 to 1995.

Woodrow W. Patterson Award, Vanderbilt University, 1993.

Young Fluorescence Investigator Award, Biophysical Society, 1997.

Elected Fellow, American Physical Society, 2000.

Stanley Cohen Award, Vanderbilt University, 2005.

Nikon Research Fellow, MBL, Woods Hole, MA, 2011.

Elected Fellow, Microscopy Society of America, 2014.

Elected Fellow, American Association for the Advancement of Science, 2016.

Distinguished Scientist, Microscopy Society of America, 2017.

Teaching Experience

At Washington University:

8-9/2022: Group mentor (18 contact hours), *DBBS Interdisciplinary Immersion Experience*

11-12/2022: Lecturer (2 hrs) in BIO 5068, *Fundamentals of Molecular Cell Biology*

8-9/2021: Group mentor (12 contact hours), *DBBS Interdisciplinary Immersion Experience*

Fall 2019, Spring 2021 (moved to Spring due to COVID shut-downs in Fall 2020), Fall 2021,
Fall 2022: Co-Course Director and Discussion Leader (16 hrs) in BIO 5148 *Metabolism
Journal Club*

4/18, 3/19, 4/20, 4/21, 4/22: Lecturer (1.5 hrs) in BIO 5224, *Molecular, Cellular and Organ
Systems Biology*

2/18, 2/19, 1/20, 2/21, 2/22: Lecturer (3 hrs) in BIO 5147, *Contrast Agents for Biological
Imaging*

3-4/16: Discussion leader (9 hrs) in DBBS *Spring Ethics Seminar*

9/15, 10/16, 10/21: Lecturer (2 hrs) in BIO 1810, *Seminar in Imaging Sciences*

At Vanderbilt University:

Spring 2014: Course Director for IGP/QCB module on *Quantitative Systems Biology*.
Developed and led a new 1 credit hour spring semester module with collaborating faculty.
Lecturer (5 contact hours), and discussion group (2 contact hours) leader.

Fall 2010, 2011, 2012, 2013, 2014: Course Director for CPB306, *Introduction to Chemical and Physical Biology*. Developed and led this new 4 credit hour course with collaborating faculty. Lecturer (10 – 20 contact hours each year), and discussion group (18 contact hours) leader.

6/99, 6/00, 6/01, 6/02, 6/03, 6/04, 6/05, 6/06, 6/07, 6/08, 6/09, 5/10, 5/11, 5/12, 5/13, 5/14, 5/15, 5/16, 5/17, 5/18: Co-Organizer and Lecturer, Intensive Short Course on *Quantitative Fluorescence Microscopy*. Mount Desert Island Biological Laboratory, Salisbury Cove, ME.

10/97, 10/98, 10/99, 10/00, 10/01, 10/02, 10/03, 10/04, 10/05, 10/08: Lecturer and Lab Director for Fluorescence Microscopy, Confocal Microscopy, Green Fluorescent Protein, and Multi-photon Excitation Microscopy in *Optical Microscopy and Imaging in the Biomedical Sciences*. Woods Hole Short Course, Woods Hole, MA.

1-2/08, 1-2/09, 1/11, 2/12, 2/13, 2/14: Lecturer (2 hrs) in Molecular Physiology & Biophysics 333, *Molecular Endocrinology*.

3/09, 3/10, 3/11, 3/12, 2/13, 2/14: Lecturer (4 hrs) in Cell Biology 313, *Introduction to Modern Biological Microscopy*.

12/07, 12/08, 12/09: Lecturer (2 hrs) in Cell Biology 310, *Signaling, Motility, and Development*.

8-9/05, 9/06: Lecturer and Discussion Leader (6 hrs) in IGP Core Course, *Quantitative Approaches in Biomedical Research*

11/04, 10/05, 10/06: Lecturer (6 hrs) in Physics 137, *Special Topics in Physics*

4/04: Lecturer (2 hrs) in Cancer Biology 344, *Angiogenesis in Cancer*

9/03: Lecturer (6 hrs) and Discussion (6 hrs) in Molecular Physiology & Biophysics 325, *Physical Measurements of Biological Systems*

5/03, 5/04, 5/05. 5/06: Cell Imaging Mini-Course, 6 hrs lecture, 12 hrs laboratory.

3/03: Lecturer (2 hrs) on Quantitative Fluorescence Imaging Methods in *Molecular Biophysics Training Course*

2-3/02: Lecturer (12 hrs) in Molecular Physiology & Biophysics 325, *Physical Measurements of Biological Systems*

8-9/01, 8-9/02, 8-9/03, 8-9/04, 8/05, 8/06: Flextime lecturer (4 hrs) in IGP Core Course, Protein Structure and Function.

1/01, 1/02, 1/03, 1/04, 1/05: Lecturer (2hrs) on Imaging in Living Cells in Microbiology and Immunology 324: Modern Techniques in Immunology.

9/00, 9/02: Lecturer (2hrs) on Imaging in Intact Neural Tissue in Neuroscience 332: Neuronal Structure and Cognitive Function.

8-9/00: Flextime lecturer (8 hrs) in IGP Core Course, Protein Structure and Function.

9/99, 9/00, 9/01: Developed and ran 3 WWW-based instruction units for Flextime in IGP Core Course, Protein Structure and Function.

10/98: Lecturer on Two-photon Excitation and GFP in *Imaging Structure and Function in the Nervous System*, Cold Spring Harbor Course, Cold Spring Harbor, NY.

9/97, 9/98: Lecturer (2hrs) on Cardiac Electrical Activity and Calcium Dynamics in MP&B 330: Physiology and Molecular Medicine.

8-9/97, 8-9/98, 8-9/99, 8-9/01, 8-9/02, 8-9/03: Organizer, Flextimes in IGP Core Course, Protein Structure and Function.

8-9/97, 8-9/98, 8-9/99: Lecture (2hrs) and Flextime (8 hrs) in IGP Core Course, Protein Structure and Function.

10/97: Lecturer on GFP in *Advanced In Situ Hybridization and Immunocytochemistry*. Cold Spring Harbor Short Course, Cold Spring Harbor, NY.

8-9/96: Flextime (6 hrs) in IGP Core Course, Protein Structure and Function.

8-9/95: Lecture (2 hrs) and Flextime (6 hrs) in IGP Core Course, Protein Structure and Function.

10/94: Lecture (4 hrs) in IGP Core Course, Membranes.

10/93, 10/95, 3/97: Lecture (4 hrs) in Pharmacology 324, Pharmacological Techniques and Instrumentation.

8/93-5/94: Course Director, MP&B 324, Topics in Physiology.

As Graduate Student and Postdoc:

3/91, 3/92: Confocal Microscopy Mini-Course, Cornell University, Ithaca, NY.

9/84-5/85: Teaching Assistant, Physics 332-333, Analog and Digital Electronics, Laboratory Instructor, Department of Physics, University of Illinois, Urbana, Illinois.

Undergraduate, Graduate, and Medical Students Supervised (27 total, 12 awarded Ph.D. thesis supervised):

Scott M. Blackman (M.D./Ph.D. student, co-advisor with Dr. Al Beth, Ph.D. completed August 1998), currently Associate Professor of Pediatrics, Johns Hopkins University.

George H. Patterson (Ph.D. completed September 1999), currently tenure-track Scientist, NIBIB, NIH.

Stuart Salmon (medical student-IBR, summer research, medical school independent research, 1995-1996).

Vikas Shah (M.D./Ph.D. student - Introduction to Biomedical Research, 2001).

Ron Chandler (summer research student, 2002).

Mark Fairweather (summer research student, 2003).

Butch Granada (M.S. student, 2003 – 2006), currently Scientific Sales Engineer, Hamamatsu Corp.

Jesse Shaver (M.D./Ph.D. student, 2003 – 2007, Ph.D. completed 2007), currently independent entrepreneur and venture capitalist, Nashville, TN.

Latsavongsakda Sethaphong (M.S. 2008), Ph.D. Materials Science, North Carolina State University 2104, currently Staff Scientist C³, Research Triangle Park, NC.

Bryan Stephens (co-advisor with Marcus Mendenhall, Ph.D. completed 2010), currently Director of Research & Development, K-Laser USA, Franklin, TN.

Sylvain LeMarchand (Ph.D. completed January 2011), currently Director of Imaging Core Lab, University of Delaware, Newark, DE.

Alessandro Ustione (Ph.D. completed November 2012), currently Staff Scientist, Washington University, St Louis, MO.

Elisabeth Ring (co-advisor with Niels de Jonge, M.S. 2010), currently Research Assistant, Vanderbilt University, Nashville, TN.

Amicia D. Elliott (Ph.D. completed May 2014, “Paracrine Regulation of Glucagon Secretion from Pancreatic Islets”) currently postdoctoral fellow, NIBIB, National Institutes of Health, Bethesda, MD.

Troy Hutchens (M.D./Ph.D. student; Ph.D. completed August 2015, “Novel Regulators of Glucagon Secretion from α -Cells”) , currently, Resident in Pathology, University of Pennsylvania, Philadelphia, PA.

