Curriculum Vitae, Nils G. Walter, Dr. Ing. (Chemistry)

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PROFESSIONAL EXPERIENCE

FACULTY

2017-present	Francis S. Collins Collegiate Professor of Chemistry, Biophysics, and Biological Chemistry, College of Literature, Science and the Arts
2016-present	Professor of Biological Chemistry
2009-present	Professor of Chemistry
2016-present	Founding Co-Director, Center for RNA Biomedicine, U. of Michigan; awarded a 5-year $10.2M Biosciences Initiative Award in 2018 to further build this grassroots, 150-faculty member effort
2010-present	Founding Director, Single Molecule Analysis in Real-Time (SMART) Center
2015-present	Associate Director, Michigan Post-baccalaureate Research Education Program (PREP)
1999-present	Member of the Biophysics (since 1999), Applied Physics (since 2000), Cellular & Molecular Biology (since 2001), Chemical Biology (since 2005), and Bioinformatics Graduate Programs University of Michigan, Ann Arbor
2025	Sabbatical Visitor of John Mattick, University of New South Wales, Australia
2020-2023	Faculty Director of the Microscopy Core in the Biomedical Research Core Facilities (BRCF)
2018	Sabbatical Visitor with Steve Quake, Chan Zuckerberg Biohub, San Francisco
2015-2020	Co-Director, Microfluidics in Biomedical Sciences Training Program
2012	Sabbatical Visitor with Harald Schwalbe, Goethe University Frankfurt, Germany
2005-2009	Associate Professor of Chemistry
2006	Sabbatical Visitor with Sunney Xie, Harvard University, Cambridge
2006	Distinguished Visitor, JILA, Boulder, with David Nesbitt
2002-2005	Dow Corning Assistant Professor of Chemistry
1999-2005	Assistant Professor of Chemistry

POSTDOCTORATE

1996-1999	Postdoctoral Research Fellow with **Prof. John M. Burke**, University of Vermont; Subject: *Biophysical Studies of the Hairpin Ribozyme*
1995	Postdoctoral Research Fellow with Nobel laureate **Prof. Manfred Eigen**, Max-Planck-Institute for Biophysical Chemistry, Göttingen; Subject: *Applications of Fluorescence Correlation Spectroscopy*

EDUCATION

1992-1995	Graduate Research Assistant with Nobel laureate **Prof. Manfred Eigen**, Max-Planck-Institute for Biophysical Chemistry, Göttingen; Dr. Ing. Thesis: *Studies on Molecular in vitro Evolution using Non-Radioactive Detection of Nucleic Acids;* Grade: *Summa cum laude (highest possible)*; awarded an *Otto-Hahn Medal 1995 of the Max-Planck-Society*
1991	Diploma Ing. Thesis with **Prof. Hans-Günther Gassen**, Institute of Biochemistry, Technical University of Darmstadt; Subject: *Physicochemical and Enzymological Characterization of a NAD^+-dependent Sorbitol Dehydrogenase from Gluconobacter oxydans ssp. suboxydans Strain*

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1988-1991 Diploma in Chemistry, Major in Biochemistry, Technical University of Darmstadt, Germany; Grade: *Summa cum laude (highest possible)*; awarded with *Anton Keller Prize for best Chemistry Diploma of the Year*

1986-1988 Pre-Diploma in Chemistry, Technical University of Darmstadt, Germany

FELLOWSHIPS, HONORS, AND GRANTS

FELLOWSHIPS AND HONORS

2021 Open Science Practice Award, Chan Zuckerberg Initiative Neurodegeneration Challenge Network

2020 Student's Choice Faculty Mentor Award, Cellular & Molecular Biology Graduate Program

2018 Visiting Sabbatical Scholar, Chan-Zuckerberg Biohub, San Francisco (hosted by Stephen Quake)

2018 Prasanta Datta Memorial Scholarship from the Department of Biological Chemistry, University of Michigan, for sabbatical travel

2017-ongoing Francis S. Collins Collegiate Professor of Chemistry, Biophysics, and Biological Chemistry, College of Literature, Science and the Arts

2017 RNA Society Mid-Career Award 2017

2015 Jean Dreyfus Boissevain Lecturer 2015, Trinity University, San Antonio, TX

2015 Harold R. Johnson Diversity Service Award, University of Michigan

2013 Imes and Moore Faculty Award, College of Literature, Science & the Arts, University of Michigan

2013 Faculty Recognition Award, University of Michigan

2012 Alexander von Humboldt Foundation Visiting Scholar, Johann Wolfgang Goethe University Frankfurt (Harald Schwalbe group)

2011 Election as AAAS Fellow

2011 Selection into the ADVANCE Program for Executive Leadership of the College of LS&A, University of Michigan

2011 Buchanan Lecturer, Bowling Green State University

2009-2013 Chartered NIH Study Section Member, MSFB

2006 Visiting Sabbatical Scholar, Harvard University (Sunney Xie group)

2006 Alumnus of the Year Award, Sherbrooke RiboClub

2006 JILA Distinguished Visitor Fellowship (David Nesbitt group)

2004-2009 Camille Dreyfus Teacher-Scholar Award

2002 Dow Corning Assistant Professorship of the University of Michigan

1996 Otto-Hahn medal 1995 for Outstanding Researchers of the Max-Planck Society

1995-1998 Feodor-Lynen Postdoctoral Research Fellowship from the Alexander von Humboldt Foundation

1995 Summa cum laude Dr. rer. nat. graduate, Technical University Darmstadt and the Max-Planck-Institute for Biophysical Chemistry

1992-1994 Kekulé Pre-doctoral Scholarship from the Fonds of the German Chemical Industry Association

1991 Summa cum laude Chemistry graduate of the Technical University of Darmstadt, Anton Keller Prize for best Chemistry Diploma

1989-1991 Fellowship from the German National Merit Foundation ("Studienstiftung des deutschen Volkes")

1985 Book prize for best Final Examination (Abitur) of 1985 in secondary school

GRANTS, PRESENT

5/1/19-4/30/29: NIH 1R35 GM131922 (PI: Walter); total cost over 5 years: $3,636,617; *The RNA nanomachines of the gene expression machinery dissected at the single molecule level*;

annual direct cost to Walter lab: $668,776 (Year 6, then $561,000); provides full indirect costs

10/01/24-09/30/25: NIH 3R35GM131922-05S2 (PI: Walter); total direct cost: $249,713; *Administrative Supplement for an AbbeLight SAFe M90 automated, multicolor, ultra-wide-field TIRF imaging module: The RNA nanomachines of the gene expression machinery dissected at the single molecule level*; provides full indirect costs

08/01/21-04/30/26: NIH R01 NS097542 (PI: Barmada); total direct cost to the Walter lab: $25,852; *RNA decay in amyotrophic lateral sclerosis and frontotemporal lobar degeneration*; provides full indirect costs

09/01/23-08/31/28: NIH R01 NS097542 (PI: Ljungman); total direct cost to the Walter lab: $91,630; *Precision targeting of bladder cancer using CRISPR*; provides full indirect costs

05/15/24-05/14/25: NIH 1S10OD034294-01A1 (PI: Walter); total direct cost: $1,431,300 (NIH) plus $183,000 (UM cost share); *Combined Optical Tweezers-Single Molecule Super-Resolution Fluorescence Microscope in the Open-Access SMART Center*; provides no indirect costs

05/01/24-04/20/25: MEDC RC112630 (PI: Walter); total direct cost: $40,000; *Programmable RAPID intervention against the next pandemic*; provides no indirect costs

12/01/21-11/30/24: NSF MCB 2140320 (Walter); total cost over 3 years: $675,000; *Unveiling functionally critical, ephemeral RNA (un)folding states with magnetic tape head tweezers*; current year direct cost to Walter lab: $151,955; provides full indirect costs

8/01/22-7/31/26: Chan Zuckerberg Initiative (CZI) 2022-250725 (Moon, Walter); total cost over 4 years: $1,600,000; *VCP-driven RNA:protein remodeling in neurodegeneration*; current year direct cost to Walter lab: $173,913; provides 15% indirect costs

GRANTS, PAST

9/1/99: Startup Funds University of Michigan: $495,000

1/1/00-12/31/01: Rackham Graduate School grant (PI: Walter): $15,000; *Relating Structure and Function in Catalytic RNA using Fluorescence Resonance Energy Transfer (FRET)*

5/1/01-8/31/01: University of Michigan Office of the Vice President of Research – Spring/Summer Research Grant Program (PI: Walter): Total cost: $4,000; *How Single Ribosomes Fold and Function: An Atomic Force Microscopy Study*

3/29/02: University of Michigan OVPR (Office of the Vice President of Research); Distinguished Faculty and Graduate Student Seminar (PI: Walter): Total cost: $6,500; *Chemistry Symposium*

5/23/02: University of Michigan OVPR (Office of the Vice President of Research), OPIL (Optical Physics Interdisciplinary Laboratory), and College of Literature, Science and Arts, Faculty grant (PI: Walter); Total cost: $81,000; *Building a Single-Molecule Fluorescence Microscope to Study Structure, Dynamics, and Function of Biological Macromolecules*

1/1/03-12/31/03: NIH Grant Supplement 1 R01 GM62357-03S2 for equipment supplement to build a 17-node dual-processor PC cluster (PI: Walter); Total cost $30,184; in support of *Folding and Function of the Hammerhead and Delta Ribozymes*

5/1/03-8/31/03: University of Michigan Office of the Vice President of Research – Spring/Summer

Research Grant Program (PI: Walter): Total cost: $4,000; *How Single Ribozymes Fold and Function: A Single-Molecule Spectroscopy Study*

6/1/03-11/1/03: OPIL (Optical Physics Interdisciplinary Laboratory) summer student support grant: $4,000; *Observe and control the folding of single RNA molecules*

9/1/02-8/31/04: ACS-PRF Type G Grant # 37728-G7 (PI: Walter); Total cost over 2 years: $35,000; *How Single Ribosomes Fold to Function: An Atomic Force Microscopy Study*

9/1/02-8/31/04: UNCF/Merck Science Initiative Fellowship (student: Dinari Harris; PI: Nils Walter); Total cost over 2 years: $40,000; *Fluorescence Studies of Catalytic RNA*

1/1/03-12/31/04: OPIL (Optical Physics Interdisciplinary Laboratory) grant (co-PI: Jens-Christian Meiners); Total cost: $19,500; *Combining optical detection of tethered single RNA molecules with microfluidic handling of buffer solutions*

9/1/03-12/31/04: NIH Grant Supplement 1 R01 GM62357-03S1 for minority student Rebecca Tinsley (PI: Walter); Total cost over $2^1/_4$ years (original grant): $124,399; in support of *Folding and Function of the Hammerhead and Delta Ribozymes*

9/1/02-8/31/05: Endowment associated with the Dow Corning Assistant Professorship; Total cost: $50,000

7/1/03-6/30/06: NASA Bioscience & Engineering Institute Grant NNC04AA21A to the University of Michigan (PI: James Grotberg, School of Engineering); Total cost over 5 years: $6,500,000; Subproject: *Single Molecule Biosensors and Actuators* (one of 12 total; co-PI with Jens-Christian Meiners)

6/1/04-5/31/06: NASA National Space Biomedical Research Institute Grant NNA04CD01G, managed by NASA's Fundamental Space Biology Program (co-PI with Jens-Christian Meiners); Total cost over 2 years: $299,696; *Microfluidic Single-Molecule Biosensor*

1/1/01-12/31/06: NIH 1 R01 GM62357-01 (PI: Walter); Total cost over 5 years: $1,110,218; *Folding and Function of the Hammerhead and Delta Ribozymes*; currently under one-year no-cost extension while submitting renewal application

9/1/04-8/31/09: Camille Dreyfus Teacher-Scholar Award from The Camille and Henry Dreyfus Foundation, Inc.; Total cost: $60,000; *Probing the Mechanism of Small Interfering RNAs (siRNAs) by Single-Molecule Fluorescence Spectroscopy*; current year direct cost to Walter lab: $12,000; provides no indirect costs

9/1/05-08/31/09: NSF Collaborative Research: Chemical Bonding Center (co-PI with several investigators in Columbia, Caltech, U. of Chicago, U. of New Mexico), award 0533019; Total cost over 4 years to the Walter group: $239,400; *Center for Molecular Cybernetics*; current year direct cost to Walter lab: $58,000; competitive renewal into Phase II recommended for funding; provides full indirect costs

12/1/05-11/30/10: NIH 2 R01 GM037006-17A1 (co-PI with Michael Morris); Total cost over 4 years: $1,031,111; *Real-time Fluorescence Imaging of RNA/Ribosome Dynamics*

1/1/06-8/31/08: PRF Type AC Grant 43875-AC4 (PI: Walter), American Chemical Society; Total cost over $2\text{-}^2/_3$ years: $80,000; *Catalysis by a Large Non-Protein Biopolymer: Dissecting VS Ribozyme Folding, Structure, and Mechanism using Single Molecule Fluorescence and Crystallography*

5/1/10-8/31/10: University of Michigan Office of the Vice President of Research – Spring/Summer Research Grant Program (PI: Walter): Total cost: $6,000; *miP-Seq as a sensitive high-throughput technique to validate and quantify all microRNA targets*; provides no indirect

costs

09/18/09-04/30/11: NIH 3R01GM062264-08S1 (Supplement to Jon Staley, U. Chicago); Total cost over funding period to the Walter lab: $64,933 ($48,025 direct costs + $16,908 facilities and administrative costs); *Mechanisms for Rearranging RNA during Pre-mRNA Splicing*

7/1/07-8/31/11: NIH 2R01 GM062357-10A2 (PI: Walter); total cost: $1,073,709; *U-turn of the Hepatitis Delta Virus Ribozyme*; current year direct cost to Walter lab: $184,500; provides full indirect costs; was awarded competitive renewal to start 9/1/11

9/1/08-8/31/11: NSF Collaborative Research: EMT/MISC (co-PI with several investigators in Columbia, Caltech, U. of Chicago, U. of New Mexico), award CCF-0829579; Total cost over 3 years to the Walter group: $330,000; *Behavior-Based Molecular Robotics*; current year direct cost to Walter lab: $71,000; provides full indirect costs

10/01/09-04/30/12: NIH 3-R01-GM062357-S1 (Supplement to NIH 2R01 GM062357) (PI: Walter); total cost: $152,758; *U-turn of the Hepatitis Delta Virus Ribozyme*; Diversity on Health-Related Research supplement for Ms. Kamali Sripathi; provides full indirect costs

1/01/12-8/31/12: NIH 3-R01-GM062357-S2 (Supplement to NIH 2R01 GM062357) (PI: Walter); total cost: $41,034; *Unraveling folding and mechanism of a small model ribozyme*; Diversity on Health-Related Research supplement for Mr. Assefa Berhane; provides full indirect costs; remaining funds returned to NIH

5/1/12-4/30/13: NSF MCB-1240634 conference support; Total cost: $8,700; *Conference: 17th Annual RNA Society Meeting to be held May 29-June 3, 2012; University of Michigan in Ann Arbor*; provides no indirect costs

8/1/07-7/31/12: NIH 1R01 GM081025 (PI: Walter); total cost over 4 years: $1,000,673; *Trekking with the Ribognome: Single Molecule Microscopy of Intracellular miRNPs*; current year direct cost to Walter lab: $175,000; provides full indirect costs

9/1/09-8/31/13: NSF EFRI-BioSA (co-PI with Ronald Larson, Chemical Engineering, as well as Jay Guo, Nick Kotov and James Baker Jr.), award 0938019; Total cost over 4 years to the Walter group: $449,396; *Engineering Synthetic Mimics of DNA-Protein Recognition Systems*; current year direct cost to Walter lab: $77,978; provides full indirect costs

2/15/10-9/30/13: NSF MRI-R2-ID (PI: Walter), award DBI-0959823; Total cost over 3 years, used to found the Single Molecule Analysis in Real-Time (SMART) Center at the U-of-M: $1,700,026 (including $537,000 university cost share); *MRI-R2: Development of High-Resolution Single Fluorescent Particle Tracker and Nanomanipulator*; provides partial indirect costs

1/1/13-12/31/13: IFOM Fondazione Istituto FIRC di Oncologia Molecolare, Milan, Italy (Sponsor: Fabrizio D'Adda di Fagagna), *Mechanism of DDRNAs*; Total cost 12 months: $46,696*;* includes 30% indirect costs

1/1/13-12/31/14: University of Michigan MCubed grant (co-PI with PI Yiorgo Skiniotis and co-PI Roger Sunahara); total cost over 2 years: $60,000; *DNA origami scaffolds for cryo-EM visualization of membrane associated complexes*; current year direct cost to Walter lab: $30,000; provides no indirect costs

