

Scott E. Lindner, PhD MBA FASTMH

Associate Professor of Biochemistry and Molecular Biology
Co-Director of the Huck Center for Malaria Research

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Professional Interests

Scientific: Transmission of the Malaria Parasite (*Plasmodium*), Host/Pathogen Interactions, Virology, RNA Biology, Post-Transcriptional Gene Regulation, Vaccine/Adjuvant Platforms, Applications of Synthetic mRNA.

Teaching: Evidence-Based Instruction, Team-Based Activities, Problem/Solution Framing, Professional Skill Sets

Organizational: Leadership Communications, Change Management, Organizational Behavior

Scientific Training and Positions

Associate Professor (tenured) <i>Co-Director of the Huck Center for Malaria Research</i> <i>Pennsylvania State University, Department of Biochemistry and Molecular Biology</i> <u>Focus</u> : Transmission of the Malaria Parasite, Post-Transcriptional Gene Regulation	July 2020 – Present
Assistant Professor (tenure track) <i>Co-Director of the Huck Center for Malaria Research</i> <i>Pennsylvania State University, Department of Biochemistry and Molecular Biology</i> <u>Focus</u> : Transmission of the Malaria Parasite, Post-Transcriptional Gene Regulation	July 2013 – June 2020
Staff Scientist, Laboratory of Stefan Kappe <i>Seattle Biomedical Research Institute, Malaria Program</i> <u>Focus</u> : Transmission of the Malaria Parasite, Genetic Attenuation Strategies	May 2012 – June 2013
NIH NRSA Post-Doctoral Fellow/Post-Doctoral Scientist, Laboratory of Stefan Kappe <i>Seattle Biomedical Research Institute, Malaria Program</i> <u>Focus</u> : Transmission of the Malaria Parasite, Genetic Attenuation Strategies	Sept 2009 – April 2012
NIH NRSA Post-Doctoral Fellow, Laboratory of Jim Keck <i>University of Wisconsin-Madison, Department of Biomolecular Chemistry</i> <u>Focus</u> : X-ray crystallography of Protein/DNA Interactions, Histone Modifiers	Jan 2007 – Aug 2009
Ph.D., Cancer Biology, NCI Pre-Doctoral Fellow, Laboratory of Bill Sugden <i>University of Wisconsin-Madison, McArdle Laboratory for Cancer Research</i> <u>Focus</u> : Molecular Virology, Licensed DNA Replication of Epstein-Barr Virus (EBV)	Aug 2001 – Dec 2006
B.S., Molecular Biology, Laboratory of Charles Helmstetter <i>Florida Institute of Technology, Department of Biology</i> <u>Focus</u> : Cell Synchronization, Cyclins/CDKs	Sept 1997 – May 2001

Business Training

Master of Business Administration Concentration: Corporate Innovation and Entrepreneurship (CIENT) <i>Pennsylvania State University</i>	May 2021 – Aug 2024
Graduate Certificate: Corporate Innovation and Entrepreneurship (CIENT) <i>Pennsylvania State University</i>	May 2022 – May 2024

Publications (56) Complete List at <https://www.ncbi.nlm.nih.gov/myncbi/scott.lindner.2/bibliography/public/>

While an Associate Professor at Pennsylvania State University, 2020 - Present (19)

Min, H., Wang, C., Liang, X., Boonhok, R., Brashear, A.M., Li, X., Minns, A.M., Adapa, S.R., Jiang, R.H.Y., Ning, G., Cao, Y., **Lindner, S.E.**, Miao, J. & Cui, L. "The DEAD-box RNA helicase PfDOZI imposes opposing actions on RNA metabolism during asexual and sexual development in *Plasmodium falciparum*." *Nature Communications*. 2024 May 3; 15(1):3747. doi: 10.1038/s41467-024-48140-4.

Johnson, J.T.* , Surette, F.A.* , Ausdahl, G.R., Shah, M., Minns, A.M., **Lindner, S.E.**, Zander, R.A. & Butler, N.S. "CD4 T cell-derived IL-21 is critical for sustaining *Plasmodium* infection-induced germinal center responses and promoting the selection of memory B cells within recall potential." (* equal contribution) *Journal of Immunology*. 2024 Mar 13: ji2300683. doi: 10.4049/jimmunol.2300683

Patel, D.R., Minns, A.M., Sim, D.G., Field, C.F., Kerr, A.E., Heinly, T., Luley, E.H., Rossi, R.M., Bator, C., Mostafa, I.M., Norton, E.B., Hafenstein, S.L., **Lindner, S.E.** # & Sutton, T.C.# "Intranasal SARS-CoV-2 RBD decorated nanoparticle vaccine enhances viral clearance in the Syrian hamster model." (# co-corresponding authors) *Microbiology Spectrum*. 2024 Mar 5; 12(3):e0499822. doi: 10.1128/spectrum.04998-22. Epub 2024 Feb 9.
**Press Release: <https://www.psu.edu/news/eberly-college-science/story/new-nasal-vaccine-platform-helps-clear-covid-19-infections-animal/>
**Animation for Public Engagement: <https://www.youtube.com/watch?v=DUJob72Xhzz8>

Sassmannshausen, J., Bennink, S., Distler, U., Kuchenhoff, J., Minns, A.M., **Lindner, S.E.**, Burda, P-C., Tenzer, S., Gilberger, T.W., & Pradel, G. "Comparative proteomics of vesicles essential for the egress of *Plasmodium falciparum* gametocytes from red blood cells." *Molecular Microbiology*. 2023 Jul 26. Doi: 10.1111/mmi.15125.

Godin, M.J.* , Sebastian, A.* , Albert, I# , & **Lindner, S.E.**# "Long-Read Genome Assembly and Gene Model Annotations for the Rodent Malaria Parasite *Plasmodium yoelii* 17XNL" *Journal of Biological Chemistry*. 2023 May 27: 104871. doi: 10.1016/j.jbc.2023.104871.
(* equal contribution, # co-corresponding authors)

McGee, J.M., Armache, J.P., & **Lindner, S.E.** "Specialized Ribosomes of *Plasmodium* Parasites" *PLoS Pathogens*. 2023 Apr 13;19(4):e1011267. doi: 10.1371/journal.ppat.1011267. Invited Review.

Zhang, K., Wang, Z., Liu, H., Perea-Lopez, N., Ranasinghe, J., Bepete, G., Minns, A.M., Rossi, R.M., **Lindner, S.E.**, Huang, X., Terrones, M., & Huang, S. "Understanding the excitation wavelength dependence and thermal stability of SARS-CoV-2 receptor-binding domain using surface-enhanced Raman scattering and machine learning." *ACS Photonics*. 2022 Aug 25; 9,9,2963-2972. doi.org/10.1021/acsp Photonics.2c00456

Lamb, I., Rios, K.T., Shukla, A., Ahiya, A.I., Morrissey, J.M., **Lindner, S.E.**, Mather, M.W., & Vaidya, A. "Mitochondrially targeted proximity biotinylation and proteomic analysis in *Plasmodium falciparum*." *PLoS One*. 2022 Aug 19;17(8):e0273357. doi.org/10.1371/journal.pone.0273357.

Clements, R.L., Morano, A.A., Narvarro, F.M., McGee, J.P., Du, E.W., Strevva, V.A., **Lindner, S.E.**, & Dvorin, J.D. "A novel basal complex protein is essential for the maturation of transmission-stage malaria parasites." *PNAS*. 2022 Aug 23; 119(34):e2204167119. doi.org/10.1073/pnas.2204167119

Marques-da-Silva, C., Peissig, K., Walker, M.P., Shiao, J. Kyle, D.E., Vijay, R., **Lindner, S.E.** & Kurup, S.P. "Direct Type I Interferon Signaling in Hepatocytes Controls Malaria." *Cell Reports*. 2022, July 19. Vol 40, Issue 3, 111098. doi.org/10.1016/j.celrep.2022.111098

Gontu, A., Marlin, E.A., Ramasamy, S., Neerukonda, S., Anil, G., Morgan, J., Quraishi, M., Chen, C., Boorla, V.S., Nissly, R.H., Jakka, P., Chothe, S.K., Ravichandran, A., Kodali, N., Amirthalingam, S., LaBella, L., Kelly, K., Natesan, P., Minns, A.M., Rossi, R.M., Werner, J.R., Hovingh, E., **Lindner, S.E.**, Tewari, D., Kapur, V., Vandegriff, K.J., Maranas, C.D., Nair, M. & Kuchipudi, S.V. "Development and validation of indirect enzyme-linked immunosorbent assays for detecting antibodies to SARS-CoV-2 in cattle, swine, and chicken." *Viruses*. 2022, June 22; 14(7), 1358; doi.org/10.3390/v14071358.