Brittany A. Caldwell (Ph.D. completed January 2016, “Dopaminergic Regulation of Insulin Secretion Investigated by Fluorescence Fluctuation Spectroscopy”) currently AIMBE Scholar at the US Food and Drug Administration, Washington, DC.

Christopher Reissaus (Ph.D. completed March 2017, “Regulated Glucagon Secretion from Islet and Pseudo-Islet Alpha Cells”) currently Senior Scientist – Biology at Novo Nordisk Research Center, Indianapolis, IN.

Keisha Carr (summer research student, 2012).

Daan van Oosten Slingeland (visiting summer research student from TU-Delft, 2012).

Chase Smith (summer research student, 2013).

Yong Hee “Will” Chung (Ph.D. completed December 2020, “RhoA Mediated Juxtacrine Regulation of Glucagon Secretion”) currently biomedical consultant ClearView Healthcare Partners, Boston, MA.

Courtney Richman (undergraduate research student, 2015 – 2017) currently medical student, Duke University.

Abeel Tariq (visiting medical student, 2016) currently awaiting residency match in Internal Medicine after completing his USMLE board exams.

Henry Roseman (undergraduate research student, 2018 – 2019) currently MD/PhD student at the University of Texas, Southwestern Medical Center.

Daniel Foust (Ph.D. completed May 2022, “Measuring G protein Activation with Spectrally Resolved Fluorescence Fluctuation Spectroscopy”) currently postdoctoral fellow with Prof. Julie Biteen at the University of Michigan.

Rebecca Rooks (undergraduate research student, 2018 – 2021) currently Research Assistant, Brigham and Women’s Hospital.

Jeongmin Lee (Ph.D. student, 2019 –).

Priya Mathur (undergraduate research student, 2019 – 2022) currently MPH student at the University of Chicago.

Shichao Gao (Imaging Sciences/BME Masters student, 2023-2024).

Post-Doctoral Trainees (20 total):

Brian D. Bennett, 1994 – 1996, currently Research Assistant Professor, Cincinnati Children’s Hospital.

Jonathan V. Rocheleau, 1999 – 2003, currently Percy Edward Hart Professor, Institute of Biomedical Engineering, University of Toronto.

Megan A. Rizzo, 2000 – 2003, currently Associate Professor of Physiology, University of Maryland Medical School.

Gerald Springer, 2001 – 2007, currently Professor of Chemistry and Department Chair, Southwestern Adventist University.

Subhadra Gunawardana, 2001 – 2007, currently Research Associate Professor of Cell Biology & Physiology, Washington University School of Medicine.

Mingming Hao, 2003 – 2007, currently Assistant Professor of Biochemistry, Weil Cornell Medical College.

Joel Schwartz, 2004 – 2005, currently Staff Scientist, Biogen Inc., Cambridge, MA.

Christopher J. Easley, 2006 – 2008, currently C. Harry Knowles Professor of Chemistry, Auburn University.

Lara Nyman (co-mentor with Dr. Al Powers), 2006 – 2008, currently Research Scientist, PepsiCo.

Gert-Jan Kremers, 2006 – 2010, currently Assistant Professor, Erasmus University, Rotterdam, Netherlands.

Richard K.P. Benninger, 2006 – 2009, currently Associate Professor of Biomedical Engineering, University of Colorado.

Tara A. Schwetz, 2009 – 2012, currently Chief, Strategic Planning & Evaluation Branch, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD (past AAAS Science & Technology Policy Fellow).

Kurt Short, 2009 – 2013, currently Research Associate, Penn State University, State College, PA.

Alessandro Ustione, 2012 – 2017, currently Staff Scientist, Washington University School of Medicine, St Louis, MO.

Lynn Samuelson, 2013 – 2015, currently Instructor, Girls Code, Nashville, TN.

Zeno Lavagnino, 2014 – 2018, currently Marie Skłodowska-Curie Fellow (European Union K99 equivalent), Ospedale San Raffaele, Milan, Italy.

Michael DiGruccio, 2017 – 2020, currently Senior Scientist, M6P Therapeutics, St. Louis, MO.

Xue Wen Ng, 2018 –

Farzad Asadi Jomnani, 2021 –

Alex Polino, 2021 –

MD Fellows (1 total):

Jing Hughes, MD, PhD, Instructor in Medicine (Endocrinology), 2015 – 2019, currently Assistant Professor of Medicine (Endocrinology) Washington University School of Medicine, St Louis, MO.

Doctoral Thesis Committees (44 total):

At Vanderbilt University:

Doug Scothorn (Beth lab, Ph.D. 1996)
Mike Otto (Beechem lab, Ph.D. 1997)
Qing Zhou (Lovinger lab, Ph.D. 1997)
Sukwoo Choi (Lovinger lab, Ph.D. 1999)
Todd Monroe (Haselton lab, Biomedical Engineering, Ph.D. 2001)
Anthony Couvillon (Exton lab, Ph.D. 2005)
Andreas Werdich (Wikswow lab, Physics, Ph.D. 2006)
Ming Xu (Emeson Lab, Pharmacology, Ph.D. 2006)
Susan Saban (Stewart Lab, Ph.D. 2006)
Charles Boulware (Brau Lab, Physics, Ph.D. 2006)
Jared Burlison (Magnuson Lab, Ph.D. 2007)
Ash Jayagopal (Prasad Lab, Biomedical Engineering, Ph.D. 2008)
Shanshan Liu (Quaranta Lab, Cancer Biology, Ph.D. 2010)
Madeline Clark Dukes (Bornhop Lab, Chemistry, Ph.D. 2011)
Leah Potter (Magnuson Lab, Ph.D. 2011)
Jennifer Plank (Labosky Lab, Cell and Developmental Biology, Ph.D. 2011)
Robel Yirdaw (Mchaourab Lab, Physics, Ph.D. 2012)
Will Ashby (Ziljsta Lab, Chemical & Physical Biology, Ph.D. 2012)
Claire Atkinson (Simon Lab, Rockefeller University, Ph.D. 2012)
Laura Keiger (Fesik Lab, Chemical & Physical Biology, M.S. 2012)
Mark Jewell (Currie Lab, Pharmacology, Ph.D. 2013)
David Shifrin (Tyska Lab, Cell and Developmental Biology, Ph.D. 2013)
Charles Day (Kenworthy Lab, Chemical & Physical Biology, Ph.D. 2013)
Peter Frick (Quaranta Lab, Chemical & Physical Biology, Ph.D. 2014)
Ian McFadden (Matrisian Lab, Cancer Biology, M.S. 2014)

Eric Bankaitis (Wright Lab, Cell and Developmental Biology)
Gregory Pask (Zweibel Lab, Biological Sciences, Ph.D. 2013)
Lewis Kraft (Kenworthy Lab, Chemical & Physical Biology, Ph.D. 2014)
Ankur Kumar (Dawant Lab, Electrical Engineering & Computer Science, Ph.D. 2014)
Ty McCleery (Hutson Lab, Physics, Ph.D. 2015)
Jing Xiong (Johnson Lab, Biological Sciences. M.S. 2014)
Jing Liu (Gu Lab, Cell and Developmental Biology, Ph.D. 2015)
Monica Lacy (Hutson Lab, Physics)
Juan Carlos Cordova (Lang Lab, Chemical & Biomolecular Engineering)
Jonathan Ehrman (Rericha Lab, Physics)
Lana Thomas (Bridges Student, Chemistry, Fisk University)

At Washington University:

Qian Yu, External Thesis Opponent, (Gylfe/Tengholm Lab University of Uppsala, Ph.D. 2018)
Caryn Carson (Lawson Lab, Genetics, Ph.D. 2020)
Alex Miranda (Lawson Lab, Genetics, Ph.D. 2021)
Leonardo Velazco-Cruz (Millman Lab, Developmental, Regenerative & Stem Cell Biology, Ph.D. 2021)
Victoria Ismael (Kast Lab, Molecular and Cellular Biology)
Samantha Chin (Jansen Lab, Molecular and Cellular Biology)
Sarah Speck (Semenkovich Lab, Molecular and Cellular Biology)
Luis Perez (Mukherji Lab, Physics)
Zijian Guo (Vahey Lab, BME)

University Service

Faculty Mentoring Committees:

At Vanderbilt University

Hassane Mchaourab, Molecular Physiology & Biophysics, 2000 – 2002.

Anne Kenworthy, Molecular Physiology & Biophysics, 2001 – 2010.

David Jacobson, Molecular Physiology & Biophysics, 2010 – 2015.

Erin Rericha, Physics, 2011 – 2015.

Carlos Lopez, Cancer Biology, 2012 – 2015.

Gregor Neuert, Molecular Physiology & Biophysics, 2012 – 2015.

Ken Lau, Cell & Developmental Biology, 2013 – 2015.

Eduard Chekmenev, Vanderbilt Institute of Imaging Science/Radiology, 2013 – 2015.

At Washington University

Gretchen Meyer, Program in Physical Therapy and Department of Neurology, 2015 –

Thomas Brett, Department of Medicine, 2016 – 2020.

