Elizabeth (Betsy) I. Parkinson

3608 Capilano Drive • West Lafayette, IN 47906 • (662) 820-1560 • eparkins@purdue.edu

EDUCATION

Ph.D. in Chemistry with a focus on Chemical Biology, September 2015
University of Illinois at Urbana-Champaign, Urbana, IL

Certificate in Foundations of Teaching, April 2015
University of Illinois at Urbana-Champaign, Urbana, IL

B.S. with Honors in Chemistry, May 2010
Rhodes College, Memphis, TN
Graduated *summa cum laude*, American Chemical Society certification

ACADEMIC EXPERIENCE

2025-present **Associate Professor**
Department of Chemistry and Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN

2018-2025 **Assistant Professor**
Department of Chemistry and Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN

2015-2018 **NIH Postdoctoral Fellow in Genetics, Microbiology, and Natural Product Biosynthesis**
With Professor William W. Metcalf
Department of Microbiology, University of Illinois at Urbana-Champaign, Urbana, IL

2010-2015 **NSF and ACS Graduate Research Fellow in Chemical Biology and Medicinal Chemistry**
With Professor Paul J. Hergenrother
Department of Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL

2007-2010 **St. Jude Summer Plus Undergraduate Research Fellow in Molecular Pharmacology**
With Doctor Philip M. Potter
Chemical Biology and Therapeutics, St. Jude Children's Research Hospital, Memphis, TN

PUBLICATIONS

37. Wilbanks, L.E.; Brajkovich, E.N.; Baumgart, L.; Zhang, Y.; Grosjean, N.; Blaby, I.; **Parkinson, E.I.*** "DAP-seq Reveals Cluster-Situated Regulator Control of Numerous Streptomyces Natural Product Biosynthetic Genes" Under review. **2026.** https://doi.org/10.64898/2026.01.05.697754

36. Wilbanks, L.E.; Roberts, C.B.; Frias-Gomez, M.; Hennigan, H.E.; Castator, K.G.; Budimir, Z.L. Zu,C.; **Parkinson, E.I.*** "Streptomyces Autoregulator Biosensors from Natural Product Cluster-Situated Regulators" Under review. **2026**. *bioRxiv*. https://doi.org/10.1101/2025.09.05.673737

35. Jeannette, P.L.†; Budimir, Z.L.†; Johnson, L.O.; **Parkinson, E.I.*** "Biocatalytic Tetrapeptide Macrocyclization by Cryptic Penicillin-binding Protein-type Thioesterases" Under review. **2026.** †co-first authors. *bioRxiv*. https://doi.org/10.1101/2024.11.16.623930

34. Zhang, Z.; Liu, Y.K.; Luo, M.W; Evans, C.N.; Qu, Z.; Xue, F.; Zhang, Z.Y.; **Parkinson, E.I.**; Bardeesy, N.; Tao, W.A. "Discovery of Chirally-dependent Protein O-2-Hydroxyglutarylation by D2HG and L2HG". Under review. **2026**. *bioRxiv*. https://doi.org/10.1101/2025.01.24.634716

33. Samal, S.; Nelson, S.; Du, Z.; Wang, D.; Wang, T.; Yang, C.; Deng, Q.; **Parkinson, E.I.**; Mei, J.* "Blood-Catalyzed Polymerization Creates Conductive Polymer in Live Zebrafish" Under review. **2026.** https://doi.org/10.21203/rs.3.rs-3602290/v1

33. Budimir, Z.L.; **Parkinson, E.I.*** "Discovery and development of penicillin-binding protein-type thioesterases as biocatalysts" *Curr. Opin. Biotechnol.* **2026**. *97*, 103417. https://doi.org/10.1016/j.copbio.2025.103417

32. Castator, K.G.; Frias-Gomez, M.; Wilbanks, L.E.; **Parkinson, E.I.*** "Diastereoselective, Diversifiable Synthesis and Biological Evaluation of the Virginiamycin Inducers, the Virginiae Butanolides" *ChemBioChem*. **2025**. *26*, e202500386. https://doi.org/10.1002/cbic.202500386

