

Traci M.T. Hall, Ph.D.
Epigenetics and Stem Cell Biology Laboratory
National Institute of Environmental Health Sciences
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Education

Johns Hopkins University School of Medicine, Baltimore, MD
Ph.D., Department of Pharmacology and Molecular Sciences, November 1992,
"The Immune-Dependent Action of Praziquantel: Molecular Characterization of a *Schistosoma mansonii* Target Antigen"

University of California, Los Angeles
B.S. in Biochemistry, June 1986

Brief Chronology of Employment

Deputy Chief, Epigenetics and Stem Cell Biology Laboratory, National Institute of Environmental Health Sciences, National Institutes of Health, March 2022-present

Senior Investigator (Tenured), Epigenetics and Stem Cell Biology Laboratory, National Institute of Environmental Health Sciences, National Institutes of Health, October 2014-present: Leader of the Macromolecular Structure Group. Structural and biochemical studies of macromolecules involved in RNA regulation.

Chief (Acting), Laboratory of Structural Biology, National Institute of Environmental Health Sciences, National Institutes of Health, October 2012-October 2014.

Senior Investigator (Tenured), Laboratory of Structural Biology, National Institute of Environmental Health Sciences, National Institutes of Health, December 2004-October 2014: Leader of the Macromolecular Structure Group. Structural and biochemical studies of macromolecules involved in RNA regulation.

Tenure-Track Investigator, Laboratory of Structural Biology, National Institute of Environmental Health Sciences, National Institutes of Health, April 1998 – December 2004

Postdoctoral Research Fellow, Department of Biophysics and Biophysical Chemistry, Johns Hopkins University School of Medicine, September 1994 – March 1998. Advisor: Daniel Leahy, Ph.D. Structural studies of Hedgehog proteins.

American Association for the Advancement of Science (AAAS), Science, Engineering and Diplomacy Fellow, September 1992 - August 1994.

Ph.D. Candidate, Department of Pharmacology and Molecular Sciences, Johns Hopkins University School of Medicine, September 1986 -August 1992. Dissertation advisor: Mette Strand, Ph.D. Molecular characterization of a 200-kDa *Schistosoma* surface protein target of antibodies that act in synergy with the drug, praziquantel.

Honors and Awards

RNA Society of North Carolina Stewardship Award (2022)
NIH Office of the Director Honor Award (2018)
Faculty of 1000, Structure: RNA section (2017-present)
Faculty of 1000, Control of Gene Expression section (2011-2013)

NIH Senior Biomedical Research Service (2008-2015)
NIH Merit Award (2005)
NIH Director's Award (2004)
Albert Lehninger Award for Postdoctoral Research, Johns Hopkins University (1997)
Individual Postdoctoral National Research Service Award (1996-98)
National Science Foundation Graduate Fellowship (1987-90)

Diversity, Equity, Inclusion, and Accessibility Activities and Training

Professional coaching sessions addressing DEIA and other management topics (2/2023-8/2023)
As co-chair, developed a rubric for the Stadtman Investigator RNA Biology search committee to evaluate applications (10/2022)
Participated in the NIH Big Read by reading How to be an Antiracist by Ibram X. Kendi and watching the videocast conversation with Dr. Kendi (8/2022-9/2022)
NIH OIR/COSWD DEIA Workshop Series (3/2022-4/2022)
Focus group to discuss NIEHS DEIA culture (1/2022)
Racial Equity Institute Groundwater Training Introduction (4/2021)
Wrote and distributed a statement on Anti-Asian Violence to my group (3/2021)
Books: Tell Me the Dream Again, Personal Librarian, Yellowface, The Atlas of Reds and Blues, How to be an Antiracist, Just Mercy, My Brother Moochie, Between the World and Me

Peer-Reviewed Publications

Full list of published work (ORCID: 0000-0001-6166-3009, ResearcherID: F-5849-2019):

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/45577310/?sort=date&direction=descending>

Warden MS, DeRose EF, Tamayo JV, Mueller GA, Gavis ER*, Hall TMT*. The translational repressor Glorund uses interchangeable RNA recognition domains to recognize *Drosophila nanos*. *Nucleic Acids Res.* 2023 Sep 8;51(16):8836-8849. doi: 10.1093/nar/gkad586. PMID: 37427795; PMCID: PMC10484662, *Joint corresponding authors, NIEHS DIR Paper of the Month.

Jouravleva K, Golovenko D, Demo G, Dutcher RC, Hall TMT*, Zamore PD*, Korostelev AA*. Structural basis of microRNA biogenesis by Dicer-1 and its partner protein Loqs-PB. *Mol Cell.* 2022 Nov 3;82(21):4049-4063.e6. doi: 10.1016/j.molcel.2022.09.002. Epub 2022 Sep 30. PMID: 36182693; PMCID: PMC9637774, * Joint corresponding authors.

