Gira Bhabha

NYU School of Medicine
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Department of Cell Biology
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EDUCATION

Scripps Research, La Jolla, CA
Ph.D., Chemical and Biological Sciences, 2006-2011

University of Chicago, Chicago, IL
A.B., Biology with honors, 2005

PROFESSIONAL POSITIONS

Associate Professor: 2024 –
Johns Hopkins University, Baltimore, MD
Department of Biology

Associate Professor: 2022 – present
New York University School of Medicine, New York, NY
Department of Cell Biology

Assistant Professor: 2017 – 2022
New York University School of Medicine, New York, NY
Department of Cell Biology

Post-Doctoral Fellow: 2012 – 2016
University of California – San Francisco, San Francisco, CA
Advisors: Ron Vale and Yifan Cheng

Graduate Student: 2006 – 2011
The Scripps Research Institute, La Jolla, CA
Thesis: Life in (Atomic) Motion: Protein Dynamics in Enzyme Catalysis
Advisor: Peter Wright

Research Assistant: 2005 – 2006
Supervisor: Elizabeth McNally

Undergraduate Researcher: 2003 – 2005
Advisor: Elizabeth McNally
University of Chicago, Chicago, IL
Thesis: Identifying modifier genes of of δ-sarcoglycan localization in Drosophila melanogaster

HONORS

ASBMB Early Career Leadership Award	2023
Irma T. Hirschl Career Scientist Award	2022
PEW Biomedical Scholar	2019 – 2023
Searle Scholars Program, Kinship Foundation	2018 – 2022
Damon Runyon Dale F. Frey Award for Breakthrough Scientists	2017 – 2019
R00 Pathway to Independence Grant (NIGMS, NIH)	2017 – 2020
K99 Pathway to Independence Grant (NIGMS, NIH)	2015 – 2016
Merck Fellow of the Damon Runyon Cancer Research Foundation	2012 – 2015
Jane Coffin Childs Postdoctoral Fellowship (declined)	2012
Howard Hughes Medical Institute (HHMI) Undergraduate Fellowship	2004

LEADERSHIP AND SERVICE

Scripps Research Alumni Mentorship Program	2023 – 2024
Standing member, NIH / MSFC study section	2021 – 2027
Chair, Cryo EM subgroup, Biophysical Society	2021 – 2022
Advisor, Cell Biology Graduate Program	2021 – 2022
Co-founder and organizer, Science Immersion and Long-term Mentoring Program (for community college students interested in STEM careers)	2021 – present
Application Reviewer, Leading Edge Fellows Program	2021
Mentor, Intersections Science Fellows Symposium	2020 – 2022
Review Board, PNCC / NIH National Cryo EM Center	2020 – present
Affiliate, BioRxiv	2020 – present
Mentor, Científico Latino	2020
Application Reviewer, Intersections Science Fellows Symposium	2020 – 2022
Ad hoc reviewer, NIH / MSFC study section	2020
Ad hoc reviewer, Swiss National Science Foundation	2020
Chair-elect, Cryo EM subgroup, Biophysical Society	2020 – 2021
Ad hoc reviewer, Human Frontiers Research Program	2019
Co-founder and Organizer, New York Area Cryo EM Meeting	2019
User Review Committee, NCCAT / NIH National Cryo EM Center	2018 – present

PUBLICATIONS

***** Equal contribution
‡ Corresponding author

1. Cooper BF, Clark R, Kudhail A, **Bhabha G**, Ekiert DC, Khalid S, Isom GL‡. Phospholipid transport to the bacterial outer membrane through an envelope-spanning bridge. **bioRxiv**. 2023 Oct 5:2023.10.05.561070. doi: 10.1101/2023.10.05.561070.
2. Ilmain JK, Perelman SS, Panepinto MC, Irnov I, Coudray N, Samhadaneh N, Pironti A, Ueberheide B, Ekiert DC, **Bhabha G**, Torres VJ‡. Unlatching of the stem domains in the Staphylococcus aureus pore-forming leukocidin LukAB influences toxin oligomerization. **J Biol Chem.** 2023 Oct 4:105321. doi: 10.1016/j.jbc.2023.105321. Online ahead of print.
3. Antao NV, Lam C, Davydov A, Riggi M, Sall J, Petzold C, Liang F, Iwasa J, Ekiert DC‡,