9/1/14-11/30/15: NIH 1R01 GM098023-S1 (PI: Walter); total cost over 1-$^{1}/_{4}$ years: $98,812; Collaborative Supplement *High-Throughput Probing of Intron Secondary Structure Within Active Spliceosomal Complexes*; provides full indirect costs

12/15/13-11/30/15: NIH 1R21 AI109791 (PI: Walter); total cost over 2 years: $384,863; *HCV biology and*

inhibition visualized at the single molecule level; current year direct cost to Walter lab: $135,000; provides full indirect costs

1/1/11-12/31/15: NIH 5 R01 GM055387 (PI: Carol Fierke); total cost over 4 years: $1,203,447; *Enzymology of RNA Processing*; current year direct cost to Walter lab: $7,636; provides full indirect costs

2/1/12-11/30/15: NIH 1R01 GM098023 (PI: Walter); total cost over 4 years: $1,269,396; *Spliceosome Mechanism Dissected at the Single Molecule Level*; current year direct cost to Walter lab: $178,243; provides full indirect costs; renewal pending

4/1/12-3/31/16: NIH 2 R01 GM063162 (PI: Joseph Wedekind); total cost over 4 years: $1,472,944; *Mechanism of Action of Non-Coding RNA Molecules*; current year direct cost to Walter lab: $36,620; provides full indirect costs

6/1/11-8/31/16: University of Michigan Rackham Graduate School (PI with co-PIs John Wolfe, Anna Mapp, Bart Bartlett, Eitan Geva); *Enhancing Diversity in Graduate Education Grant award to Chemistry department*; Total cost over 5 years: $175,500*; Student Diversity in Chemistry*; provides no indirect costs

7/1/15-12/31/16: University of Michigan Mi-TRAC Kickstart grant (co-PI with Muneesh Tewari); total cost over 1 year: $30,000; *A New Technology for Single Molecule Counting of Nucleic Acid Biomarker*; current year direct cost to Walter lab: $30,000; provides no indirect costs

3/1/16-2/28/17: University of Michigan Comprehensive Cancer Center Research Grant through P30 CA46592 (PI: Eric Fearon) (co-PI with Muneesh Tewari); total cost over 1 year: $50,000; *A Novel Single Molecule Counting Technology Enabling Non-Invasive Detection and Monitoring of Cancer via Trans-Renal Circulating Tumor DNA in Urine*; current year direct cost to Walter lab: $25,000; provides no indirect costs

4/1/16-3/31/17: University of Michigan MCubed 2.0 grant (PI with co-PIs Muneesh Tewari, Arul Chinnaiyan, Shuichi Takayama); total cost over 2 years: $60,000; *Single-molecule counting of cancer biomarker RNAs in human biofluids*; current year direct cost to Walter lab: $60,000; provides no indirect costs

4/1/16-3/31/17: University of Michigan Fast Forward GI Innovation Fund grant (co-PI with Muneesh Tewari); total cost over 1 year: $50,000; *A New Technology for Single Molecule Counting of Stool Mutant DNA Biomarkers for Colorectal Cancer*; current year direct cost to Walter lab: $25,000; provides no indirect costs

8/1/12-8/31/17: US Department of Defense MURI, ONR award W911NF-12-1-0420 (co-PI: Walter; PI: Hao Yan, Arizona State U.); total cost: $6,250,000; *Translating Biochemical Pathways to Non-Cellular Environment*; current year direct cost to Walter lab: $162,000; provides full indirect costs

6/1/16-5/31/18: University of Michigan Comprehensive Cancer Center (through P30 CA46592) and Biointerfaces Institute Research Grant (co-PI with Sunitha Nagrath and Nithya Ramnath); total cost over 1 year: $100,000; *Pilot Project-Single Molecule Characterization of Circulating Tumor Cells in Lung Cancer*; current year direct cost to Walter lab: $40,000; provides no indirect costs

02/01/17-04/30/18 MiTRAC Grant University of Michigan & State of MI (co-PIs Walter, Tewari); total direct cost over 2 years: $200,000; *A high-specificity, direct single molecule counting technology to enable cell-free DNA-based liquid biopsy for oncology;* current year direct cost to Walter lab: $100,000; provides 15% indirect costs

7/1/17-6/30/18 NIH R01 GM094450 (PI: Chen); total cost: $1,313,468; *Molecular mechanism of telomerase actions*; current year direct cost to Walter lab: $45,000 for one year only; provides full indirect costs

2/12/18-9/15/19: Bio-Rad/aLight Science LLC (Walter); total cost to Walter lab over 1 year: $246,336; *Proof-of-concept study on protein detection with SiMREPS assay*; current year direct cost to Walter lab: $246,336; provides only partial indirect costs

3/3/17-2/28/20: NIH R21 CA204560 (Walter, Tewari); total cost to Walter lab over 3 years: $413,333; *Single-molecule counting of cancer biomarker miRNAs in human biofluids*; current year direct cost to Walter lab: $100,000; provides full indirect costs

6/1/16-3/31/20: NIH R01 GM115857 (Nikonowicz); total cost to Walter lab over 4 years: $447,500; *Resolving structure and Mechanism of tRNA-actuated riboswitches*; current year direct cost to Walter lab: $85,621; provides full indirect costs

7/1/19-6/30/20: University of Michigan Rogel Cancer Center Fund for Discovery Grant through P30 CA46592; total cost over 1 year: $50,000; *Cellular Cancer Biology Imaging Research (CCBIR): Nano-Fingerprint-Imaging of Cancer Tissues for In Situ Single-Cell Multi-Omics*; current year direct cost to Walter lab: $50,000; provides no indirect costs

9/1/16-8/31/20: NSF DMR-1607854 (Yan); total cost to Walter lab over 3 years (plus no-cost extension): $150,000; *Collaborative Research: A biomimetic dynamic self-assembly system programmed using DNA nanostructures*; current year direct cost to Walter lab: $30,703; provides full indirect costs

9/23/16-8/31/20: NIH R01 GM118524 (Walter); total cost to Walter lab over 4 years: $1,215,224; *Co-transcriptional folding of single riboswitches*; current year direct cost to Walter lab: $197,500; provides full indirect costs

1/1/01-03/31/21: NIH 2R01 GM062357 (PI: Walter); total cost over 4 years: $1,512,054; *Riboswitch mechanism unraveled at the single molecule level*; current year direct cost to Walter lab: $250,000; provides full indirect costs

04/01/20-03/31/21: NIH 3-R01-GM062357-14-A1-S1 (PI: Walter); total direct cost: $248,778; *Administrative supplement for instrumentation: Riboswitch mechanism unraveled at the single molecule level*; provides full indirect costs

5/01/17-4/30/21: NIH R01 R01 GM122803 (Walter); total cost to Walter lab over 4 years: $1,069,510; *Timing and coordination of the conformational rearrangements mediating splicing*; current year direct cost to Walter lab: $190,000; provides full indirect costs

9/1/18-8/31/21: NIH R33 CA229023 (Tewari, Walter); total cost to Walter lab over 3 years: $582,556; *Optimization and Validation of Single-Molecule Kinetic Fingerprinting Technology for Rapid, Ultra-Specific Detection of Cancer Mutations*; current year direct cost to Walter lab: $124,500; provides full indirect costs

9/1/18-12/31/21: University of Michigan MCubed 3.0 grant (co-PI with Mats Ljungman, Maria Castro); total cost over 2 years: $60,000; *Identification and characterization of cancer-associated non-coding RNAs*; current year direct cost to Walter lab: $20,000; provides no indirect costs

11/1/20-4/30/22: aLight Science LLC (Walter); total cost to Walter lab over 1 year: $250,000; *Proof-of-Concept Study on Expanding the Utility of Protein Detection with SiMREPS Assay*; current year direct cost to Walter lab: $113,265; provides only partial indirect costs

03/15/22-03/14/23: Innovation Partnerships Roivant Fund (Walter); total cost over 1 year: $49,991; *High*

throughput drug screening against paused elongation complexes; current year direct cost to Walter lab: $49,991; provides no indirect costs

6/1/18-5/31/23: NIH 5 P30 CA46592 (PI: Eric Fearon); contribution to salary: 0.6 academic months; Cancer Center Support Grant; Role: Director, Cell and Tissue Imaging Shared Resource

12/01/20-5/31/23: Chan Zuckerberg Initiative (CZI) (Moon, Walter); total cost over 2 years: $150,000; *Regulation of mRNA and RNP Granules by VCP in Motor Neuron Degeneration*; current year direct cost to Walter lab: $34,785; provides no indirect costs

8/6/20-7/31/23: NIH R21 CA225493 (Tewari, Walter); total cost to Walter lab over 3 years to Walter lab: $181,106; *Highly specific, amplification-free, single-molecule counting of rare methylated DNA cancer biomarkers*; current year direct cost to Walter lab: $56,202; provides full indirect costs

05/01/23-04/30/24: NIH 3R35GM131922-05S1 (PI: Walter); total direct cost: $250,000; *Administrative Supplement for a Cytosurge FluidFM OMNIUM instrument: The RNA nanomachines of the gene expression machinery dissected at the single molecule level*; provides full indirect costs

GRANTS, PENDING

MANY

FELLOWSHIPS OF CURRENT GROUP MEMBERS

Ms. Emily Sumrall NSF Graduate Research Fellowship

PROFESSIONAL ORGANIZATIONS

Member, Society of German Chemists (GDCh), since 1991
Member, Society for Biochemistry and Molecular Biology (GBM), since 1993
Member, RNA Society, since 1996
Member, American Chemical Society, since 1999
Member, American Association for the Advancement of Science, since 1999
Member, Biophysical Society, since 2002
Member, American Society for Biochemistry and Molecular Biology, since 2017
Founding Council Member, International Society of RNA Nanotechnology and Nanomedicine (ISRNN), since 2019
Member, Full Membership in Sigma Xi, the Scientific Research Honor Society, 2020-2022

CONSULTING AND OTHER PROFESSIONAL ACTIVITIES

Co-Editor-in-Chief, *Wiley Interdisciplinary Reviews (WIREs): Nanomedicine and Nanobiotechnology* (2018-2024; Associate Editor 2010-2016)
Editorial Board Member, *Journal of Biological Chemistry* (2017-ongoing)
Editor, *Methods* (2015-2019); Editorial Advisory Board member (2013-ongoing)
Associate Editor, *Biopolymers* (2007-2016)
Advisory Board, NIH Chemistry-Biology Interface T32 Training Grant, U. Rochester (since 2019)
Editorial Advisory Board member of Versita Open Access Books program in Chemistry (since 2012)
Organizer, Principles of Single Molecule Techniques Course 2014, October 13th – 14th, 2014, Ann Arbor, MI, USA
Co-Organizer, 2nd Midwest Single Molecule Workshop, July 26th – 27th, 2012, Ann Arbor, MI, USA

Lead Co-Organizer, 17th RNA Society meeting, May 29th – June 3rd, 2012, Ann Arbor, MI, USA
Co-Organizer, 16th International Conference on Luminescence, June 26th – July 1st, 2011, Ann Arbor, MI, USA
Lead Organizer, Single Molecule Symposium, May 18th – 19th, 2006, Ann Arbor, MI, USA
Organizer, MI RNA Society meeting 2002, Ann Arbor, MI, USA
Guest editor of two volumes of *Chemical Reviews* on *Single molecule imaging and mechanics: seeing and touching molecules one at a time* (2014) and *RNA: From Single Molecules to Medicine* (2017)
Guest editor of two issues of *Methods* on *RNA dynamics* (2009) and *RNA-related Methods* (2013)
Section editor of Springer's *Encyclopedia of Biophysics* on *Single Molecule Tools* (2012)
Guest editor of two volumes of *Methods in Enzymology* on *Single Molecule Tools* (2010)
Editor (together with co-editors Sarah Woodson, Johns Hopkins U., and Rob Batey, U. Colorado at Boulder) of a book in Springer's *Series in Biophysics* on *Non-protein coding RNAs* (2009)
Guest editor for *PLoS Computational Biology* (2009)
Scientific Advisor for faculty search committee of King Abdullah University of Science and Technology (KAUST)
Scientific Advisor, DNA Software (Ann Arbor, since 2007)
Scientific Advisory Board, Q-RNA, Inc. (New York, since 2002)
Scientific Advisory Board, Onconetics, Inc. (San Francisco, 2017-2022)
Chair, Scientific Advisory Board, CircNova, Inc. (since 2023)
Chartered Member, NIH MSFB Study Section, Oct 2009-June 2013; Ad-hoc Member of numerous other NIH study sections
Co-Founder, aLight Sciences Inc. (Ann Arbor, May 2017)

PUBLICATIONS (CURRENTLY OVER 220, IN CHRONOLOGICAL ORDER)

1. **Walter, N.*** and Steiner, C. (1993) Fast chemiluminescent measurement of T7 RNA polymerase activity based on photon counting technology. *Biotechniques* **15**, 926-931.

2. **Walter, N.G.*** and Steiner, C. (1994) Fast quantification of chemiluminescent dot blot membranes using a filter adapter in a microplate luminometer: Application to polymerase activity assays. *J. Biolum. Chemilum.* **9**, 302.

3. **Walter, N.G.*** and Strunk, G. (1994) Strand displacement amplification as an *in vitro* model for rolling-circle replication: Deletion formation and evolution during serial transfer. *Proc. Natl. Acad. Sci. USA* **91**, 7937-7941.

4. **Walter, N.G.*** and Steiner, C. (1994) Screening for polymerase activities by fast quantification of chemiluminescent dot blot membranes using a filter adapter in a photon counting microplate luminometer. In *Bioluminescence and Chemiluminescence: Fundamentals and Applied Aspects*, pp. 83-86 (A. Campbell, L. Kricka and P. Stanley, eds.), John Wiley & Sons, Chichester.

5. Schober, A.*, **Walter, N.G.**, Tangen, U., Strunk, G., Ederhof, T., Dapprich J. and Eigen, M. (1995) A multichannel PCR and serial transfer machine as a future tool in evolutionary biotechnology. *Biotechniques* **18**, 652-660.

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204. Chandler, M., Johnson, B., Khisamutdinov, E., Dobrovolskaia, M., Sztuba-Solinska, J., Salem, A., Breyne, K., Chammas, R., **Walter, N.G.**, Contreras, L., Guo, P.* and Kirill, A.* (2021) The International Society of RNA Nanotechnology and Nanomedicine (ISRNN): The Present and Future of the Burgeoning Field. *ACS Nano* **15**, 16957-16973.

205. Mandal, S., Khanna, K., Johnson-Buck, A., and **Walter, N.G.*** (2022) A guide to accelerated direct digital counting of single nucleic acid molecules by FRET-based intramolecular kinetic fingerprinting. *Methods* **197**, 63-73.

206. Yadav, R., Widom, J.R., Chauvier, A. and **Walter, N.G.*** (2022) An anionic ligand snap-locks a long-range interaction in a magnesium-folded riboswitch. *Nat. Commun.* **13**, 207.

207. Li, Z., McNeely, M., Sandford, E., Tewari, M., Johnson-Buck, A. and **Walter, N.G.*** (2022) Attomolar sensitivity in single biomarker counting upon aqueous two-phase surface enrichment. *ACS Sensors* **7**, 1419-1430.

208. Blanchard, A.T., Li, Z., Duran, E.C., Scull, C.E., Hoff, J.D., Wright, K.R., Pan, V. and **Walter, N.G.*** (2022) Ultra-photostable DNA FluoroCubes: mechanism of photostability and compatibility with FRET and dark quenching. *Nano Lett.* **22**, 6235-6244.

209. Ray, S., Dandpat, S.S., Chatterjee, S. and **Walter, N.G.*** (2022) Precise tuning of bacterial translation initiation by non-equilibrium 5'-UTR unfolding observed in single mRNAs. *Nucleic Acids Res.* **50**, 8818-8833.

210. Chatterjee, T., Johnson-Buck, A.* and **Walter, N.G.*** (2022) Highly Sensitive Protein Detection by Aptamer-Based Single-Molecule Kinetic Fingerprinting. *Biosens. Bioelectron.* **216**, 114639.

211. Welty, R., Schmidt, A. and **Walter, N.G.*** (2023) Probing transient riboswitch structures *via* single molecule accessibility analysis. *Methods Mol. Biol.* **2568**, 37-51.

212. Pal, N.* and **Walter, N.G.** (2023) Using single molecule FRET to evaluate DNA nanodevices at work. *Methods Mol. Biol.* **2639**, 157-172.

213. Duran, E., Schmidt, A., Welty, R., Jalihal, A.P., Pitchiaya, S. and **Walter, N.G.*** (2023) Utilizing functional cell-free extracts to dissect ribonucleoprotein complex biology at single-molecule resolution. *WIREs RNA*, **e1787**.