31. Hennigan, H.E.; Otgontseren, N. **Parkinson, E.I.*** "Rapid access to enantiopure protected (R)-paraconyl alcohol" *Org. Synth.* **2025**, *102*, 251. DOI: 10.15227/orgsyn.102.0251

30. Coy, G.†; Brajkovich, E.N. †; **Parkinson, E.I.*** "Bioinformatics guided synthesis of natural product cyclic peptides" *Methods in Enzymology*. **2025**. *717*, 387-412. †co-first authors. https://doi.org/10.1016/bs.mie.2025.03.003

29. Lu, C.†, Nelson, S.†, **Parkinson, E.I.*;** Rice, C.A.* "Discovery of antiamoebic cyclic peptides" *J. Nat. Prod.* **2025**, *88(2)*, 274-281 †co-first authors *co-corresponding authors. https://doi.org/10.1021/acs.jnatprod.4c00834

28. Nelson, S.; **Parkinson, E.I.*** "Synthetic-Bioinformatic Natural Product-Inspired Peptides" invited submission to *Nat. Prod. Rep.* **2025**. *42*, 50-66. https://doi.org/10.1039/D4NP00043A

27. Moriarty, N.M.; Benton, A.; Hanna, J.A.; **Parkinson, E.I.*** "Exploring halogenated ketone derivatives of neocarzilin A as improved antimetastatic agents" *ACS Bio & Med Chem Au,* **2024**. *22*, 879-890. https://doi.org/10.1021/acsbiomedchemau.4c00087

26. Zhong, W.†; Budimir, Z.L.†; **Parkinson, E.I.***; Agarwal, V.* "Activity and biocatalytic potential of an indolylamide generating thioesterase" *Org. Lett.* **2024.** *26, 43,* 9378–9382 †co-first authors *co-corresponding authors. https://doi.org/10.1021/acs.orglett.4c03648

25. Benton, A.; Terwillinger, E.; Moriarty, N.M.; Liu, B.; Murphy, A.; Maluvac, H.; Shu, M.; Gartenhaus, L.E.; Janson, N.D.; Pfeffer, C.M.; Utturkar, S.M.; **Parkinson, E.I.**, Lanman, N.A.; Hanna, J.A.* "miR-497 target gene regulatory network in angiosarcoma" *Mol. Cancer Res*. **2024**, *22 (9)*, 879–890. https://doi.org/10.1158/1541-7786.MCR-23-1075

24. Eggly, A.; Otgontseren, N.; Roberts, C.; Alwali, A.; Hennigan, H.; **Parkinson, E.I.*** "A Diels-Alder Probe for Discovery of Natural Products Containing Furan Moieties" Invited publication for the to the "Young Investigators in Natural Products Chemistry, Biosynthesis, and Enzymology" issue of the *Beilstein J. Org. Chem.* **2024**, *20*, 1001-1010. https://doi.org/10.3762/bjoc.20.88

23. Aguilar, C.; Alwali, A.; Mair, M.; Rodriguez-Orduña, L.; Contreras-Peruyero, H.; Modi, R.; Roberts, C.; Sélem-Mojica, N.; Licona-Cassani, C.; **Parkinson, E.I.*** "*Actinomycetota* bioprospecting from ore-forming environments" *Microb. Genom*. **2024**, *10*, 001253. https://doi.org/10.1099/mgen.0.001253

22. Alwali, A.; Santos, D.; Aguilar, C.; Birch, A.; Rodriguez-Orduna, L.; Roberts, C.; Modi, R.; Licona-Cassani, C.; **Parkinson, E.I.*** "Discovery of Streptomyces species CS-62, a novel producer of the Acinetobacter baumannii selective antibiotic factumycin" *J. Ind. Microbiol. Biotechnol.* **2024**, *51*, kuae014. https://doi.org/10.1093/jimb/kuae014

21. Nelson, S.; Harris, T.J.; Muli, C.S.; Maresch, M.E.; Baker, B.; Smith, C.; Neumann, C.; Trader, D.J.; **Parkinson, E.I.*** "Discovery and Development of Cyclic Peptide Proteasome Stimulators" *ChemBioChem.* **2024.** *25*, e202300671. https://doi.org/10.1002/cbic.202300671