Bhabha G‡. 3D reconstructions of parasite development and the intracellular niche of the microsporidian pathogen *E. intestinalis.*
Nature Communications. *In Press* (2023). **Pre-print on BioRxiv**: doi: 10.1101/2023.07.02.547383

4. Alexander LT, Durairaj J, Kryshtafovych A, Abriata LA, Bayo Y, **Bhabha G**, Breyton C, Caulton SG, Chen J, Degroux S, Ekiert DC, Erlandsen BS, Freddolino PL, Gilzer D, Greening C, Grimes JM, Grinter R, Gurusaran M, Hartmann MD, Hitchman CJ, Keown JR, Kropp A, Kursula P, Lovering AL, Lemaitre B, Lia A, Liu S, Logotheti M, Lu S, Markússon S, Miller MD, Minasov G, Niemann HH, Opazo F, Phillips GN Jr, Davies OR, Rommelaere S, Rosas-Lemus M, Roversi P, Satchell K, Smith N, Wilson MA, Wu KL, Xia X, Xiao H, Zhang W, Zhou ZH, Fidelis K, Topf M, Moult J, Schwede T‡. Protein target highlights in CASP15: Analysis of models by structure providers.
Proteins. 2023 Jul 26. doi: 10.1002/prot.26545. Online ahead of print.
5. Huddy TF, Hsia Y, Kibler RD, Xu J, Bethel N, Nagarajan D, Redler R, Leung PJY, Courbet A, Yang EC, Bera AK, Coudray N, Calise SJ, Davila-Hernandez FA, Weidle C, Han HL, Li Z, McHugh R, Reggiano G, Kang A, Sankaran B, Dickinson MS, Coventry B, Brunette TJ, Liu Y, Dauparas J, Borst AJ, Ekiert DC, Kollman JM, **Bhabha G**, Baker D‡. Blueprinting expandable nanomaterials with standardized protein building blocks.
Under review. (2023). **Pre-print on BioRxiv**: doi: 10.1101/2023.06.09.544258
6. Ennist N, Wang S, Kennedy M, Curti M, Sutherland G, Vasilev C, Redler R, Maffeis V, Shareef S, Sica A, Hua A, Deshmukh A, Moyer A, Hicks D, Swartz A, Cacho R, Novy N, Bera A, Kang A, Sankaran B, Johnson M, Reppert M, Ekiert D, **Bhabha G**, Stewart L, Caram J, Stoddard B, Romero E, Hunter CN, Baker D‡. *De novo* design of energy transfer proteins housing excitonically coupled chlorophyll special pairs.
Under review. (2023). **Pre-print on BioRxiv**: doi: 10.1101/2023.06.09.544258.
7. Chang R, Davydov A, Jaroenlak P, Budaitis B, Ekiert DC, **Bhabha G**‡, Prakash M‡. Energetics of the Microsporidian Polar Tube Invasion Machinery.
Elife, in process. (2023). **Pre-print on BioRxiv**. doi: 10.1101/2023.01.17.524456
8. MacRae MR*, Puvanendran D*, Haase MAB, Coudray N, Kolich L, Lam C, Baek M, **Bhabha G**‡, Ekiert DC‡. Protein-protein interactions in the Mla lipid transport system probed by computational structure prediction and deep mutational scanning.
J. Biol. Chem. 299(6):104744 (2023). **Pre-print on BioRxiv**. doi: 10.1101/2022.12.09.519820
9. Chen J, Fruhauf A, Fan C, Ponce J, Ueberheide B, **Bhabha G**‡, Ekiert DC‡. Structure of an endogenous mycobacterial MCE lipid transporter.
Nature. 620(7973):445-452 (2023). **Pre-print on BioRxiv**. doi: 10.1101/2022.12.08.519548
10. Edman NI*, Redler RL*, Phal A*, Schlichthaerle T*, Srivatsan SR, Etemadi A, An S, Favor A, Ehnes D, Li Z, Praetorius F, Gordon M, Yang W, Coventry B, Hicks DR, Cao L, Bethel N, Heine P, Murray A, Gerben S, Carter L, Miranda M, Negahdari B, Lee S, Trapnell C, Ekiert DC, Schlessinger J, Shendure J, **Bhabha G**, Ruohola-Baker H, Baker D‡. FGF receptor activation using designed cyclic oligomeric assemblies.
Under review. (2023). **Pre-print on BioRxiv**: doi: 10.1101/2023.03.14.532666.
11. Wu K, Bai H, Chang YT, Redler R, Sheffler W, Brunette TJ, Hicks DR, McNally K, Broerman A, Goreshnik I, DeWitt M, Chow CM, Shen Y, Stewart L, Derivery E, Silva DA, **Bhabha G**, Ekiert DC, Baker D‡. De novo design of modular peptide binding proteins by superhelical matching.
Nature. 616:581-589 (2023). **Pre-print on BioRxiv**. doi: 10.1101/2022.11.14.514089
12. Bermeo S*, Favor A*, Chang YT*, Norris A, Boyken SE, Hsia Y, Haddox HK, Xu C, Brunette