Klemm BP, Sikkema AP, Hsu AL, Horng JC, Hall TMT, Borgnia MJ, Schaaper RM. High-resolution structures of the SAMHD1 dGTPase homolog from *Leeuwenhoekiella blandensis* reveal a novel mechanism of allosteric activation by dATP. *J Biol Chem.* 2022 Jul;298(7):102073. doi: 10.1016/j.jbc.2022.102073. PMID: 35643313; PMCID: PMC9257424, NIEHS DIR Paper of the Month.

Qiu C, Wine RN, Campbell ZT, Hall TMT. Bipartite interaction sites differentially modulate RNA-binding affinity of a protein complex essential for germline stem cell self-renewal. *Nucleic Acids Res.* 2022 Jan 11;50(1):536-548. doi: 10.1093/nar/gkab1220. PMID: 34908132, PMCID: PMC8754657, NIEHS DIR Paper of the Month.

Teramoto T, Kaitany KJ, Kakuta Y, Kimura M, Fierke CA*, Hall TMT*. Pentatricopeptide repeats of protein-only RNase P use a distinct mode to recognize conserved bases and structural elements of pre-tRNA. *Nucleic Acids Res.* 2020 Dec 2;48(21):11815-11826. doi: 10.1093/nar/gkaa627. PMID: 32719843, PMCID: PMC7708040, * Joint corresponding authors, NAR Breakthrough Paper.

McCann KL, Kavari SL, Burkholder AB, Phillips BT, Hall TMT. H/ACA snoRNA levels are regulated during stem cell differentiation. *Nucleic Acids Res.* 2020 Sep 4;48(15):8686-8703. doi: 10.1093/nar/gkaa612. PMID: 32710630, PMCID: PMC7470967, NIEHS DIR Paper of the Month.

Zhang J, Teramoto T, Qiu C, Wine RN, Gonzalez LE, Baserga SJ, Hall TMT. Nop9 recognizes structured and single-stranded RNA elements of preribosomal RNA. *RNA*. 2020 Aug;26(8):1049-1059. doi: 10.1261/rna.075416.120. Epub 2020 May 5. PMID: 32371454, PMCID: PMC7373996.

Phillips BT, Williams JG, Atchley DT, Xu X, Li JL, Adams AL, Johnson KL, Hall TMT. Mass spectrometric identification of candidate RNA-binding proteins associated with Transition Nuclear Protein mRNA in the mouse testis. *Sci Rep*. 2019 Sep 20;9(1):13618. doi: 10.1038/s41598-019-50052-z. PMID: 31541158, PMCID: PMC6754440.

Qiu C, Bhat VD, Rajeev S, Zhang C, Lasley AE, Wine RN, Campbell ZT*, Hall TMT*. A crystal structure of a collaborative RNA regulatory complex reveals mechanisms to refine target specificity. *eLife*. 2019 Aug 9;8. pii: e48968. doi: 10.7554/eLife.48968. PMID: 31397673; PMCID: PMC6697444, *Joint corresponding authors, NIEHS DIR Paper of the Month.

Qiu C, Dutcher RC, Porter DF, Arava Y, Wickens M*, Hall TMT*. Distinct RNA-binding modules in a single PUF protein cooperate to determine RNA specificity. *Nucleic Acids Res*. 2019 Sep 19;47(16):8770-8784. doi: 10.1093/nar/gkz583. PMID: 31294800; PMCID: PMC7145691, *Joint corresponding authors, NIEHS DIR Paper of the Month and Paper of the Year.

Bhat VD#, McCann KL#, Wang Y, Fonseca DR, Shukla T, Alexander JC, Qiu C, Wickens M, Lo TW, Hall TMT*, Campbell ZT*. Engineering a conserved RNA regulatory protein repurposes its biological function in vivo. *eLife*. 2019 Jan 17;8. pii: e43788. doi: 10.7554/eLife.43788. PMID: 30652968; PMCID: PMC6351103, #Joint first authors, *Joint corresponding authors.

Tamayo JV#, Teramoto T#, Chatterjee S, Hall TMT*, Gavis ER*. The Drosophila hnRNP F/H homolog Glorund uses two distinct RNA-binding modes to diversify target recognition. *Cell Rep*. 2017 Apr 4;19(1):150-161. doi: 10.1016/j.celrep.2017.03.022. PMID: 28380354; PMCID: PMC5392723, #Joint first authors, *Joint corresponding authors (alphabetical order), NIEHS DIR Paper of the Month.

Skrajna A, Yang XC, Bucholtz K, Zhang J, Hall TMT, Dadlez M, Marzluff WF, Dominski Z. U7 snRNP is recruited to histone pre-mRNA in a FLASH-dependent manner by two separate regions of the stem-loop binding protein. *RNA*. 2017 Jun;23(6):938-951. doi: 10.1261/rna.060806.117. Epub 2017 Mar 13. PMID: 28289156; PMCID: PMC5435866.

Zhang J, Gonzalez LE, Hall TMT. Structural analysis reveals the flexible C-terminus of Nop15 undergoes rearrangement to recognize a pre-ribosomal RNA folding intermediate. *Nucleic Acids Res*. 2017 Mar 17;45(5):2829-2837. doi: 10.1093/nar/gkw961. PMID: 27789691; PMCID: PMC5389651, NIEHS DIR Paper of the Month.