Publications (continued)**While an Associate Professor at Pennsylvania State University (Continued)**

Rios, K.T., Dickson, T., & Lindner, S.E. "Sulfadiazine enrichment of gametocytes causes unexpected effects on *Plasmodium* transmission." *mSphere*. 2022 May 19; e0010622. doi: 10.1128/msphere.00106-22.

Hart, K.J., Power, B.J.*, Rios, K.T.*, Sebastian, A., & Lindner, S.E. "The *Plasmodium* NOT1-G paralogue is an essential regulator of sexual stage maturation and parasite transmission."

PLoS Biology. 2021 Oct 21; 19(10):e3001434. doi.org/10.1371/journal.pbio.3001434 (* equal contribution)

Kumar, R., Christensen, N.D., Maldonado, R.J.K., Bewley M.C., Ostman, A., Sudol, M., Chen, E.C., Buchkovich, N.W., Gontu, A., Nair, M.S., Nissly, R.H., Minns, A.M., Kapur, V., Rossi, R., Kuchipudi, S.V., Lindner, S.E., Parent, L.J., Flanagan, J.M., & Buchkovich, N.J. "Monoclonal antibodies to S and N SARS-CoV-2 proteins as probes to assess structural and antigenic properties of coronaviruses." *Viruses*. 2021; 13, 1899. doi.org/10.3390/v13101899

Holyk, A.*, Lindner A.H.*, Lindner S.E., & Shippert, B.W. "Physical compatibility of Normosol-R with critical care medications used in patients with COVID-19 during simulated Y-site administration."

American Journal of Health-System Pharmacy. 2021 Aug 14. doi: 10.1093/ajhp/zxab329. (* equal contribution)

Godin, M.J. & Lindner, S.E. "NEB Monarch HMW DNA Extraction Kit improves sample preparation for Oxford Nanopore Technologies sequencing of malaria parasites." *New England Biolabs Application Note*. July 15, 2021. (Note: Non-Peer Reviewed Publication) <https://tinyurl.com/NEB-HMW-Nanopore>

Gontu, A.*, Srinivasan, S.*, Salazar, E.*, Nair, M.S., Nissly, R.H., Greenawalt, D., Bird, I.M., Herzog, C., Ferrari, M.J., Poojary, I., Katani, R., Lindner, S.E., Minns, A.M., Rossi, R., Christensen, P.A., Castillo, B., Chen, J., Eagar, T.N., Yi, X., Zhao, P., Leveque, C., Olsen, R.J., Bernard, D.W., Gollihar, J., Kuchipudi, S.V.#, Musser, J.M.#, & Kapur, V.# "Limited window for donation of convalescent plasma with high live-virus neutralizing antibodies for COVID-19 immunotherapy." *Communications Biology*. 2021 Feb; 4:267 doi: 10.1038/s42003-021-01813-y. (* equal contribution, # co-corresponding authors)

Bowman, L.M.*, Finger, L.E.*, Hart, K.J., & Lindner, S.E. "Definition of Constitutive and Stage-Enriched Promoters in the Rodent Malaria Parasite, *Plasmodium yoelii*."

Malaria Journal. 2020 Nov 23; 19(1):424. doi: 10.1186/s12936-020-03498-2. (* equal contribution)

Gray, S.L., Tiedge, T.M., Butkus, J.M., Earp, T.J., Lindner, S.E., & Roy, R. "Determination of Human Identity from *Anopheles stephensi* Mosquito Blood Meals Using Direct Amplification and Massively Parallel Sequencing."

Forensic Science International: Genetics. 2020 Sep; 48:102347. Doi: 10.1016/j.fsigen.2020.102347.

While an Assistant Professor at Pennsylvania State University, 2013-2020 (20)

Rios, K.T. & Lindner S.E. "Protein-RNA Interactions Important for *Plasmodium* Transmission."

PLoS Pathogens. 2019 Dec 26; 15(12):e1008095. doi: 10.1371/journal.ppat.1008095. *Invited Review*.

Lindner, S.E.*#, Swearingen, K.E.*, Shears, M., Walker, M.P., Vrana, E.N., Hart, K.J., Minns, A.M., Sinnis, P., Moritz, R.L., & Kappe, S.H.I.# "Transcriptomics and proteomics reveal two waves of translational repression during the maturation of malaria parasite sporozoites." *Nature Communications*. 2019 Oct 31; 10(1):4964. doi:

10.1038/s42467-019-12936-6. (* equal contribution, # joint supervision/co-corresponding authors)

Addendum: 2022 Jan 6;13(1):283. doi: 10.1038/s41467-021-27767-7.

Lee, M., Lindner, S.E., Marco-Rubio, J.J., & Llinás, M. "Cutting back malaria: CRISPR/Cas9 genome editing of *Plasmodium*." *Briefings in Functional Genomics*. 2019 Jul 29; 1-9. doi: 10.1093/bfgp/elz012. *Invited Review*.

Vivax Sporozoite Consortium (Alphabetical): Ansell, B., Charnaud, S., Duffy, M., Emery-Corbin, S.J., Flannery, E., Jex, A., Kappe, S.H., Koepfli, C., Mikolajczak, S., Muller, I., Lerch, A., Lindner, S.E., Merrienne, N., Patrapuvich, R., Petter, M., Sattabongkot, J., Smith, J., and Swearingen, K.E.. "Transcriptome and histone epigenome of *Plasmodium vivax* salivary-gland sporozoites point to tight regulatory control and mechanisms for liver-stage differentiation in relapsing malaria." *International Journal for Parasitology*. 2019 Jun; 49(8):501-513 doi: 10.1016/j.ijpara.2019.02.007.

Publications (continued)**While an Assistant Professor at Pennsylvania State University (Continued)**

Walker M.P., & Lindner, S.E. "Ribozyme-Mediated, Multiplex CRISPR Gene Editing and CRISPR interference (CRISPRi) in rodent-infectious *Plasmodium yoelii*." *Journal of Biological Chemistry*. 2019 Jun 14; 294(24):9555-9566. doi: 10.1074/jbc.RA118.007121

**Featured as one of the Top 50 most viewed JBC papers in May and June 2019.

Hart, K.J., Oberstaller, J., Walker, M.P., Minns, A.M., Kennedy, M.F., Padykula, I., Adams, J.H., & Lindner, S.E. "*Plasmodium* male gametocyte development and transmission are critically regulated by the two putative deadenylases of the CAF1/CCR4/NOT Complex." *PLoS Pathogens*. 2019 Jan 31; 15(1):e1007164. 1-28.

Swearingen, K.E. & Lindner S.E. "*Plasmodium* Parasites Viewed Through Proteomics" *Trends in Parasitology*. 2018 Nov; 37(11): 945-960. doi: 10.1016/j.pt.2018.08.003. Invited Review.

**Featured as the Cover Image/Publication for November 2018

Bennink, S., von Bohl, A., Ngwa, C., Henschel, L., Kuehn, A., Pilch, N., Weibbach, T., Rosinski, A.N., Scheuermayer, M., Repnik, U., Przyborski, J.M., Minns, A.M., Orchard, L.M., Lindner, S.E., Griffiths, G., Llinás, M., & Pradel, G. "A seven-helix protein constitutes stress granules crucial for regulating translation during human-to-mosquito transmission of *Plasmodium falciparum*." *PLoS Pathogens*. 2018 Aug 22; 14(8):e1007249. 1-36.