TJ, Wysocki V, **Bhabha G**, Ekiert DC, Baker D‡. De novo design of obligate ABC heterotrimeric proteins.
Nat Struct Mol Biol. 29(12):1266-1276 (2022). PMID: 36522429

13. Murareanu BM, Antao NV, Zhao W, Dubuffet A, El Alaoui H, Knox J, Ekiert DC, **Bhabha G**, Roy PJ; Reinke AW‡. High-throughput small molecule screen identifies inhibitors of microsporidia invasion and proliferation in *C. elegans*.
Nat Commun. 13(1):5653 (2022). PMID: 36163337. **Pre-print on BioRxiv**. doi: 10.1101/2021.09.06.459184
14. Ekiert DC‡, Coudray N, **Bhabha G**. Structure and mechanism of the bacterial lipid ABC transporter, MlaFEDB.
Curr Opin Struct Biol. 76:102429. (2022). PMID: 35981415.
15. Giacometti SI*, MacRae MR*, Dancel-Manning K, **Bhabha G‡**, Ekiert DC‡. Lipid Transport Across Bacterial Membranes.
Annu Rev Cell Dev Biol. 38:125-153 (2022). PMID: 35850151.
16. Jaroenlak P*, Usmani M*, Ekiert DC‡, **Bhabha G‡**. Mechanics of Microsporidian Polar Tube
Microsporidia: Current Advances in Biology (Book Series chapter) 114:215-245. (2022). PMID: 35544005.
17. Vieni C, Coudray N, Isom GL, **Bhabha G‡**, Ekiert DC‡. Role of Ring6 in the function of the E. coli MCE protein LetB.
J. Mol. Biol. 434(7):167463. (2022). PMID: 35077766. **Pre-print on BioRxiv**. doi: 10.1101/2021.09.30.462657
18. Lažetić V, Wu F, Cohen LB, Reddy KC, Chang Y-T, Gang SS, **Bhabha G**, Troemel ER‡. The predicted bZIP transcription factor ZIP-1 promotes resistance to intracellular infection in Caenorhabditis elegans.
Nat Communications. 13(1):17. (2022). PMID: 35013162. **Pre-print on BioRxiv**. doi: 10.1101/2021.06.17.448850
19. Perelman SS, James DBA, Boguslawski KM, Nelson CW, Ilmain JK, Zwack EE, Prescott RA, Mohamed A, Tam K, Chan R, Narechania A, Pawline MB, Vozhilla N, Moustafa AM, Kim SY, Dittmann M, Ekiert DC, **Bhabha G**, Shopsin B, Planet PJ, Koralov SB, Torres VJ. Genetic variation of staphylococcal LukAB toxin determines receptor tropism.
Nat Microbiol. 6(6):731-745 (2021). doi: 10.1038/s41564-021-00890-3. PMID: 33875847
20. Grossman-Haham I, Coudray N, Yu Z, Wang F, Zhang N, **Bhabha G**, Vale RD. Structure of the radial spoke head and insights into its role in mechanoregulation of ciliary beating.
Nat Struct Mol Biol., 28(1):20-28 (2021). PMID: 33318704
21. Kelley K, Raczkowski AM, Klykov O, Jaroenlak P, Bobe D, Kopylov M, Eng ET, **Bhabha G**, Potter CS, Carragher B, Noble AJ‡. Waffle Method: A general and flexible approach for improving throughput in FIB-milling.
Nat Commun. 13(1):1857. (2022). PMID: 35387991. **Pre-print on BioRxiv (2020)**. doi: 10.1101/2020.10.28.359372
22. Santarossa CC, Mickolajczyk K, Steinman JB, Urnavicius L, Chen N, Fukase Y, Hirata Y, Coudray N, Ekiert DC, **Bhabha G‡**, Kapoor TM‡. Targeting Allostery in the Dynein Motor Domain with Small Molecule Inhibitors.
Cell Chem. Biol. 28(10):1460-1473.e15. (2021). PMID: 34015309. **Pre-print on BioRxiv (2020)**. doi: 10.1101/2020.09.22.308700
23. Coudray N*, Isom GL*, MacRae MR*, Saiduddin MN, **Bhabha G‡**, Ekiert DC‡. Structure of bacterial phospholipid transporter MlaFEDB with substrate bound.
eLife, 9:e62518 (2020). PMID: 33236984. **Pre-print on BioRxiv (2020)**. doi: 10.1101/2020.06.02.129247