Zhang J, McCann KL, Qiu C, Gonzalez LE, Baserga SJ*, Hall TMT*. Nop9 is a PUF-like protein that prevents premature cleavage to correctly process pre-18S rRNA. *Nat Commun*. 2016 Oct 11;7:13085. doi: 10.1038/ncomms13085. PMID: 27725644; PMCID: PMC5062617, *Joint corresponding authors, NIEHS DIR Paper of the Month and Year.

Weidmann CA#, Qiu C#, Arvola RM, Lou TF, Killingsworth J, Campbell ZT, Hall TMT*, Goldstrohm AC*. Drosophila Nanos acts as a molecular clamp that modulates the RNA-binding and repression activities of Pumilio. *eLife*. 2016 Aug 2;5. pii: e17096. doi: 10.7554/eLife.17096. PMID: 27482653; PMCID: PMC4995099, #Joint first authors, *Joint corresponding authors.

McCann KL, Teramoto T, Zhang J, Hall TMT*, Baserga SJ*. The molecular basis for ANE syndrome revealed by the large ribosomal subunit processome interactome. *eLife*. 2016 Apr 14;5. pii: e16381. doi: 10.7554/eLife.16381. PMID: 27077951, PMCID: PMC4859800, *Joint corresponding authors.

Wilinski D, Qiu C, Lapointe CP, Nevil M, Campbell ZT, Hall TMT, Wickens M. RNA regulatory networks diversified through curvature of the PUF protein scaffold. *Nat Commun*. 2015 Sep 14;6:8213. doi: 10.1038/ncomms9213. PMID: 26364903; PMCID: PMC4570272.

Qiu C, McCann KL, Wine RN, Baserga SJ*, Hall TMT*. A divergent Pumilio repeat protein family for pre-rRNA processing and mRNA localization. *Proc Natl Acad Sci U S A*. 2014 Dec 30;111(52):18554-9. doi: 10.1073/pnas.1407634112. Epub 2014 Dec 15. PMID: 25512524; PMCID: PMC4284587, *Joint corresponding authors, NIEHS DIR Paper of the Month.

Zhang J, Tan D, DeRose EF, Perera L, Dominski Z, Marzluff WF, Tong L, Hall TMT. Molecular mechanisms for the regulation of histone mRNA stem-loop-binding protein by phosphorylation. *Proc Natl Acad Sci U S A*. 2014 Jul 22;111(29):E2937-46. doi: 10.1073/pnas.1406381111. Epub 2014 Jul 7. PMID: 25002523; PMCID: PMC4115514, NIEHS DIR Paper of the Month.

Valley CT, Porter DF, Qiu C, Campbell ZT, Hall TMT, Wickens M. Patterns and plasticity in RNA-protein interactions enable recruitment of multiple proteins through a single site. *Proc Natl Acad Sci U S A*. 2012 Apr 17;109(16):6054-9. doi: 10.1073/pnas.1200521109. Epub 2012 Mar 30. PMID: 22467831; PMCID: PMC3341033.

Qiu C, Kershner A, Wang Y, Holley CP, Wilinski D, Keles S, Kimble J, Wickens M, Hall TMT. Divergence of Pumilio/fem-3 mRNA binding factor (PUF) protein specificity through variations in an RNA-binding pocket. *J Biol Chem*. 2012 Feb 24;287(9):6949-57. doi: 10.1074/jbc.M111.326264. Epub 2011 Dec 28. PMID: 22205700; PMCID: PMC3307254.

Wang H, Falck JR, Hall TMT, Shears SB. Structural basis for an inositol pyrophosphate kinase surmounting phosphate crowding. *Nat Chem Biol*. 2011 Nov 27;8(1):111-6. doi: 10.1038/nchembio.733. PMID: 22119861; PMCID: PMC3923263, NIEHS DIR Paper of the Month.

Dong S, Wang Y, Cassidy-Amstutz C, Lu G, Bigler R, Jezyk MR, Li C, Hall TMT, Wang Z. Specific and modular binding code for cytosine recognition in Pumilio/FBF (PUF) RNA-binding domains. *J Biol Chem*. 2011 Jul 29;286(30):26732-42. doi:10.1074/jbc.M111.244889. Epub 2011 Jun 8. PMID: 21653694; PMCID: PMC3144504, JBC Paper of the Week.

Cenik ES, Fukunaga R, Lu G, Dutcher R, Wang Y, Hall TMT, Zamore PD. Phosphate and R2D2 restrict the substrate specificity of Dicer-2, an ATP-driven ribonuclease. *Mol Cell*. 2011 Apr 22;42(2):172-84. doi: 10.1016/j.molcel.2011.03.002. Epub 2011 Mar 17. PMID: 21419681; PMCID: PMC3115569.

Lu G, Hall TMT. Alternate modes of cognate RNA recognition by human PUMILIO proteins. *Structure*. 2011 Mar 9;19(3):361-7. doi: 10.1016/j.str.2010.12.019. PMID: 21397187; PMCID: PMC3063405, NIEHS DIR Paper of the Month.