Heather Lawson, Department of Genetics, 2016 – 2021.

Jeffrey Millman, Department of Medicine, 2016 – 2021.

Research and Training Service:

1993 to 2009: Director, Vanderbilt Cell Imaging Resource

2009 to 2014: Scientific Director, Vanderbilt Cell Imaging Shared Resource

Founded a new core laboratory for the Vanderbilt Cancer Center and the Vanderbilt Diabetes Research and Training Center. This lab currently has multiple confocal microscopes, electron microscopes, computer-controlled fluorescence microscopes with state-of-the-art digital imaging capabilities, and 7 full-time staff. In addition to the VICC, and DRTC, the lab now serves as the imaging core facility for the Kennedy Center, the Digestive Diseases Center, the Mouse Metabolic Phenotyping Center, and is part of the Center for Molecular Neuroscience.

1996 to 1999: Member, Computer Support Oversight Committee (Biomedical Informatics oversight committee), Vanderbilt University.

1997 to 2000: Member, Academic Computing and Information Technology (University-wide committee), Vanderbilt University.

1999: Chairman, VUMC World Wide Web Task Force, Vanderbilt University.

1999 to 2000: Chairman, Computer Services Oversight Committee (VUMC Informatics and Network Computing oversight committee).

1999 to 2002: Member, Molecular Biophysics Training Program Executive Committee.
Chairman, Recruitment Committee, charged with recruiting graduate students into the Program, Vanderbilt University.

2000 to 2001: Lecture Series Committee, John F. Kennedy Center for Research on Human Development, Vanderbilt University.

2000 to 2003: Vanderbilt Physics Department Bio-Search Committee.

2000 to 2014: Executive Committee Member, Graduate Program in Chemical and Physical Biology (CPB), Vanderbilt University.

2000 to 2011: Director, W.M. Keck Foundation Free Electron Laser Center, Vanderbilt University.

2001 to 2003: Member of the Vanderbilt Biomath Program Executive Committee.

2001 to 2004: Member, Vanderbilt Transinstitutional Bioinformatics Recruiting Team.

2001 to 2005: Member, Vanderbilt Technology Review Committee (University-wide committee).

2002 to 2008: Executive Committee Member, Molecular Biophysics Training Program
Vanderbilt University.

2002 to 2010: Member, Internal Advisory Board, Center for Structural Biology.

2004 to 2014: Steering Committee Member, Advanced Computer Center for Research and Education (ACCRES), Vanderbilt University.

2004 to 2006: Chair, Internal Advisory Board, Vanderbilt Center for Structural Biology.

2005 to 2006: Chair, Vanderbilt Technology Review Committee (University-wide committee).

2006 to 2014: Member, Vanderbilt Institutional Animal Care and Use Committee (University-wide committee).

2006 to 2008: Chair, Vanderbilt Institutional Animal Care and Use Committee (University-wide committee).

2007 to 2010: Member, Vanderbilt University Faculty Senate (Chair of Faculty Life Committee, 2008-2009)

2008: Member of VUMC Basic Sciences Strategic Planning Committee (Co-Chair of sub-committee on Sharing Research Resources).

2008 to 2009: Chair, Electrophysiology Search Committee, Department of Molecular Physiology & Biophysics and Diabetes Center, Vanderbilt University.

2008 to 2011: Chair, Biological Physics Search Committee, Department of Physics, Vanderbilt University.

2008 to 2009: Member, Biomedical Engineering Search Committee, Vanderbilt University.

2008 to 2010: Member, Search Committee, Chair of Microbiology and Immunology, Vanderbilt University Medical Center.

2009 to 2012: Member, Chemical and Biomolecular Engineering Search Committee, Vanderbilt University.

2010 to 2015: Director, Quantitative and Chemical Biology Graduate Program, Vanderbilt University.

2011: Member, Search Committee, Chair of Biomedical Informatics, Vanderbilt University Medical Center.

2015 to Present: Head, Department of Cell Biology and Physiology, Washington University School of Medicine. As Head, I hold ultimate authority and responsibility for all aspects of the teaching, research, and service missions of the Department. This includes both Medical Student and Graduate Student teaching, our participation in the PhD degree granting programs of the Division of Biological and Biomedical Sciences; Recruiting and retaining faculty; Mentoring junior and senior faculty; Ensuring an effective and efficient department office to support our faculty, post-docs, and students; Leading our core laboratory initiative in Imaging (WUCCI, wucci.wustl.edu) and a new effort in Mass Spectroscopy/Multi-omics; Presenting department highlights within the institution and to the broader community; and leading service projects for the department in the St. Louis area.

Scientific Service

Manuscript Editing and Reviewing

Journal of Fluorescence Editorial board, 1997-2002.

American Journal of Physiology: Endocrinology and Metabolism Editorial Board, 2000-2006.

Journal of Biomedical Optics, Special Section Editor, September/October issue, 2004.

Microscopy and Microanalysis Editorial Board, 2001-2010.

Biophysical Journal Editorial Board, 2002-2008, 2012 – 2013.

Biophysical Journal Associate Editor, Cell Biophysics, 2013 – 2018.

Reviewer for *Nature*, *Science*, *Nature Biotechnology*, *Nature Methods*, *Cell*, *Cell Metabolism*, *Proceedings of the National Academy of Sciences (USA)*, *Biophysical Journal*, *Journal of the American Chemical Society*, *Biochemistry*, *Journal of Cell Biology*, *Journal of Biological Chemistry*, *Journal of Biomedical Optics*, *Journal of Microscopy*, *Journal of Physiology*, *Applied Optics*, *Optics Letters*, *Photochemistry & Photobiology*.

Scientific Society Service

Council Member, Society for Molecular Imaging, 2004 – 2007.

Biological Sciences Councilor, Microscopy Society of America, 2004 – 2007.

Council Member, Biophysical Society, 2006 – 2009 (Executive Board, 2006 – 2007).

Chair, Publications Committee, Biophysical Society, 2006 – 2012.

President-elect, Microscopy Society of America, 2009.

President, Microscopy Society of America, 2010.

Past-President, Microscopy Society of America, 2011.

Member, Section Committee on Biological Sciences, American Association for the Advancement of Science, 2011 – 2014.

Chair, Nominations Committee, Biophysical Society, 2012 – 2013.

Co-Chair, Program Committee, Biophysical Society, 2017.

President-elect, Biophysical Society, 2018-19.

President, Biophysical Society, 2019-20.

Past-President, Biophysical Society, 2020-21.

Advisory Panels

National Advisory Committee, Integrated Microscopy Resource, University of Wisconsin, Madison, 1993 – 1996.

National Advisory Committee, NSF Center for Bio-Image Informatics, University of California – Santa Barbara, 2005 – 2007.

Advisory Panel, Special Statutory Funding for Type 1 Diabetes, NIDDK, 2005.

Scientific Advisory Board, Searle Scholars Program, 2007 – 2012.

NCI Cancer Imaging Camp, Steering Committee, 2007 – 2013.

Scientific Advisory Panel for Nanomedicine Development Centers, NIH Roadmap Initiative, 2008 – 2010.

Proposal Review Committee for the SHaRE User Facility at Oak Ridge National Laboratory, 2008 – 2010.

Advisory Panel, Office for Research Infrastructure Programs, Office of the Director, National Institutes of Health, 2014 – 2015.

Allen Institute for Cell Science, Microscopy Project Advisory Council, 2017 – Present.

Grant Review Panels

NIH, Division of Research Resources, Site Visitor, December 1994, November 1997, November 2002.

NSF, Advisory Panel for Biological Instrumentation and Resources, 1994 – 1995.

NIH, National Cancer Institute, Site Visitor, Feb-Mar 1995, Feb 1996, Mar 1997.

NIH, Special Emphasis Panel, Visual Sciences A, 1995-1996.

NIH, Division of Research Resources, Special Emphasis Panel, May 1997.

NIH, Molecular Cytology Study Section, Ad Hoc Member, July 1998.

NIH, Cell Development and Function Study Section, Ad Hoc Member, March 1999.

NIH, Special Emphasis Panel for "NICHD Mentored Quantitative Research Career Development Awards", Ad Hoc Member, August, 2000.

NIH, Cell Development and Function Study Section, Ad Hoc Member, July 2001.

Beckman Foundation, Young Investigator Grants Panel, 2002.

NIH, Virology Study Section, Ad Hoc member, October 2003.

NIH, DDRC Center Review Study Section, November 2003.

Beckman Foundation, Chairman, Young Investigator Grants Panel, 2003.

NIH, Special Study Section on Protein Interactions, July 2004.

NIH, Microscopy Imaging Study Section, Full Member, 2004 – 2007.

NIH, Microscopy Imaging Study Section, Chair, 2005 – 2007.

Beckman Foundation, Young Investigator Grants Panel, 2007.

NIH, Special Emphasis Panel for High End Instrumentation, April 2008.

NIH, Member, Conflict Study Section for Biological Chemistry and Macromolecular Biophysics IRG, June 2008.

Beckman Foundation, Young Investigator Grants Panel, 2008.