24. Hsia Y, Mout R, Sheffler W, Edman NI, Vulovic I, Park YJ, Redler RL, Bick MJ, Bera AK, Courbet A, Kang A, Brunette TJ, Nattermann U, Tsai E, Saleem A, Chow CM, Ekiert DC, **Bhabha G**, Veesler D, Baker D. Hierarchical design of multi-scale protein complexes by combinatorial assembly of oligomeric helical bundle and repeat protein building blocks.
Nat. Comm. 12(1):2294 (2021). doi: 10.1038/s41467-021-22276-z. PMID: 33863889
Pre-print on BioRxiv (2020). doi: 10.1101/2020.07.27.221333
25. Thawani A, Rale MJ, Coudray N, **Bhabha G**, Stone HA, Shaevitz JW, Petry S. The transition state and regulation of γ-TuRC-mediated microtubule nucleation revealed by single molecule microscopy.
eLife, 9:e54253 (2020). PMID: 32538784. **Pre-print on BioRxiv (2020)**. doi: 10.1101/853010
26. Daniloski Z, Jordan TX, Ilmain JK, Guo X, **Bhabha G**, tenOever BR, Sanjana NE. The Spike D614G mutation increases SARS-CoV-2 infection of multiple human cell types.
eLife, 10:e65365 (2021). PMID: 33570490. **Pre-print on BioRxiv (2020)**. doi: 10.1101/2020.06.14.151357
27. Kolich L*, Chang Y*, Coudray N*, Giacometti SI, MacRae MR, Isom GL, Teran EM, **Bhabha G**, Ekiert DC‡. Structure of MlaFB uncovers novel mechanisms of ABC transporter regulation.
eLife, 9:e60030 (2020). PMID: 32602838. **Pre-print on BioRxiv (2020)**. doi: 10.1101/2020.04.27.064196.
28. Jaroenlak P, Cammer M, Davydov A, Sall J, Usmani M, Liang F, Ekiert DC‡, **Bhabha G‡**. 3-dimensional organization and dynamics of the Microsporidian polar tube invasion machinery.
PLoS Pathogens 16(9):e1008738 (2020). PMID: 32946515. **Pre-print on BioRxiv (2020).** doi: 10.1101/2020.04.03.024240
29. Georgia L. Isom*, Nicolas Coudray*, Mark R. MacRae, Collin T. McManus, Damian C. Ekiert‡, **Gira Bhabha‡**. Structure of LetB reveals a tunnel for lipid transport across the bacterial envelope.
Cell. 181:653–664 (2020). PMID: 32359438. **Preprint on BioRxiv (2019).** doi: 10.1101/748145
30. Niekamp S, Coudray N, Zhang N, Vale RD, **Bhabha G‡**. Coupling of ATPase activity, microtubule binding, and mechanics in the dynein motor domain.
EMBO J. 38(13):e101414 (2019). PMID 31268607. **Preprint on Biorxiv (2018).** doi: 10.1101/309179
31. Niekamp S, Sung J, Huynh W, **Bhabha G**, Vale RD, Stuurman N. Nanometer-accuracy distance measurements between fluorophores at the single-molecule level.
Proc Natl Acad Sci U S A. 116(10):4275-4284 (2019). PMID: 30770448.
32. Ekiert DC*, **Bhabha G***, Isom GL, Greenan G, Ovchinnikov S, Henderson IR, Cox JS, Vale RD. Architectures of Lipid Transport Systems for the Bacterial Outer Membrane.
Cell. 169(2):273-285.e17 (2017). PMID: 28388411. **Preprint on BioRxiv (2016).** doi: 10.1101/064360
33. **Bhabha G***, Johnson GT*, Schroeder CM, Vale RD. How Dynein Moves Along Microtubules.
Trends Biochem Sci. 41(1):94-105 (2015). PMID: 26678005.
34. Brunette TJ*, Parmeggiani F*, Huang PS*, **Bhabha G**, Ekiert DC, Tsutakawa SE, Hura GL, Tainer JA, Baker D. Exploring the repeat protein universe through computational protein design.
Nature. 528(7583):580-4 (2015). PMID: 26675729.