Liang, X., Hart, K.J., Gang, D., Siddiqui, F.A., Sebastian, A., Li, X., Albert, I., Miao, J., Lindner, S.E., & Cui, L. "Puf3 participates in ribosomal biogenesis in malaria parasites." *Journal of Cell Science*. 2018 Mar 26; 131(6). doi: 1.1242/jcs.212597.

Hahn, W.O., Butler, N.S., Lindner, S.E., Akilesh, H.M., Sather, D.N., Kappe, S.H.I., Hamerman, J.A., Gale Jr., M., Liles, W. C., & Pepper, M. "cGAS-mediated control of blood-stage malaria promotes *Plasmodium*-specific germinal center responses." *JCI Insight*. 2018 Jan 25;3(2). 1-19. doi: 10.1172/jci.insight.94132

Minns, A.M., Hart, K.J., Subramanian, S., Hafenstein, S., & Lindner S.E. "Nuclear, Cytosolic, and Surface Localized Poly(A)-Binding Proteins of *Plasmodium yoelii*." *mSphere*. 2018 Jan 10; 3(1). 1-13. pii:e00435-17. doi: 10.1128/mSphere.00435-17.

Zander, R.A., Vijay, R., Pack, A.D., Guthmiller, J.J., Graham, A.C., Lindner, S.E., Vaughan, A.M., Kappe, S.H., & Butler N.S. "Th1-like *Plasmodium*-specific memory CD4+ T cells support humoral immunity." *Cell Reports*. 2017 Nov 14; 21(7): 1839-1852. doi: 10.1016/j.celrep.2017.10.077

Munoz, E. E., Hart, K. J., Walker, M. P., Kennedy, M. F., Shipley, M. M., & Lindner, S.E. "ALBA4 modulates its stage-specific interactions and specific mRNA fates during *Plasmodium yoelii* growth and transmission." *Molecular Microbiology*. 2017 Oct; 106(2):266-284. doi: 10.1111/mmi.13762

Swearingen, K. E., Lindner, S.E., Flannery, E., Vaughan A.M., Patrapuvich, R., Kopfli, C., Muller, I., Jex, A., Moritz, R.L., Kappe, S.H.I., Sattabongkot, J. & Mikolajczak, S. "Proteogenomic analysis of the total and surface-exposed proteomes of *Plasmodium vivax* salivary gland sporozoites." *PLoS Neglected Tropical Diseases*. 2017 Jul 31; 11(7):e0005791. 1-36. doi: 10.1371/journal.pntd.005791.

El-Manzalawy, Y., Munoz, E.M., Lindner, S.E.*, & Honavar, V.* "PlasmoSEP: Predicting Surface Exposed Proteins on the Malaria Parasite Using Semi-supervised, Self-training, and Expert-annotated Data." *Proteomics*. 2016 Dec; 16(23):2967-2976. (* joint supervision/co-corresponding authors)

Huang, W., Hulverson, M.A., Zhang, Z., Choi, R., Hart, K.J., Kennedy, M., Subba Rao Vidadala, R., Maly, D.J., Van Voorhis, W.C., Lindner, S.E., Fan, E., & Ojo, K.K. "5-Aminopyrazole-4-carboxamide analogues are selective inhibitors of *Plasmodium falciparum* microgametocyte exflagellation and potential malaria transmission blocking agents." *Bioorganic & Medicinal Chemistry Letters*. 2016 Nov 15; 26 (22):5487-5491. doi: 10.1016/j.bmcl.2016.10.014

Publications (continued)**While an Assistant Professor at Pennsylvania State University (Continued)**

Swearingen, K.E.* , **Lindner, S.E.***, Shi, L., Shears, M.J., Harupa, A., Hopp, C.S., Vaughan, A.M., Springer, T.A., Moritz, R.L., Kappe, S.H., & Sinnis, P. "Interrogating the *Plasmodium* Sporozoite Surface: Identification of Surface-Exposed Proteins and Demonstration of Glycosylation on CSP and TRAP by Mass Spectrometry-Based Proteomics." *PLoS Pathogens*. 2016 Apr 29; 12(4):e1005606. 1-32. doi: 10.1371/journal.ppat.1005606.

(* equal contribution)

****Recognized as one of the "Top 50 Most Downloaded" articles of the year for PLoS Pathogens**

Reddy, B.P.N., Shrestha, S., Hart, K.J., Liang, X., Kemirembe, K., Cui, L., & **Lindner, S.E.**

"A bioinformatic survey of RNA-binding proteins in *Plasmodium*." *BMC Genomics*. 2015 Nov 2; 16:890. 1-26. doi: 10.1186/s12864-015-2092-1

Mikolajczak, S.A.* , Vaughan, A.V.* , Kangwanrangsang, N., Yimamnuaychok, N., Rezakhani, N., Fishbauger, M., Lakshmanan, V., Singh, N., Kaushansky, A., Baldwin, M., **Lindner, S.E.**, Adams, J.H., Prachumsri, J., & Kappe, S.H. "*Plasmodium vivax* liver stage development and hypnozoite persistence in human liver-chimeric mice." *Cell Host & Microbe*. 2015 Apr 8; 17(4): 526-35. doi: 10.1016/j.chom.2015.02.011. (* equal contribution)

Cui, L., **Lindner, S.**, & Miao, J. "Translational regulation during stage transitions in malaria parasites." *The Annals of the New York Academy of Sciences*. 2015 Apr; 1342:1-9 doi: 10.1111/nyas.12573. Invited Review.

While a Post-Doctoral Fellow/Staff Scientist at Seattle Biomedical Research Institute (SBRI), 2009-2013 (11)

Harupa, A., Sack, B., Lakshmanan, V., Arang, N., Douglass, A., Oliver, B., Stuart, A., Sather, D.N., **Lindner, S.E.**, Hybiske, K., Torii, M., & Kappe, S.H.I. "SSP3 is a novel *Plasmodium yoelii* sporozoite surface protein with a role in gliding motility." *Infection and Immunity*. 2014 Nov; 82(11): 4643-4653. doi: 10.1128/IAI.01800-14.

Lindner, S.E., Sartain, M.J., Hayes, K., Harupa, A., Moritz, R.L., Kappe, S.H.I. & Vaughan, A.M. "Enzymes involved in plastid-targeted phosphatidic acid synthesis are essential for *Plasmodium yoelii* liver-stage development." *Molecular Microbiology*. 2014 Feb; 91(4): 679-693. doi: 10.1111/mmi.12485

****Featured as the Cover Image/Publication**

Mailu, B.M., Ramasamay, G., Mudeppa, D.G., Li, L., **Lindner, S.E.**, Peterson, M.J., DeRocher, A.E., Kappe, S.H.I., Rathod, P.K., & Gardner, M.J. "A nondiscriminating glutamyl-tRNA synthetase in the *Plasmodium* apicoplast: the first enzyme in an indirect aminoacylation pathway." *Journal of Biological Chemistry*. 2013 Nov 8; 288(45):32539-52. doi: 10.1074/jbc.M113.507467

Pei, Y. *, Miller, J.L. *, **Lindner, S.E.**, Vaughan, A.M., Torii, M., & Kappe, S.H.I. "*Plasmodium yoelii* inhibitor of cysteine proteases is exported to exomembrane structures and interacts with yoelipain-2 during asexual blood-stage development." *Cellular Microbiology*. 2013 Sep; 15(9):1508-1526. doi: 10.1111/cmi.12124.

(* equal contribution)

Lindner, S.E., Mikolajczak, S.A., Vaughan, A.M., Moon, W., Joyce, B.R., Sullivan, W.J., & Kappe, S.H.I.

"Perturbations of *Plasmodium* Puf2 expression and RNA-seq of Puf2-deficient sporozoites reveal a critical role in maintaining RNA homeostasis and parasite transmissibility."