NIH, Member, Conflict Study Section for Biological Sciences and Technology IRG, Feb. 2009.

NIH, National Institute for General Medical Sciences, EUREKA Grant Study Section, 2009.

NIH, National Institute for Biomedical Imaging and Bioengineering, Chair, P41 grant application site visit, Dec. 2009.

NIH, National Institute for General Medical Sciences, EUREKA Grant Study Section, 2010.

NIH, Center for Scientific Review, Member, College of Scientific Reviewers. 2010 – 2012

NIH, Center for Scientific Review, Program Project Special Emphasis Panel, Ad Hoc Member, November 2010.

NIH, Center for Scientific Review, Member Conflict Special Emphasis Panel, Ad Hoc Member, January 2011.

NIH, National Institute for General Medical Sciences, EUREKA Grant Study Section, 2011.

NIH, Center for Scientific Review, Member Conflict Special Emphasis Panel, Ad Hoc Member, June 2011.

NIH, Director's New Innovator Awards Study Section, February 2012.

NIH, Center for Scientific Review, Member Conflict Special Emphasis Panel, Ad Hoc Member, July 2012.

NIH, NIDDK SBIR/STTR Special Emphasis Panel, October 2012.

Beckman Foundation, Young Investigator Grants Panel, 2013.

NIH, Director's New Innovator Awards, Study Section, February 2013.

NIH, Special Emphasis Panel for Shared Instrumentation – Optical Microscopy and *In Vivo* Imaging, September 2013.

NIH, Special Emphasis Panel for Macromolecular Interactions in Cells, November 2013.

Beckman Foundation, Young Investigator Grants Panel, 2014.

NIH, Director's New Innovator Awards, Study Section, February 2014.

NIH, Member Conflict Special Emphasis Panel for MDCN, April 2014.

NIH, Center for Scientific Review, BST-F80 Study Section, Ad Hoc Member, July 2014.

NIH, Director's New Innovator Awards, Editorial Review Panel, April, 2015.

Beckman Foundation, Young Investigator Grants Panel, 2015.

NIH, Director's New Innovator Awards, Editorial Review Panel Chair, April, 2016.

Beckman Foundation, Young Investigator Grants Panel, 2016.

NIH, Director's New Innovator Awards, Editorial Review Panel Chair, March, 2017.

NIH, Center for Scientific Review, ZRG1 EMNR-W (02) Member Conflict Special Emphasis Panel, Ad Hoc Member, June 2017.

Beckman Foundation, Young Investigator Grants Panel, 2017.

NIH, Director's New Innovator Awards, Editorial Review Panel Chair, March, 2018.

NIH, Center for Scientific Review, CADO Study Section, Ad Hoc Member, October 2018.

Beckman Foundation, Young Investigator Grants Panel, 2018-2019.

NIH, Center for Scientific Review, CADO/BMDM Study Section, Full Member, 2019-2024.

NIH, Center for Scientific Review, BMDM Study Section, Chair, 2022-2024.

Beckman Foundation, Young Investigator Executive Committee, 2022-2026.

Conference Organizing

Organizer, *International Symposium on Green Fluorescent Protein*, for Symposium and Workshops on GFP Imaging, New Brunswick, NJ. October 1997.

Co-Organizer, Digestive Diseases Center Retreat, with Dr. D. Brent Polk. Vanderbilt University Medical Center, Nashville, TN. April 2000.

Symposium Organizer and Chair, Microscopy Society of America, Annual Meeting, *Symposium on Multi-photon Excitation Microscopy*, Philadelphia, PA. August 2000.

Pre-Meeting Congress Organizer and Chair, Microscopy Society of America, Annual Meeting, *Pre-Meeting Symposium on Imaging Life: From Cells to Whole Animals*, Long Beach, CA. August 2001.

Program Co-Chair, Microscopy Society of America, Annual Meeting, Quebec City, QE. August 2002.

American Physical Society Topical Conference "Interface of Biology and Physics" Member of steering committee; Chairman, symposium on *High-Resolution Imaging of Living Cells*, Boston, MA. September 2002

Program Chair, Microscopy Society of America, Annual Meeting, San Antonio, TX. August 2003.

Symposium Chair, Society for Molecular Imaging, Annual Meeting, Member of Scientific Program Committee, Symposium on *Endogenous Optical Signatures and Exogenous Probes*, San Francisco, CA. August 2003.

Symposium Co-Organizer and Co-Chair, Microscopy Society of America, Annual Meeting, *Symposium on Quantitative Microscopy in the Biological Sciences*, Savannah, GA. August 2004.

Symposium Chair, Society for Molecular Imaging, Annual Meeting, Member of Scientific Program Committee, Symposium on *Multi-mode Imaging*, St. Louis, MO. September 2004.

Workshop Organizer and Chair, American Society for Cell Biology, Annual Meeting. Workshop on *Protein Interactions in Live Cells Studied by Optical Methods*, Washington, DC. December 2004.

Pre-Meeting Congress Organizer and Chair, Microscopy Society of America, Annual Meeting, *Pre-Meeting Symposium on Live Cell Imaging and Biophotonics*, Honolulu, HI. July 2005.

Organizing Committee for Islet Biology, American Diabetes Association Annual Scientific Sessions, Chicago, IL. June 2007.

International Microscopy Congress 17, Program Committee, and Organizer & Chair for Symposium on Live Cell Imaging, Rio de Janeiro, Brazil, September 2010.

Microscopy and Microanalysis Annual Meeting, Co-Organizer and Chair, Symposium on *Imaging Cancer Tumors and Environments In Vivo*, Nashville, TN, August 2011.

Biophysical Society 56th Annual Meeting, Organizer and Moderator for Panel on *How to Get Your Scientific Paper Published*, San Diego, CA, February 2012.

18th International Microscopy Congress, Steering Committee, and Organizer & Chair for Symposium on Live Cell Imaging, Prague, Czech Republic, September 2014.

Submission Review Committee, American Diabetes Association 75th Annual Scientific Sessions, 75th Scientific Sessions, Boston, MA, June 2015.

Biophysical Society 60th Annual Meeting, Member, *Program Committee*, Los Angeles, CA, February 2016.

Biophysical Society 61st Annual Meeting, *Co-Chair of Program Committee*, New Orleans, LA, February 2017.

Biophysical Society 62nd Annual Meeting, Member, *Program Committee*, San Francisco, CA, February 2018.

Microscopy and Microanalysis Annual Meeting, Co-Organizer and Chair, Memorial Symposium: Shinya Inoue, Portland, OR, August 2022.

Consulting

Expert Witness on confocal microscopy, multiple cases, 2002 – 2014.

BlueShift Biotechnology, Chair, Scientific Advisory Board, 2003 – 2008.

Merck & Co., Inc., Consultant on assay development and implementation, 2008 – 2009.

Allen Institute of Cell Science, Member, Microscopy Advisory Council, 2016 – Present.

Pfizer, Inc., Consultant on Kendall Square Imaging Technology Center, Cambridge, MA, 2018 – 2020.

Protein Fluidics, Member, Scientific Advisory Board, 2019 – Present.

Expert Witness on ultrafast fluorescence imaging and fluorescent proteins, multiple cases, 2020 – 2022.

Invited Seminars

1. Microscopy Society of America, Annual Meeting, San Jose, CA. July 1991.
2. Microcirculatory Society Annual Meeting, Anaheim, CA. July 1992.
3. Microscopy Society of America, Annual Meeting, Cincinnati, OH. August 1993.
4. Mayo Clinic, Rochester MN, Pharmacology/Biochemistry Joint Seminar, Rochester MN. December 1993.
5. Clinical Pharmacology Seminar, Vanderbilt University, Nashville, TN. March 1994.
6. National Institute for Medical Research at Mill Hill, Biochemistry Seminar, London, England. July 1994.
7. Beckman Instruments, Research Division Seminar, Fullerton, CA. August 1994.
8. Biomedical Engineering Seminar, Vanderbilt University, Nashville, TN. November 1994.
9. Cardiology Grand Rounds, Vanderbilt University Medical Center, Nashville, TN. January 1995.
10. Biophysical Society Annual Meeting, Workshop on Two-Photon Excitation Microscopy, February 1995.
11. Johns Hopkins University, Biophysics Seminar, Baltimore, MD. February 1995.
12. University of Maryland at Baltimore, Physiology Seminar, Baltimore, MD. May 1995.
13. CLEO/QUELS, Symposium on Emerging Applications of Fluorescence Technology to Biophysics and Cellular Imaging, Baltimore, MD. May 1995.
14. National Institutes of Health, NHLBI-LKEM Seminar, Bethesda, MD. May 1995.