35. **Bhabha G**, Biel JT, Fraser JS. Keep on moving: discovering and perturbing the conformational dynamics of enzymes.
Acc Chem Res. 48(2):423-30 (2015). PMID: 25539415.
36. **Bhabha G***, Cheng HC*, Zhang N, Moeller A, Liao M, Speir JA, Cheng Y, Vale RD. Allosteric communication in the dynein motor domain.
Cell. 159(4):857-68 (2014). PMID: 25417161.
37. Liu Y, Zhang X, Tan YL, **Bhabha G**, Ekiert DC, Kipnis Y, Bjelic S, Baker D, Kelly JW. De novo-designed enzymes as small-molecule-regulated fluorescence imaging tags and fluorescent reporters.
J Am Chem Soc. 136(38):13102-5 (2014). PMID: 25209927.
38. McKenney RJ, Huynh W, Tanenbaum ME, **Bhabha G**, Vale RD. Activation of cytoplasmic dynein motility by dynactin-cargo adapter complexes.
Science. 345(6194): 337-41 (2014). PMID: 25035494.
39. Liu Y, Tan YL, Zhang X, **Bhabha G**, Ekiert DC, Genereux JC, Cho Y, Kipnis Y, Bjelic S, Baker D, Kelly JW. Small molecule probes to quantify the functional fraction of a specific protein in a cell with minimal folding equilibrium shifts.
Proc Natl Acad Sci U S A. 111(12):4449-54 (2014). PMID: 24591605.
40. Friesen RH, Lee PS, Stoop EJ, Hoffman RM, Ekiert DC, **Bhabha G**, Yu W, Juraszek J, Koudstaal W, Jongeneelen M, Korse HJ, Ophorst C, Brinkman-van der Linden EC, Throsby M, Kwakkenbos MJ, Bakker AQ, Beaumont T, Spits H, Kwaks T, Vogels R, Ward AB, Goudsmit J, Wilson IA. A common solution to group 2 influenza virus neutralization.
Proc Natl Acad Sci U S A. 111(1):445-50 (2014). PMID: 24335589.
41. **Bhabha G**, Ekiert DC, Jennewein M, Zmasek CM, Tuttle LM, Kroon G, Dyson HJ, Godzik A, Wilson IA, Wright PE. Divergent evolution of protein conformational dynamics in dihydrofolate reductase.
Nat Struct Mol Biol. 20(11):1243-9 (2013). PMID: 24077226.
42. van den Bedem H, **Bhabha G**, Yang K, Wright PE, Fraser JS. Automated identification of functional dynamic contact networks from X-ray crystallography.
Nat Methods. 10(9):896-902 (2013). PMID: 23913260.
43. Ekiert DC, Kashyap AK, Steel J, Rubrum A, **Bhabha G**, Khayat R, Lee JH, Dillon MA, O'Neil RE, Faynboym AM, Horowitz M, Horowitz L, Ward AB, Palese P, Webby R, Lerner RA, Bhatt RR, Wilson IA. Cross-neutralization of influenza A viruses mediated by a single antibody loop.
Nature. 489(7417):526-32 (2012). PMID: 22982990.
44. **Bhabha G**, Tuttle L, Martinez-Yamout MA, Wright PE. Identification of endogenous ligands bound to bacterially expressed human and E. coli dihydrofolate reductase by 2D NMR.
FEBS Lett. 585(22):3528-32 (2011). PMID: 22024482.
45. Ekiert DC, Friesen RH, **Bhabha G**, Kwaks T, Jongeneelen M, Yu W, Ophorst C, Cox F, Korse HJ, Brandenburg B, Vogels R, Brakenhoff JP, Kompier R, Koldijk MH, Cornelissen LA, Poon LL, Peiris M, Koudstaal W, Wilson IA, Goudsmit J. A highly conserved neutralizing epitope on group 2 influenza A viruses.
Science. 333(6044):843-50 (2011). PMID: 21737702.
46. **Bhabha G**, Lee J, Ekiert DC, Gam J, Wilson IA, Dyson HJ, Benkovic SJ, Wright PE. A dynamic knockout reveals that conformational fluctuations influence the chemical step of enzyme catalysis.
Science. 332(6026):234-8 (2011). PMID: 21474759.
47. Fuller AA, Du D, Liu F, Davoren JE, **Bhabha G**, Kroon G, Case DA, Dyson HJ, Powers ET, Wipf P, Gruebele M, Kelly JW. Evaluating beta-turn mimics as beta-sheet folding