214. Ellinger, E., Chauvier, A., Romero, R.A., Liu, Y., Ray, S. and **Walter, N.G.*** (2023) Riboswitches as therapeutic targets: Promise of a new era of antibiotics. *Expert Opin. Ther. Targets* **27**, 433-445.

215. Chauvier, A., Porta, J.C., Deb, I., Ellinger, E., Meze, K., Frank, A.T., Ohi, M.D.* and **Walter, N.G.*** (2023) Structural basis for control of bacterial RNA polymerase pausing by a riboswitch and its ligand. *Nat. Struct. Mol. Biol.* **30**, 902-913.

216. Perelman, R.T., Schmidt, A., Khan, U. and **Walter, N.G.*** (2023) Spontaneous Confinement of mRNA Molecules at Biomolecular Condensate Boundaries. *Cells* **12**, 2250.

217. Gao, G. and **Walter, N.G.*** (2023) Critical Assessment of Condensate Boundaries in Dual-Color Single Particle Tracking. *J. Phys. Chem. B* 127, 7694-7707.

218. Hou, Q., Chatterjee, S., Lund, P.E., Suddala, K.C. and **Walter, N.G.*** (2023) Single-molecule FRET observes opposing effects of urea and TMAO on structurally similar meso- and thermophilic riboswitch RNAs. *Nucleic Acids Res.* **51**, 11345-11357.

219. Gao, G., Sumrall, E.S., Pitchiaya, S., Bitzer, M., Alberti, S. and **Walter, N.G.*** (2023) Biomolecular Condensates in Kidney Physiology and Disease. *Nat. Rev. Nephrol.* **19**, 756-770.

220. Chauvier, A. and **Walter, N.G.*** (2024) Regulation of bacterial gene expression by non-coding RNA: it is all about time! *Cell Chem. Biol.* **31**, 71-85.

221. Centola, M., Poppleton, E., Ray, S., Centola, M., Welty, R., Valero, J., **Walter, N.G.**, Šulc, P. and Famulok, M.* (2024) A rhythmically pulsing leaf-spring DNA-origami nanoengine that drives a passive follower. *Nat. Nanotech.*, **19**, 226-236.

222. **Walter, N.G.*** (2024) Are non-protein coding RNAs junk or treasure? *Bioessays*, **2300201**.

223. Chauvier, A., Dandpat, S., Romero, R. and **Walter, N.G.*** (2024) A nascent riboswitch helix orchestrates robust transcriptional regulation through signal integration. *Nat. Commun.* **15**, 3955.

224. Chauvier, A. and **Walter, N.G.*** (2024) Beyond Ligand Binding: Single molecule observation reveals how riboswitches integrate multiple signals to balance bacterial gene regulation. *Curr. Opin. Struct. Biol.* **88**, 102893.

225. Reddy, M.R., **Walter, N.G.** and Sevryugina, Y.V.* (2024) Implementation and Evaluation of a ChatGPT-Assisted Special Topics Writing Assignment in Biochemistry. *J. Chem Educ.* **101**, 2740-2748.

226. Sgouralis, I., Xu, L.W.Q., Jalihal, A.P., Kilic, Z., **Walter, N.G.** and Pressé, S.* (2024) BNP-Track: a framework for superresolved tracking. *Nat. Methods* **21**, 1716–1724.

227. Dai, L., Johnson-Buck, A., Laird, P.W.*, Tewari, M.* and **Walter, N.G.*** (2024) Ultrasensitive amplification-free quantification of a methyl CpG-rich cancer biomarker by single-molecule kinetic fingerprinting. *Anal. Chem.* **96**, 17209-17216.

228. Li, J., **Walter, N.G.** and Chen, S.-J.* (2024) smFRET-assisted RNA structure prediction. *Comm. Inf. Syst.* **24**, 163-179.

229. Webster, M.W., Chauvier, A., Rahil, H., Graziadei, A., Charles, K., Takacs, M., Saint-André, C., Rappsilber, J., **Walter, N.G.** and Weixlbaumer, A.* (2024) Molecular basis of mRNA delivery to the bacterial ribosome. *Science* **386**, eado8476.

230. Zhang, L., Li, J.* and **Walter, N.G.*** (2025) Pre-trained deep neural network Kin-SiM for single-molecule FRET trace idealization. *J. Phys. Chem. B* **129**, 1167-1175.

231. Li, J.*, Zhang, L., Johnson-Buck, A. and **Walter, N.G.*** (2025) AI-Driven Discovery in Single-Molecule Time Series Data. *Nat. Methods*, in revision.

232. Ellinger, E., Liu, Y., Chauvier, A., Porta, J.C.* and **Walter, N.G.*** (2025) RNA-driven control of transcriptional pausing and termination. *Mol. Cell*, in revision.

233. Banerjee, P., Ray, S., Dai, L., Sandford, E., Chatterjee, T., Mandal, S., Siddiqui, J., Tewari, M. and **Walter, N. G.*** (2025) Chromato-kinetic fingerprinting enables multiomic digital counting of single disease biomarker molecules. *Nat. Nanotechnol.*, submitted.

234. Chatterjee, T., Mandal, S., Ray, S., Johnson-Buck, A. and **Walter, N.G.*** (2025) A unifying model for microRNA-guided silencing of messenger RNAs. *Cell*, submitted.

Several additional publications are currently in preparation.

* denotes corresponding author.

PATENTS AND DISCLOSURES OF INVENTION

1. Katherine Korbiak Jordan, Jens-Christian Meiners and **Nils G. Walter** (2007) Microfluidic single-molecule theophylline-specific biosensor based on a microarray platform. *Disclosure of Invention and New technology*, filed with NASA.
2. Yunbo Guo, Theodore B. Norris, James R. Baker, Lingjie Jay Guo and **Nils G Walter** (2011) Photonic crystal-metallic structures and applications. *Recorded with the United States patent and trademark office,* US Patent 9,223,064.
3. **Nils G. Walter**, Alexander Johnson-Buck, Mario Blanco and Arlie Rinaldi (2015) **UM-33976/US-2/PRO,** Detection of nucleic acids. *Disclosure of Invention and New technology*, filed through the University of Michigan's Office of Technology Transfer.
4. **Nils G. Walter**, Muneesh Tewari and Alexander Johnson-Buck (2018) U.S. Pat. App. Ser. No. 14/589,467 (UM 6250/6472; CJ UM-33976/US-3/ORD) issued: *Detection of nucleic acids*. Additional related disclosures of invention and new technology were filed through the University of Michigan's Office of Technology Transfer and are being pursued as patents: Refs # 6948, 7340, 7413, 7622, 7623, 7638, 7735, 7737, 7818, and more.

INVITED SPEAKING ENGAGEMENTS

1. Seminar, April, 3rd, 1994, Department of Microbiology and Molecular Genetics, University of Vermont, Burlington, VT, USA.
2. Seminar, April, 4th, 1994, Department of Molecular Biology, Massachusetts General Hospital, Boston, MA, USA.
3. Seminar, April, 6th, 1994, Department of Molecular Biology and Biochemistry, Rockefeller University, New York, NY, USA.
4. Seminar, April, 12th, 1997, Department of Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, USA.
5. Seminar, October 3rd, 1997, Department of Molecular Biology, Scripps Research Institute, La Jolla, CA, USA.
6. Seminar, January 13th, 1999, Department of Chemistry, University of Michigan, Ann Arbor, MI, USA.
7. Seminar, January 22nd, 1999, Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University, Ames, IA, USA.
8. Seminar, April 8th, 1999, Biophysics Research Division, University of Michigan, Ann Arbor, MI, USA.
9. Seminar, April 21st, 1999, Department of Molecular Biophysics, Albert Einstein College of Medicine, New York City, NY, USA.
10. Platform talk at the Michigan RNA Society Meeting, September 25th, 1999, Ann Arbor, MI, USA.
11. Platform talk at the Rust Belt RNA Meeting, November 4th – 5th, 1999, Mt. Sterling, OH, USA.
12. Seminar, March 24th, 2000, Biology Department, University of Michigan, Flint, MI, USA.
13. Seminar, April 6th, 2000, Physics Department, Applied Physics Program, University of Michigan, Ann

Arbor, MI, USA.

14. Seminar, April 11th, 2000, Biophysics Research Division, University of Michigan, Ann Arbor, MI, USA.
15. Seminar, July 12th, 2000, Chemistry Department, Stanford University, Stanford, CA, USA.
16. Seminar, October 26th, 2000, Department of Chemistry and Biochemistry, Middlebury College, Middlebury, VT, USA.
17. Seminar, October 27th, 2000, Department of Chemistry, College of the Holy Cross, Worcester, MA, USA.
18. Seminar, November 15th, 2000, Chemistry Department & Center for Photochemical Sciences, Bowling Green State University, Bowling Green, OH, USA.
19. Seminar, February 21st, 2001, Chemistry Department, Oakland University, Rochester, MI, USA.
20. Seminar, February 26th, 2001, Chemistry Department, Peking University, Beijing, China.
21. Invited talk at the RNA Society Meeting, May 29th - June 3rd, 2001, Banff, Alberta, Canada.
22. Invited talk at the Michigan RNA Society Meeting, September 29th, 2001, Wayne State University, Detroit, MI, USA.
23. Seminar, December 17th, 2001, Department of Biochemistry and Molecular Biophysics, Columbia University, New York City, NY, USA.
24. Seminar, April 5th, 2002, Department of Chemistry, Michigan Technological University, Houghton, MI, USA.
25. Seminar, May 2nd, 2002, Alumni Advisory Council Department of Chemistry, University Michigan, Ann Arbor, MI, USA.
26. Invited talk at the RNA Society Meeting, May 28th - June 2nd, 2002, Madison, WI, USA.
27. Seminar, July 11th, 2002, Center for RNA Molecular Biology, Case Western Reserve University, Cleveland, OH, USA.
28. Invited short talk at the Biochemical Society Focused Meeting/EMBO Workshop, August 23rd – 27th, 2002, Dundee, Scotland, UK.
29. Seminar, February 4th, 2003, Departments of Microbiology & Molecular Genetics and Biochemistry, Michigan State University, Lansing, MI, USA.
30. Seminar, May 19th, 2003, Department of Physics, University of Illinois Urbana-Champaign, IL, USA.
31. Invited talk and Session Chair for "Single Molecule Studies" at the Gordon Research Conference "Nucleic Acids" 2003, June 1st - 6th, 2003, in Newport, RI, USA.
32. Seminar, June 10th, 2003, Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL, USA.
33. Invited talk at "Albany 2003, The 13th Conversation" 2003, June 17th – 21st, 2003, in Albany, NY, USA.
34. Invited talk at the RNA Society Meeting, July 1st - July 6th, 2003, Vienna, Austria.
35. Seminar, July 14th, 2003, Department of Cellular Biochemistry, Max-Planck-Institute for Biophysical Chemistry, Göttingen, Germany.
36. Invited talk at the Mechanism of RNA Processing session of the Biological Chemistry Division, 226th ACS National Meeting, September 7th - 11th, 2003, New York City, NY, USA.
37. Seminar, September 10th, 2003, Department of Chemistry and Biochemistry, University of Colorado at Boulder, Boulder, CO, USA.

38. Seminar, September 30th, 2003, Dow Corning Corporation, Midland, MI, USA.
39. Seminar, October 10th, 2003, Biophysics Research Division and Department of Chemistry, University of Michigan, Ann Arbor, MI, USA
40. Seminar, February 9th, 2004, Beckman Institute for Advanced Science and Technology, University of Illinois Urbana-Champaign, Urbana-Champaign, IL, USA.
41. Seminar, March 5th, 2004, Department of Chemistry, University of Indiana at Bloomington, Bloomington, IN, USA.
42. Seminar, April 9th, 2004, Department of Chemistry and Biochemistry, University of California San Diego, San Diego, CA, USA.
43. Lunch seminar, April 14th, 2004, Biophysics Research Division, University of Michigan, Ann Arbor, MI, USA.
44. Seminar, April 23rd, 2004, Department of Biochemistry, Duke University, Durham, NC, USA.
45. Invited talk at the RNA Society Meeting, June 1st – 6th, 2004, Madison, Wisconsin, USA.
46. Invited talk at the Gordon Research Conference "Nucleic Acids" 2004, June 6th - 11th, 2004, in Newport, RI, USA.
47. Invited talk at the Biophysical Chemistry and Novel Imaging of Single Molecules and Single Cells Symposium of the Physical Chemistry Division, 228th ACS National Meeting, August 22nd - 26th, 2004, Philadelphia, PA, USA.
48. Seminar, September 10th, 2004, Department of Chemistry, Pennsylvania State University, University Park, PA, USA.
49. Seminar, September 13th, 2004, Department of Biophysics, Johns Hopkins University, Baltimore, MD, USA.
50. Invited talk at the "Aptamers in Analysis" Symposium at the FACSS Meeting, October 3rd - 7th, 2004, Portland, OR, USA.
51. Seminar, October 25th, 2004, Department of Chemistry, University of Rochester, Rochester, NY, USA.
52. Seminar, November 30th, 2004, Department of Chemistry, University of California Davis, Davis, CA, USA.
53. Seminar, December 3rd, 2004, Department of Chemistry, University of Zürich, Switzerland, USA.
54. Seminar, January 19th, 2005, Department of Chemistry, Wayne State University, Detroit, MI, USA.
55. Invited talk at the Gordon Research Conference "Magnesium in Biochemical Processes & Medicine" 2005, February 6th - 11th, 2005, in Ventura, CA, USA.
56. Seminar, March 2nd, 2005, Department of Chemistry, University of Minnesota, Minneapolis, MN, USA.
57. Seminar, March 23rd, 2005, Department of Chemistry, Bowling Green State University, Bowling Green, OH, USA.
58. Seminar, April 5th, 2005, Department of Chemistry, Allegheny College, PA, USA.
59. Invited talk at "Albany 2005, The 14th Conversation" 2005, June 14th – 18th, 2005, in Albany, NY, USA.
60. Seminar, October 20th, 2005, Department of Chemistry, Andrews University, MI, USA.
61. Seminar, October 25th, 2005, Department of Biochemistry, University of Colorado Heath Sciences Center, CO, USA.

62. Invited talk at the Biophysical Society meeting 2006, February 18th – 22nd, 2006, in Salt Lake City, UT, USA.
63. Seminar, February 22nd, 2006, Department of Biochemistry and Biophysics, University of California San Francisco, CA, USA.
64. Talk and Chair of organizing committee at the symposium "At the Single Molecule Frontier: Integration into Biology and Nanotechnology", May 18&19th, 2006, University of Michigan, Ann Arbor, MI, USA.
65. Invited talk at the Gordon Research Conference "Single Molecule Approaches to Biology", June 18-23, 2006, Colby-Sawyer College, New London, NH, USA.
66. Seminar, August 15th, 2006, JILA/University of Colorado, Boulder, CO, USA.
67. Seminar, September 15th, 2006, Department of Biochemistry, Biophysics discussion series, Brandeis University, MA, USA.
68. Seminar, September 21st, 2006, Department of Physics, Northeastern University, MA, USA.
69. Seminar, September 22nd, 2006, Department of Biochemistry, University of Vermont, VT, USA.
70. Invited "Alumnus of the Year award" talk at the Opening Session of the Sherbrooke Ribo-Club 2006, September 25-27, 2006, Magog, Quebec, Canada.
71. Seminar, October 30th, 2006, Department of Biochemistry & Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA, USA.
72. Invited talk at the Nanobiotech World Congress, Nov 16-17, 2006, Boston, MA, USA.
73. Seminar, December 5th, 2006, Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA, USA.
74. Seminar, December 18th, 2006, Ambion Inc./Applied Biosystems, Austin, TX, USA.
75. Seminar, February 8th, 2007, Biology Student Club, University of Michigan, Ann Arbor, MI, USA.
76. Seminar, March 23th, 2007, seminar in Astrobiology Lecture Series (organized by Biology and Astronomy Student Clubs), University of Michigan, Ann Arbor, MI, USA.
77. Two invited talks at the Division of Physical Chemistry's "Single Molecule Spectroscopy, Imaging and Manipulation of Biomolecular Systems" and Division of Computers in Chemistry's "Protein-Nucleic Acid Interactions: Experimental and Modeling Analysis" sessions, 234th ACS National Meeting, August 19th - 23rd, 2007, Boston, MA, USA.
78. Invited talk at the 27th Midwest Enzyme Chemistry Conference (MECC), Sept 29th, 2007, Chicago, IL, USA.
79. Seminar, January 24th, 2008, Society of Biology Students, University of Michigan, Ann Arbor, MI, USA.
80. Seminar, February 12th, 2008, Department of Chemistry, SUNY Albany, Albany, NY, USA.
81. Seminar, February 13th, 2008, Applied Physics Program, University of Michigan, Ann Arbor, MI, USA.
82. Seminar, February 25th, 2008, Max-Planck-Institute for Biophysical Chemistry, Göttingen, Germany.
83. Seminar, February 28th, 2008, Department of Chemistry Johann Wolfgang Goethe University Frankfurt, Frankfurt, Germany.
84. Seminar, March 11th, 2008, Department of Biological Sciences, SUNY Albany, Albany, NY, USA.
85. Invited talk at the American Society of Biochemistry and Molecular Biology (ASBMB) meeting, April 5th - 8th, 2008, San Diego, CA, USA.