Koh YY, Wang Y, Qiu C, Opperman L, Gross L, Hall TMT*, Wickens M*. Stacking interactions in PUF-RNA complexes. *RNA*. 2011 Apr;17(4):718-27. doi: 10.1261/rna.2540311. Epub 2011 Mar 3. PMID: 21372189; PMCID: PMC3062182, *Joint corresponding authors.

Mueller GA#, Miller MT#, DeRose EF, Ghosh M, London RE, Hall TMT. Solution structure of the Drosha double-stranded RNA-binding domain. *Silence*. 2010 Jan 12;1(1):2. doi: 10.1186/1758-907X-1-2. PMID: 20226070; PMCID: PMC2836000, #Joint first authors.

Zhu D, Stumpf CR, Krahn JM, Wickens M, Hall TMT. A 5' cytosine binding pocket in Puf3p specifies regulation of mitochondrial mRNAs. *Proc Natl Acad Sci U S A*. 2009 Dec 1;106(48):20192-7. doi: 10.1073/pnas.0812079106. Epub 2009 Nov 16. PMID: 19918084; PMCID: PMC2787145

Wang Y, Opperman L, Wickens M, Hall TMT. Structural basis for specific recognition of multiple mRNA targets by a PUF regulatory protein. *Proc Natl Acad Sci U S A*. 2009 Dec 1;106(48):20186-91. doi: 10.1073/pnas.0812076106. Epub 2009 Nov 9. PMID: 19901328; PMCID: PMC2787170.

Wang Y, Cheong CG, Hall TMT, Wang Z. Engineering splicing factors with designed specificities. *Nat Methods*. 2009 Nov;6(11):825-30. doi: 10.1038/nmeth.1379. Epub 2009 Oct 4. PMID: 19801992; PMCID: PMC2963066.

- Miller MT, Higgin JJ, Hall TMT. Basis of altered RNA-binding specificity by PUF proteins revealed by crystal structures of yeast Puf4p. *Nat Struct Mol Biol*. 2008 Apr;15(4):397-402. doi: 10.1038/nsmb.1390. Epub 2008 Mar 9. PMID: 18327269; PMCID: PMC2802072.
- Cheong CG, Hall TMT. Engineering RNA sequence specificity of Pumilio repeats. *Proc Natl Acad Sci U S A*. 2006 Sep 12;103(37):13635-9. Epub 2006 Sep 5. PMID: 16954190; PMCID: PMC1564246.
- Longo A, Leonard CW, Bassi GS, Berndt D, Krahn JM, Hall TMT*, Weeks KM*. Evolution from DNA to RNA recognition by the bI3 LAGLIDADG maturase. *Nat Struct Mol Biol*. 2005 Sep;12(9):779-87. Epub 2005 Aug 21. PMID: 16116439, *Joint corresponding authors.
- Vargason JM, Szittyá G, Burgyán J, Hall TMT. Size selective recognition of siRNA by an RNA silencing suppressor. *Cell*. 2003 Dec 26;115(7):799-811. PMID: 14697199.
- Wang X, McLachlan J, Zamore PD, Hall TMT. Modular recognition of RNA by a human Pumilio-homology domain. *Cell*. 2002 Aug 23;110(4):501-12. PMID: 12202039.
- Wang X, Zamore PD, Hall TMT. Crystal structure of a Pumilio homology domain. *Mol Cell*. 2001 Apr;7(4):855-65. PMID: 11336708.
- Wang X, Hall TMT. Structural basis for recognition of AU-rich element RNA by the HuD protein. *Nat Struct Biol*. 2001 Feb;8(2):141-5. PMID: 11175903.
- Fuse N, Maiti T, Wang B, Porter JA, Hall TMT, Leahy DJ, Beachy PA. Sonic hedgehog protein signals not as a hydrolytic enzyme but as an apparent ligand for Patched. *Proc Natl Acad Sci U S A*. 1999 Sep 28;96(20):10992-9. PMID: 10500113; PMCID: PMC34231.
- Hall TMT, Porter JA, Young KE, Koonin EV, Beachy PA, Leahy DJ. Crystal structure of a Hedgehog autoprocessing domain: homology between Hedgehog and self-splicing proteins. *Cell*. 1997 Oct 3;91(1):85-97. PMID: 9335337.
- Hall TMT, Porter JA, Beachy PA, Leahy DJ. A potential catalytic site revealed by the 1.7-Å crystal structure of the amino-terminal signalling domain of Sonic Hedgehog. *Nature*. 1995 Nov 9;378(6553):212-6. PMID: 7477329.
- Hall TMT, Joseph GT, Strand M. *Schistosoma mansoni*: molecular cloning and sequencing of the 200-kDa chemotherapeutic target antigen. *Exp Parasitol*. 1995 Mar;80(2):242-9. PMID: 7534724.
- Tanaka TM, Skubitz AP, Strand M. *Schistosoma*: a 200-kDa chemotherapeutic target antigen is differentially localized in African vs Oriental species. *Exp Parasitol*. 1993 May;76(3):293-301. PMID: 7684706
- Sauma SY, Tanaka TM, Strand M. Selective release of a glycosylphosphatidylinositol-anchored antigen from the surface of *Schistosoma mansoni*. *Mol Biochem Parasitol*. 1991 May;46(1):73-80. PMID: 1649401.
- Abraham E, Tanaka T, Chang YH. Effects of hemorrhagic serum on interleukin-2 generation and utilization. *Crit Care Med*. 1988 Apr;16(4):307-11. PMID: 325822.