nucleators.
Proc Natl Acad Sci U S A. 106(27):11067-72 (2009). PMID: 19541614.

48. Ekiert DC, **Bhabha G**, Elsliger MA, Friesen RH, Jongeneelen M, Throsby M, Goudsmit J, Wilson IA. Antibody recognition of a highly conserved influenza virus epitope.
Science. 324(5924):246-51 (2009). PMID: 19251591.
49. Yao Y, **Bhabha G**, Kroon G, Landes M, Dyson HJ. Structure discrimination for the C-terminal domain of Escherichia coli trigger factor in solution.
J Biomol NMR. 40(1):23-30 (2008). PMID: 18043871.
50. Allikian MJ, **Bhabha G**, Dospoy P, Heydemann A, Ryder P, Earley JU, Wolf MJ, Rockman HA, McNally EM. Reduced life span with heart and muscle dysfunction in Drosophila sarcoglycan mutants.
Hum Mol Genet. 16(23):2933-43 (2007). PMID: 17855453.

TEACHING AND MENTORING

2022-present	Instructor, Biochemical and Biophysical Methods (Graduate Course, Rockefeller University)
2020-present	Course Developer and Director, Peer Review in the Life Sciences (Graduate Course, NYU)
2019-present	Instructor, Molecular Biochemistry (Graduate Course, NYU)
2019-present	Instructor, Introduction to Cryo EM (multi-institutional course, NYSBC)
2019	Instructor, Molecular Mechanisms (Graduate Course, NYU)
2017 – 2019	Instructor, Cell Biology (Graduate Course, NYU)

I have been involved in teaching and mentoring since I was an undergraduate myself at the University of Chicago. I have had the privilege of working with students at different levels, from high school to graduate students and postdoctoral fellows, and from different backgrounds, one-on-one as well as in classes, at the University of Chicago, Scripps Research, UCSF, and NYU School of Medicine. Throughout my own training, I have had excellent mentors who have shaped me as a scientist and member of my community. Recognizing the importance of this, I strive to achieve the same for my mentees. Since starting my lab in 2017, I have mentored 29 trainees (all co-mentored with my colleague Damian Ekiert, and a couple who have other co-mentors in addition). This includes 4 undergrads, 6 postbacs/technicians, 1 MS student, 6 PhD students, 1 MD/PhD student, and 11 postdocs. One of my biggest goals, and a main reason that I have chosen to pursue research in the context of academia is to build and sustain a culture in which the next generation of scientists have the freedom, opportunity and support to cultivate their ideas, niches and independent careers, and so this is a part of my job that I value highly.