86. Seminar, April 23rd, 2008, Chemistry department staff, University of Michigan, Ann Arbor, MI, USA.
87. Seminar, October 1st, 2008, Chemistry Department, Bowling Green State University, Bowling Green, OH, USA.
88. Seminar, October 10th, 2008, Department of Chemistry, University of Michigan, Ann Arbor, MI, USA
89. Seminar, October 23rd, 2008, Department of Chemistry and Biochemistry, UT Austin, Austin, TX, USA.
90. Seminar, December 5th, 2008, Department of Chemistry, Purdue University, West Lafayette, IN, USA.
91. Invited talk at the Telluride workshop on "RNA Dynamics", July 27th-31st, 2009, Telluride, CO, USA.
92. Invited talk at the Gen-AU project cluster workshop, September 24th-25th, 2009, Innsbruck/Seefeld, Austria.
93. Seminar, October 21st, 2009, Department of Chemistry, Oakland University, Rochester, MI, USA.
94. Invited talk at the Symposium on Watching Biomolecules in Action (WBMA'09), December 15th-17th, Osaka, Japan.
95. Seminar, February 19th, 2010, Department of Chemistry, Albion College, Albion, MI, USA.
96. Seminar, February 22nd, 2010, Nanobiology Certificate seminar series, University of Michigan, Ann Arbor, MI, USA.
97. Seminar, March 9th, 2010, Department of Biological Sciences, Western Michigan University, Kalamazoo, MI, USA.
98. Seminar, April 21nd, 2010, Department of Chemistry, Ohio State University, Columbus, OH, USA.
99. Invited talk at the Telluride workshop on "Toward understanding of phosphoryl transfer in protein and RNA: experiments and computations", June 14th-18th, 2010, Telluride, CO, USA.
100. Invited talk at the Midwest Single Molecule Workshop, July 26th-27th, 2010, St. Louis, MO, USA.
101. Seminar, September 3rd, 2010, Department of Chemistry, Jackson State University, Jackson, MS, USA.
102. Seminar, October 18th, 2010, BioMolecular Markers seminar, Department of Chemistry, University of Cincinnati, Cincinnati, OH, USA.
103. Seminar, November 5th, 2010, Department of Chemistry, Saint Louis University, Saint Louis, MI, USA.
104. Seminar, March 11th, 2011, Chemistry-Biology Interface Training Grant Symposium, University of Michigan, Ann Arbor, MI, USA.
105. Buchanan lecture, April 19th & 20th, 2011, Departments of Biology, Chemistry and Physiology, Bowling Green State University, Bowling Green, OH, USA.
106. Invited talk at the RNA Society Meeting, June 14th – 19th, 2011, Kyoto, Japan.
107. Seminar, June 20th, 2011, Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Kyoto, Japan.
108. Invited talk at the Division of Physical Chemistry's symposium "From Ultrafast Electron Transfer to Single Molecule Spectroscopy: Forces Driving Contemporary Themes in Physical Chemistry", 242nd ACS Meeting, Aug 28th – Sept 1st, 2011, Denver, CO, USA.
109. Seminar, September 2nd, 2011, Department of Biochemistry, University of Missouri Medical School, Columbia, MO, USA.
110. Seminar, November 2nd, 2011, Department of Biochemistry, University of Rochester Medical School, Rochester, NY, USA.

111. Seminar, January 24th, 2012, Department of Molecular & Cell Biology, University of California Berkeley, Berkeley, CA, USA.
112. Seminar, January 25th, 2012, Bay Area RNA Club, held at University of California San Francisco, California, CA, USA.
113. Seminar, February 20th, 2012, Department of Molecular Biology and Biochemistry, Simon Fraser University, British Columbia, Canada.
114. Seminar, March 2nd, 2012, Institute of Organic Chemistry and Chemical Biology & DFG-SFB 902 "Molecular principles of RNA-based regulation", Johann Wolfgang Goethe University Frankfurt, Frankfurt, Germany.
115. Seminar, May 2nd, 2012, Department of Chemistry, Rice University, Houston, TX, USA.
116. Seminar, May 8th, 2012, Department of Biology, University of North Carolina, Chapel Hill, NC, USA.
117. Seminar, June 15th, 2012, Department of Chemistry and Biochemistry, Lise-Meitner Kolloquium, Free University of Berlin, Berlin, Germany.
118. Seminar, June 18th, 2012, Department of Chemistry, Heinrich-Heine University Düsseldorf, Düsseldorf, Germany.
119. Seminar, June 22nd, 2012, Max-Planck-Institute for Biophysical Chemistry, Göttingen, Germany.
120. Seminar, June 25th, 2012, Rudolph-Boehm-Institute for Pharmacology and Toxicology, University of Leipzig, Leipzig, Germany.
121. Seminar, June 26th, 2012, Medical Faculty, Graduiertenkolleg GRK1591, Martin-Luther-University Halle-Wittenberg, Halle, Germany.
122. Seminar, June 28th, 2012, Department of Biology, Technical University of Darmstadt, Darmstadt, Germany.
123. Seminar, July 3rd, 2012, Department of Chemistry, University of Konstanz, Konstanz, Germany.
124. Seminar, July 5th, 2012, Institute for Biochemistry, Genetics and Microbiology, Sonderforschungsbereich 960 "Ribosome Formation", University of Regensburg, Regensburg, Germany.
125. Seminar, July 9th, 2012, Department of Chemistry, GDCh-Kolloqium, Technical University of Dortmund, Dortmund, Germany.
126. Seminar, July 11th, 2012, LIMES-Institute, Life and Medical Sciences Bonn, Rheinische Friedrich-Wilhelms University Bonn, Bonn, Germany.
127. Seminar, July 12th, 2012, Institute for Biochemistry, DFG-SFB 858 "Synergistic Effects in Chemistry – From Additivity Towards Cooperativity", Westfälische Wilhelms University of Münster, Münster, Germany.
128. Seminar, July 13th, 2012, Helmholtz Zentrum München, Department of Physics/TU München and DFG-SFB 863 "Forces in Biomolecular Systems", Technical University of Munich, Munich, Germany.
129. Workshop, August 27th & 29th, 2012, "From Ensemble to Single Molecule Fluorescence: Conformational Changes and Super-resolved Movement", Biocenter, Johann Wolfgang Goethe University Frankfurt, Frankfurt, Germany.
130. Seminar, Oct 12th, 2012, Department of Chemistry, University of Missouri, Columbia, MO, USA.
131. Seminar, Oct 17th, 2012, The Exposure Series-PechaKucha, University of Michigan, MI, USA.
132. Seminar, Oct 24th, 2012, Department of Chemistry, Louisiana State University, Baton Rouge, LA, USA.

133. Seminar, Oct 25th, 2012, Department of Chemistry, Xavier University, New Orleans, LA, USA.
134. Seminar, Jan 30th, 2013, Applied Physics seminar, University of Michigan, MI, USA.
135. Seminar, Mar 5th, 2013, Department of Chemistry and Biochemistry, Biophysics program, University of Maryland, College Park, MD, USA.
136. Seminar, May 23rd, 2013, Department of Biochemistry and Molecular Biology, University of Texas Medical Branch, Galveston, TX, USA.
137. Invited talk at the Gordon Research Conference "Nucleic Acids" 2013, June 2nd-7th, 2013, University of New England, Biddeford, Maine, USA.
138. Seminar, Jun 10th, 2013, SEMMinar program, iFOM-IEO, Milan, Italy.
139. Invited talk at the RNA Society Meeting, June 11th – 16th, 2013, Davos, Switzerland.
140. Invited talk at the 1st Korea Symposium on "Current Trends in Biophysics", Aug 11th-14th, 2013, Korea Institute for Advanced Study, Seoul, South Korea.
141. Seminar, Oct 11th, 2013, Department of Chemistry and Biochemistry, University of Notre Dame, South Bend, IN, USA.
142. Seminar, Oct 18th, 2013, Department of Physics, Center for the Physics of Living Cells, University of Illinois at Urbana-Champaign, Urbana, IL, USA.
143. Seminar, Nov 6th, 2013, Department of Pharmaceutical Sciences, University of Michigan, Ann Arbor, MI, USA.
144. Seminar, Nov 8th, 2013, Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ, USA.
145. Seminar, Jan 23rd, 2014, Seminar to the Biology Student Alliance, University of Michigan, MI, USA.
146. Seminar, Feb 22nd, 2014, Seminar to the Rackham Diversity Faculty Allies, University of Michigan, MI, USA.
147. Invited talk at Pittcon in session "Spectrochemical Analysis of Biological Systems - A Perspective from New and Established Investigators" 2013, March 2nd-6th, 2014, Chicago, IL, USA.
148. Seminar, Mar 5th, 2014, Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL, USA.
149. Seminar, Mar 18th, 2014, Seminar at the Rackham Chairs and Directors Meeting, University of Michigan, MI, USA.
150. Seminar, Mar 22nd, 2014, Department of Physics – Saturday Morning Physics, University of Michigan, Ann Arbor, MI, USA.
151. Seminar, Mar 31st, 2014, Department of Physics, Michigan State University, East Lansing, MI, USA.
152. Seminar, Apr 4th, 2014, Department of Chemistry and Biochemistry, UC Santa Cruz, Santa Cruz, CA, USA.
153. Seminar, Jul 14th, 2014, Regional Centre of Advanced Technologies and Materials, Palacký University, Olomouc, Czech Republic.
154. Seminar, Oct 3rd, 2014, Department of Chemistry, Penn State University, College Park, PA, USA.
155. Seminar, Mar 6th, 2015, Department of Chemistry, Truman State University, Kirksville, MO, USA.
156. Seminar, Apr 9th, 2015, Department of Physics, Kent State University, Kent, OH, USA.

157. Seminar, Apr20th, 2015, Department of Biophysics, Johns Hopkins University, Baltimore, MD, USA.
158. Jean Dreyfus Boissevain Lectures, Jul 7th and 8th, 2015, Department of Chemistry, Trinity University, San Antonia, TX, USA.
159. Invited talk at the Telluride workshop on "RNA Dynamics", July 20th-24th, 2015, Telluride, CO, USA.
160. Seminar, Sep 14th, 2015, Department of Chemistry and Biochemistry, San Francisco State University, San Francisco, CA.
161. Seminar, Oct 15th, 2015, NCIBI Tools and Technology seminar series, University of Michigan, Ann Arbor, MI.
162. Invited talk at Pacifichem 2015's symposium "Single-molecule Fluorescence Imaging", Dec 15th – 20th, 2015, Honolulu, HI, USA.
163. Invited talk at the MBI workshop "Modeling and Inference from Single Molecules to Cells", Feb 8th – 12th, 2016, The Ohio State University, Columbus, OH, USA.
164. Seminar, Feb 26th, 2016, Department of Biological Chemistry, University of Michigan, Ann Arbor, MI, USA.
165. Seminar, Mar 15th, 2016, Genomics Institute of the Novartis Research Foundation, San Diego, CA, USA.
166. Invited talk at the Division of Biological Chemistry's symposium "RNA Structure and Function: Perspectives from inside the cell and out", 251st ACS Meeting, Mar 13th – 17th, 2016, San Diego, CA, USA.
167. Seminar, Mar 28th, 2016, as part of the FAPESP Week 2016 for outreach to Brazil, University of Michigan, Ann Arbor, MI, USA.
168. Seminar, Mar 29th, 2016, Department of Chemistry, Oregon State University, Corvallis, OR, USA.
169. Invited talk at the Fields Institute's "Workshop on Mathematical Oncology VI", Apr 11th – 13th, 2016, The Fields Institute, Toronto, Canada.
170. Seminar, Apr 21st, 2016, in the RNA Innovation Seminar series of the Center for RNA Biomedicine, University of Michigan, Ann Arbor, MI, USA.
171. Seminar, May 7th, 2016, Biointerfaces Institute/Comprehensive Cancer Center Challenge workshop, University of Michigan, Ann Arbor, MI, USA.
172. Invited talk at the Telluride "Single Molecule Workshop: Theory Meets Experiment", Jul 12th-16th, 2016, Telluride, CO, USA.
173. Seminar, Sep 19th, 2016, School of Molecular Sciences, Arizona State University, Tempe, AZ, USA.
174. Invited talk at Elsevier's Berlin Translational Dialogue "RNA-Medicine: from RNA Discoveries to Future Therapies", Nov 8th, 2016, Berlin, Germany.
175. Seminar, Nov 10th, 2016, Institute for Physical Chemistry, University of Freiburg, Freiburg, Germany.
176. Invited talk at the Gordon Research Conference "RNA Nanotechnology" 2017, Jan 22nd-27th, 2017, Ventura, CA, USA.
177. Invited talk at the Molecular Biophysics Subgroup Symposium at the Biophysical Society's 61st Annual Meeting, Feb 11th, 2017, New Orleans, LA, USA.
178. Seminar, Mar 9th, 2017, Life Sciences division, Bio-Rad headquarters, Hercules, CA, USA.
179. Seminar, Apr 17th , 2017, at the Biophysics Symposium, University of Michigan, Ann Arbor, MI, USA.

180. Seminar, Jun 6th, 2017, Department of Medicine, Imperial College London, London, UK.
181. Seminar, Jun 15th, 2017, Featured Speaker at Chemistry-Biology Interface Retreat, University of Rochester, Rochester, NY.
182. Invited talk at the Telluride workshop on "The Complexity of Dynamics and Kinetics from Single Molecules to Cells", Jun 20th-24th, 2017, Telluride, CO, USA.
183. Seminar, Jun 27th, 2017, RNA Institute, University at Albany, Albany, NY.
184. Invited talk at the "First Conference on Biomotors, Virus Assembly, and Nanobiotechnology Applications", August 16th-19th, 2017, Columbus, OH, USA.
185. Seminar, Sep 6th, 2017, Biophysics Program, Massachusetts Institute of Technology, Cambridge, MA, USA.
186. Seminar, Sep 18th, 2017, Department of Biochemistry and Molecular Biology, Pennsylvania State University, University Park, PA, USA.
187. Seminar, Nov 7th, 2017, Undergraduate Research Opportunities Program, University of Michigan, Ann Arbor, MI, USA.
188. Seminar, Nov 27th, 2017, Department of Chemistry, Brigham Young University, Provo, UT, USA.
189. Seminar, Feb 12th, 2018, Department of Chemistry and Biophysics Program, Boston University, Boston, MA, USA.
190. Seminar, Mar 2nd, 2018, Department of Chemistry, Western Washington University, Bellingham, WA, USA.
191. Seminar, May 11th, 2018, Department of Biological Chemistry, University of Michigan, Ann Arbor, MI, USA.
192. Seminar, Jun 19th, 2018, College of Life Science and Technology, Beijing University of Chemical Technology, Beijing, China.
193. Seminar, June 20th, 2018, Department of Chemistry, Peking University, Beijing, China.
194. Seminar, Jun 21st, 2018, Department of Chemistry, Nankai University, Tianjin, China.
195. Invited talk at the Telluride "Single Molecule Workshop: Theory Meets Experiment", Jun 26th-30th, 2018, Telluride, CO, USA.
196. Seminar, Jul 12th, 2018, Investigators meeting, Chan Zuckerberg Biohub, San Francisco, CA, USA.
197. Seminar, Jul 20th, 2018, Chan Zuckerberg Biohub, San Francisco, CA, USA.
198. Seminar, Jul 25th, 2018, Exobiology group, NASA Ames Research Center, Moffett Field, CA, USA.
199. Seminar, Aug 8th, 2018, Department of Microbiology and Molecular Genetics, UC Davis, Davis, CA, USA.
200. Seminar, Aug 16th, 2018, Department of Cellular Molecular Pharmacology, UC San Francisco, San Francisco, CA, USA.
201. Seminar, Aug 30th, 2018, Sonderforschungsbereich (SFB) 902 symposium, "Understanding RNA-based Regulation in Cells", Johann Wolfgang Goethe University Frankfurt, Frankfurt, Germany.
202. Seminar, Oct 5th, 2018, Department of Chemistry, Columbia University, New York City, NY, USA.
203. Invited talk at the 6th annual Wayne State University American Chemical Society Symposium, Oct 13th, 2018, Detroit, MI, USA.
204. Seminar, Nov 5th, 2018, Frontier Institute for Biomolecular Engineering Research (FIBER), Konan

University, Kobe, Japan.