20. Budimir, Z.L.; Patel, R.S.; Eggly, A.; Evans, C.N.; Rondon-Cordero, H.M.; Adams, J.J.; Das, C.; **Parkinson, E.I.*** "Biocatalytic cyclization of small macrolactams by a PBP-type thioesterase" *Nat. Chem. Biol.* **2024.** *20*, 120-128. https://doi.org/10.1038/s41589-023-01495-z

19. Alwali, A.A.; **Parkinson, E.I.*** "Small Molecule Inducers of Actinobacteria Natural Product Biosynthesis" *J. Ind. Microbiol. Biotechnol.* **2023**, *50*, kuad019. https://doi.org/10.1093/jimb/kuad019

18. Wilbanks, L.E.; Hennigan, H.E.; Martinez-Brokaw, C.D.; Lakkis, H.; Thormann, S.; Eggly, A.S.; Buechel, G.; **Parkinson, E.I.*** "Synthesis of Gamma-Butyrolactone Hormones Enables Understanding of Natural Product Induction" *ACS Chem. Biol.* **2023**, *18*, 1624-1631. https://doi.org/10.1021/acschembio.3c00241

17. Modi, R.; McKee, N.; Zhang, N.; Alwali, A.; Nelson, S.; Lohar, A.; Ostafe, R.; Zhang, D.D.; **Parkinson, E.I*** "Stapled Peptides as Direct Inhibitors of Nrf2-sMAF Transcription Factors" *J. Med. Chem*. **2023**, *66*, 6184–6192. https://doi.org/10.1021/acs.jmedchem.2c02037

16. **Parkinson, E.I.***, Alwali, A.A., Metcalf, W.W.* "An unusual oxidative rearrangement catalyzed by a divergent member of the 2-oxoglutarate dioxygenase superfamily during biosynthesis of the phosphonate natural product Dehydrofosmidomycin" *Angew. Chem. Int. Ed.* ***2022****. 61*, e202206173. https://doi.org/10.1002/anie.202206173

15. Hostetler, M.A.; Smith, C.; Nelson, S.; Budimir, Z.; Modi, R.; Woolsey, I.; Frerk, A.; Baker, B.; Gantt, J.; **Parkinson, E.I.*** "Synthetic Natural Product Inspired Cyclic Peptides" *ACS Chem. Biol.* **2021**, *16*, 2604-2611. https://doi.org/10.1021/acschembio.1c00641.

14. Schorn MA, Verhoeven S, Ridder L, Huber F, Acharya DD, Aksenov AA, Aleti G, Moghaddam JA, Aron AT, Aziz S, Bauermeister A, Bauman KD, Baunach M, Beemelmanns C, Beman JM, Berlanga-Clavero MV, Blacutt AA, Bode HB, Boullie A, Brejnrod A, Bugni TS, Calteau A, Cao L, Carrión VJ, Castelo-Branco R, Chanana S, Chase AB, Chevrette MG, Costa-Lotufo LV, Crawford JM, Currie CR, Cuypers B, Dang T, de Rond T, Demko AM, Dittmann E, Du C, Drozd C, Dujardin JC, Dutton RJ, Edlund A, Fewer DP, Garg N, Gauglitz JM, Gentry EC, Gerwick L, Glukhov E, Gross H, Gugger M, Guillén Matus DG, Helfrich EJN, Hempel BF, Hur JS, Iorio M, Jensen PR, Kang KB, Kaysser L, Kelleher NL, Kim CS, Kim KH, Koester I, König GM, Leao T, Lee SR, Lee YY, Li X, Little JC, Maloney KN, Männle D,

Martin H C, McAvoy AC, Metcalf WW, Mohimani H, Molina-Santiago C, Moore BS, Mullowney MW, Muskat M, Nothias LF, O'Neill EC, **Parkinson EI**, Petras D, Piel J, Pierce EC, Pires K, Reher R, Romero D, Roper MC, Rust M, Saad H, Saenz C, Sanchez LM, Sørensen SJ, Sosio M, Süssmuth RD, Sweeney D, Tahlan K, Thomson RJ, Tobias NJ, Trindade-Silva AE, van Wezel GP, Wang M, Weldon KC, Zhang F, Ziemert N, Duncan KR, Crüsemann M, Rogers S, Dorrestein PC, Medema MH, van der Hooft JJJ. "A community resource for paired genomic and metabolomic data mining." *Nat Chem Biol.* **2021**. *17,* 363-368. https://doi.org/10.1038/s41589-020-00724-z PubMed PMID: 33589842.