Cellular Microbiology. 2013 Jul; 15(7):1266-1283. doi: 10.1111/cmi.12116.

Lindner, S.E. *, Swearingen, K.E. *, Harupa, A., Vaughan, A.M., Sinnis, P., Moritz, R.L., & Kappe, S.H.I. "Total and putative surface proteomics of malaria parasite salivary gland sporozoites." *Molecular and Cellular Proteomics*. 2013 May; 12(5): 1127-1143. doi:10.1074/mcp.M112.024505 (* equal contribution)

Kennedy, M., Fishbauger, M.E., Vaughan, A.M., Patrapuvich, R., Boonhok, R., Yimamnuaychok, N., Rezakhani, N., Metzger, P., Ponpuak, M., Sattabongkot, J., Kappe, S.H., Hume, J.C.C., & **Lindner, S.E.** "A rapid and scalable density gradient purification method for *Plasmodium* sporozoites." *Malaria Journal*. 2012 Dec 17; 11:421. 1-10. doi: 10.1186/1475-2875-11-421.

Publications (continued)**While a Post-Doctoral Fellow/Staff Scientist at Seattle Biomedical Research Institute (SBRI) (Continued)**

Vaughan, A.M., Mikolajczak, S. A., Camargo, N., Lakshmanan, V., Kennedy, M., **Lindner, S.E.**, Miller, J.L., & Kappe, S.H. "A transgenic *Plasmodium falciparum* NF54 strain that expresses GFP-luciferase throughout the parasite life cycle." *Molecular and Biochemical Parasitology*. 2012 Dec;186(2): 143-147. doi: 10.1016/j.molbiopara.2012.10.004.

Lindner, S.E.*, Miller, J.L.*, & Kappe, S.H. "Malaria parasite pre-erythrocytic infection: preparation meets opportunity." *Cellular Microbiology*. 2012 Mar; 14(3): 316-324. doi: 10.1111/j.1462-5822.2011.01734.x. (* equal contribution) *Invited Review*.

Lindner, S.E., Llinás, M., Keck, J.L., & Kappe, S.H. "The primase domain of PfPrex is a proteolytically matured, essential enzyme of the apicoplast." *Molecular and Biochemical Parasitology*. 2011 Dec; 180(2): 69-75. doi: 10.1016/j.molbiopara.2011.08.002.

Aly, A.S.I, **Lindner, S.E.**, MacKellar, D.C., Peng, X., & Kappe, S.H. "SAP1 is a critical post-transcriptional regulator of infectivity in malaria parasite sporozoite stages." *Molecular Microbiology*. 2011 Feb; 79(4): 929-939. doi: 10.1111/j.1365-2958.2010.07497.x.

While a Post-Doctoral Fellow at the University of Wisconsin, 2007-2009 (3)

Kolonko, E.M, Albaugh, B.N., **Lindner, S.E.**, Chen, Y, Satyshur, K.A., Keck, J.L., Kaufman, P.D., & Denu, J.M. "Catalytic activation of histone acetyltransferase Rtt109 by a histone chaperone." *PNAS*. 2010 Nov 23; 107(47): 20275-20280. doi: 10.1073/pnas.1009860107.

Lindner, S.E., De Silva, E., Keck, J.L. & Llinás, M. "Structural determinants of DNA binding by a *P. falciparum* ApiAP2 transcriptional regulator." *Journal of Molecular Biology*. 2010 Jan 22; 395(3): 558-567. doi: 10.1016/j.jmb.2009.11.004.

Berndsen, C.E., Tsubota, T., **Lindner, S.E.**, Lee, S., Holton, J.M., Kaufman, P.D., Keck, J.L., & Denu, J.M. "Molecular functions of the histone acetyltransferase chaperone complex Rtt109-Vps75." *Nature Structural and Molecular Biology*. 2008 Sep; 15(9): 948-956.

While a Ph.D. Student at the University of Wisconsin, 2001-2006 (3)

Lindner, S.E., Zeller, K., Schepers, A., & Sugden, B. "The affinity of EBNA1 for its origin of DNA synthesis is a determinant of the origin's replicative efficiency." *Journal of Virology*. 2008 Jun; 82(12): 5693-5702. doi: 10.1128/JVI.00332-08.

Lindner, S.E. & Sugden, B. "The plasmid replicon of Epstein-Bar Virus: mechanistic insights into efficient, licensed, extrachromosomal replication in human cells." *Plasmid*. 2007 Jul; 58(1): 1-12.

Wang, J. *, **Lindner, S.E.** *, Leight, E.R., & Sugden, B. "Essential elements of a licensed, mammalian plasmid origin of DNA synthesis." *Molecular and Cellular Biology*. 2006 Feb; 26(3): 1124-1134. (* equal contribution)

Publications (continued)

Undergoing Peer Review (2)

Rios, K.T., McGee, J.P., Sebastian, A., Moritz, R.L., Feric, M., Absalon, S., Swearingen, K.E., & **Lindner, S.E.**

"Global Release of Translational Repression Across *Plasmodium*'s Host-to-Vector Transmission Event."

Biorxiv Preprint: <https://www.biorxiv.org/content/10.1101/2024.02.01.577866v1>

Under Revision: August 26, 2024

Caloba, C., Sturtz, A., Ramachandran, A. John, L., Malkina, K., Minns, A.M., **Lindner, S.E.**, & Vijay, R.

"Exogenous 4-1BB co-stimulation enhances memory B cell response during malaria."

Biorxiv Preprint: <https://www.biorxiv.org/content/10.1101/2023.09.12.557411v1?ct=>

Manuscript in Peer Review.

Funding

ACTIVE:

R21AI181227 (MPIs: Lindner, Dvorin) 2024 – 2026 1.2 months
NIH/NIAID

Development and Composition of the Basal Complex During *Plasmodium* Sporogony

This new submission aims to investigate the basal complex's role during *Plasmodium* sporozoite development.

Role: Co-PI/Administrative Lead PI

T32GM125592 (Pugh, Reese) 2018 – 2028 0 months
NIH/NIGMS

Eukaryotic Gene Regulation (EGR) Pre-Doctoral Training Program

The goal of this funded training grant is to train a future generation of scientists in experimental, molecular and computational sciences applied towards understanding mechanisms of eukaryotic gene regulation.

Role: Faculty Trainer (Since 2020)

T32DK120509 (Patterson) 2020 - 2025 0 months
NIH/NIDDK

Integrative Analysis of Metabolic Phenotypes (IAMP) Pre-Doctoral Training Program

The goal of this funded training grant is to train a future generation of scientists in experimental, molecular, and bioinformatics approaches applied towards integrating our understanding of the host metabolism in health and disease.

Role: Faculty Trainer (Since 2020)

Funding (continued)

PENDING:

<Redacted>

Funding (continued)

COMPLETED:

2R56AI123341 (Lindner) 2022 – 2023 (NCE to 7/31/2024)
NIH/NIAID \$300,000/Year Direct Costs

Mechanisms governing translational regulation during *Plasmodium* transmission.

The goal of this grant was to determine mechanisms of translational repression in the malaria parasite during vector-to-host transmission.

Role: PI

1R01GM125907 (Lindner & Hafenstein) 2018 – 2021 (NCE to 12/31/2023)
NIH/NIGMS \$367.5k/Year Direct Costs

Development of Cryo-EM/TEM Technologies for Small Protein and RNA Systems

The goal of this grant was to advance scaffolding technology for structural biology approaches utilizing electron microscopy for proteins and RNA.

Role: Co-PI, Administrative Lead PI

R01AI123341 (Lindner) 11/01/2016 – 10/31/2021
NIH/NIAID \$250k/Year Direct Costs

Mechanisms governing translational regulation during *Plasmodium* transmission.

The goal of this proposal was to identify the key *cis* elements and *trans* factors at work during transmission of the malaria parasite to enact specific translational repression.