INVITED TALKS / SEMINARS

2024

- Biophysical Society, Philadelphia
- Biology Seminar Series, Columbia University, NY
- North Atlantic Microscopy Society meeting, keynote speaker, NY
- NIH Common Fund Program in Transformative High Resolution Cryo-EM, WI
- Biology of Host-Parasite Interactions: Underlying mechanisms and opportunities for intervention, Gordon Conference
- Frontiers in Biophysics Seminar Series, Purdue University
- Science, Collaboration and Innovation Talk Series, NYSBC, NY

- “The Bacterial Cell Across Scales” Symposium, University of Lausanne, Switzerland

2023
- Biology Seminar Series, Johns Hopkins University, Baltimore, MD
- ASM Microbe Annual Meeting, Houston, TX
- Molecular Genetics and Cell Biology Seminar Series, University of Chicago
- Lorne Conference on Protein Structure and Function, Lorne, Australia
- Biochemistry seminar series, University of Wisconsin, Madison, WI
- Biological Chemistry Seminar Series, University of Michigan, MI
- PEW Biomedical Sciences Annual Meeting, Puerto Rico

2022
- PEW Biomedical Sciences Annual Meeting, Costa Rica
- Biology Seminar Series, Johns Hopkins University, Baltimore, MD
- University of Toronto, Dept. of Biochemistry Retreat Keynote Speaker, Canada
- Cryo-EM Retreat, Flatiron Institute, New York, NY
- NY Bacteria Meeting, Keynote Speaker, New York, NY
- COMPPÅ Symposium on Membrane Protein Production and Analysis, New York, NY
- Microbiology Seminar Series, Harvard Medical School, Boston, MA
- Microbiology Seminar Series, University of Chicago, Chicago, IL
- Microbial Pathogenesis Seminar Series, University of Utah, Salt Lake City, UT

2021
- Structural Biology Seminar Series, Memorial Sloan Kettering, New York, NY
- Cell Biology Seminar Series, Harvard Medical School, Boston, MA
- Biophysical Society Meeting (virtual)
- UCSF Basic Sciences Seminar Series (virtual)
- American Society for Biochemistry and Molecular Biology Meeting (virtual)
- NIH Scientific Interest Groups, Bethesda, MD (virtual)
- Microscopy and Microanalysis meeting (virtual)

2020
- Parasitology Seminar Series, University of Pennsylvania
- Biochemistry and Structure Colloquium, Princeton, NJ
- UCSF QBI Spring Seminar Series, San Francisco, CA (virtual)
- Weill Cornell Medical Center, Biochemistry Seminar Series, New York, NY (virtual)
- UCSD, Spring Seminar Series, Cellular & Molecular Medicine + Div. of Biological Sciences (virtual)
- Michigan State University, Biochemistry and Molecular Biology Seminar Series (virtual)

2019
- Molecular Parasitology Meeting, Woods Hole, MA
- ACSB / EMBO Meeting, Washington, DC
- Microbiology Seminar Series, Mt. Sinai, New York
- Spotlight on Faculty, NYU School of Medicine
- ABL Computational Analysis Forum, NYU School of Medicine

2018

- Evnin Chemical Biology Seminar Series, Rockefeller University, New York
- Innovations in imaging for the life sciences symposium, University of Washington, Seattle
- Structural biology symposium, National Tsing Hua University, Taiwan
- Keystone symposia: Cryo EM from Cells to Molecules, Granlibakken Tahoe, USA
- Biophysical Society of Asia Annual Meeting, Taiwan

2017
- 3DEM Gordon Research Conference, Geneva, Switzerland
- Biophysical Society Annual Meeting, New Orleans, USA
- New York Structural Biology Meeting, New York, USA

Pre-2017
- Bay Area Cryo EM Meeting, Berkeley, USA
- Ignite Bay Area (protein) Dynamics, Protein Society, San Francisco, USA
- Automated Molecular Imaging seminar series, The Scripps Research Institute, San Diego, USA
- World Molecular Engineering Network, Cabo, Mexico

CURRENT FUNDING

Irma T. Hirschl Career Scientist Award (PI; Annual direct costs: $77,026): Structural cell biology of the harpoon-like invasion organelle of microsporidian parasites

R01AI174646 (MPI, NIH/NIAID; Annual direct costs: $481,884): Structural characterization of MCE transport systems from *Mycobacterium tuberculosis*

PEW-00033055 (PI, Pew Biomedical Scholars; Annual direct costs: $75,000): How microsporidia parasites deploy harpoons to infect cells

R01AI147131 (PI, NIH/NIAID; Annual direct costs: $403,213): Structural basis of the polar tube invasion machinery from microsporidia parasites