13. Lundberg, A.P.; Boudreau, M.W.; Selting, K.A.; Chatkewitz, L.E.; Samuelson, J.; Francis, J.M.; **Parkinson, E.I.**; Barger, A.M.; Hergenrother, P.J.; Fan, T.M. *Neoplasia*. **2021**, *23*, 811-822. https://doi.org/10.1016/j.neo.2021.06.008

12. Navarro-Muñoz, J.C.; Selem-Mojica, N.; Mullowney, M.W.; Kautsar, S.; Tryon, J.H.; **Parkinson, E.I.**; De Los Santos, E.L.C.; Yeong, M.; Cruz-Morales, P.; Abubucker, S.; Roeters, A.; Lokhorst, W.; Fernandez-Guerra, A.; Cappelini, L.T.D; Thomson, R.J.; Metcalf, W.W.; Kelleher, N.L.; Barona-Gomez, F.; Medema, M.H, "A computational framework to explore large-scale biosynthetic diversity." *Nat. Chem. Biol*. **2020**, 16, 60. doi: 10.1038/s41589-019-0400-9.

11. **Parkinson, E.I**.; Erb, A.; Eliot, A.C.; Ju, K.S.; Metcalf, W.W. "Fosmidomycin biosynthesis diverges from related phosphonate natural products." *Nat. Chem. Biol*. **2019**, 15, 1049. doi: 10.1038/s41589-019-0343-1.

10. **Parkinson, E.I.**; Goering, A.W.; Tryon, J.H.; Ju, K.; McClure, R.A.; Kemball, J.D.; Zhukovsky, S.; Thomson, R.J.; Kelleher, N.L.; Metcalf, W.W. "Discovery of the Tyrobetaine Natural Product Family and Their Biosynthesis Using Metabologenomics." *ACS. Chem. Biol.* **2018**, *13*,1029. **DOI:** 10.1021/acschembio.7b01089

9. Lee, HY.; **Parkinson, E.I**.; Granchi, C.; Panigrahy, D.; Seth, P.; Minutolo, F.; Hergenrother, P.J. "Reactive Oxygen Species Synergize to Potently and Selectively Induce Cancer Cell Death". *ACS Chem. Biol.* **2017**, *12,* 1416. **DOI:** 10.1021/acschembio.7b00015

8. Lundberg, A.P.; Francis, J.M.; Pojaka, M.; **Parkinson, E.I.**; Wycisloc, K.; Rosold, T.J.; Browne, M.E.; Londond, C.A.; Dirikoluf, L.; Hergenrother, P.J.; Fan, T.M. "Pharmacokinetics and derivation of an anticancer dosing regimen for the novel anti-cancer agent isobutyl-deoxynyboquinone (IB-DNQ) in the domestic felid species." *Invest. New Drugs.* **2017**, *35*, 134. **DOI**:10.1007/s10637-016-0414-z.

7. **Parkinson, E.I.**; Hergenrother, P.J. "Deoxynyboquinones as Personalized Cancer Therapeutics." *Acc. Chem. Res.* **2015**, *48*, 2715. **DOI:** 10.1021/acs.accounts.5b00365

6. **Parkinson, E.I.**; Bair, J.S.; Nakamura, B.A.; Lee, H.Y.; Kuttab, H.K.; Southgate, E.S.; Lau, G.W.; Hergenrother, P.J. "Deoxynybomycins Inhibit Mutant DNA Gyrase and Rescue Mice Infected with Fluoroquinolone-Resistant Bacteria." *Nat. Commun.* **2015**, *6*, 6947. **DOI:** 10.1038/ncomms7947