Role: PI

R21AI123690 (Ojo) 2017 – 2020
NIH/NIAID \$70k Direct Costs

Coformulation of bumped kinase inhibitors (BKIs) with Artemisinin combination therapy (ACT) will stop widespread transmission of artemisinin-resistant malaria strains

The goal of this funded proposal was to investigate the effect of combined drug therapy for malaria using drugs that target the asexual and sexual stages of the parasite.

Role: Subcontract PI

R21AI130692 (Lindner) 2017 – 2020
NIH/NIAID \$275k Direct Costs

Ribozyme Guided CRISPRi in Human- and Rodent-Infectious *Plasmodium* species

The goal of this funded proposal was to develop a CRISPR/Cas9 gene regulation system for *Plasmodium*.

Role: PI

Lab Bench to Commercialization Program (Lindner and Hafenstein) 2017 – 2019
Pennsylvania State University \$75k Total Costs

Versatile Display Scaffolds for Cryo-EM Approaches

The goal of this internal grant was to promote the development and commercialization of highly symmetrical, versatile scaffolds for cryo TEM imaging.

Role: Co-PI

SBIR Award #193342 (De Novo DNA, Inc.) 2017 – 2018
Department of Defense/DARPA \$50k Subcontract

Highly Scalable Multiplexed CRISPR Applications Using Advanced Part Toolboxes and Circuits

The goal of this effort was to optimize the design, testing, and implementation of ribozyme/single guide RNA panels for CRISPR approaches in *Plasmodium* parasites.

Role: Subcontract PI

K22AI101039 (Lindner) 2013-2016
NIH/NIAID \$250K Total Costs

Dissection of RNA Storage Granules Essential to *Plasmodium* Transmission

The goal of this funded proposal was to characterize the composition and function of RNA storage granules in *Plasmodium* sporozoites during transmission from the mosquito vector to the vertebrate host.

Role: PI

Funding (continued)

COMPLETED:

Cyberhealth Innovation Seed Funds (Lindner, Allen) 2014 – 2015
 PA Tobacco Cure Fund; Huck Institutes/Institute for CyberScience \$62k Total Costs

Prioritization of Malaria-Vaccine Candidates using New Methods for Functional Annotation

The goal of this funded proposal was to leverage our surface proteomic datasets of *Plasmodium* to develop improved methods to predict protein domain structures and functions.

Role: Co-PI

OPP1067687 (Co-PI: Kappe and Sinnis, Co-I: Lindner) 2012 – 2013
 Bill and Melinda Gates Foundation \$450k Total Costs

Proteomic Identification of Novel Surface and Secreted Antigens as Targets to Block Malaria Infection

The goal of this solicited accelerated grant proposal was to build upon our initial proteomics discoveries to identify novel surface/secreted proteins on *Plasmodium* sporozoites to serve as antibody-based vaccine targets.

Role: Co-I

F32GM083438 – NIGMS NRSA Post-Doctoral Fellow (Lindner) 2009 – 2011
 NIH/NIGMS

Structural Analysis of DNA Replication Machinery of *Plasmodium falciparum*

The goal of this fellowship was to train in both the fields of structural biology and molecular parasitology in order to address significant problems in malaria biology using these complementary approaches.

Role: PI

T32CA009135 – NCI NRSA Pre-Doctoral Fellow (Lindner) 2004 – 2005
 NIH/NCI

NCI T32 Pre-Doctoral Training Program in Experimental Oncology

The goal of this fellowship was to train and study host/pathogen interactions of Epstein-Barr virus (EBV), the first identified human tumor virus. Research was focused on viral DNA replication by co-opting host proteins.

Role: Trainee

Selected Honors

2024	Rock Ethics Institute Fellow
2023 – 2024	Huck Leadership Fellow
2023	Fellow of the American Society of Tropical Medicine and Hygiene
2023	Finalist, C.I. Noll Award for Excellence in Teaching, Eberly College of Science, Penn State
2022	Outstanding Collaborative Research Team Award, Penn State University
2020 – 2021	Daniel R. Tershak Memorial Teaching Award, Penn State University
2019	Keynote Speaker, Future of Malaria Research Symposium
2019	Co-Organizer, Pennsylvania Parasitology Conference (PAraCon 2019)
2018	Co-Organizer, Pennsylvania Parasitology Conference (PAraCon 2018)
2013 – 2015	NIAID K22 Research Scholar Development Award
2011 – 2012	President, Post-Doc Association, Seattle Biomedical Research Institute
2010	U. Washington / Howard Hughes Medical Institute (HHMI) Future Faculty Fellow
2009 – 2011	NIAID F32 Ruth L. Kirschstein NRSA Postdoctoral Fellow
2009	Molecular Parasitology Meeting, <i>Award for Excellent Oral Presentation</i>
2004 – 2005	NCI T32 Experimental Oncology Training Grant, Pre-Doctoral Fellow
2001	Graduated with <i>magna cum laude</i> distinction, Florida Institute of Technology
2001	<i>Frank G. Brooks Award for Excellence in Student Research</i> , Tri-Beta District I
2000 – 2001	Tri-Beta National Biological Honor Society
2000 – 2001	Outstanding Senior in Molecular Biology, Florida Institute of Technology
1997 – 2001	Presidential Scholarship, Florida Institute of Technology
1997 – 2001	Dean's List, Florida Institute of Technology

Invited Talks at Universities/Institutes**While an Associate Professor at Pennsylvania State University:**

Mar 2024	University of New South Wales, Sydney, Australia
Mar 2024	Walter and Eliza Hall Institute, University of Melbourne, Melbourne, Australia
Nov 2023	University of Wisconsin, School of Medicine and Public Health, Department of Medical Microbiology and Immunology, Madison, WI
May 2023	Washington University, School of Medicine, Department of Cell Biology & Physiology, St Louis, MO
Oct 2022	Duquesne University, Department of Biological Sciences, Pittsburgh, PA
Oct 2022	University of Georgia, Center for Tropical & Emerging Global Diseases, Athens, GA
Mar 2022	University of Florida, Emerging Pathogens Institute, Gainesville, FL
June 2021	National Institutes of Health, Laboratory of Malaria and Vector Research. Bethesda, MD
April 2021	University of Illinois, Department of Pathobiology, Champaign-Urbana, IL
Mar 2021	University of Glasgow, Glasgow, UK

While an Assistant Professor at Pennsylvania State University:

Jan 2020	Indiana University, School of Medicine, Department of Pediatrics, Indianapolis, IN
May 2019	Pennsylvania State University, College of Medicine, Department of Biochemistry and Molecular Biology, Hershey, PA
Oct 2018	Harvard University, T.H. Chan Harvard School of Public Health, Department of Immunology and Infectious Diseases, Boston, MA
May 2018	Humboldt University, Department of Biology, Berlin, Germany
April 2018	Drexel University, Department of Microbiology and Immunology, Philadelphia, PA
Jan 2018	Naval Medicine Research Unit – Six (NAMRU-6), Lima, Peru
Oct 2017	University of Minnesota, School of Medicine, Department of Biomedical Sciences, Duluth, MN
March 2017	University of Pittsburgh, Department of Biological Sciences, Pittsburgh, PA
Dec 2016	CRISPR Approaches for Apicomplexans; Sanger Centre, Hinxton, UK
Oct 2016	University of Pennsylvania, Department of Microbiology, Parasitology Seminar Series, Philadelphia, PA
Sept 2016	Indiana University, School of Medicine, Department of Pharmacology & Toxicology, Indianapolis IN
Jan 2016	University of South Florida, Department of Global Health, Tampa, FL
Oct 2015	University of Oklahoma, Department of Microbiology and Immunology, Oklahoma City, OK
May 2015	Johns Hopkins University, Bloomberg School of Public Health, Malaria Research Institute, Baltimore, MD
April 2014	Rutgers University, New Jersey Medical School Seminar Series, Newark, NJ

While a Post-Doctoral Fellow/Staff Scientist at Seattle Biomedical Research Institute (SBRI):