Invited Methods and Review Articles

- Qiu C, Goldstrohm AC, Hall TMT. Preparation of cooperative RNA recognition complexes for crystallographic structural studies. *Methods Enzymol*. 2019;623:1-22. doi: 10.1016/bs.mie.2019.04.001. Epub 2019 May 2. PMID: 31239042; PMCID: PMC6697268.
- Goldstrohm AC, Hall TMT, McKenney KM. Post-transcriptional regulatory functions of mammalian Pumilio proteins. *Trends Genet*. 2018 Dec;34(12):972-990. doi: 10.1016/j.tig.2018.09.006. Epub 2018 Oct 10. Review. PMID:30316580; PMCID: PMC6251728.

- Arvola RM, Weidmann CA, Hall TMT, Goldstrohm AC. Combinatorial control of messenger RNAs by Pumilio, Nanos and Brain Tumor Proteins. *RNA Biol.* 2017 Nov 2;14(11):1445-1456. doi: 10.1080/15476286.2017.1306168. Epub 2017 Apr 17. PMID: 28318367; PMCID: PMC5785226.
- Lou TF, Weidmann CA, Killingsworth J, Hall TMT, Goldstrohm AC, Campbell ZT. Integrated analysis of RNA-binding protein complexes using in vitro selection and high-throughput sequencing and sequence specificity landscapes (SEQRS). *Methods.* 2017 Apr 15;118-119:171-181. doi: 10.1016/j.ymeth.2016.10.001. Epub 2016 Oct 8. PMID: 27729296; PMCID: PMC5385160.
- Hall TMT. De-coding and re-coding RNA recognition by PUF and PPR repeat proteins. *Curr Opin Struct Biol.* 2016 Feb;36:116-21. doi: 10.1016/j.sbi.2016.01.010. Epub 2016 Feb 11. Review. PMID: 26874972; PMCID: PMC4757904.
- Hall TMT. Expanding the RNA-recognition code of PUF proteins. *Nat Struct Mol Biol.* 2014 Aug;21(8):653-5. doi: 10.1038/nsmb.2863. PMID: 25093524.
- Wang Y, Wang Z, Hall TMT. Engineered proteins with Pumilio/fem-3 mRNA binding factor scaffold to manipulate RNA metabolism. *FEBS J.* 2013 Aug;280(16):3755-67. doi: 10.1111/febs.12367. Epub 2013 Jun 24. Review. PMID: 23731364; PMCID: PMC3768134.
- Lu G, Dolgner SJ, Hall TMT. Understanding and engineering RNA sequence specificity of PUF proteins. *Curr Opin Struct Biol.* 2009 Feb;19(1):110-5. doi:10.1016/j.sbi.2008.12.009. Epub 2009 Jan 29. PMID: 19186050; PMCID: PMC2748946.
- Hall TMT. Structure and function of Argonaute proteins. *Structure.* 2005 Oct;13(10):1403-8. Review. PMID: 16216572
- Hall TMT. Multiple modes of RNA recognition by zinc finger proteins. *Curr Opin Struct Biol.* 2005 Jun;15(3):367-73. Review. PMID: 15963892.
- Hall TMT. SAM breaks its stereotype. *Nat Struct Biol.* 2003 Sep;10(9):677-9. PMID: 12942139.
- Hall TMT. Poly(A) tail synthesis and regulation: recent structural insights. *Curr Opin Struct Biol.* 2002 Feb;12(1):82-8. Review. PMID: 11839494.
- Beachy PA, Cooper MK, Young KE, von Kessler DP, Park WJ, Hall TMT, Leahy DJ, Porter JA. Multiple roles of cholesterol in hedgehog protein biogenesis and signaling. *Cold Spring Harb Symp Quant Biol.* 1997;62:191-204. Review. PMID: 9598352.