5. Granger, B. A.; Jewett, I, T.; Butler, J. D.; Hua, B.; Knezevic, C. E.; **Parkinson, E.I**.; Hergenrother, P. J.; Martin, S. F **"**Synthesis of (±)-Actinophyllic Acid and Analogs: Applications of Cascade Reactions and Diverted Total Synthesis." *J. Am. Chem. Soc.* **2013,** *135*,12984-12986. **DOI:** 10.1021/ja4070206

4. **Parkinson, E.I**.; Bair, J.S.; Cismesia, M. Hergenrother, P.J. "Efficient NQO1 Substrates are Potent and Selective Anticancer Agents." *ACS Chem. Biol.* **2013**, *8*, 2173-2183, **DOI:** 10.1021/cb4005832

3. Huang, X.; Dong, Y.; Bey, E.A.; Kilgore, J.A.; Bair, J.S.; Li, L.; Patel, M.; **Parkinson, E.I.**; Wang, Y.; Williams, N.S.; Gao, J.; Hergenrother, P.J.; Boothman, D.A. "An NQO1 Substrate with Potent Antitumor Activity that Selectively Kills by PARP1-Induced Programmed Necrosis." *Cancer Res.* **2012**, *72*, 3038-3047,

2. **Parkinson, E.I.**; Hergenrother, P.J. "Runaway ROS as a Selective Anticancer Strategy." *ChemMedChem.* **2011,** *6,* 1957-1959, **DOI**: 10.1002/cmdc.201100381.

1.**Parkinson, E.I.;** Hatfield, J.M.; Tsurkan, L.; Hyatt, J.L.; Edwards, C.C.; Hicks, L.D.; Yan, B.; Potter, P.M. "Requirements for mammalian carboxylesterase inhibition by substituted ethane-1,2-diones." *Bioorg. Med. Chem.* **2011,** *29*, 4635-4643, **DOI**: 10.1016/j.bmc.2011.06.012.

PATENTS

10. **Parkinson, E.I.**; Rice, C.A.; Coy, G.; Lu, C.; Nelson, S. "Discovery of Cyclic Peptide Natural Product Inhibitors of Free Living Amoeba." Application No: 63/720,864; filed on Nov. 15, 2024

9. **Parkinson, E.I.;** Hanna, J.; Moriarty, N.; Powell, A. "Neocarzilin A Derivatives as Antimetastasis Agents." Application No: 63/711,951; filed on Oct. 25, 2024

8. **Parkinson, E.I.**; Das, C.; Budimir, Z.; Patel, R. "Biocatalytic Cyclization Method for Preparation of Cyclic Peptides". Application Number: 63524777. Filing Date: July 3, 2023

7. **Parkinson, E.I.;** Trader, D.; Nelson, S. "Cyclic Peptides as Proteasome Stimulators" Application Number: 63536122. Filing Date: September 1, 2023

6. **Parkinson, E.I.;** Modi, R. "Stapled Peptides for Sensitization of Cancer to Treatment" Application No: PCT/US23/84473. Filing date: December 16, 2023.

5. **Parkinson, E.I.**; Hostetler, M.A. "Bioactive Peptide Molecules Discovered by a Combination of Bioinformatics Technique and Chemical Synthesis." Application No: 17/679,240; Issue Date: 23-Jan-2024; Patent No. 11879142

4. Hergenrother, P.J.; **Parkinson, E.I.**; Bair, J.S. 2015. Compounds for treatment of fluoroquinolone-resistant bacteria. WO 2015142952 Issued Sep. 24, 2015.

3. Hergenrother, P. J.; Knezevic, C. E.; **Parkinson, E. I.**; Martin, S. F.; Granger, B. A. 2015. Anticancer Agents. WO 2015006615 Issued Jan. 15, 2015.

2. Hergenrother, P.J.; Boothman, D.A.; Bair, J.S.; Cao, L.; Gao, J.; Huang, X.; Luo, X.; Ma, X.; Moore, Z.R.; **Parkinson, E.I.** 2014. Tumor Selective Combination Therapy. WO 2014168991 Issued Oct. 16, 2014.