Oct 2012	University of Texas, Department of Microbiology & Molecular Genetics, Houston, TX
Oct 2012	University at Buffalo, Department of Microbiology & Immunology, Buffalo, NY
July 2012	Penn State University, Department of Biochemistry & Molecular Biology, University Park PA
Feb 2012	Western Washington University, Department of Biology, Bellingham, WA

Patents (6) and Trademark (1):

Lindner, S.E. & Sutton, T.C. "A Versatile Nanocage Platform for Intranasal Vaccine Administration" <i>Provisional Patent Filed February 8, 2021.</i> PSU2021-5223, 36PST100218MA
Lindner, S.E. , Hafenstein, S., & Butler, N. "Specific Selection of Immune Cells Using Versatile Display Scaffolds" <i>PTC Application Filed May 20, 2020.</i> PCT/US2020/033785
Lindner, S.E. & Hafenstein, S. "Versatile Display for Proteins" # 62/472,119. PCT/US2018/022803
Lindner, S.E. , Kappe, S.H., Swearingen, K.E., & Moritz R.L. "Sporozoite surface proteins" #61718054.
Lindner, S.E. , Kennedy, M., & Hume, J.C.C "Density gradient purification for <i>Plasmodium</i> sporozoites" #61678541.
Lindner, S.E. and Sugden, B. "Efficient oriP/EBNA-1 plasmid vector." #12/353,835.
Trademark: "SpyCage" Serial Number 90683755, Issued December 21, 2021.

Business Conferences and Courses

Oct/Nov 2022	National Science Foundation Innovation Corps, Short Course
April 2022	Invent Penn State - Venture and IP (VIP) Conference; University Park, PA

Scientific Conferences and Meetings

(Nov 2024)	American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting; New Orleans, LA Oral Presentation, Session Co-Chair
(Sept 2024)	Molecular Parasitology Meeting; Woods Hole, MA.
Feb 2024	Molecular Approaches to Malaria (MAM); Lorne, Australia, Oral Presentation, Session Co-Chair
Dec 2023	Antibody Engineering and Therapeutics, San Diego, CA
Oct 2023	American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting; Chicago, IL. Oral Presentation, Session Co-Chair
Sept 2023	Molecular Parasitology Meeting; Woods Hole, MA.
July 2023	Pennsylvania Parasitology Conference (PParaCon); State College, PA. Co-Organizer
April 2023	NCI RNA Biology Symposium; Bethesda, MD.
Sept 2022	Molecular Parasitology Meeting (virtual)
May 2022	NIEHS Workshop: Capturing RNA Sequence and Transcript Diversity (virtual)
May 2022	NIAID Workshop: Incorporating Systems Biology to Vector-Borne Pathogen Research (virtual)
Feb 2022	EMBO: Epitranscriptomics (virtual)
Nov 2021	Nanopore Community Meeting 2021 (virtual)
Oct 2021	Molecular Parasitology Meeting (virtual)
May 2021	BioMalPar; EMBL (virtual) Session Co-Chair
May 2021	Oxford Nanopore London Calling 2021 Conference (virtual)
April 2021	NCI RNA Biology Symposium (virtual)
Dec 2020	EMBO: <i>In Situ</i> Structural Biology: From Cryo EM to Integrative Modeling (virtual)
Dec 2020	Nanopore Community Meeting 2020 (virtual)
Sept 2020	Molecular Parasitology Meeting (virtual) Session Co-Chair
Nov 2019	American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting; Baltimore, MD. Oral Presentation, Session Co-Chair
Nov 2019	Future of Malaria Research Symposium, Rockville, MD. Keynote Speaker
Sept 2019	Molecular Parasitology Meeting; Woods Hole, MA
July 2019	Pennsylvania Parasitology Conference (PParaCon); State College, PA. Co-Organizer
Sept 2018	Molecular Parasitology Meeting; Woods Hole, MA
July 2018	Pennsylvania Parasitology Conference (PParaCon); State College, PA. Co-Organizer
May 2018	BioMalPar; EMBL, Heidelberg, Germany. Oral Presentation, Session Co-Chair
Apr 2018	DARPA Safe Genes Meeting; Biosphere2 at Oracle, AZ.
Feb 2018	Keystone Symposium: Cryo-EM from Cells to Molecules: Multi-Scale Visualization of Biological Systems (F1); Tahoe City, CA
Nov 2017	American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting; Baltimore, MD. Oral Presentation
Sept 2017	Molecular Parasitology Meeting; Woods Hole, MA Session Co-Chair
June 2017	American Society for Microbiology Annual Meeting; New Orleans, LA. Oral Presentation
Jan 2017	Keystone Symposium: Precision Genome Engineering; Breckenridge, CO
Sept 2016	Molecular Parasitology Meeting; Woods Hole, MA.
June 2016	Alan Magill Memorial Symposium; Walter Reed Army Institute of Research, Silver Spring, MD.
April 2016	World Malaria Day Symposium; Johns Hopkins University, Bloomberg School of Public Health
Oct 2015	American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting; Philadelphia, PA. Oral Presentation, Symposium Organizer and Chair
Sept 2015	Molecular Parasitology Meeting; Woods Hole, MA
May 2015	American Society for Microbiology Annual Meeting; New Orleans, LA Poster Presentation
Nov 2014	American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting; New Orleans, LA Oral Presentation, Session Co-Chair
Nov 2014	ASTMH Pre-Meeting Course, Advances in Proteomics and Metabolomics: Toward Dissecting Host-Pathogen Interactions; New Orleans, LA Oral Presentation, Co-Organizer and Co-Chair
Oct 2014	EMBO: The Complex Life of mRNA; Heidelberg, Germany; Poster Presentation
Sept 2014	Molecular Parasitology Meeting; Woods Hole, MA
April 2014	World Malaria Day Symposium; NY Academy of Science; New York, NY; Poster Presentation
Sept 2013	Molecular Parasitology Meeting; Woods Hole, MA
Jan 2013	Malaria; Keystone Symposium; New Orleans, LA Poster Presentation
Sept 2012	Molecular Parasitology Meeting; Woods Hole, MA; Poster Presentation
May 2012	Seattle Parasitology Conference; Seattle, WA; Oral Presentation

Scientific Conferences and Meetings (continued)

March 2012	Protein-RNA Interactions in Biology and Disease; Keystone Symposium; Santa Fe, NM. Poster Presentation
May 2011	Seattle Parasitology Conference; Seattle, WA
May 2010	Seattle Parasitology Conference; Seattle, WA
Sept 2009	Molecular Parasitology Meeting; Woods Hole, MA; Oral Presentation
Sept 2008	Molecular Parasitology Meeting; Woods Hole, MA; Poster Presentation
Sept 2005	Eukaryotic DNA Replication; Cold Spring Harbor Laboratory; Poster Presentation
Aug 2004	DNA Replication and Genome Integrity; Salk Institute San Diego, CA Poster Presentation
June 2004	Buffalo DNA Replication and Repair Symposium; Buffalo, NY; Oral Presentation
July 2003	International Herpesvirus Workshop; Madison, WI
April 2001	Association of Southeastern Biologists; New Orleans, LA; Oral Presentation

Professional Affiliations

Pennsylvania State University:

2013 – Present	Center for Malaria Research (CMaR), Co-Founder and Co-Director
2013 – Present	Center for Infectious Disease Dynamics (CIDDD), Member; Executive Committee (2024 -)
2013 – Present	Center for RNA Molecular Biology, Member
2013 – 2016	Center for Molecular Immunology and Infectious Disease (CMIID), Member
2020 – Present	Center for Eukaryotic Gene Regulation, Member
2020 – Present	Center for Structural Biology, Member

External:

2022 – Present	American Association for the Advancement of Science (AAAS)
2013 – Present	American Committee of Molecular, Cellular, and Immunoparasitology (ACMCIP), ASTMH
2013 – Present	American Society of Tropical Medicine and Hygiene (ASTMH)
2013 – Present	American Society for Biochemistry and Molecular Biology (ASBMB)
2013 – Present	American Society for Microbiology (ASM)