15. Third International Symposium on Innovative Fluorescence Methodologies in Biochemistry and Medicine, Maui, HI. July 1995.
16. Microscopy Society of America, Annual Meeting, Kansas City, MO. August 1995.
17. University of Minnesota, Cell Biology Seminar, Minneapolis, MN. October 1995.
18. University of North Carolina, Cell Biology and Anatomy Seminar, Chapel Hill, NC. November 1995.
19. Karolinska Institute, Diabetes and Endocrinology Seminar, Stockholm, Sweden. November 1995.
20. National Institute for Medical Research at Mill Hill, Developmental Biology Seminar, London, England. November 1995.
21. National Institute for Medical Research at Mill Hill, Physical Biochemistry Seminar, London, England. May 1996.
22. Microscopy Society of America, Annual Meeting, Minneapolis, MN. August 1996.
23. International Conference on Caged Compounds: Chemistry, Instrumentation, and Applications, Gunzburg, Germany. September 1996.
24. On-Line Monitoring of Intracellular Messengers, Satellite Workshop of EuroTox 96, Alicante, Spain. September 1996.
25. International Bioluminescence Chemoluminescence Meeting, Wood's Hole, MA. October 1996.
26. Microscopy Society of Northeast Ohio, Annual Meeting, Cleveland, OH. October 1996.
27. WE-Haraeus-Seminar, Multiphoton Photochemistry in Biological Systems, Bad Honef, Germany. October 1996.
28. American Society of Cell Biology, Annual Meeting, Symposium on the Green Fluorescent Protein, San Francisco, CA. December 1996.
29. Biophysical Society, Biological Subgroup Symposium, Young Fluorescence Investigator Award Presentation, New Orleans, LA. February 1997.
30. Focus on Multi-Dimensional Microscopy 1997, Buffalo, NY. April 1997.
31. Symposium and Short Course on Applications of Multi-Photon Excitation Imaging, Cleveland, OH. August 1997.

32. Microscopy Society of America, Annual Meeting, Symposium on Biological Applications of Multi-Photon Excitation Imaging, Cleveland, OH. August 1997.
33. University of Memphis, Microbiology and Molecular Cell Sciences Seminar, Memphis, TN. October 1997.
34. International Symposium on Green Fluorescent Protein, *Symposium on GFP Imaging*, New Brunswick, NJ. October 1997.
35. Cold Spring Harbor Laboratory Course on *Advanced In Situ Hybridization and Immunocytochemistry*, Lecturer on the Green Fluorescent Protein, Cold Spring Harbor, NY. October 1997.
36. International Symposium and Short Course on Modern Laser Microscopy in Cellular and Molecular Biology, Friedrich Schiller University, Jena, Germany. November 1997.
37. Max Planck Institute for Biophysical Chemistry, Molecular Biology Seminar, Göttingen, Germany. November 1997.
38. University of Pennsylvania, Cellular and Developmental Biology Seminar, Philadelphia, PA. December 1997.
39. University of Texas, Southwestern Medical Center, Molecular Biophysics Seminar, Dallas, TX. January 1998.
40. University of Texas, Southwestern Medical Center, Diabetes Seminar, Dallas, TX. January 1998.
41. Southeastern Spectroscopy Conference, Nashville, TN. January 1998.
42. Department of Biology Seminar, Vanderbilt University, Nashville, TN. April 1998.
43. IMRA Lasers America, Corporate Seminar, Ann Arbor, MI. May 1998.
44. Nikon, Inc. Advanced Quantitative and Light Microscopy, Instructor for Confocal and Two-Photon Excitation Imaging, Woods Hole, MA. May 1998.
45. Rockefeller University, *Imaging in the Cell Symposium*, New York, NY. May 1998.
46. National Institutes of Health, *Fluorescence in Biomedicine: The Robert L Bowman Memorial Symposium*, Bethesda, MD. June 1998.
47. Symposium and Short Course on *Applications of Multi-Photon Excitation Imaging*, Atlanta, GA. July 1998.

48. Microscopy Society of America, Annual Meeting, *Symposium on Applications of the Green Fluorescent Protein*, Atlanta, GA. July 1998.
49. Society for the Study of Reproduction, Annual Meeting, *Techniques Workshop: Use of the Green Fluorescent Protein*, College Station, TX. August 1998.
50. Mexican Physiological Society, Symposium on *High Resolution Microscopy in Biology*, San Luis Potosi, Mexico. September 1998.
51. Texas Microscopy Society, Annual Meeting, Bandera, TX. October 1998.
52. Grinnell College, Division of Science Seminar, Grinnell, IA. November 1998.
53. ClonTech, Inc., Corporate Research Seminar, Palo Alto, CA. November 1998.
54. Vanderbilt University Medical Center, Dept. of Microbiology and Immunology Seminar, Nashville, TN. February 1999.
55. University of Virginia, Molecular Physiology and Biological Physics Seminar, Charlottesville, VA. March 1999.
56. Symposium and Short Course on the Green Fluorescent Protein, Mendoza, Argentina. April 1999.
57. Vanderbilt University, Dept. of Biomedical Engineering Seminar, Nashville, TN. May 1999.
58. Vanderbilt University Medical Center, Renal Research Conference, Nashville, TN. May 1999.
59. Microscopy Society of America Pre-Meeting Congress on *Optical Microscopy in the Next Millennium*, Portland, OR. July 1999.
60. Microscopy Society of America, Annual Meeting, *Symposium on Novel Approaches to the Study of Living Cells*, Portland, OR. August 1999.
61. University of Texas, Integrative Physiology Seminar, Austin, TX. November 1999.
62. W. M. Keck Free Electron Laser Center Seminar, Vanderbilt University, Nashville, TN. February 2000.
63. Society of Toxicology, Continuing Education Course, Philadelphia, PA. March 2000.
64. Digestive Diseases Center Retreat, Vanderbilt University Medical Center, Nashville, TN. April 2000.

65. American Diabetes Association, *Current Issues Session on □ Cell Heterogeneity*, San Antonio, TX. June 2000.
66. 13th International Congress for Photobiology, Symposium on *Novel Imaging Techniques*, San Francisco, CA. July 2000.
67. Microscopy Society of America, Annual Meeting, *Tutorial on Multi-photon Excitation Microscopy*, Philadelphia, PA. August 2000.
68. EMBO Practical Course, *GFP and Advanced Microscopy*, Lecture on Quantitative Imaging of GFP and Applications to the Study of Glucose-Stimulated Insulin Secretion, Göttingen, Germany. September 2000.
69. SPIE Meeting, Symposium on New Probes for the Study of Living Cells, San Jose, CA. January 2001.
70. University of Texas, Southwestern Medical Center, Department of Cell Biology Seminar, Dallas, TX. May, 2001.
71. Texas Tech University, Department of Physiology Seminar, Lubbock, TX. May 2001.
72. Vanderbilt Conference on Genomics: Neurogenomics, Building a Better Brain. Seminar and Workshop on Imaging Neural Expression. Nashville, TN. May 2001.
73. Pediatric Pathology Society, Symposium on Modern Trends in Pathology, Warsaw, Poland. September 2001.
74. University of Texas Health Science Center, Department of Cellular and Structural Biology Seminar, San Antonio, TX. November 2001.
75. Carnegie Mellon University, Department of Cell Biology Seminar, Pittsburgh, PA. November 2001.
76. NIH Director's Wednesday Afternoon Lecture Series, Bethesda, MD. January 2002.
77. University of Arizona, Department of Physiology Seminar, Tucson, AZ. March 2002.
78. Focus on Microscopy 2002, Symposium on *High-resolution Optical Imaging*, Taiwan. April 2002.
79. Genomes to Life, Department of Energy Workshop on *Imaging Approaches*, Charlotte, NC. April 2002.
80. Vanderbilt Conference on “Proteomics, The Next Great Challenge”, Workshop on *Optical Measurements of Intramolecular Distances* May 2002.

81. Society for Molecular Imaging Annual Meeting, Symposium on *New Methodologies for In Vivo Imaging*, Boston, MA. August 2002.
82. Photomedicine Lecture Series, Massachusetts General Hospital and Harvard Medical School, Boston, MA. September 2002.
83. American Society for Nephrology, Renal Week 2002, Symposium on *Multi-photon Microscopy to Study Cellular and Intracellular Processes in the Living Kidney*, Philadelphia, PA. November 2002.
84. University of Puerto Rico, Department of Biology Seminar, San Juan, Puerto Rico, November 2002.
85. SPIE Annual Meeting, Symposium on *Multi-photon Excitation Microscopy*, San Jose, CA. January 2003.
86. 4th National Forum on *Biomedical Imaging in Oncology*, National Cancer Institute, Bethesda, MD. February 2003.
87. Case Western Reserve University, Biophotonics Seminar, Cleveland, OH. February 2003
88. Biophysical Society Annual Meeting, Biological Fluorescence Subgroup Symposium, San Antonio, TX. March 2003.
89. Biophysical Society Annual Meeting, Emily Gray Educational Symposium, San Antonio, TX. March 2003.
90. Vanderbilt Institute of Imaging Sciences Seminar, April 2003.
91. NIDDK, NIBIB Conference on Beta Cell Imaging, April 2003.
92. Vanderbilt University, Membrane Biology Conference, April 2003.
93. Vanderbilt University, Endocrinology Grand Rounds, May 2003.
94. Duke University, Keynote Address, Fitzpatrick Center for Photonics Annual Meeting, Durham, NC. May 2003.
95. Vanderbilt University, Renal Conference, May 2003.
96. Workshop on InfraRed Microscopy and Spectroscopy, Lake Tahoe, CA, July 2003.
97. Society of Molecular Imaging Annual Meeting, San Francisco, CA, August 2003.
98. Cornell University, Department of Biochemistry and Molecular Medicine, Ithaca, NY September 2003.