Invited Lectures

National and International Meetings

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| June 2022 | AAAS 50 Years of S&T Policy Fellows, virtual presentation |
| Apr. 2019 | NCI RNA Biology Symposium, Bethesda, MD |
| Feb. 2019 | Keystone Symposia on RNA-Protein Interactions/Long Non-Coding RNAs: From Molecular Mechanism to Functional Genetics, Whistler, BC, Canada |
| June 2018 | FASEB Science Research Conference on Post-transcriptional Control of Gene Expression: Mechanisms of RNA Decay, Scottsdale, AZ |
| June 2015 | Protein-RNA: Recognition, Regulation and Prediction, Banff International Research Station, Banff, Alberta Canada |
| Nov. 2014 | Keynote speaker, North Carolina State University Molecular Biotechnology Training Program Symposium, Raleigh, NC |
| Nov. 2010 | EMBO Workshop, RNA Control of Cell Dynamics, Kibbutz Ein Gedi, Israel |
| July 2009 | Annual Meeting of the Protein Society, Boston, MA |
| Apr. 2009 | Annual Meeting of the American Society for Biochemistry and Molecular Biology, New Orleans, LA |

- July 2007 EMBO/FASEB Conference on “Intracellular RNA Localization and Localized Translation,” Il Ciocco, Italy
- Apr. 2006 Annual Meeting of the American Society for Biochemistry and Molecular Biology, San Francisco, CA
- Nov. 2004 EMBO Conference on “Structures in Biology,” EMBL Heidelberg, Germany
- Aug. 2004 Banbury Center Conference on RNAi-Related Processes in Plants: Chromatin, Development and Defense, Cold Spring Harbor, NY
- July 2004 BioScience 2004, Glasgow, UK
- June 2004 Gordon Research Conference, Nucleic Acids, Newport, RI
- Apr. 2004 Genetic and Environmental Mutagen Society meeting, Research Triangle Park, NC
- Feb. 2004 Annual Meeting of the Biophysical Society, Baltimore, MD
- Oct. 2003 Symposium on RNA Biology V: RNA, Tool and Target, Research Triangle Park, NC
- Oct. 2003 NIH Research Festival, Structural Biology Mini-symposium, Bethesda, MD
- Oct. 2003 19th International Congress of Biochemistry and Molecular Biology, Montreal, Canada
- Sept. 2003 Structural Insights into Biological Function II, NIEHS symposium, Research Triangle Park, NC
- Oct. 2001 NIH Research Festival, Regulatory RNA Mini-symposium, Bethesda, MD
- Mar. 2001 University of North Carolina, School of Medicine Structural Biology and Bioinformatics conference, Chapel Hill, NC
- Sept. 2000 Translational Control 2000, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Seminars at Universities and other Research Institutions

- Mar. 2024 RNA Center, The Ohio State University, Columbus, OH
- Aug. 2023 Toxicology Program, North Carolina State University, Raleigh, NC
- Jan. 2023 National Heart, Lung, and Blood Institute, virtual
- Feb. 2021 Department of Biology, University of Puerto Rico, virtual
- Oct. 2020 Department of Biology, Kenyon College, Gambier, OH, virtual
- Jan. 2020 Emory University RNA Salon, Atlanta, GA
- Jun. 2016 Biophysical Society Summer Course Reunion, Chapel Hill, NC
- Apr. 2016 Department of Biological Chemistry, University of Michigan, Ann Arbor, MI
- Oct. 2014 Department of Biochemistry and Biophysics, University of Rochester, Rochester, NY
- Jun. 2014 Biophysical Society Summer Course Reunion, Chapel Hill, NC
- Jun. 2013 Department of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT
- Apr. 2013 Department of Chemistry, University of Washington, Seattle, WA
- Mar. 2013 Institute for Structural Biology and Drug Discovery, Virginia Commonwealth University, Richmond, VA
- Nov. 2010 University of Arkansas for Medical Sciences Career Day, Little Rock, AK
- Mar. 2009 George Connell Lecture, Dept. of Biochemistry, University of Toronto, Canada
- Jan. 2008 Departments of Cell Biology and Anatomy and Biochemistry and Molecular Biology, University of Miami School of Medicine, Miami, FL
- Nov. 2007 Program in Structural Biology and Biophysics Distinguished Lecture, Duke University, Durham, NC
- Oct. 2006 Department of Chemistry and Biochemistry, Utah State University, Logan, UT
- Apr. 2005 Department of Molecular Biophysics and Biochemistry, Yale University, New Haven, CT
- Jan. 2005 Department of Biology, Carnegie Mellon University, Pittsburgh, PA
- Nov. 2004 Institut de Biologie Moléculaire et Cellulaire, Centre National de la Recherche Scientifique, Strasbourg, France

Oct. 2004 Department of Biochemistry, Wake Forest University School of Medicine, Winston-Salem, NC
Sept. 2004 Jenkins Biophysics Department, Johns Hopkins University, Baltimore, MD
Sept. 2004 Department of Pharmacology, University of North Carolina, Chapel Hill, NC
Sept. 2004 National Advisory Environmental Health Sciences Council meeting, NIEHS, Research Triangle Park, NC
Feb. 2004 Program in Gene Function and Expression, University of Massachusetts Medical School, Worcester, MA
Feb. 2004 Department of Molecular and Structural Biochemistry, North Carolina State University, Raleigh, NC
Nov. 2003 Plant Biology Division, Samuel Noble Foundation, Ardmore, OK
Nov. 2003 Department of Biophysics and Biophysical Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD
Oct. 2003 Department of Molecular Biology, The Scripps Research Institute, La Jolla, CA
July 2003 Agricultural Biotechnology Center, Gödöllő, Hungary
Jan. 2003 Department of Biochemistry, Duke University, Durham, NC
June 2002 NIH Structural Biology Interest group, Bethesda, MD
Oct. 2000 Department of Chemistry, University of North Carolina, Chapel Hill, NC
Oct. 1999 Department of Biochemistry, North Carolina State University, Raleigh, NC
Apr. 1999 Biogen, Inc., Cambridge, MA