1. Hergenrother, P.J.; Boothman, D.A.; Bair, J.S.; Palchaudhuri, R.; **Parkinson, E.I.** 2013. Preparation of antitumor NAD(P)H quinone oxidoreductase substrates. WO2013056073 Issued April 18, 2013; CA 2887648 Issued April 18, 2013; EP 2768308 Issued Aug. 27, 2014; US 20150011509 Issued Jan. 8, 2015.

HONORS AND AWARDS

Early Career Research Achievement Award, PICR, 2025
Society for Industrial Microbiology and Biotechnology (SIMB) Early Career Awardee, 2024
American Peptide Society Early Career Lectureship Awardee, 2024
ACS Bio & Med Chem Au Rising Star, 2024
Exceptional Early Career Teaching Award, Purdue University, 2024
College of Science Faculty Award for Outstanding Contributions to Undergraduate Teaching by an Assistant Professor, Purdue University, 2024
Organic Division Young Academic Investigator, American Chemical Society, 2024
NSF CAREER Award, 2023
Christian J. Foster Award for outstanding contributions to K-12 science, technology, engineering and math (STEM) education in Indiana, Purdue University, 2023
-Awarded due to my development and implementation of labs for high schools and children's museums
College of Pharmacy Bravo Award, Purdue University, 2022
-Awarded for my efforts towards improving graduate student mental health
College of Science Faculty and Staff Leadership Award, Purdue University, 2021
-Awarded for my efforts towards improving graduate student mental health
Arthur Kelley Undergraduate Teaching Award, Chemistry Department, Purdue University, 2021
NIH Ruth L. Kirschstein National Research Service Award, F32, 2017-2019
School of Chemical Sciences Graduate Student Teaching Award, UIUC, 2014-2015
UIUC List of Teachers Ranked as Excellent by Their Students, 2014
R.C. Fuson Fellowship, Chemistry Department, UIUC, 2013-2014
ACS Medicinal Chemistry Pre-Doctoral Fellowship, 2013-2014
National Science Foundation Graduate Research Fellow, 2010-2013
Phi Beta Kappa, 2009
William Spandow Scholarship in Chemistry, Rhodes College, 2009
Barry M. Goldwater Scholarship, 2008
Rhodes College Organic Chemistry Award, 2008
Rhodes College First-year Biology Award, 2008
CRC First-year Chemistry Award, Rhodes College, 2007

TEACHING EXPERIENCE

Fall 2025, **Co-Instructor, Organic Chemistry II (PHSC 205)**
Purdue University, West Lafayette, IN (9 lectures, ~200 students)

Spring 2025, **Instructor, Chemical Biology Capstone (CHM 499)**
Purdue University, West Lafayette, IN (1 lecture & 2 labs a week; 10 students)
- Developed a new capstone course for chemical biology seniors that incorporates lectures of basics of chemical biology and a course based undergraduate research experience in chemical biology

Spring 2021, 2023 **Instructor, Bioorganic Chemistry (CHM 656)**
Purdue University, West Lafayette, IN (3 lectures a week; 20 students)
- Developed a new course on natural product biosynthetic pathways and biocatalysis; focused on understanding biosynthetic logic and enzyme mechanisms

Spring 2020, 2022, 2024 **Co-Instructor, Organic Chemistry I (MCMP 204)**
Purdue University, West Lafayette, IN (7 lectures, 235 students in 2020; 14 lectures, 182 students in 2022)

Fall 2018, 2019, 2020, 2021, 2022, 2024 **Instructor, Organic Chemistry I (CHM 255)**
Purdue University, West Lafayette, IN

TRAINING IN TEACHING

Summer 2020 **IMPACT-X**
Guides instructors through the major principles of course design

Spring 2017 **Educational Organization & Leadership 585: College Teaching (audited)**
Profs. Michel Bellini, Cheelan Bo-Linn, Faye Lesht, *University of Illinois, Urbana, IL*