99. Albert Einstein School of Medicine, Department of Biochemistry Seminar, Bronx, NY. October 2003.
100. University of Wisconsin, Biophotonics Seminar Series, Madison, November 2003.
101. University of New Mexico, Department of Physics Colloquium, December 2003.
102. Indiana University-Purdue University, Indianapolis, Department of Physics Colloquium, March 2004.
103. Marine Biological Association, Short Course on Fluorescence Imaging, Plymouth, England, April 2004.
104. National Institutes of Health, Symposium on *Live Cell Imaging*, Bethesda, MD. April 2004.
105. Boston Obesity Nutrition Seminar, MIT Faculty Club, Boston, MA. May 2004.
106. Vanderbilt Conference on “Frontiers in Genome Engineering, Building a Better Mouse”, Workshop on *Fluorescent Proteins and Imaging Technology for Use with Transgenic Mice*. June 2004.
107. American Diabetes Association Annual Meeting, Symposium on *New Insights into Glucokinase Regulation*, Orlando, FL. June 2004.
108. Johnson & Johnson Research Division, Beta Cell Biology Discovery Group, Rahway, NJ. July 2004.
109. Microscopy and Microanalysis Annual Meeting, Symposium on *Quantitative Microscopy in the Biological Sciences*, Savannah, GA. August 2004.
110. Southeast Ultrafast Laser Conference, Keynote Speaker, Atlanta, GA. August 2004.
111. University of Washington, Friday Harbor Laboratories Centennial Celebration honoring Dr. Osamu Shimomura, *Calcium-Regulated Photoproteins and Green-Fluorescent Proteins*, Friday Harbor, WA. September 2004.
112. Washington University, Department of Cell Biology Colloquium, St. Louis, MO. October 2004.
113. University of Connecticut Medical Center, Department of Cell Biology Colloquium, Farmington, CT. November 2004.
114. Massachusetts Institute of Technology, *Lester Wolfe Symposium on Photomedicine*, November 2004.

115. American Society of Cell Biology, *Symposium on Quantitative Imaging of Live Cells*, Washington, DC, December 2004.
116. Medical Applications of Free-Electron Lasers, Boston, MA, December 2004.
117. American Physical Society March Meeting, Symposium on *Non-linear Optics in Biophysics Research*, Los Angeles CA, March 2005.
118. Emory University, Physics Colloquium, Atlanta, GA, April 2005.
119. Wayne State University, Pharmacology Department Colloquium, Detroit, MI, April 2005.
120. University of Chicago, Diabetes Center Seminar, Chicago, IL, May 2005.
121. Columbia University, Biological Sciences Colloquium, New York, NY, May 2005.
122. Royal Academy of Sciences, Symposium on *Novel Biophysical Approaches*, Stockholm, Sweden, June 2005.
123. 6th International Gregorio Weber Fluorescence Congress, Kauai, HI, July 2005.
124. Microscopy and Microanalysis Annual Meeting, Pre-meeting Congress on *Biophotonics and Live Cell Imaging*, Honolulu, HI, July 2005.
125. Microscopy and Microanalysis Annual Meeting, Symposium on *Fluorescence Resonance Energy Transfer (FRET)*, Honolulu, HI, August 2005.
126. Stowers Institute for Biomedical Research, Imaging Symposium, Kansas City, MO, September 2005.
127. Imaging in 2020, Symposium and Panel Discussion on Emerging Technologies, Jackson Hole, WY, September 2005.
128. American Society of Nephrology, Renal Week 2005, Symposium on Visualizing Protein Functions in Real-Time, Philadelphia, PA, November 2005.
129. NIH, High Resolution Cellular Probes Meeting, Bethesda, MD, December 2005.
130. Biophysical Society Annual Meeting, Biological Fluorescence Subgroup Symposium, Salt Lake City, UT. February 2006.
131. University of Massachusetts, Medical School, Physiology Department Seminar, Worcester, MA. March 2006.

132. Gordon Conference on Macromolecular Structure and Cell Function, Mt. Holyoke, MA. August 2006.
133. Oregon Health & Science University, Vollum Institute Seminar Series, Portland, OR. September 2006.
134. University of Southern California, Neuroscience Seminar, Los Angeles, CA. November 2006.
135. University of California–San Diego, High Resolution Cellular Probes Meeting, San Diego, CA. December 2006.
136. University of Toledo, Pathology Department Seminar, Toledo, OH. January 2007.
137. University of Michigan, Biomedical Engineering Seminar, Ann Arbor, MI. February 2007.
138. University of Pennsylvania, Diabetes Seminar, Philadelphia, PA. March 2007.
139. University of Pennsylvania, Undergraduate Student Symposium in Biochemistry, Philadelphia, PA. March 2007.
140. Society for Biomolecular Sciences, Symposium on *High-Content Screening*, Montreal, QE, Canada, April 2007.
141. Experimental Biology Annual Meeting, Symposium on *Novel Technologies in Physiology and Medicine*, Washington, DC. May 2007.
142. Microscopy and Microanalysis, Symposium on *New Imaging Approaches for Cancer*, Ft. Lauderdale, FL, August 2007.
143. Microscopy and Microanalysis Annual Meeting, Symposium on *Biophotonics for the Technologists' Forum*, Ft. Lauderdale, FL, August 2007.
144. Pennsylvania State University, Biomedical Engineering Seminar, State College, PA. September 2007.
145. University of Pittsburgh, Cell Biology Seminar, Pittsburgh, PA. November 2007.
146. Singapore A*STAR, Bioimaging Consortium Seminar, Singapore. January 2008.
147. Photonics West, Annual Meeting of SPIE, the International Society of Optical Engineering, *Hot Topics* Symposium, San Jose, CA. January 2008.
148. Biophysical Society Annual Meeting, Symposium on *Optical Control and Imaging of Biological Systems In Vivo*. Long Beach, CA. February 2008.

149. Vanderbilt University, Molecular Physiology and Biophysics Seminar, Nashville, TN. February 2008.
150. Vanderbilt University, Biomedical Engineering Department Seminar, Nashville, TN. February 2008.
151. Experimental Biology 2008, Joint ASBMB/Histochemical Society Symposium on *Phenoms of the Phenome*, San Diego, CA. April 2008.
152. University of Massachusetts, Amherst, Systems Biology Colloquium, Amherst, MA. April 2008.
153. Medical University of South Carolina, College of Pharmacy Colloquium, Charleston, SC. May 2008.
154. Johns Hopkins University, School of Medicine, Physiology Seminar, Baltimore, MD. January 2009.
155. Biophysical Society Annual Meeting, Biological Fluorescence Subgroup, Boston, MA. February 2009.
156. University of Geneva, *Frontiers in Biomedicine* Seminar Series, Geneva, Switzerland. March 2009.
157. European Biophysical Societies Association Biannual Meeting, Symposium on *Live Cell Imaging*. Genoa, Italy. July 2009.
158. Southeast Regional Multi-photon Excitation Science Meeting, *Keynote Address*, Kannapolis, NC, August 2009.
159. Cambridge Health Institute, High Content Analysis East 2009, *Live Cell Imaging Symposium*, Boston, MA. September 2009.
160. American Society of Nephrology, Renal Week 2009, Symposium on *A Picture Is Worth a Thousand Words: Novel Imaging Techniques and Biology*, San Diego, CA, October 2009.
161. University of Michigan, Department of Pharmacology Seminar, Ann Arbor, MI. November 2009.
162. University of Pennsylvania, Biomedical Engineering Seminar, Philadelphia, PA. January 2010.
163. Histochemical Society, The Journal of Histochemistry and Cytochemistry Plenary Speaker, Annual Meeting, Woods Hole, MA. March 2010
164. Southeast Microscopy Society, Annual Meeting, Charleston, SC. May 2010.

165. International Microscopy Congress 17, Session Chair and Speaker for Symposium on Live Cell Imaging, Rio de Janeiro, Brazil, September 2010.
166. Focus in Optics/Laser Science 2010, Annual Meeting of the Optical Society of America, Symposium on Biomedical Applications of Lasers, Rochester, NY, October 2010.
167. Wake Forest University, Joint Biology/Physics Departments Seminar, Winston-Salem, NC. November 2010.
168. University of Toronto, Department of Physiology Seminar, Toronto, ON, Canada. November 2010.
169. University of Virginia, Charlottesville, FRET at 65, An International Symposium in Honor of Prof. Theodor Förster's 100th birthday. March 2011.
170. International Meeting on Förster Resonance Energy Transfer in the Life Sciences, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany. March 2011.
171. University of Maryland School of Medicine, Department of Physiology Seminar, Baltimore, MD. April 2011.
172. NeuroImaging Seminar, Marine Biological Laboratory, Woods Hole, MA. June 2011
173. Microscopy and Microanalysis Annual Meeting, Symposium on *Imaging Cancer Tumors and Environments In Vivo*, Nashville, TN, August 2011.
174. University of Wisconsin, Milwaukee, Physics Department Colloquium, Milwaukee, WI, September 2011.
175. Carl Zeiss Workshop on Correlative Microscopy, Munich, Germany, October 2011.
176. Vanderbilt University, Physics Department Colloquium, Nashville, TN. February 2012.
177. Vanderbilt University, Diabetes Research and Training Center Seminar, Nashville, TN. February 2012.
178. Oregon Health Sciences University, Systems Biology Symposium, Portland, OR, March 2012.
179. Ohio River Valley Microscopy Society, Annual Meeting, Dayton, OH, April 2012.
180. Oklahoma Microscopy Society, Annual Meeting, Noble Foundation, Ardmore, OK, April 2012.