Postdoctoral Fellows

Antonella Longo-Research Assistant Professor, University of North Texas
Thomas Transue-Computational Biochemist, US Environmental Protection Agency
Xiaoqiang Wang-formerly Associate Professor, Noble Foundation; currently Research Associate Professor, University of North Texas
Jeffrey Vargason-Associate Professor, Dept of Chemistry, George Fox University
Matthew Miller-formerly Research Faculty, Rutgers University; currently Senior Principal Investigator, Eternity Bioscience
Cheom-gil Cheong-formerly Research Associate, Duke University; currently Staff Scientist, University of Texas, Austin
Joshua Higgin-Intellectual Property Attorney, RTI International
Terrie Moore-formerly Senior Protein Scientist/Study Director Manager, Bayer CropScience; currently Senior Regulatory Affairs Manager, Bayer CropScience
Cynthia Holley (5/08-7/12)-formerly Scientist II at Fuji Diosynth and Scientist II, Novavax, Tech Transfer, currently Manager, Paragon Gene Therapy
Mark Jezyk-formerly Consultant, Campbell Alliance; currently AbbVie, Senior Manager, Global Commercial Business Development & Strategy Pharmaceuticals
Yeming Wang-formerly Associate Research Scientist, Yale University; currently Scientist II, Meso Scale Diagnostics
Deyu Zhu-Associate Professor, Department of Biochemistry and Molecular Biology, Shandong University School of Medicine, Jinan, China
Gang Lu-formerly Dental student, Case Western Reserve University; currently Dentist (Private Practice), Cleveland, Ohio
Misty Balcewich Thomas-Assistant Professor, Department of Biology NC A&T University
Jun Zhang-Assistant Professor, University of Alabama at Birmingham
Takamasa Teramoto -Assistant Professor, Kyushu University, Japan
Bart Phillips-Quality Control Editor, Research Square, Durham, NC
Kathleen McCann-Research Specialist, University of Colorado, Boulder
Andrew Sikkema-Research Scientist I, New England Biolabs

Meghan Warden-Scientist II, Fujifilm Diosynth
 Jae Cho (1/2020-present)
 Yingying Zhang (11/2021-present)

Graduate Committee membership

Alyson Hoffman, Ph.D. Candidate, Department of Biochemistry, Duke University (2015-2019)
 Sujatha Jagannathan, Ph.D. Candidate, Department of Cell Biology, Duke University (2009-2013)
 Adriana Vela, Ph.D. Candidate, Department of Molecular, Cellular and Developmental Biology, Yale University (2013)
 Brian Farley, Ph.D. Candidate, Department of Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School (2012)
 Elif Sarinay Cenik, Ph.D. Candidate, Department of Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School (2012)
 Alla Sigova, Ph.D. Candidate, Department of Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School
 Cynthia Holley, Ph.D. Candidate, Department of Pharmacology, University of North Carolina, Chapel Hill
 Greg Buhrman, Ph.D. Candidate, Department of Biochemistry, North Carolina State University
 Karen Buchmueller, Ph.D. Candidate, Department of Chemistry, University of North Carolina, Chapel Hill

NIEHS and NIH service

2022-present NIH Equity Committee
 2007-present NIEHS Committee on Promotions I (tenure committee)
 2007-present NIEHS Radiation Safety committee
 2014-present NIEHS Mass Spectrometry Faculty Advisor
 2017-present ESCBL Postdoc Review Director
 2020-present NIEHS NMR Core Advisory Committee
 2018-present NIEHS Mass Spectrometry Steering Committee
 2006-present NIEHS Protein Expression Advisory Committee
 2022 NCI Tenure Review Panel, ad hoc member
 2016-2021 NIEHS Tenure Track Investigators Review Committee
 2017-2019 NIEHS DIR Space Resources Advisory Committee
 2018-2019 NIEHS Cryo-EM Steering Committee
 2018 Reviewer, NIEHS-NIDDK Joint Fellowship Program
 2006, 2016 NIEHS DIR Media Facility Evaluation Group
 2011-2012 NIEHS DIR Retreat planning committee
 2009-2011 NIEHS Scientific Director's Advisory Council
 2009-2011 NIEHS Assembly of Scientists Council (President 2010)
 2006-2008 Trans-NIH IRP Imaging Initiative Implementation Committee
 2007-2008 NIEHS Summers of Discovery Advisory committee
 2006-2018 NIEHS Protein Microcharacterization Advisory Committee
 2006-2007 NIEHS Education and Training Committee
 2005 NIEHS Strategic Planning Group
 2004-2005 NIEHS Assembly of Scientists Council
 2002-2004 NIH Structural Biology Interest Group, Steering Committee
 2001-2004 NIH Tenure Track Investigators Committee
 1998-2005 NIEHS Seminars and Meetings Committee
 1999-2001 NIEHS Women Scientists Assembly Council
 1998-2004 NIEHS Tenure Track Investigators Assembly