205. Invited talk at the 45th International Symposium on Nucleic Acids Chemistry (ISNAC 2018), Nov 7th – 9th, 2018, Kyoto, Japan.
206. Seminar, Nov 26th, 2018, Alberta RNA Research and Training Institute (ARRTI), University of Lethbridge, Lethbridge, Alberta, Canada.
207. Invited talk at the Gordon Research Conference "RNA Nanotechnology" 2019, Jan 13th-18th, 2019, Ventura, CA, USA.
208. Seminar, Jan 18th, 2019, California NanoSystems Institute, UC Los Angeles, Los Angeles, CA, USA.
209. Invited talk at the 6th Fusion Nucleic Acids Conference, Feb 13th – 16th, 2019, Nassau, Bahamas.
210. Seminar, Mar 21st, 2019, Taubman Institute Tech Talk, University of Michigan, Ann Arbor, MI, USA.
211. Seminar, Mar 27th, 2019, UROP Brown Bag Speaker Series, University of Michigan, Ann Arbor, MI, USA.
212. Invited talk at the 16th Annual Conference "Foundations of Nanoscience 2019 (FNANO19)", Apr 15th-18th, 2019, Snowbird, UT, USA.
213. Seminar, Apr 23rd, 2019, School of Molecular Sciences, Arizona State University, Tempe, AZ, USA.
214. Invited talk at the *Cell* Symposium "Regulatory RNAs", May 12th-14th, 2019, Berlin, Germany.
215. Invited talk at the Telluride workshop on "RNA Dynamics", July 8th-12th, 2019, Telluride, CO, USA.
216. Invited talk at the "Second Conference on Biomotors, Virus Assembly, and Nanobiotechnology Applications", July 29th-31st, 2019, Columbus, OH, USA.
217. Seminar, Sep 20th, 2019, Department of Chemistry and Biochemistry, University of Maryland, Baltimore County, MD, USA.
218. Invited talk at the Michigan State University Molecular Biophysics Symposium, Oct 4th – 5th, 2019, East University, MI, USA.
219. Seminar, Oct 7th, 2019, Protein Folding Disease Symposium, University of Michigan, Ann Arbor, MI, USA.
220. Invited talk at the NCI-IMAT Annual PI Conference, Nov 22nd & 23rd, 2019, Cedar Sinai Medical Center, Los Angeles, CA, USA.
221. Seminar, Dec 7th, 2019, Materials Research Society/Kavli Future of Materials Workshop on Nucleic Acid Nanotechnology, Boston, MA, USA.
222. Seminar, Mar 5th, 2020, Department of Chemistry, Louisiana State University, Baton Rouge, LA, USA.
223. Seminar, Mar 6th, 2020, Department of Chemistry, Southeastern Louisiana University, Hammond, LA, USA.
224. Invited talk at the 2020 Webinar Series of the International Society of RNA Nanotechnology and Nanomedicine (ISRNN), July 28th and 29th, 2020 (Virtual).
225. Invited talk at the 2020 Next Generation Dx Virtual Interactive Summit, August 25th-27th, 2020 (Virtual).
226. Seminar, Sep 9th, 2020, Biophysics Colloquium, Cornell University, Ithaca, NY, USA (Virtual).
227. Seminar, Sep 17th, 2020, Department of Chemistry, University of Massachusetts Amherst, Amherst, NY, USA (Virtual).
228. Seminar, Sep 29th, 2020, George O'Brien Kidney Center, University of Michigan, Ann Arbor, USA

(Virtual).

229. Seminar, Oct 8th, 2020, Chemistry department, Loyola University Chicago, Chicago, IL, USA (Virtual).
230. Seminar, Oct 30th, 2020, Chemistry departments, Minnesota State University & Concordia College, Fargo, MN/ND, USA (Virtual).
231. Seminar, Nov 5th, 2020, Chemistry department, North Dakota State University, Fargo, MN/ND, USA (Virtual).
232. Seminar, Nov 9th, 2020, Chemistry department, Northern Illinois University, DeKalb, IL, USA (Virtual).
233. Seminar, Dec 10th, 2020, 2020 Nobel Symposium, Center for the Study of Complex Systems, University of Michigan, Ann Arbor, USA (Virtual).
234. Seminar, Jan 25th, 2021, Frontiers in single-molecule and cell imaging seminar series, Chemistry department, Seoul National University, Seoul, South Korea (Virtual).
235. Seminar, Feb 24th, 2021, Department of Chemistry and Biochemistry, Hampton University, Hampton, VA, USA (Virtual).
236. Seminar, Mar 10th, 2021, H. Tom Soh group, Department of Electrical Engineering, Stanford University, Palo Alto, CA, USA (Virtual).
237. Seminar, Apr 8th, 2021, American Chemical Society local sections of Huron Valley, MI, and Bay Area, CA, USA (Virtual).
238. Seminar, Jun 14th, 2021, University of Michigan NSF REU Program, University of Michigan, Ann Arbor, MI, USA (Virtual).
239. Seminar, Jun 17th, 2021, Department of Chemistry, Winthrop University, Rock Hill, SC, USA (Virtual).
240. Invited talk at the 2021 Chan Zuckerberg Initiative (CZI) Neurodegeneration Challenge Network PI Meeting, June 22nd-24th, 2021 (Virtual).
241. Seminar, Sept 23rd, 2021, Department of Chemistry, Virginia Commonwealth University, Richmond, VA, USA (Virtual).
242. Seminar, Feb 17th, 2022, UM American Chemical Society Student Chapter, University of Michigan, Ann Arbor, MI, USA.
243. Seminar, Apr 14th, 2022, Honors Student Celebration Keynote, Kent State University, Kent, OH, USA.
244. Seminar, May 6th, 2022, ISTAART Alzheimer's Association series on “Vascular Cognitive Disorders PIA: New advances in biomedical sciences transferable to VCID research?”, Chicago, IL, USA (Virtual).
245. Seminar, Aug 31st, 2022, Department of Biochemistry & Cellular and Molecular Biology, University of Tennessee Knoxville, Knoxville, TN, USA.
246. Seminar, Oct 13th, 2022, UM Rogel Cancer Center, Signaling & Tumor Microenvironment & Cancer Genetics (STME/CG) group, University of Michigan, Ann Arbor, MI, USA.
247. Invited talk and discussion leader at the Gordon Research Conference “RNA Nanotechnology” 2023, Jan 8th-13th, 2023, Ventura, CA, USA.
248. Invited talk at the 7th Fusion Nucleic Acids Conference, Feb 9th – 12th, 2023, Cancun, Mexico.
249. Seminar, Mar 23rd, 2023, Pioneer High School, Ann Arbor, MI, USA.
250. Collegiate Professorship Lecture, May 8th, 2023, University of Michigan, Ann Arbor, MI, USA.
251. Seminar, Jun 6th, 2023, Pan-Asia University of Michigan alumni group, Singapore, Singapore.

252. Invited talk at the Telluride workshop on "RNA Dynamics", July 11th-15th, 2023, Telluride, CO, USA.
253. Seminar, Jul 17th, 2023, Portage Zhang Senior Center, City of Portage, MI, USA.
254. Seminar, Jul 27th, 2023, miRcore High School Summer Camp, Ann Arbor, MI, USA.
255. Invited talk at the meeting on "Regulating with RNA in bacteria and archaea", Sep 5th-8th, 2023, in St. Petersburg, FL, USA.
256. Invited lecture at the 2023 Cold Spring Harbor Asia Strategic Summit on Sep 14th-15th, 2023, at the Suzhou Dushu Lake Conference Center, Shanghai, China.
257. Seminar, Sep 26th, 2023, Department of Biochemistry and Molecular Biophysics, Washington University in St. Louis, St. Louis, MO, USA.
258. Seminar, Nov 7th, 2023, Helmholtz-Institute for RNA-based Infection Research (HIRI), Julius-Maximilians-Universität Würzburg, Würzburg, Germany.
259. Seminar, Dec 15th, 2023, Department of Biological Chemistry, University of Michigan, Ann Arbor, MI, USA.
260. Invited keynote at the 4th Conference on Biomotors, Virus Assembly, and RNA Nanobiotechnology, Dec 18th and 20th, 2023 (Virtual).
261. Invited Symposium-Select talk at the Biophysical Society Meeting 2024, Feb 10th-14th, 2024, in Philadelphia, PA, USA.
262. Seminar, Mar 28th, 2024, Department of Chemistry, Pennsylvania State University, University Park, PA, USA.
263. Seminar, April 19th, 2024, Neuroscience Student Association, University of Michigan, Ann Arbor, MI, USA.
264. Seminar, July 4th, 2024, Max-Planck Institute for Terrestrial Microbiology, Marburg, Germany.
265. Seminar, Sept 18th, 2024, Department of Pharmaceutical Sciences, University of Michigan, Ann Arbor, MI, USA.
266. Invited talk at Riboclub/RNA Canada 2024, Sep 30th – Oct 4th, 2024, Ottawa, Ottawa, Canada.
267. Invited talk at the symposium "Biomolecular Structure and Function", 2024 ACS Midwest Regional Meeting, Oct 13th – 15th, 2024, Lincoln, NE, USA.
268. Invited talk at the *Cell* Symposium "Functional RNAs", Oct 20th – 22nd, 2024, Beijing, China.
269. Invited talk at the 21st Biennial meeting of Post Initiation Activities of RNA Polymerases (the "Mountain Lake Termination meeting"), Oct 31st – Nov 3rd, 2024, Pembroke, VA, USA.
270. Seminar, Nov 4th, 2024, Center for RNA Biomedicine, University of Michigan, Ann Arbor, MI, USA.
271. Invited talk at OWLS-17, the biennial "International Conference on Optics Within Life Sciences", Nov 18th – 21st, 2024, IIT Bombay, Mumbai, India.
272. Seminar, Feb 13th, 2025, RNA Institute, University of New South Wales, Sydney, Australia.
273. Invited talk at the 46th Lorne Genome Conference 2025, Feb 16th – 19th, 2025, Lorne, Australia.
274. Seminar, Feb 20th, 2025, Molecular Horizons, University of Wollongong, Wollongong, Australia.
275. Seminar, Feb 25th, 2025, The Shine-Dalgarno Centre for RNA Innovation, Australian National University, Canberra, Australia.
276. Seminar, Mar 21st, 2025, Department of Biomedical Engineering, Arizona State University, Tempe, AZ,

USA.

RESEARCH GROUP

Current Graduate Students (denotes member of a traditionally underrepresented group)*

Mr. Armin Arnoud	from 9/1/24 (Pharmaceutic Sciences student from 9/23)
Mr. Bisal Halder	from 5/1/24 (Chemistry student from 9/23)
Ms. Rosa Romero *	from 5/1/20 (Biological Chemistry student from 9/19)
Ms. Emily Sumrall	from 5/1/22 (Biophysics student from 9/21)
Ms. Jingxuan Tang	from 5/1/22 (Chemistry student from 9/21)

Former Graduate Students

Dr. John Androsavich	9/1/07 – 8/31/12	Chemical Biology student, then scientist at Regulus Therapeutics, San Diego; now Global Lead for RNA Medicines at Pfizer, Boston
Mr. Berhane(gebriel) Assefa *	9/1/11 – 8/31/12	PIBS/CMB student, soccer coach
Mr. Garrette Belanger	5/1/00 – 2/1/02	Chemistry student, now PharmD
Dr. Mario Blanco *	9/1/07 – 5/30/13	PIBS/CMB student, now postdoctoral fellow with Mitch Guttman at Caltech
Ms. Elizabeth Cameron	5/1/14 – 4/30/17	Chemistry student
Dr. Erika Cline	9/1/08 – 5/30/13	PIBS/CMB student, now postdoctoral fellow with William L. Klein at Northwestern University
Dr. Corey Custer	5/1/12 – 9/15/16	Chembio IDP student, now Scientific Lab Manager at Eurofins Bioanalytical Services
Dr. Liuhan Dai	5/1/19 – 04/30/24	Chemistry student, now securing postdoc
Dr. Shiba Dandpat	9/1/15 – 12/31/20	Chemistry student, then Application Scientist, LUMICKS
Dr. Chamaree de Silva	5/1/04 – 5/1/09	Biophysics student, now Visiting Assistant Professor in Physics at Mercer University
Dr. Mark Ditzler	9/1/03 – 12/31/08	PIBS/Biophysics student, now physical research scientist with NASA Ames Research Center
Dr. Emily Ellinger	9/1/19 – 12/31/24	Biological Chemistry student
Dr. Guoming Gao	9/1/18 – 5/31/24	PIBS-Biophysics student
Dr. Dinari Harris *	1/1/00 – 08/31/04	Chemistry student, first Damon-Runyan Postdoctoral Fellow w/ Richard Carthew at Northwestern U., then Laboratory of Molecular Biophysics at the NIH, now Assistant Professor of Chemistry at Howard University
Ms. Charity Haynes *	5/1/10 – 12/31/11	PIBS/Biophysics student, then School of Public Health
Dr. John Hoerter	9/1/02 – 12/31/07	Chemistry student, first Irving S. Sigal Postdoctoral Fellow w/ Nicholas Gascoigne at the Scripps, then Postdoctoral Fellow at GNF in San Diego, now company scientist
Dr. Ameya Jalihal	9/1/15 – 12/31/20	PIBS/CMB student, now postdoctoral fellow with Amy Gladfelter at UNC Chapel Hill
Ms. Sohee Jeong	1/1/01 – 12/31/02	Chemistry student, switched graduate programs, then at Los Alamos National Labs

Dr. Alexander Johnson-Buck	5/1/08 – 12/31/12	Chemistry student, then postdoc at Harvard Medical School, then Research Assistant Professor in Internal Medicine, University of Michigan, now Chief Scientific Officer at aLight Sciences Inc.
Dr. Matthew Kahlscheuer	5/1/10 – 04/30/15	Chemistry student, now Research Scientist with Apeel Sciences
Dr. Kunal Khanna	5/1/17 – 1/7/22	Chemistry student, now Research Scientist with Agilent
Dr. Ramya Krishnan	9/1/08 – 5/30/13	Chemistry student, graduated
Dr. Visha(lakshi) Krishnan	9/1/07 – 5/30/13	Chemistry student, now company adviser with SearchLite
Dr. Katherine Korbiak	9/1/02 – 12/31/07	joint Physics student with Jens-Christian Meiners/Physics, now graduated
Ms. Rachel Leslie	5/1/09 – 12/31/10	Chemical Biology student, left graduate program with Masters now Global Clinical and Analytical Scientist at GOJO Industries, Akron, OH
Dr. Jieming Li	9/1/13 – 12/31/18	Chemistry student, now Research Scientist with Bristol-Myers Squibb
Ms. Lidan Li	10/1/19 – 9/23/20	Chemistry exchange student from Beijing University of Chemical Technology
Ms. Saffron Little *	5/1/19 – 8/15/22	Chemical Biology student
Dr. Yichen Liu	9/1/18 – 05/01/24	Chemistry student
Dr. Paul Lund	9/1/10 – 08/31/15	Chembio IDP student, now 10x Genomics
Dr. Matthew Marek	9/1/07 – 08/31/14	PIBS/CMB student, now Research Scientist, Freelance
Dr. Sarah (Liz) McDowell	5/1/03 – 08/31/08	Biophysics student, now Director of the Science Learning Center at UM-Dearborn
Dr. Nicole Michelotti	5/1/08 – 04/30/13	Physics student, now Postdoctoral Research Fellow w/ Timothy McKay/UM Physics
Dr. Karen Montoya *	9/1/17 – 12/31/22	Chemistry student, now Biology & Chemistry Specialist at Scale AI
Dr. Miguel Pereira	9/1/03 – 05/1/09	Chemistry student, now Postdoctoral Fellow, University of Utah School of Medicine.
Dr. Sethu(ramasundaram) Pitchiaya	5/1/07 – 12/31/11	Chemistry student; then postdoctoral fellow with Arul Chinnaiyan, Cancer Center, University of Michigan; now Assistant Professor of Urology in University of Michigan Medical School
Ms. Amy Predenkiewicz	1/1/04 – 12/31/04	CMB graduate student
Dr. Renata Afi Rawlings *	5/23/05 – 05/1/10	Biophysics student, then PENN PORT Program postdoctoral fellow w/ Sarah Tishcoff at U. Penn, then NSF liaison with White House Office of Science and Technology, now Executive Director of the South Big Data Innovation Hub at Georgia Tech
Dr. Maria Rhodes	1/1/01 – 06/30/06	Chemistry student, graduated
Dr. Arlie Rinaldi	6/1/10 – 04/30/13	Chemistry student, now Assistant Professor of Chemistry in the Keck Science Department at Claremont McKenna College
Dr. Jana Sefcikova	5/1/01 – 06/30/06	Chemistry student, now postdoc w/ Penny Beuning at Northeastern U.