Diversity, Equity, and Inclusion (DEI)

2021 – Present	Rainbow Science Network – Member, Penn State University, Eberly College of Science
2021 – 2022	Climate and Diversity Committee – Member, Dept. of Biochemistry and Molecular Biology

Service to the Profession

Leadership Positions:

- **American Committee of Molecular, Cellular, and Immunoparasitology (ACMCIP) subgroup, ASTMH**
 - **Awards & Symposium Councilor:** 10/2023 – 10/2025
 - **Councilor-at-Large:** 11/2022-10/2023

Peer Review of Publications:

- **Associate Editor** – Parasite and Host Section, *Frontiers in Cellular and Infection Microbiology* 8/2019 – 07/2021
- **Guest Editor** – *PLoS Pathogens* 2021, 2022, and 2024
- **Ad hoc Reviewer:** *Review Commons, Nature Microbiology, Nature Communications, Genome Research, PNAS, PLoS Pathogens, BMC Genomics, Nucleic Acids Research, Journal of Biological Chemistry, mSphere, mSystems, mBio, Trends in Biochemical Sciences, Trends in Parasitology, Infection & Immunity, Malaria Journal, Molecular Microbiology, International Journal of Parasitology, Scientific Reports, FEBS Journal, iScience, Molecular and Biochemical Parasitology, Current Protein & Peptide Science, Frontiers in Microbiology, Frontiers in Cellular and Infection Microbiology, ACS Synthetic Biology, Antimicrobial Agents & Chemotherapy, Acta Tropica.*

External Reviewer - Foreign Ph.D. Dissertations:

- 2024: Peiyuan Luo – Monash University – Supervised by Darren Creek and Ghizal Siddiqui

Service to the Profession (continued)

Peer Review of Grant Applications:

- Domestic:
 - Department of Defense, CDMRP:
 - Member: 2014 (twice), 2015 (twice), 2016, 2018, 2021, 2022, 2023
 - Study Section Chair: 2023
 - NIH: PTHE Study Section:
 - *Ad Hoc* Member: June 2018, June 2019, Feb 2020
 - (*Nominated for Standing Membership – Proposed Term: July 2024 – June 2028*)
 - NIH: Special Emphasis Panel – Mycology and Parasitology, *Ad Hoc* Member: July 2022
 - NIH: U19 Program, Intl. Centers of Excellence for Malaria Research, *Ad Hoc* Member: 2016
- International:
 - Medical Research Council, UK (2018, 2023); Human Frontier Science Program (2022); Wellcome Trust, UK (2021); Swiss National Science Foundation (2020); US-Israel Binat. Sci. Found. (2018)

Mentorship:

2024	Early Career Researcher Event, Molecular Approaches to Malaria – Mentor
2023	Penn State Mentorship Training Workshop - Participant
2019	Early Career Researcher Event, ASTMH Annual Meeting – Mentor

External Advisory/Review Boards:

- Aug 2020: Uniformed Services University: Henry C. Wu Award for Excellence in Research Selection Committee
- Aug 2019: Development of the Parasites Collection Site, Addgene. <https://www.addgene.org/crispr/parasites/>
- Mar 2018: Carver Trust, External Reviewer
- Nov 2015: Maryland Industrial Partnerships Program (MIPS), External Reviewer

Service to the Department of Biochemistry and Molecular Biology (BMB)

2024 – 2025	Member, BMMB Graduate Student Recruitment Committee
2023 – 2025	Advisor, Schreyer Honors College
2023 – 2025	Member, Biotechnology Curriculum and Assessment Committee
2022 – 2024	Member, Peer Teaching Evaluation Committee
2022	Member, BMB Faculty Search Committee – <i>Ad Hoc</i> Search
2022	Reviewer, BMB Summer Undergraduate Research Fellowships (SURF)
2021 – 2022	Member, Climate and Diversity Committee
2021 – 2022	Member, BMB Faculty Search Committee – Open Search
2021	Member, BMMB Graduate Program Steering Committee
2020 – 2021	Member, Peer Teaching Evaluation Committee
2017 – 2021	Chair, BMB Departmental Seminar Series and Distinguished Lectures Committee
2016 – 2021	Member, BMMB Graduate Student Recruitment Committee
2019 – 2020	Member, Safety Committee
2018 – 2019	Member, Commencement Attendance Committee
2014 - 2015	Participant, BMMB Graduate Student Recruitment Committee
2016 – 2017	Member, BMB Department Head Search Committee
2015 – 2017	Chair, BMB Departmental Seminar Series
2014 – 2015	Chair, Distinguished Seminar Selection Committee
2013 – 2017	Member, Distinguished Seminar Selection Committee
2015	Reviewer, BMB Summer Undergraduate Research Fellowship (SURF)
2013 – 2015	Member, Graduate Affairs Committee

Service to the Eberly College of Science

2024	Participant, Eberly College of Science Ethics Workshop
2023	Chair, Sabbatical Review Committee
2021 – 2022	Member, Eberly Fellows Selection Committee
2017	Faculty Participant, Dean's Advisory Meeting, Promoting Penn State through Social Media
2015, 2019	Collaboration to develop animations/videos for general audiences with the Office of Digital Learning (with Daryl Branford)
2014, 2015	Guest Speaker, "Spend a Summer Day" College Overview Session for Prospective Undergraduate Students
2013	Faculty Representative, Freshman Convocation Ceremony

Service to the Pennsylvania State University

2024 – Present	Executive Committee, Center for Infectious Disease Dynamics (CIDD)
2023 – 2024	Huck Leadership Fellow, Huck Institutes of the Life Sciences
2023 – 2024	Representative of the Huck Institutes, Gene Regulation Faculty Search Committee
2023 – 2024	Staff Hiring Committee, Huck Institutes of the Life Sciences
2023	Coordinator, Huck Distinguished Lecture Series, Huck Institutes of the Life Sciences
2022	Panelist, <i>Business of Science</i> Boot Camp, Huck Institutes of the Life Sciences
2022, 2023	Schmidt Science Fellowship – Down-select Committee
2022	Member, Search Committee for the IACUC Director, Penn State University
2022	Researcher Advisor, Institutional Biosafety Committee (IBC) Submission System
2019 – Present	Member, Microscopy Core Steering Committee, Penn State University
2019 – 2020	Member, Search Committee for the Director of the Animal Research Program (ARP)
2019	Faculty Participant, STEM Open House for Diverse Graduate Student Recruiting
2019	Member, Qualifying Exam Committee for Molecular Cellular and BioSciences
2019	Interviewee, "Hey I Got A Question About That" Podcast
2018	Speaker, Grant Writing Workshop, Center for Infectious Disease Dynamics (CIDD)
2017	Panelist, Penn State College of Medicine Career Day, Hershey, PA
2014 - Present	Participant, Huck Institutes Graduate Student Recruitment
2015 – 2016	Member, Candidacy Organizing Committee, Molecular Cellular and BioSciences
2015	Script and Film two videos for the Massive Online Open Course (MOOC) focused on "Emerging/Expanding Mosquito-Borne Disease" with Manuel Llinas, Matthew Thomas, and Jason Rasgon (organized by Matthew Ferrari, Department of Biology and Huck Institutes of the Life Sciences)
2015, 2018	"Meet the Professor" lunch with Schreyer Honors College students to provide an opportunity to interact with Freshmen/Sophomores.
2014	Huck Institutes Graduate Program Promotional Videos
2014	Judge, Penn State Graduate Expo
2014	Reviewer, University Graduate Fellowship (Huck Institutes)
2014	Interviewer, Occupational Safety/Environmental Health Specialist
2013 – Present	Co-Founder & Co-Director, Center for Malaria Research (CMaR)

Easter Eggs

- 2023, 2024: State College Little League - Assistant Coach
- June 2020: Certified SKYWARN Weather Spotter (National Weather Service)
- December 2011 – Present: Owner, Green Bay Packers, Inc.
- August 1996: 1st Degree Black Belt, Hapkido and Tang Soo Doo

Lecture-Based Teaching (Since 2013)

Courses:

BMB/MICRB 251: Molecular & Cell Biology 1 (125-280 Undergraduate Students, 40 Lectures/Semester)

Fall Semesters of 2015 – 2021, Fall 2023. Pending: Honors Level Course in Spring 2025.