1999, 2002-3	Interdisciplinary Research Award Review Committee
1999	Laboratory of Structural Biology Web Site Committee
2021, 2022	Co-Chair, NIH Stadtman Investigator RNA Biology Search Committee
2020, 2023	Search Committee for NCI Senior Investigator, RNA Biology
2021	Search Committee for NIEHS staff scientist for Natalie Shaw
2021	Technical evaluator for Media and Glassware contract
2020	Search Committee for NIEHS NMR Core Director
2019-2020	Search Committee for NIEHS Scientific Information Officer
2018	Co-Chair, NIH Stadtman Investigator RNA Biology Search Committee
2018	Search Committee for NIEHS Deputy Executive Officer
2018	Chair, Search Committee for CryoEM and Viral Vector Core Directors
2017	Search Committee for NIH Stadtman Investigators, RNA Biology
2016	Technical evaluator for Media and Glassware contract
2016	Search committee for NIEHS Director of the Center for Integrated Bioinformatics
2014-2015	Chair, Search committee for NIEHS Scientific Information Officer
2014	Search committee for NIEHS Tenure-track and Tenured investigators in Cell Signaling, Neurobiology, and Reproductive or Developmental Biology
2013	Search committee for NIH Stadtman Investigators, Developmental Biology and Neurodevelopment
2013	Review panel for Supervisory Program Specialist, Office of the NIEHS Scientific Director
2012	Search committee for NIH Stadtman Investigators, Molecular Biology and Biochemistry
2011	Search committee for NIEHS Bioinformatics Manager
2011	Search committee for NIEHS Executive Officer
2009-2010	Search committee for NIH Stadtman Investigators, Structural Biology
2008-2009	Chair, Search committee for Laboratory of Molecular Carcinogenesis tenure-track Embryonic Stem Cell Biologist
2008-2009	Search committee for tenure-track X-ray Crystallographer
2007	Search committee for Macromolecular Structure Group staff scientist
2006-2007	Search committee for NIEHS Scientific Director
2006-2007	Chair, Search committee for Gene Delivery Core Facility staff scientist
2005	Technical evaluator for Media and Glassware contract
2005	Search committee for a Molecular Toxicologist principal investigator
2004-2005	Search committee for Laboratory of Molecular Carcinogenesis tenure-track investigator
2004-2005	Search committee for a Computational Chemistry staff scientist
2002, 2004	Search committee for a Mass Spectrometry staff scientist
2002	Search committee for a Protein Expression Core staff scientist
2001-2002	Search committee for a tenure-track X-ray Crystallographer
2001	Search committee for an NMR staff scientist

Professional Service

Steering committee member, RNA Society of North Carolina, 2004-present

Member, Duke-UNC RNA Center, 2007-present

Co-organizer, Carolina Biophysics Symposium 2016, 2018, 2023

Session Moderator, NIEHS Capturing RNA Sequence and Transcript Diversity, from Technology Innovation to Clinical Application Virtual Workshop 2022 (virtual)

Session Chair, RNA Society Annual Meeting 2020, Vancouver, Canada (virtual)

Session Chair, RNA, Tool and Target 2019, symposium sponsored by the RNA Society of NC

Co-organizer, RNA, Tool and Target 2017, symposium sponsored by the RNA Society of NC

Member, American Society for Biochemistry and Molecular Biology Meetings Committee, 2008-2011
Co-chair, RNA, Tool and Target 2009, symposium sponsored by the RNA Society of NC
Program Planning Committee, American Society for Biochemistry and Molecular Biology (ASBMB)
Annual Meeting 2009

Co-organizer, RNA, Tool and Target 2007, symposium sponsored by the RNA Society of NC
Co-organizer, RNA, Tool and Target 2005, symposium sponsored by the RNA Society of NC
Session Chair, Keystone Meeting on RNAi and related pathways, Vancouver, Canada, January 2006
Session Chair, Mid-Atlantic Protein Crystallography Workshop, Johns Hopkins Univ., June 2004
Co-organizer, Structural Insights into Biological Function II, NIEHS, September 23, 2003
Co-organizer, 31st Mid-Atlantic Protein Crystallography Workshop, Duke University, May 2003

Reviewer for ACS Chemical Biology, Biochemistry, Biophysical Journal, Cell, Cell Reports, Current Biology, eLife, EMBO Journal, EMBO Reports, FEBS Journal, Genes and Development, Journal of the American Chemical Society, Journal of Biological Chemistry, Journal of Molecular Biology, Journal of Virology, Molecular and Cellular Biology, Molecular Cell, Molecular Microbiology, Nature, Nature Biotechnology, Nature Chemical Biology, Nature Communications, Nature Methods, Nature Structural and Molecular Biology, Nucleic Acids Research, PNAS, Proteins: Structure, Function and Genetics, PLoS-Biology, PLoS-Genetics, RNA, RNA Biology, Science, Structure, Trends in Cell Biology