181. Salk Institute, Imaging of Molecules, Cells, and Animals Symposium, La Jolla, CA, May 2012.
182. American Diabetes Association, Annual Scientific Sessions, Symposium on Fusion. Philadelphia, PA, June 2012.
183. National Cancer Institute, Cancer Imaging Camp, Nashville, TN, June 2012.
184. University of Vermont, Physiology Department Seminar, Burlington, VT, September 2012.
185. Appalachian Region Microscopy Society, Annual Meeting, Knoxville, TN, October 2012.
186. Midwest Association of Core Directors, Annual Meeting, St. Louis, MO, October 2012
187. Fluorescent Proteins and Biosensors III, HHMI Janelia Farms Research Campus, Ashburn, VA, November 2012
188. Biophysical Society Annual Meeting, Biological Fluorescence Subgroup, Philadelphia, PA, February 2013.
189. University of Illinois, Physics of Living Systems Colloquium, March 2013.
190. Technical University Delft, Faculty of Applied Sciences, Physical Sciences Colloquium, Delft, The Netherlands, April 2013.
191. Rotterdam Imaging Conference, Erasmus Medical Center, Rotterdam, The Netherlands, April 2013.
192. Texas Microscopy Society, Spring Meeting, Denton, TX, April 2013.
193. University of Southern California, Diabetes & Obesity Research Institute Seminar, Los Angeles, CA, April 2013.
194. ENDO 2013, Society of Endocrinology Annual Meeting, Symposium on Illuminating GPCRs, San Francisco, CA, June 2013.
195. Singapore Symposium on Metabolic Diseases, Symposium on Advanced Correlative Imaging, Singapore, August 2013.
196. Kidney Week 2013, Symposium on *In Vivo* Imaging, Atlanta, GA, November 2013.
197. Washington University, Cell Biology and Physiology Seminar, St. Louis, MO, February 2014.
198. University of Wisconsin, Biomedical Engineering Seminar, Madison WI, March 2014.

199. International Meeting of the German Society for Cell Biology (DGZ), Carl Zeiss Symposium on Novel Microscopies, Regensburg, Germany, March 2014.
200. Columbia University, Berrie Diabetes Center, Weekly Seminar Series, New York, NY, April 2014.
201. Symposium on the Enigmatic α -cell: Role in Glucose Homeostasis and Diabetes, Biomedical Centre, Uppsala, Sweden, May 2014.
202. North Carolina State University, Department of Biological Sciences, Nina Allen Imaging Seminar Series, Raleigh, NC, July 2014.
203. 18th International Microscopy Congress, Symposium on Live Cell Imaging, Prague, Czech Republic, September 2014.
204. Vanderbilt University, Institute of Imaging Sciences Seminar Series, Nashville, TN, September 2014.
205. The Ohio State University, Biophysics Research Mini-Symposium, Columbus, OH, October 2014.
206. Washington University, Anesthesiology Research Seminar, St. Louis, MO, April 2015.
207. Washington University, Physics Department Colloquium, St. Louis, MO, April 2015.
208. National University of Singapore, Department of Chemistry Colloquium, August 2015.
209. Singapore Symposium on Metabolic Diseases, Symposium on Innovative Approaches to the Treatment of Type 1 Diabetes, August 2015.
210. Washington University, Molecular Microbiology Retreat, Keynote Speaker, Pere Marquette State Park, IL, September 2015.
211. Oregon Health Sciences University, Vollum Institute Seminar Series, Portland, OR, October 2015.
212. University of Memphis, Chemistry Department Colloquium, Memphis, TN, October 2015.
213. Kidney Week 2015, Symposium on Live Cell Fluorescent Biosensors, San Diego, CA, November 2015.
214. University of Chicago, Institute for Biophysical Dynamics Seminar, Chicago, IL, December 2015.
215. Washington University, Cancer Biology Research Forum, Department of Radiation Oncology, St. Louis, MO, March 2016.

216. National Cancer Institute, Laboratory of Cell Biology Seminar, Bethesda, MD, April 2016.
217. American Diabetes Association, Annual Scientific Sessions, Symposium on Autocrine and Paracrine Signaling Between Islet Cell Types, New Orleans, LA, June 2016.
218. Washington University, Imaging Sciences Pathway Retreat 2016, Keynote Speaker, St. Louis, MO, June 2016.
219. Indiana University School of Medicine, Diabetes and Metabolism Colloquium, Indianapolis, IN, November 2016.
220. Indiana University – Purdue University, Indianapolis, Advances in Renal Imaging Symposium, Indianapolis, IN, November 2016.
221. Washington University, Imaging Science and Engineering Seminar, St. Louis, MO, November 2016.
222. Microscopy and Microanalysis Annual Meeting, Symposium on *Bridging the Gap: Technologies and Methods for Correlative Light and Charged Particle Microscopy of Biological Systems*, St Louis, MO, August 2017.
223. Microscopy and Microanalysis Annual Meeting, Distinguished Scientist Award Symposium, St Louis, MO, August 2017.
224. Conference of Collaborative Research Centre 1208, Dynamics of Membrane Systems, Düsseldorf, Germany, September 2017.
225. Washington University, John T. Milliken Department of Medicine, Renal Division Research Seminar Series, St. Louis, MO, October 2017.
226. University of Alabama, Birmingham, Department of Physiology Seminar, Birmingham, AL, October 2017.
227. Singapore Symposium on Metabolic Diseases, Symposium on Role of Islet Cell Interactions in Human Physiology, November 2017.
228. Biophysical Society Annual Meeting, Biological Fluorescence Subgroup, San Francisco, CA, February 2018.
229. 19th Servier – International Group on Insulin Secretion Symposium, St. Jean Cap Ferrat, France, March 2018.
230. The Second Britton Chance International Symposium on Metabolic Imaging and Spectroscopy, University of Pennsylvania, Philadelphia, PA, June 2018.

231. 9th International Meeting of the Islet Society, The Islet Biology Workshop at Vanderbilt, Nashville, TN, September 2018.
232. University of Uppsala, Diabetes and Endocrinology Seminar, Uppsala, Sweden, September 2018.
233. Saint Louis University, Department of Chemistry Colloquium, St Louis, MO, November 2018.
234. Protein Fluidics Scientific Advisory Board Meeting, Burlingame, CA, May 2019.
235. American Diabetes Association 2019 Scientific Sessions, Symposium on New Insights into Islet Signal Transduction, San Francisco, CA, June 2019.
236. Mechanobiology Institute Seminar, National University of Singapore, June 2019.
237. Singapore Biological Imaging Consortium, Colloquium, July 2019.
238. SPIE Photonics West, 30 Years of Multiphoton Microscopy in the Biomedical Sciences Conference, San Francisco, CA, February 2020.
239. University of California, Davis, College of Biological Sciences ‘Joint Seminar Series’, Davis, CA, April 2020. POSTPONED.
240. Southeast Electron Microscopy Society, Annual Meeting Keynote Speaker, Jacksonville, FL, May 2020. POSTPONED.
241. Oregon Health Sciences University, Department of Chemical Physiology and Biochemistry Seminar, Portland, OR, June 2020. *Virtual On-line Seminar*.
242. Washington University School of Medicine, Metabolism, Obesity, and Diabetes Grand Rounds, St. Louis, MO, October 2020. *Virtual On-line Seminar*.
243. University of California, Irvine, Laboratory for Fluorescence Dynamics Seminar, Irvine, CA, April 2021. *Virtual On-line Seminar*.
244. Beckman Foundation Annual Meeting, Light Sheet Microscopy Symposium, August, 2021. *Virtual On-line Seminar*.
245. Islet Research Seminar Series, UCLA, City of Hope, Mayo Clinic, Wash U, September 2021. *Virtual On-line Seminar*.
246. SPIE Photonics West, Multiphoton Microscopy “Watt Webb Memorial” Symposium, San Francisco, CA, February 2022.

247. Case Western Reserve University, Department of Physiology Seminar, Cleveland, OH, April 2022.
248. Light Sheet Fluorescence Microscopy '22 Conference. Woods Hole, MA, May 2022.
249. Microscopy and Microanalysis Annual Meeting, Memorial Symposium: Shinya Inoue, Portland, OR, August 2022
250. Cornell University, School of Applied Physics, Watt W. Webb Memorial Symposium. Ithaca, NY, August 2022.