Dr. Kamali Sripathi *	7/1/09 – 04/30/14	Medicinal Chemistry student, Post-Doctoral Researcher at Michigan State University Automated Analysis of Constructed Responses Group
Dr. Xin Su	9/1/13 – 09/30/14	visiting from Peking University as part his PhD, now Assistant Professor, Beijing University of Chemical Technology, China
Dr. Krishna Suddala	7/1/09 – 04/30/14	PIBS/Biophysics student, now Postdoctoral fellow at the NIH
Dr. Wendy Tay	7/1/10 – 04/30/14	Program in Chemical Biology student, now Program Manager at Maluuba (a Microsoft company)
Dr. Rebecca Tinsley *	9/1/02 – 05/31/05	Chemistry student, now Research Scientist at Colgate/Palmolive
Dr. Gabrielle Todd	6/1/08 – 12/31/11	Chemical Biology student, now Freelance Editor with proof-reading-service.com
Mr. Zezhong Wan	3/1/23 – 8/31/23	Chemistry masters student
Dr. Jennifer Willard Furchak	9/1/02 – 9/30/07	Chemistry student, graduated, now Associate Professor of Chemistry, Kalamazoo College
Ms. Sherry (Yue) Xie	5/1/12 – 8/31/13	Chemistry student, left group

Titles of Ph.D. theses completed in the Walter lab

Dr. John Androsavich-- Diversity in intracellular microRNA regulatory networks: microRNA-21 and beyond

Dr. Mario Blanco—Splicing at single molecule resolution: Pre-mRNA dynamics throughout spliceosome assembly and catalysis

Dr. Erika Cline-- Interactions between nanoparticles and biological charged lines: biological mimics of protein-DNA complexes and microtubules as drug targets

Dr. T. Corey Custer -- Fluorescent labeling, co-tracking, and quantification of RNA *in cellulo*

Dr. Liuhan Dai-- Advancing Quantitative DNA Biomarker Detection through Single Molecule Fluorescence Kinetic Fingerprinting

Dr. Shiba Dandpat-- Mechanism of transcription and translation regulation by riboswitches in bacteria

Dr. Chamaree de Silva-- Single molecule fluorescence imaging of biosensors, ribozymes and molecular spiders

Dr. Mark Ditzler-- Folding and conformational dynamics of the hairpin ribozyme and the spliceosome: combining computational and experimental analyses

Dr. Emily Ellinger-- Structural mapping of the cross-coupling between riboswitches and the RNA polymerase

Dr. Guoming Gao-- Probing the Impact of Biomolecular Condensates on RNAs with Single-Molecule Tracking *in vitro* and *in cellulo*

Dr. Dinari Harris-- Conformational changes and metal-ion binding of the hepatitis delta virus ribozyme

Dr. John Hoerter-- Dynamics, degradation, and chemical modification of non-coding RNA

Dr. Ameya Jalihal-- To find and to form: Cellular strategies for intracellular target search and higher-order assembly

Dr. Alexander Johnson-Buck-- Detection of stochastic and heterogeneous behaviors in DNA nanodevices by super-resolution fluorescence microscopy

Dr. Sarah (Liz) McDowell-- Structure, function and dynamics of minimal and extended hammerhead ribozymes

Dr. Matthew Kahlscheuer-- Characterization of pre-mRNA dynamics and structure throughout spliceosome assembly and catalysis

Dr. Kunal Khanna-- Rapid Single Molecule FRET Biosensing Assay for Nucleic Acid Detection
Dr. Ramya Krishnan-- Understanding Pre-mRNA Dynamics in Single Spliceosome Complexes
Dr. Visha(lakshi) Krishnan-- An investigation of the RNA induced silencing complex and its therapeutic implications
Dr. Jieming Li-- Engineering Dynamic Behavior into Nucleic Acids Guided by Single Molecule Fluorescence Microscopy
Dr. Yichen Liu-- Investigating Riboswitch-Containing Complexes via Molecular Dynamics Simulations
Dr. Paul Lund-- Interactions between the Translation Machinery and a Translational preQ$_1$ Riboswitch
Dr. Matthew Marek-- Heterogeneous folding and function of small RNA motifs: The hairpin ribozyme and a translational riboswitch
Dr. Karen Montoya-- Direct identification and counting of microRNAs in single cells by transient binding and kinetic fingerprinting
Dr. Miguel Pereira-- Single molecule characterization of the Varkud satellite ribozyme and bulk native purification of non-coding RNA
Dr. Sethu(ramasundaram) Pitchiaya-- Probing microRNA cctivity *in vitro* and inside cells using single molecule microscopy
Dr. Renata Afi Rawlings-- An *in vitro* and *in silico* kinetic study of a viral RNA silencing suppressor
Dr. Maria Rhodes-- Formation and structural communication through an interdomain cavity in the catalytic core of the hairpin ribozyme
Dr. Arlie Rinaldi-- Establishing ligand mediated RNA folding of translational riboswitches as genetic regulators using single molecule microscopy
Dr. Jana Sefcikova-- Conformational dynamics in folding and function of the hepatitis delta virus ribozyme
Dr. Kamali Sripathi-- Structural Dynamics of the Hepatitis Delta Virus and Hairpin Ribozymes: Implications for Function
Dr. Krishna Suddala-- A Tale of Two Riboswitches: Single Molecule Investigation of the Conformation, Dynamics and Ligand binding to the PreQ1 and T-box Riboswitches
Dr. Wendy Tay-- Structures, Dynamics, and Ribozymes: An Investigation of RNA Structural Dynamics with the Hepatitis Delta Virus and Hairpin Ribozymes
Dr. Rebecca Tinsley Probing the structure-function relationship of two non-coding RNAs: the hepatitis delta virus ribozyme and glmS catalytic riboswitch
Dr. Gabrielle Todd-- Secondary Structure of Bacteriophage T4 Gene *60* mRNA: Implications for Translational Bypassing
Dr. Jennifer Willard Furchak-- Development of analytical assays for the detection of small molecules using aptazymes

Former PREP postbac students

Chandler Petersen	7/1/17 – 6/30/20	now PhD student at the University of Washington

Current Master's Students

Mr. Ben Healy	9/1/24 – ongoing	Master's student in Chemistry
Ms. Ying Zhu	2/20/25 – ongoing	Master's student in Bioinformatics

Former Master's Students

Mr. Brian Hardaway	9/1/17 – 6/30/19	Master's and PREP student in Biochemistry
Ms. Qian Hou	5/1/16 – 4/30/17	Advanced Degree (Master's) student in Biochemistry, now PhD student, Weill Cornell Medicine
Mr. Jonathan Kuriakose	5/1/17 – 4/30/18	Advanced Degree (Master's) student in

		Biochemistry
Ms. Anna Spoto	5/1/20 – 4/30/21	Advanced Degree (Master's) student in Biochemistry; now Research Scientist at aLight Sciences Inc.

Former Research Assistant Professor

Dr. Alexander Johnson-Buck	9/1/16 – 8/30/20	first, postdoc at Harvard Medical School; then Research Assistant Professor in Internal Medicine, University of Michigan; now Chief Scientific Officer at aLight Sciences Inc.

Assistant Research Scientist

Dr. Alexander Johnson-Buck	10/1/24 – ongoing	

Current Postdoctoral Fellows

Dr. Pavel Banerjee	4/1/22 – present	Postdoctoral fellow
Dr. Tanmay Chatterjee	5/1/17 – present	Postdoctoral fellow, then Research Lab Specialist/Laboratory Manager-Chemistry
Dr. Adrien Chauvier	8/1/17 – present	Postdoctoral fellow, then Research Lab Specialist/Laboratory Manager-Biology
Dr. Laxmikanta Khamari	3/15/23 – present	Postdoctoral fellow
Dr. Yichen Liu	8/19/24 – present	Postdoctoral fellow
Dr. Namra Siddiqui	8/1/23 – present	Postdoctoral fellow

Former Postdoctoral Fellows

Dr. John Androsavich	9/1/12 – 09/30/12	then Postdoctoral fellow Regulus Therapeutics, San Diego; Global Lead, RNA Medicines, at Pfizer; now Gingko Bioworks
Mr. Joel Bentley	7/15/15 – 7/14/16	former Research Scientist in the Single Molecule Analysis in Real-Time (SMART) Center
Dr. Aaron Blanchard	9/14/20 – 8/14/21	Michigan Society of Fellow and NCI F99/K00 fellowship recipient, now postdoc Duke University
Dr. Mario Blanco *	5/1/13 – 12/31/13	now Postdoctoral fellow with Mitch Guttman at Caltech
Dr. Javier Cabello *	9/14/16 – 9/12/20	now Research Scientist at aLight Sciences Inc.
Dr. Surajit Chatterjee	12/14/16 – 11/30/21	Postdoctoral fellow
Dr. Liuhan Dai	5/1/24 – 12/31/24	now postdoctoral research fellow with Peng Yin at Harvard University
Dr. Soma Dhakal	2/1/13 – 8/31/16	now Assistant Professor, Virginia Commonwealth University
Dr. Elizabeth Duran *	5/1/18 – 7/3/23	Postdoctoral IRACDA fellow, NIH MOSAIC K99/R00 fellow, now Assistant Professor at University of Alabama Birmingham
Dr. May Daher Farhat	12/1/12 – 8/15/16	now Chemistry Instructor, University of Detroit Mercy
Dr. Elizabeth (Lizi) Franklin	6/6/22 – 6/5/24	Postdoctoral fellow
Dr. Guoming Gao	6/1/24 – 12/31/24	now postdoctoral research fellow with Mitch Guttman at Caltech

Dr. Katelyn Green	2/15/21 – 9/7/21	now stay at home mom
Dr. Kaushik Gurunathan	9/1/12 – 08/31/13	now Director, Care Health Diagnostic Lab, Chennai
Dr. Laurie Heinicke	1/1/13 – 12/31/15	now writer for Medical Supply company
Dr. Damon Hoff	1/1/13 – 10/1/13	now Lab Manager in the Single Molecule Analysis in Real-Time (SMART) Center
Dr. Cheng-Yen Huang	10/1/07 – 10/31/09	
Dr. Alexander Johnson-Buck	1/1/13 – 7/31/14	first, postdoc at Harvard Medical School; then Research Assistant Professor in Internal Medicine, University of Michigan; now Chief Scientific Officer at aLight Sciences Inc.
	12/1/23 – 9/30/24	Postdoctoral Research Associate II
Dr. Matthew Kahlscheuer	5/1/15 – 7/15/15	now Research Scientist, Apeel Sciences
Dr. Hui Li	9/22/16 – 9/21/17	Postdoctoral visitor from the State Key Laboratory of Analytical Chemistry for Life Science, Nanjing University returned to senior scientist position at Nanjing University
Dr. Xiang Li	9/1/14 – 9/15/15	now Research Scientist, Parabon NanoLabs, Inc.
Dr. Zi Li	2/1/19 – 08/14/21	now Research Scientist, Pacific Biosciences
Dr. Paul Lund	9/1/15 – 11/30/18	Postdoctoral fellow, now at 10xGenomics
Dr. Anthony Manzo	9/1/05 – 8/30/11	now Research Scientist, The Aerospace Corporation in El Segundo, CA
Dr. Shankar Mandal	7/15/19 – 03/14/22	now Assoc. Research Scientist, PPD as part of Thermo Fisher Scientific
Dr. Sarah (Liz) McDowell	9/1/08 – 8/31/09	then Assistant Professor of Physics, Kalamazoo College
Dr. Katarina (Katie) Meze	1/1/22 – 12/31/22	Postdoctoral fellow, Michigan Pioneer Program (MP3) fellow
Dr. Meredith Newby	9/1/02 – 6/30/06	then Asst. Prof. of Physics, Clemson University
Dr. Nibedita Pal	5/1/16 – 10/10/18	Postdoctoral fellow, now Assistant Professor, Department of Biology, Indian Institute of Science Education and Research, Tirupati
Dr. Shiamalee Perumal	8/1/07 – 5/31/08	now VP Customer Strategy, Tact.ai, Redwood City, California
Dr. Sethu Pitchiaya	1/1/12 – 12/31/14	then postdoctoral fellow with Arul Chinnaiyan, Cancer Center, University of Michigan; now Assistant Professor of Urology in University of Michigan Medical School
Dr. Sujay Ray	2/1/16 – 05/31/20 & 5/1/22 – 8/16/24	now Assistant Professor of Chemistry at the University of Mississippi
Dr. Arlie Rinaldi	5/1/13 – 09/30/13	now Visiting Assistant Professor of Chemistry in the Keck Science Department at Claremont McKenna College
Dr. Poorna Roy	6/10/17 – 4/15/19	Followed husband back to India
Dr. David Rueda	8/1/01 – 8/31/05	now Chair (Full Professor) at Imperial College London
Dr. Andreas Schmidt	4/1/19 – 04/19/22	Postdoctoral fellow, Walter Benjamin Scholar of the German Research Council (DFG), now Senior Scientist at Illumina
Dr. Catherine (Catie) Scull	4/1/20 – 3/11/22	Postdoctoral MI Life Sciences fellow, NIH NSRA

		fellow, now Research Scientist at Servier Pharmaceuticals
Dr. Kamali Sripathi *	5/1/14 – 7/25/14	now postdoctoral fellow in Chemical Education at Purdue University
Dr. Mohamed Sobhy	10/1/07 – 1/31/09	now postdoctoral fellow at KAUST
Dr. Krishna Suddala	5/1/14 – 9/30/16	postdoctoral fellow at Emory University w/ Greg Melikian, then at NIH with Jinwei Zhang
Dr. Catherine Summers	1/1/01 – 2/28/02	now at Sankyo Pharma, Inc.
Dr. Tristan Tabouillot	9/1/10 – 12/20/12	Senior Research Scientist of the Single Molecule Analysis in Real-Time (SMART) Center
Dr. Gabrielle Todd	1/1/12 – 3/31/12	now at UM Medschool w/ Akira Ono
Dr. Hannah Townsend	8/15/08 – 5/31/09	now Scientist at Locus Biosciences, Inc.
Dr. Robb Welty	10/1/18 – 8/2/22	now Biophysics Core Manager, University of Colorado Anschutz Medical Campus
Dr. Julia Widom	1/10/14 – 8/2/18	Postdoctoral fellow on NIH Path to Independence, now Assistant Professor of Chemistry at U. Oregon
Dr. Rajeev Yadav	2/1/17 – 12/31/19	Postdoctoral fellow

Current Sabbatical Visitor

Former Sabbatical Visitor

Dr. Christopher Rohlman (Biochemistry, Albion College)	1/1/06 – 7/31/06 and 1/1/16 – 7/31/16
Dr. Valter Zazubovits (Physics, Concordia University, Montreal)	7/1/17 – 10/30/17

Current Undergraduate Students

Ms. Molly Goldwasser	from 9/1/23	Biochemistry major, Computer Science minor
Ms. Allison Myers	from 9/1/24	UROP student
Mr. Seth Shebo	from 9/1/24	Biochemistry and Biophysics double major
Shelby Stakenas *	from 9/1/22	UROP student
Mr. Jonathan Wang	from 9/1/24	Chemistry major
Ms. Vivien Wang	from 9/1/24	UROP student
Ms. Nicole Wrubel	from 9/1/24	Biochemistry major

Former Undergraduate Students (denotes member of a traditionally underrepresented group)*

Ms. Autumn Acklin *	6/1/17 – 8/1/17	SROP summer student
Ms. Maria Agostini	1/1/13 – 6/30/14	Biochemistry student; now graduate student, Vanderbilt University
Mr. Pujan Ajmera	7/1/18 – 12/31/21	Engineering Physics major
Mr. Jacob Anderson	1/1/16 – 1/31/17	Cellular & Molecular Biology student
Ms. Rebecca Bartke	9/1/13 – 4/30/15	UROP student
Mr. Vivek Behera	1/1/09 – 6/1/10	Biochemistry honors thesis; then technician with Nobel laureate Carol Greider, John Hopkins; now M.D./Ph.D. student at U. Penn
Ms. Hailey Blinkiewicz	5/1/17 – 4/30/19	Biochemistry student
Mr. Noah Chen	1/1/16 – 8/31/16	Biochemistry student
Ms. Kasia Chmielinska	6/4/03 – 11/1/03	German exchange student, FU Berlin; then graduate student TU Berlin
Mr. Liuhan Dai	7/10/17 – 1/9/18	Visiting Chemical Biology student, Nankai