- I revised the course to a Flipped Classroom model in 2020 to better serve students during COVID-19.
- I expanded the Flipped Classroom model in 2021 to incorporate Learning Assistant-driven problem-solving activities, and profession-specific examples of Molecular & Cell Biology in clinical, research, and engineering careers.
- My efforts were recognized by receipt of the Daniel R. Tershak Memorial Teaching Award (2020-2021)

BBH390A: Preparation for Field Work. (30 Undergraduate Students). One 2-hour guest lecture on Malaria to students in the Global Health Minor, focusing on countries for their fieldwork efforts. Fall Semester of 2019.

BMB 398B: Problem Solving in Molecular and Cell Biology (20-50 Undergraduate Students, 15 Weekly Trainings with Learning Assistants (see below)) - Fall Semesters of 2016-2018

BMB 488: Communities of Practice, Host-Microbe Interactions (~5-6 Undergraduate Students, 15 Weekly Lectures and Host of an Undergraduate Researcher) – Fall Semester of 2015, Spring Semester of 2016

BMMB 507: Effective Scientific Communication (12 Graduate Students, 15 Weekly Lectures, Student Presentations, and Evaluations) – Fall Semester of 2014

BMMB 509: Ethics in Biomedical Science (10-27 Graduate Students, 10 Sessions)

Fall Semesters of 2017, 2018, 2019 and Spring Semesters of 2021, 2022, 2023, 2024. Pending Spring 2025.

- Major update in 2021 to better align with PHS guidelines and NIH Rigor and Reproducibility requirements.

BMMB 521, 598: Advanced Microbiology. Lectures (3) on Protozoan Pathogens. Spring Semesters of 2022, 2024

Evidence-Based Practices, Student-Centered Approaches, and Course Climate and Inclusion:

I have adopted several practices that have been shown to boost student learning gains and success, including:

- Learning Assistants (LAs) and Guided Study Groups (GSGs): Upper-level undergraduates are trained as Learning Assistants and are empowered to run problem-solving sessions using provided curricula to help their peers who are currently enrolled in the lecture course. I meet with LAs weekly to discuss the practice of teaching, as well as the course content. When student feedback presents opportunities to serve them better, we discuss potential changes and work together to implement them immediately.
- Learning Objectives: Specific goals are provided at the outset of the course and when starting each new section to allow students to know what they will gain from the course and what knowledge gains are anticipated. *Learning objectives are aligned with the teaching mission of the BMB Department.*
- Active Learning Approaches: The use of on-the-fly Q&A and other active learning activities allows me to assess student comprehension and adjust lecture content to meet student needs. We use concept mapping to allow students to connect similar ideas and biological mechanisms.
- Course Adaptations Based on Student Feedback: I adjust course operations and structure both during and after the semester in response to student feedback and requests. For example, I have reduced the impact of high-stakes exams by expanding their number and introducing frequent quizzes and team-based assessments to reinforce learning gains on a shorter iterative cycle. Additionally, I have provided the short course videos that I recorded in Summer 2020 to current students to provide another educational asset.
- Climate and Inclusion: I start the course by introducing myself, my professional and personal interests, and my teaching philosophy and prioritization of psychological safety in the course. I reinforce this throughout the semester by encouraging all students to ask questions in whatever format they feel comfortable using. For those asking questions during lectures, I ask them for their name and then repeat their question so all can hear before answering. This helps to ensure that they know I value them and their voices. Finally, I actively seek to hear the voices of those who are not quick to respond or are uncertain of themselves. Together, this helps more of my students to engage with me, one another, and the course content.
- Mentorship: Interactions with students often develop into a mentor/mentee relationship, especially when students join my group as independent researchers. In support of this, I participated in a Penn State Mentoring Workshop in Oct/Nov 2023 to better meet their needs and appropriate expectations.

Laboratory-Based Teaching and Training

Current Graduate Students:

- James McGee: 2019 – Present, Molecular Cellular and Integrative BioSciences (MCIBS) Ph.D. Program, Homer F. Braddock Scholarship (2019-2020)

Current Undergraduate Students:

- Jacob Kohler: 2024 – Present, Class of 2026
- Madison Michelitch: 2024 – Present, Class of 2026
- Brayden Wenrich: 2024 – Present, Class of 2027

Previous Post-Doctoral Scientists:

- Amy Lee Burns, Ph.D.: 2020-2021
- Bridget (Joanne) Power, Ph.D.: 2019-2021
- Megan Gragg, Ph.D.: 2018-2021 (Joint Supervision with Susan Hafenstein)
- Tanumoy Mondol, Ph.D.: 2018-2019 (Joint Supervision with Susan Hafenstein)

Previous Graduate Students:

- Rachel Krizek: 2021 – 2024, Biochemistry, Microbiology and Molecular Biology (BMMB) Ph.D. Program, Rosalind E. Franklin Science Achievement Graduate Fellow, Co-Advised with Jason Rasgon
- Aniko Verbrugge: 2021 – 2024, Biochemistry, Microbiology & Molecular Biology (BMMB) Ph.D. Program, Paul and Harriet Campbell Distinguished Graduate Fellow, and a NIGMS T32 Trainee in Eukaryotic Gene Regulation (Funded 2022-2023)
- Mitchell J. Godin: 2019-2023, Biochemistry, Microbiology & Molecular Biology (BMMB) Ph.D. Program, Homer F. Braddock and Nellie H. and Oscar L. Roberts Fellowship (2019-2020) NIGMS T32 Trainee in Eukaryotic Gene Regulation (Funded 2020-2021, Participant 2020-2023)
- Kelly T. Rios: 2015-2022, Biochemistry, Microbiology & Molecular Biology (BMMB) Ph.D. Program Bunton-Waller Fellowship (2015-2017), Graham Endowed Fellowship (2015-2016)
- Michael P. Walker: 2014-2021, Molecular Cellular & Integrative BioSciences (MCIBS) Ph.D. Program Huck Graduate Research Award (2017-2019)
- Kevin J. Hart: 2013-2018, Immunology & Infectious Diseases Ph.D. Program, Post-Doc: 2018 – 2019 Huck Graduate Research Award (2016-2018)
- Elyse E. Munoz: 2013-2016, Genetics Ph.D. Program Sloan Scholarship, National Action Council for Minorities in Engineering (2013-2016) Bunton-Waller Fellowship (2011-2014), Huck Institutes Graduate Enrichment Fund Award (2013-2016) ASM Robert D. Watkins Graduate Research Fellowship (2014-2016)

Previous Undergraduate Students:

- Leena Wardeh: 2022-2024, Class of 2024, Senior Honors Thesis, Erickson Discovery Grant
- Taylor Dickson: 2020-2020, Class of 2022, Senior Honors Thesis
- Lauren Sarko: 2018-2020, Class of 2020, Independent Research, Erickson Discovery Grant
- Leigh Smith: 2018-2020, Class of 2020, Senior Honors Thesis
- Logan Finger, MD: 2017-2019, Class of 2019, Senior Honors Thesis
- Steve Griffin: 2015-2018, Class of 2018, Independent Research, Erickson Discovery Grant
- Laura Bowman, MD: 2015-2017, Class of 2017, Senior Honors Thesis
- Erin Vrana, MD: 2014-2017, Class of 2017, Senior Honors Thesis, Erickson Discovery Grant, ASM Undergraduate Research Fellowship
- Amanda Reese, MS, MPH: 2014-2017, Class of 2017, Senior Honors Thesis, SURF Fellowship, ASM Undergraduate Research Fellowship