Funding History

Current Support

Principal Investigator

9/01/2020-06/30/2025: National Institutes of Health, R01 DK123301 “Regulation of Glucagon Secretion from Pancreatic Islets”, \$250,000 yearly direct costs.

7/1/2018 – 6/30/2023: National Institutes of Health, R01 DK115972 “Multi-dimensional Dynamics of Pancreatic Islet Cells Measured by Image Mapping”, \$417,500 yearly direct costs.

7/1/19 – 9/30/25: The Leona M. and Harry B. Helmsley Charitable Trust, “Normalizing Alpha Cell Glucagon Secretion as a Diabetes Therapy”, \$3000,000 yearly direct costs.

8/1/21 – 2/28/22: The Leona M. and Harry B. Helmsley Charitable Trust, “Screening Compounds that Modulate Glucagon Secretion”, \$300,000 direct costs.

4/1/19 – 3/31/25: Arch Personalized Medicine Initiative, “Strategies to Normalize Glucagon Secretion as a Therapeutic Approach for Type 2 Diabetes”, \$500,000 yearly direct costs.

Other Grants

2/27/2018 – 11/30/2022: National Institutes of Health, P30 DK020579 “Diabetes Research Center”, Clay Semenkovich, P.I. Associate Director, Director of Pilot & Feasibility Program, Executive Committee Member.

4/1/2019 – 3/31/2024: National Institutes of Health, R01HL146601 “Cellular and Molecular Features of Gene Mutations in Primary Ciliary Dyskinesia”, Steven Brody, P.I. Collaborator, \$30,000 yearly direct costs to Piston Lab.

Past Support

Principal Investigator

7/1/93 – 6/30/95: Beckman Young Investigator, "Three-Dimensional Imaging of Living Cell Dynamics by Two-Photon Excitation Microscopy", \$175,000 total direct costs.

12/1/93 – 11/30/95: Vanderbilt DRTC, Pilot Study Grant, "Dynamics of Single Cells within Living, Intact Pancreatic Islets: Implications for Insulin Secretion", \$40,000 total direct costs.

8/1/94 – 7/31/97: Whitaker Foundation Biomedical Engineering Grant, "Investigation of Cell Lineage in Sea Urchin Development by Two-Photon Excitation Photorelease of a Fluorescent Marker", \$163,000 total direct costs.

1/1/98 – 11/30/11: National Institutes of Health, R01 DK53434 “Dynamics of Pancreatic Islet Function”, \$210,000 yearly direct costs.

8/15/98 – 6/30/01: National Science Foundation, DBI-9871063 “Development of a Multi-Function Laser Scanning Microscope,” \$428,939 total direct costs.

6/1/01 – 9/30/03: Department of Defense - Air Force Office of Scientific Research, “Vanderbilt Free Electron Laser Center for Medical and Materials Applications” \$2,600,000 yearly total costs.

6/1/00 – 5/31/04: National Institutes of Health, P20 CA86283 “Vanderbilt *In Vivo* Imaging Center”, \$291,982 yearly direct costs.

4/1/05 – 3/31/06: National Institutes of Health, S10 RR021208 “Two-photon FCS System”, \$406,100 direct costs.

10/1/03 – 6/30/09: Department of Defense - Air Force Office of Scientific Research, “Vanderbilt Free Electron Laser Center for Medical and Materials Applications” \$3,250,000 yearly total costs.

6/1/04 – 3/31/09: National Institutes of Health, U54 CA105296 “Network for Translational Research in Optical Imaging”, \$129,000 yearly direct costs.

8/1/04 – 7/31/09: National Institutes of Health, P20 GM072048 “Probes for Quantitative Optical and Electron Microscopy”, \$453,000 yearly direct costs.

9/1/2008 – 8/31/2013: National Institutes of Health, R01 GM081801 “Three Dimensional Aberration Corrected Scanning Transmission Electron Microscopy”, \$283,000 yearly direct costs.

4/1/09 – 3/31/10: National Institutes of Health, S10 RR025649 “Multifunction Laser Scanning Microscope”, \$499,481 direct costs.

8/1/09 – 7/31/10: National Institutes of Health, S10 RR026828 “Parallel Computer”, \$498,936 direct costs.

4/1/2010 – 8/31/2016: National Institutes of Health, R01 DK085064 “Dopamine Action in Pancreatic Islet Function”, \$250,000 yearly direct costs.

5/1/2012 – 4/30/2013: National Institutes of Health, S10 OD010681 “Multiphoton Microscope Upgrade”, \$453,931 direct costs.

7/11/13 – 7/10/14: National Institutes of Health, S10 RR026828 “Parallel Computer with High Memory Nodes”, \$597,524 direct costs.

7/1/2013 – 10/31/2015: Iacocca Family Foundation, “Reversal of Type 1 Diabetes without Insulin”, \$463,187 direct costs.

9/20/2013 – 8/31/2018: National Institutes of Health, R01 DK098659 “Pancreatic Islets Dynamics Regulating Glucagon Secretion”, \$217,500 yearly direct costs.

11/1/17 – 10/31/18: The Leona M. and Harry B. Helmsley Charitable Trust, “Normalizing Alpha Cell Glucagon Secretion as a Diabetes Therapy”, \$150,000 yearly direct costs.

7/1/20 – 6/30/22: The Leona M. and Harry B. Helmsley Charitable Trust, “Improved Glucagon Assay”, \$125,000 direct costs.

Other Grants

9/14/2017 – 8/31/2020: National Institutes of Health, R01 DK112921 “Endoplasmic Reticulum in Beta Cells”, Fumihiko Urano, PI. \$10,000 yearly direct costs to Piston Lab.

6/1/2001 – 12/31/2014: National Institutes of Health, P50 DK59637 “Vanderbilt Mouse Metabolic Physiology Center”, David Wasserman, P.I. Director of Cell Imaging Core.

9/17/1997 – 12/31/2014: National Institutes of Health, P60 CA68485 “Vanderbilt Cancer Center”, Jennifer A. Pietenpol, P.I. Shared Resource Manager for Cell Imaging Resource.

5/15/2012 – 12/31/2014: National Institutes of Health, P60 DK20593 “Diabetes Research and Training Center”, Alvin C. Powers, P.I. Executive Committee Member and Director of Cell Imaging Core.

6/1/2000 – 12/31/2014: National Institutes of Health, P30 DK058404 “Molecular and Cellular Basis for Digestive Diseases”, Richard M. Peek, P.I. Director of Cell Imaging Core.

9/22/2003 – 8/31/2013: National Institutes of Health, U54 CA136465 “Multimodality Imaging of GI Cancers for Diagnosis and Directed Therapy”, Subcontract from Stanford University, David W. Piston and Larry Marnett, PIs, \$179,000 yearly direct costs.

9/22/2008 – 8/31/2013: National Institutes of Health, P50CA128323 “Vanderbilt *In Vivo* Cellular and Molecular Imaging Center”, Co-PI for Project 2 and Imaging Core. John C. Gore PI, \$1,500,000 yearly direct costs.

6/1/2016 – 5/31/2019: Juvenile Diabetes Research Foundation “Small Molecule Modulators of Endoplasmic Reticulum for the Treatment of Type 1 Diabetes”, Fumihiko Urano, PI. \$20,000 yearly direct costs to Piston Lab.

6/1/01 – 5/31/07: National Institutes of Health, R01 DK42612 “Glucokinase Gene Expression in Pancreatic Beta Cell”, Mark A. Magnuson, P.I. Collaborator.

9/1/04 – 8/31/07: National Institutes of Health, R01 DK68764 “Pancreatic Islet Imaging and Blood Flow”, Alvin C. Powers, P.I. Collaborator.

9/30/01 – 5/31/04: National Institutes of Health, R01 DK42502 “Genes of Glucose Homeostasis and Diabetes”, Mark A. Magnuson, P.I. PI of pilot project: "In Vivo Imaging of β Cell Development".

4/1/97 – 3/31/01: National Institutes of Health, R01 NS30470, “Excitatory Synaptic Transmission in Neurostriatum” David M. Lovinger, P.I. Collaborator.

9/1/97 – 8/31/99: National Institutes of Health, R21 MH58332, “Novel Methods for Visualizing Neuron-Specific Synapses” David Miller, P.I. Co-PI.

7/1/95 – 6/30/99: National Institutes of Health, R01 DK42502 “Genes of Glucose Homeostasis and Diabetes”, Mark A. Magnuson, P.I. Collaborator in Core B for Confocal Microscopy and Image Analysis.

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3. Feddersen, B.A., D.W. Piston, E. Gratton. 1989. Digital Parallel Acquisition in Frequency Domain Fluorometry. *Rev. Sci. Instrum.* **60**:2929-2936.
4. Piston, D.W., E. Gratton. 1989. Orientational Exchange Approach to Fluorescence Anisotropy Decay. *Biophys. J.* **56**:1083-1091.
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