		University
Mr. Solanus de la Serna	6/1/15 – 4/30/17	Biochemistry student
Mr. Williams Dixon	9/1/11 – 08/31/14	UROP student
Ms. Katelyn Doxtader	9/1/10 – 06/31/14	UROP student; now graduate student, UT Southwestern
Ms. Brea Edwards *	6/2/14 – 8/1/14	SROP student
Ms. Annika Ehrlacher	9/1/21 – 5/1/22	Biochemistry major
Mr. Ken Eng	10/1/06 – 05/31/07	UROP student
Mr. Hugo Espejel *	6/1/08 – 8/1/08	SROP summer student
Ms. Mary Falgout	6/1/01 – 8/7/01	REU summer student
Ms. Carina Figge	4/1/02 – 8/31/02	German exchange student, U. Bielefeld
Ms. Christina Galloway	1/1/09 – 5/1/10	Chemistry student
Ms. Carolyn Glasser	9/1/19 – 5/1/21	UROP student
Ms. Devisi Goel	9/1/23 – 5/1/24	UROP student
Ms. Sarah Golts	9/1/22 – 4/30/23	Data Science and Biophysics major
Ms. Melissa Gondert	1/1/04 – 5/31/05	Biochemistry honors thesis
Ms. Kristy Hamlin *	5/30/14 – 8/7/14	REU student
Mr. Spencer Haupert	1/1/17 – 4/30/18	Biochemistry student
Ms. Kimberly Haupt	9/1/08 – 12/31/10	UROP student
Ms. Charity Haynes *	6/1/08 – 8/1/08	SROP summer student
Mr. Bennett Hendricks	9/1/18 – 4/30/21	Biochemistry student
Ms. Qian Hou	6/1/14 – 4/30/16	Biochemistry honors thesis
Mr. Michael James	1/1/20 – 6/30/21	Biochemistry student, then PhD student at Columbia U.
Mr. Jesse Jun	9/1/07 – 5/1/09	Biochemistry honors thesis
Mr. Christopher Katanski	9/1/09 – 06/30/10	UROP student
Mr. Zaid Khatib	8/1/16 – 02/01/17	Biomedical Engineering and Engineering Physics student
Mr. Sim Choon Kiat	7/15/04 – 12/31/04	Biophysics undergraduate
Mr. Matthew Ko	1/1/14 – 05/30/14	work-study student
Mr. Alexey Kovalenko	7/1/21 – 4/30/23	Biochemistry major
Ms. Jacqueline Kunesh	9/1/18 – 04/30/21	Biochemistry student, then MPH student at UC Berkeley
Mr. Jonathan Kuriakose	1/1/17 – 04/30/17	Biomolecular Science student
Ms. Wenrui (Renata) Lei	7/2/19 – 09/30/19	Visiting Chemistry student, Nanjing University
Ms. Amelia Lemont	1/1/23 – 04/30/23	Biology, Health & Society major
Mr. Yuchen Li	7/2/19 – 01/30/20	Visiting Chemical Biology student, Nankai University
Ms. LeaAnn Love *	6/1/12 – 8/1/12	SROP summer student
Mr. Philip Ma	1/1/16 – 4/30/17	Biochemistry student
Ms. Natalia Makaro	9/1/23 – 4/30/24	Biochemistry major, now gradfuate student at University of Illinois Chicago
Mr. Collin Marshall *	6/1/17 – 8/1/17	SROP summer student
Mr. Mariusz Matyszewski	1/1/12 – 5/1/13	Biophysics student
Ms. Molly McNeely	5/1/17 – 4/30/18	Biochemistry student
Ms. Eka Melani *	6/1/12 – 8/10/12	REU summer student
Mr. Simon Meyer	1/27/04 – 6/25/04	German exchange student, U. Regensburg
Ms. Michaela Möllmann	8/6/03 – 10/4/03	German exchange student, TU Munich
Mr. Khalil Mroue	1/1/10 – 5/31/11	Biochemistry student

Ms. Katherine Mudge	9/1/21 – 12/31/23	Biochemistry and Informatics major
Mr. Jun Park	9/1/13 – 4/30/16	Biochemistry student
Mr. James Patterson	6/1/05 – 8/10/05	REU summer student
Ms. Laura Penabad-Pena *	6/7/21 – 8/10/21	SROP student
Ms. Rebecca Perelman	9/1/20 – 4/30/23	UROP student, Biophysics major, now graduate student at Harvard
Mr. Hai Pham	8/1/07 – 5/1/09	Biochemistry honors thesis
Ms. Victoria Rai	9/1/14 – 4/30/18	Biophysics student
Ms. Anirudha Rathnam	10/1/07 – 4/30/08	UROP student
Ms. Stephanie Redemann	2/4/04 – 5/1/04	German exchange student, TU Darmstadt, then graduate student Cambridge U.
Mr. Vincent (Alex) Reed	9/1/22 – 4/30/24	Biochemistry major, now graduate student at UC Irvine
Ms. Maggie Rodgers	1/1/10 – 5/31/11	Biochemistry student
Mr. Kenneth Rodriguez *	6/1/00 – 8/1/00	SROP summer student, then Ph.D. student at USC
Ms. Melanie Sabbagh	09/1/08 – 9/1/09	Biochemistry undergraduate
Mr. Finsam Samson	9/1/19 – 4/30/20	UROP student
Ms. Franziska Schorsch	8/1/02 – 2/28/03	German exchange student, U. Mainz
Ms. Emily Schugardt	9/1/21 – 04/30/23	Biomolecular Science major
Mr. Frank Schulz	4/15/02 – 8/15/02	German exchange student, then Ph.D. student at MPI for coal research
Mr. Phillip Sekella	10/1/00 – 8/15/02	Biochemistry honors thesis, then Ph.D. student at U. Stanford
Ms. Hui Shan	6/1/01 – 12/31/01	Biophysics undergraduate, then Ph.D. student at MIT, now Managing Director Goldman Sachs
Ms. Elizabeth Shy	11/1/09 – 12/31/10	Biochemistry honors thesis
Mr. Jesse Sinanan *	6/1/07 – 8/10/07	REU summer student
Mr. Benjamin Singer	5/1/00 – 10/30/00	Mathematics undergraduate, then graduate students Bioinformatics at UM
Mr. David Smith	9/1/12 – 05/01/14	UROP student
Ms. Alisha Spoelman	11/1/16 – 04/30/19	UROP student
Ms. Anna Spoto	9/1/17 – 04/30/20	Biochemistry student
Mr. Jeremy Stocks *	6/1/13 – 8/1/13	SROP summer student
Ms. Meike Stoldt	9/1/17 – 4/30/19	Biochemistry student
Mr. Jalal Taleb	9/1/15 – 04/30/16	Neuroscience student
Ms. Saskia Thomas	6/4/03 – 11/1/03	German exchange student, FU Berlin
Ms. Ava Tikekar	9/1/23 – 04/30/24	UROP student
Ms. Anastasiya (Anna) Trzcinski	9/1/18 – 04/30/21	Biochemistry student
Ms. Sarah Uhler	5/1/01 – 6/1/03	Chemistry honors thesis, then M.D./Ph.D. student at UC San Francisco
Ms. Eva Vöcker	8/2/04 – 10/8/04	German exchange student, U. Bochum
Ms. Hanna Wagner	8/1/11 – 10/31/11	German exchange student, U. Freiburg
Ms. Jiarui (Jerry) Wang	1/1/13 – 12/31/14	Biochemistry student
Ms. Katrin Wick	9/1/02 – 2/28/03	German exchange student, FU Fürtwangen, then at Concordia U. in Montreal
Ms. Anja Will	3/7/08 – 9/29/08	German exchange student, University of Technology Dresden
Mr. Delon Wilson *	6/1/02 – 8/15/02	REU summer student
Ms. Mona Wood	5/31/07 – 5/31/08	Biochemistry honors thesis, then M.D./Ph.D.

		student at UC Irvine
Ms. Yun Xie	6/1/03 – 8/31/03	Chemistry undergraduate, U. Michigan
Ms. Ying Qi Zhang	6/1/11 – 8/1/11	SROP summer student
Mr. Ang Zhou	7/5/10 – 8/31/10	China-REU

Former High School Students (denotes member of a traditionally underrepresented group)*

Mr. Brandon Campbell *	7/1/19 – 8/31/19	D-RISE summer student, now graduate student at Harvard University
Mr. Neel Chhandra	6/26/23 – 8/4/23	D-RISE associated summer student
Ms. Nakelle Cooper *	6/26/23 – 8/4/23	D-RISE summer student
Ms. Paola Garza *	7/1/22 – 8/12/22	D-RISE summer student, now graduate student at University of Michigan, Dearborn

Current Research Assistants

Former Research Assistants

Ms. Martina Jerant	11/21/16 – 11/18/22	Lab Manager
Ms. Caitlin Marlatt	1/14/08 – 6/30/09	now Chemistry graduate student, Emory U.
Mr. Miguel Pereira	09/01/99 – 8/31/02	CMB graduate student at UC Berkeley for one year, then Chemistry student at UM, graduated

MAJOR FELLOWSHIPS AND AWARDS OF RESEARCH GROUP MEMBERS

Individual Fellowships or Awards

Postdoctoral Fellows

Dr. Aaron Blanchard	National Cancer Institute F99/K00 award; Michigan Society of Fellows Fellowship
Dr. Adrien Chauvier	RiboClub 2019 Travel Fellowship; 2025 Research Associate / Assistant / Technician Recognition Award
Dr. Elizabeth Duran	NIH Institutional Research and Academic Career Development Awards (IRACDA) (K12) Postdoctoral fellowship; Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) (K99/R00)
Dr. Meredith Lambert	Ruth L. Kirschstein F32 National Research Service Postdoctoral Fellowship; Michigan RNA Society Meeting Outstanding Poster Award; Seyhan Ege ADVANCE Travel Award
Dr. Shankar Mandal	Biophysical Society Travel Award 2021
Dr. David Rueda	Postdoctoral research fellowship of the Swiss National Science Foundation; Dharmacon award for oral presentation at the Rustbelt RNA Meeting
Dr. Andreas Schmidt	Walter Benjamin-Stipendium Fellowship from the German Research Council (DFG)
Dr. Catherine Scull	Ruth L. Kirschstein F32 National Research Service Postdoctoral Fellowship, Michigan Life Sciences Fellowship
Dr. Mohamed Sobhy	Ruth L. Kirschstein F32 National Research Service Postdoctoral Fellowship
Dr. Hannah Townsend	Ruth L. Kirschstein F32 National Research Service Postdoctoral Fellowship

Dr. Julia Widom	Ruth L. Kirschstein F32 National Research Service Postdoctoral Fellowship, Honorable Mention: UROP Outstanding Research Mentor Award, NIH K99/R00 Path to Independence Award

Graduate Students

Mr. John Androsavich	Cellular Biotechnology Training Program Fellowship
Mr. Mario Blanco	Rackham Merit Fellowship, Maas/Deans Award of the PIBS program; Cellular & Molecular Biology Training Grant; Molecular Biophysics Training Grant; Rustbelt RNA Meeting top oral presentation award; CMB top poster presentation award; MI RNA Society Meeting top poster presentation award
Ms. Elizabeth Cameron	Cellular Biotechnology Training Program Fellowship
Ms. Erika Cline	Cellular & Molecular Biology Training Grant
Mr. Corey Custer	GAANN fellowship
Mr. Shiba Dandpat	RNA Society poster award; Karle Symposium 2019 Award in Chemical Biology; Margaret & Herman Sokol Graduate Summer Research Fellowship 2020
Mr. Mark Ditzler	Molecular Biophysics Training Grant
Mr. Dinari Harris	GEM Fellowship; Michigan Rackham Merit Fellowship; Molecular Biophysics Training Grant; United Negro College Fund/Merck Pre-Doctoral Fellowship; Wirt & Mary Cornwell Outstanding Graduate Student Research Award
Ms. Charity Haynes	Michigan SROP Summer Research Fellowship; Rackham Merit Fellowship
Mr. John Hoerter	Molecular Biophysics Training Grant; Eli Lilly Fellowship 2005-2006; Rackham One Term Dissertation Award; Irving S. Sigal Postdoctoral Fellowship from the ACS (only one awarded nationwide every two years)
Mr. Ameya Jalihal	Cellular & Molecular Biology Training Grant
Mr. Alexander Johnson-Buck	Molecular Biophysics Training Grant; PECRUM travel award; ACS Outstanding Graduate Student Award for Research & Teaching; Rackham Predoctoral Fellowship; Rackham Outstanding Graduate Student Instructor Award; Kasimir Fajans best-thesis Award of the Chemistry Department for the 2012-2013 time frame
Mr. Matthew Kahlscheuer	RNA Travel Award fellowship 2014; *Nature Reviews Molecular Cell Biology* poster award at the RNA Society meeting 2014
Ms. Ramya Krishnan	Best poster travel award at Vaughan symposium 2011
Ms. Rachel Leslie	Chemistry & Biology Interface Training Grant
Ms. Jieming Li	Travel Grant from the Biophysical Society
Ms. Saffron Little	Michigan Rackham Merit Fellowship; Chemistry & Biology Interface Training Grant Fellowship
Mr. Matthew Marek	Cellular & Molecular Biology Training Grant
Ms. Sarah (Liz) McDowell	Molecular Biophysics Training Grant; NSF Pre-Doctoral Fellowship
Ms. Nicole Michelotti	Microfluidics in Biomedical Sciences Training Grant
Ms. Karen Montoya	Michigan Rackham Merit Fellowship; Chemistry & Biology Interface Training Grant Fellowship; Margaret & Herman Sokol Graduate Summer Research Fellowship
Mr. Miguel Pereira	Molecular Biophysics Training Grant; Florence Fenwick Outstanding GSI Award
Mr. Sethu Pitchiaya	Best poster travel award at Vaughan symposium 2011

Ms. Amy Predenkiewicz	Cellular & Molecular Biology Training Grant
Ms. Afi Rawlings	Ford Fellowship; Michigan Science Award Fellowship; Molecular Biophysics Training Grant; MI RNA Society top oral presentation award
Ms. Arlie Rinaldi	*Nature Structural & Molecular Biology* poster award of the RNA Society 2012
Ms. Maria Rhodes	Michigan Regents Fellowship; NSF Pre-Doctoral Fellowship
Ms. Rosa Romero	Michigan Rackham Merit Fellowship; Genetics Training Program Fellowship
Ms. Jana Sefcikova	Margaret and Herman Sokol International Summer Research Fellowship; NATO Science Fellowship, Czech Republic; Center for the Education of Women Sarah Winans Newman Scholarship; Eli Lilly Fellowship 2004-2005; Rackham One Term Dissertation Award
Mr. Xin Su	China Scholarship Council Fellowship
Ms. Emily Sumrall	NSF Graduate Research Fellowship
Ms. Jingxuan Tang	PPG Summer Research Fellowship Award
Ms. Wendy Tay	pre- and post-candidacy NSERC scholarships
Ms. Rebecca Tinsley	Michigan Rackham Merit Fellowship; NIH Minority Supplement and predoctoral fellowship; 1st prize oral presentation in the biosciences, Emerge Workshop 2005

Undergraduates

Ms. Maria Agostini	Chemistry Summer Undergraduate Research Fellowship
Ms. Kasia Chmielinska	German DAAD Study Abroad Fellowship
Mr. Solanus de la Serna	Chemistry Summer Undergraduate Research Fellowship
Mr. William Dixon	Chemistry Summer Undergraduate Research Fellowship
Ms. Brea Edwards	Michigan SROP Summer Research Fellowship
Mr. Hugo Espejel	Michigan SROP Summer Research Fellowship
Ms. Mary Falgout	Michigan REU Summer Research Fellowship
Ms. Carina Figge	German DAAD Study Abroad Fellowship
Ms. Christina Galloway	ACS Outstanding Third-Year undergraduate student award
Ms. Melissa Gondert	Gomberg Summer Research Fellowship; Carlene Friedley Scholarship
Ms. Kristy Hamlin	Michigan REU Summer Research Fellowship
Mr. Bennett Hendricks	Chemistry Summer Undergraduate Research Fellowship, Honors College Vanko Award
Ms. Qian Hou	Chemistry Summer Undergraduate Research Fellowship, twice
Mr. Jesse Jun	Alumni Outstanding Award for 3rd Year Student
Mr. Alexey Kovalenko	American Chemical Society Physical Chemistry Award
Ms. Rachel Leslie	Chemistry & Biology Interface Training Grant
Mr. Philip Ma	Chemistry Summer Undergraduate Research Fellowship
Mr. Jun Park	UROP Summer Undergraduate Research Fellowship and Chemistry Summer Undergraduate Research Fellowship
Ms. Rebecca (Becky) Perelman	Biophysics Krimm Exceptional Graduate Student Award
Ms. Victoria Rai	Top oral presentation of UROP's Research Scholars program
Ms. Alex Reed	Chemistry Summer Undergraduate Research Fellowship
Mr. Kenneth Rodriguez	Michigan SROP Summer Research Fellowship
Mr. Frank Schulz	German DAAD Study Abroad Fellowship
Mr. Phillip Sekella	ACS Outstanding Senior Leadership Award; Summer Research Fellowship
Mr. Jesse Sinanan	Michigan REU Summer Research Fellowship

Ms. Saskia Thomas	German DAAD Study Abroad Fellowship
Ms. Anastasiya (Anna) Trzcinski	Chemistry Summer Undergraduate Research Fellowship; UROP Research Scholarship
Ms. Sarah Uhler	Michigan Chemistry Department Alumni Fellow; Barry M. Goldwater Scholarship; Carlene Friedley Scholarship; AIC Chemistry Award; two consecutive Summer Research Fellowships
Mr. Sebastian Velez	Michigan REU Summer Research Fellowship
Ms. Katrin Wick	German DAAD Study Abroad Fellowship
Mr. Delon Wilson	Michigan REU Summer Research Fellowship
Ms. Jerry Wong	Chemistry Summer Undergraduate Research Fellowship
Ms. Mona Wood	2008 Merck Index Award, 2008 ACS Analytical Chemistry/Alumni Award

SERVICE

Departmental Committees

Computer Committee	1999 – 2000
Gomberg Lecture Committee	1999 – 2005
Chemistry Graduate Recruiting Committee	2000 – 2005; 2006 – 2008; 2012 – 2015, 2017 – 2019 (Chair); 2020 – ongoing
Chemical Biology Search Committee	2000 (successfully hired Hashim Al-Hashimi)
Biophysics/Physics Search Committee	2000 (successfully hired Michal Zochowski)
Biophysics Admissions Committee	2000 – 2001, 2007 – 2009 (Chair)
Program in Biomedical Sciences Adm. Comm.	2000 – 2001
Analytical Chemistry Search Committee	2002 (successfully hired Kristina Hakansson)
Chemical Biology Seminar Coordinator	2002 – 2003 and 2004 – 2006
Curriculum Committee	2002 – 2005
Advisory Committee Chemistry Symposium	2002 – 2008
Chairman ADVANCE junior faculty forum	2003 – 2004
Mol. Biophysics Training Grant Seminar Coordinator	2003
Mol. Biophysics Training Grant Steering Committee	2003 – 2009
Biophysics/Chemistry Search Committee	2004 (successfully hired Jennifer Ogilvie)
Chemistry Space Planning Committee	2005; 2018
Nanoscience Search Committee (joint with Physics)	2005 – 2006
Biophysics Curriculum Committee	2005 – 2007
Presidential postdoc mentoring committee, Aaron Frank	2014 – 2016
Ad hoc (tenure & promotion) committees	Hashim Al-Hashimi (promoted), Kicki Hakansson (promoted), Kevin Kubarych (promoted), Katrin Karbstein (Chair 2009-2010; then she moved to Scripps Florida), Julie Biteen (Chair 2010-2016; promoted), Kaushik Ragunathan (Biological Chemistry; 2017-2022, then he moved to Brandeis University), Amanda Garner (Medicinal Chemistry, 2023-)
Chemistry Search Committee	2012 – 2013, 2021-2024
Chemistry Admissions Committee	2001 – 2002; 2008; 2009 – 2011 (Chair); 2013 – 2015
Chemistry Long-range Planning Committee	2005 – 2008, 2015 – 2017

Chemistry Rackham Diversity Faculty Ally	2012 – 2021
NextProf-Science Organizing Committee	2014 – ongoing
Chemistry Diversity Committee	2014 – ongoing
Research Faculty Mentoring Committee	2015 – 2016 (Chair)
Chemistry Undergraduate Advising Committee	2015 – 2016; 2018 – ongoing
Chemistry Award Committee	2021 – ongoing
Biological Chemistry Seminar Committee	2016 – 2017
Biological Chemistry Rackham Diversity Faculty Ally	2017 – 2019
Biol. Chem. Diversity, Equity, Inclusion (DEI) Comm.	2016 – 2019 (co-Chair 2017-2019)
Biological Chemistry Chair's Elected Advisory Comm.	2017 – 2019
Chemistry Library Liaison	2023 – ongoing

Other Departmental Service

- Currently spearheading a grassroots effort that established the Center for RNA Biomedicine at the U-of-M; an inaugural symposium on March 25, 2016, brought 2 Nobel laureates and several other well-known speakers from the RNA field to campus, with introductory remarks from U-of-M President Schlissel; we raised $400K for a seminar series, the annual symposium on "RNA in Precision Medicine" and pilot grants. In 2018, we were awarded a $10.2m Biosciences Initiative Tier-1 Award to continue and expand our operations and hire 5 new faculty to Michigan (1 senior, 4 junior).
- As departmental Recruiting Committee Chair, I reinvigorated (at least doubled) our outreach seminar program to primarily undergraduate institutions and worked with LSA's videography group to develop a departmental recruiting video, now posted on YouTube.
- As departmental Rackham Diversity Ally, I have been responsible for diversity recruiting into the department since 2012. I raised funds from Rackham and, most notably, conceived and implemented a M-CORE (Michigan – Chemistry Opportunities for Research & Education) preview weekend to bring 12-13 students from underrepresented student serving institutions and their research mentors to campus each fall for recruiting into our summer internship and graduate programs. This effort has transformed our graduate program from, on average ~1 underrepresented student per year to ~8. I was also a co-organizer of the NextProfScience Future Faculty Workshops in May 2015-2018, with the goal to diversify science at all levels.
- As chairman of the Chemistry Admissions Committee I worked hard on securing a more even recruiting effort by reaching the targeted class size of 55-60 students. I introduced three specific improvements to our admissions process: 1.) All student applications are available online to first the admissions committee members and later (for the admitted students) to the faculty as a whole; 2.) visiting students are assigned each one host from our current student pool; the feedback from the visitors and current students has been very positive; 3.) the admissions and recruiting committees work more closely together; for example, the recruiting committee generated a flash drive with information materials for the recruiting weekends (traditionally a domain of the admissions committee) and a brainstorm meeting was held 2 weeks after closure of the admissions season for wrap-up and collection of ideas for future improvements.
- Developed and set up a brochure and website for our Chemistry department Chemical Biology graduate program, Spring 2000
- Developed and set up a brochure and website for our Biophysics graduate program, Fall 2007
- Interviewed 42 Chinese students in Beijing for admission to our Chemistry graduate program (and additional 5 students for Biophysics) in February 2001; we offered admission to 9 and attracted 7 of these students into our program; planned and organized such a trip for the first time in the Chemistry

department; coordinated with the Rackham Graduate School and the English Language Institute on this endeavor; thus initiated the first of our now annual recruiting trips to China, performed every year since

- Initiated regular biweekly social gatherings for students, staff, and faculty in the department, 2001
- Helped group of graduate students apply for and implement the first annual Chemistry Symposium
- Currently serving or have served on ~60 graduate student dissertation committees
- Initiated the introduction of two new courses to our Biochemistry undergraduate curriculum: Chem 453 (Biophysical Chemistry I: Thermodynamics and Kinetics); Chem 454 (Biophysical Chemistry II: Macromolecular Structure and Dynamics); revamped Chem 451 (Advanced Biochemistry I); and co-founded graduate level course Chem 505 (Nucleic Acid Biochemistry)
- Served as Marshal during Spring 2013 Commencement

Manuscript Reviewer for the Following Journals

Accounts of Chemical Research
ACS Chemical Biology
Analytica Chimica Acta
Analytical Chemistry
Angewandte Chemie
Biochemistry
Bioessays
Biophysical Journal
Biotechniques
Cell
Cell Reports
Cellular and Molecular Life Sciences
Chemical Communications
Chemical Reviews
Chemistry & Biology
EMBO Journal
FEBS Letters
Inorganic Chemistry
Journal of Molecular Biology
Journal of the American Chemical Society
Journal of Nanoscience and Nanotechnology
Journal of Physical Chemistry B
Journal of Visual Experiments
Nature
Nature Biomedical Engineering
Nature Biotechnology
Nature Chemical Biology
Nature Communications
Nature Materials
Nature Methods
Nature Nanotechnology
Nature Reviews Chemistry
Nature Structural and Molecular Biology
Nucleic Acids Research

Oligonucleotides
PLOS
Proceedings of the National Academy of Sciences of the USA
RNA
Science Advances
Scientific Reports (Nature)
Small
Trends in Biochemical Sciences

University and External Service

- Elected Co-Chair of the Single-Molecule Forces, Manipulation, & Visualization Subgroup, to organize the subgroup symposium during the 2024 Biophysical Society meeting in Philadelphia
- Elected Co-Chair of the Gordon Research Conference for RNA Nanotechnology in 2023, to serve as Co-Chair 2025, then Chair 2027, the Past-Chair 2029 for the Conference
- Filed numerous patent applications through the U-of-M on a revolutionary single molecule based biomarker detection technology that we are working to commercialize into a revolutionary diagnostics platform; to this end, we were awarded a Kickstart award from the Fast Forward Medical Innovation initiative of U-of-M MTRAC and several other pilot grants. Founded aLight Sciences Inc. in 2017, which is working to commercialize the disease biomarker detection technology SiMREPS developed in the lab.
- Member, Admissions Committee of the Michigan Post-baccalaureate Research Education Program (PREP), 2011-2015; Associate Director, 2015-ongoing
- Elected member of the UM Rackham Graduate School's Executive Board (2017-2020); serving an additional term 2022-23
- Co-Director, Microfluidics in Biomedical Sciences Training Program at the University of Michigan, 2015-2020
- Member, Aaron Goldstrohm (Biological Chemistry) mentoring committee; Jayakrishnan (JK) Nandakumar (MCDB) launch committee; Kaushik Choudhuri (Microbiology & Immunology) mentoring committee; Stephanie Moon (Human Genetics) mentoring committee; Sue Hammoud (Human Genetics) mentoring committee
- Co-organizer of the US U.S.-Brazil International Research Workshop "Non-Coding RNAs: A New Frontier in Biomedical Research", organized by the CIC (US) and CAPES (Brazil) at the Ohio State University, Columbus, OH, in May 2015
- Affiliate Member, UM Global Reach Program in the Medical School
- Member of the UM Rackham Graduate School's selection committees for Rackham Merit Fellowships (2014-2016), Graduate Student Instructor awards (2014-2017), and Faculty Recognition Awards (2020-2023)
- Local Lead Organizer, RNA Society meeting 2012 at the University of Michigan, Ann Arbor, with over 800 participants
- Co-organizer of the Midwest Single Molecule Workshop 2012 at the University of Michigan, Ann Arbor
- Member, Membership Committee of the RNA Society, 2011-2013

- Member, Nomination Committee of the RNA Society, 2015
- Member, Evaluation Committee of RNA Society awards portfolio, 2021
- Served as regular member of the NIH MSFB study section, Oct 2009-2013; Ad Hoc reviewer on the NIH Biophysical Chemistry (BBCB) study section for the Oct. 21/22, 2004, session (was previously asked to serve on the Biochemistry (BIO) study section, but declined); Ad Hoc reviewer on NIH study sections ZRG1 BCMB-K (40) P, SEP-ZGM1TRN-0, 2015/05 ZRG1 AARR-D (03) M, 2017-05 ZRG1 EBIT-Z (90) S, SEP-ZRG1 CMT-F (01)Q, P01 2016-ZRG1 BCMB-S (41), NCI P01 ZCA1 RTRB-R (M1), Transformative R01 201905 ZRG1 BCMB-A (50) A and 202005 ZRG1 BCMB-A (50) R, 202101 ZRG1 CB-K (55) R, 202110 ZRG1 BCMB-U, MSFA 05/23
- Grant Reviewer for the NSF: ad hoc for numerous individual investigator grants; and as panelist for REU program and regular NSF proposals
- Member, Research Policies Committee of the UM Senate Assembly (SACUA), 2009-2012
- Member, Data fraud inquiry committee for the Office of the Vice President of Research at the UM, 2008
- Chaired organizing committee of the symposium "At the Single Molecule Frontier: Integration into Biology and Nanotechnology", May 18&19th, 2006, University of Michigan, Ann Arbor, MI, USA (raised $50,000 for this purpose from intramural sources)
- Directing the UM Single Molecule Analysis in Real-Time (SMART) Center and chairing its Steering Committee, 2010-ongoing
- Co-organized the annual Pfizer-Chemistry symposium 2007, in conjunction with the departmental 150th birthday celebration
- Co-organized the MI RNA Society Meetings 2002 and 2007, as well as the PECRUM (Perspectives on Chemistry research at the University of Michigan) Symposium 2003
- Elected into the Executive Committee of the Optical Physics Interdisciplinary Laboratory (OPIL) at UM, 2003-2006
- Grant Reviewer for the University of Missouri-Kansas City Research Board, 1999
- Grant Reviewer for the Human Frontier Science Program, 2006
- Grant Reviewer for Research Corporation for Science Advancement, 2009
- External Honors examiner for three undergraduate theses at Oberlin College, 2014
- Grant Reviewer for the King Abdullah University of Science and Technology (KAUST), 2014, 2015
- Grant Reviewer for the W.M. Keck Foundation and Stanford Synchrotron Radiation Lightsource
- Grant Reviewer for the Research Councils UK, 2013, 2015
- Grant Reviewer for the Army Research office, 2016
- Grant Reviewer for the European Research Council 2016, 2020, 2023
- Grant Reviewer for the Wellcome Trust DBT India Alliance Fellowship, 2021
- RNA Society Awards Committee, 2021
- Internal reviewer for Camille Dreyfus Teacher-Scholar Awards, 2022
- Internal reviewer for Mallinckrodt Scholars Awards, 2024

TEACHING

Department of Chemistry, University of Michigan, MI, USA
Chem 352-353: Introductory Biochemistry Laboratory (W19, W20, W21)

Department of Chemistry, University of Michigan, MI, USA
Chem 451: Biochemistry I for Undergraduate Students (F02, F09, F10, F11, W13, W14, W15, W16, W17, W18, W22)

Department of Chemistry, University of Michigan, MI, USA
Chem 454: Biophysical Chemistry II for Undergraduate Students (W05, W06, W07, W08, W09)

Department of Chemistry, University of Michigan, MI, USA
Chem 455/505: Nucleic Acid Biochemistry (F09, F13, F14, F15, F16, F17, F19, F20, F21, F22, F23, F24)

Department of Chemistry, University of Michigan, MI, USA
Chem 495: Professional Development in the Chemical Sciences (W10, W11)

Department of Chemistry, University of Michigan, MI, USA
Chem 480: Instrumental Analysis Lab for Undergraduate Students (F07)

Chemical Biology Interdepartmental Graduate Program, University of Michigan, MI, USA
Chem 501: Chemical Biology I (F08, F09, F10, F12)

Chemical Biology Interdepartmental Graduate Program, University of Michigan, MI, USA
Chem 502: Chemical Biology II (W23)

Department of Chemistry, University of Michigan, MI, USA
Chem 260: Chemical Principles for Undergraduate Students (W01, F01, F03, F04)

Cellular Biotechnology Training Program, University of Michigan, MI, USA
Biotech 504: Cellular Biotechnology (W02, W03)

Department of Chemistry, University of Michigan, MI, USA
Chem 525: Chemical Biology I for Graduate Students (F00, F01, F02, F03)

Department of Chemistry, University of Michigan, MI, USA
Chem 526: Chemical Biology II for Graduate Students (W00, W01, W03, W23, W24)

Biophysics Program, University of Michigan, MI, USA
Biophys 440: Biophysics of Disease (F19, F20, F21, F22)

Biophysics Graduate Program, University of Michigan, MI, USA
Biophys/Chem 520: Biophysical Chemistry I (F15, F17)

Biophysics Graduate Program, University of Michigan, MI, USA
Biophys/Chem 521: Biophysical Chemistry II (W08, W09, W10, W14, W15)

Chemical Biology Interdepartmental Graduate Program, University of Michigan, MI, USA
Chem 601: Critical Reading (F05, F07, F08)

Chemical Biology Interdepartmental Graduate Program, University of Michigan, MI, USA
Chem 602: Critical Reading (W06)

Department of Chemistry, Technical University of Darmstadt, Darmstadt, Germany
Teaching Assistant in Physical Chemistry for Physics Undergraduates

Department of Biological Chemistry, University of Michigan, MI, USA
BiolChem 713: Special Topics Seminar Class (F21)