Spring 2016 **Chemistry 590F: Preparing Future Faculty (audited)**
Prof. Steven Zimmerman*, University of Illinois, Urbana, IL*

LEADERSHIP ROLES AND SERVICE (*Public Outreach)

2025 – 2031 **Councilor for the American Peptide Society**

August 2024-Present **Natural Products and Bioactive Compounds Gordon Research Conference (GRC)**
Power Hour co-organizer for 2024 meeting;
Co-vice chair for 2025 meeting; Co-chair elect for 2027 meeting

August 2022 & August 2024 **Modern Natural Products Discovery Session at the SIMB Annual Meeting**
Co-convener for both the 2022 and 2024 meeting

May 2021-Present **Chair of the Purdue Chemistry Department Committee on Graduate Student Mental Health**
Committee founder; *goal is to raise awareness of mental health resources*

Jan 2021-Present *__Development and implementation of a high school lab focused on natural product isolation__
The goal of this laboratory is to inspire high school students to have an interest in science.

May 2022-Present *__Development and implementation of a lab for children focused on natural product isolation__
The goal of this laboratory is to inspire children to have an interest in science.

October 2022-Present **Faculty Advisor to the Purdue University Notre Dame Student Symposium in Chemistry and Medicinal Chemistry**

December 2020-March 2022 **Faculty Advisor to the Purdue Graduate Student Symposium Planning Committee**

February 2020 *__Superheroes of Science Guest__

June 2015-June 2017 **High Throughput Chemistry and Chemical Biology Gordon Research Seminar (GRS)**
Chair for 2017 meeting; Co-chair for 2015 meeting
Colby Sawyer College, New London, NH and Proctor Academy, Andover, NH

June 2016-June 2017 **Institute for Genomic Biology Postdoctoral Association, Co-chair**
Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana-Champaign, Urbana, IL

May 2017 ***The World of Genomics, Volunteer**
The Field Museum of Natural History, Chicago, IL
Explained drug discovery and the problem of antimicrobial resistance to museum visitors

March 2016 **Mining Microbial Genomes Symposium, Co-chair**
Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana-Champaign, Urbana, IL

2010-2018 ***Encouraging Tomorrow's Chemists, Co-coordinator, 2012-2013; volunteer, 2010-2018**
University of Illinois at Urbana-Champaign, Urbana, IL
Planned and volunteered at chemistry demonstrations for local middle and elementary schools

2011-2015 ***Women Chemists Committee Girls Day Camp, Coordinator, 2012; Station Leader, 2013; volunteer, 2011-2015**
University of Illinois at Urbana-Champaign, Urbana, IL
Planned and volunteered at a day camp for 90 middle school girls with scientific experiment stations

PRESENTATIONS (Independent Career Only)

71. Ardvarks to Zebus, Challenging Chemistry Targets and Innovative Solutions in Synthetic, Medicinal and Biological Peptide and Protein Science, Pacifichem 2025, Honolulu, HI, December 15, 2025

70. Biosynthesis of Natural Products and Biomaterials Session, Pacifichem 2025, Honolulu, HI, December 15, 2025
69. Department of Chemistry, Australian National University, Canberra, Australia, October 19, 2025
68. 16th Australian Peptide Conference, Launceston, Tasmania, Australia, October 13, 2025
67. Department of Chemistry, University of Sydney, Sydney, Australia, October 9, 2025
66. Institute for Molecular Bioscience, University of Queensland, Brisbane, Australia, October 6, 2025
65. Department of Chemistry, University of South Florida, Tampa, FL, September 23, 2025
64. Department of Chemistry, University of Wisconsin-Oshkosh, Oshkosh, WI, September 19, 2025 (virtual)
63. Department of Chemistry, Queens University, Kingston, Ontario, Canada, July 15, 2025
62. 2025 Physical Organic Chemistry Gordon Research Conference, Holderness, NH, June 26, 2025
61. 29th American Peptide Symposium & 15th International Peptide Symposium, San Diego, CA, June 16, 2025
60. ACSMEDI - EFMC Medicinal Chemistry Frontiers 2025, Chicago, IL, May 15, 2025
59. ACS Spring 2025 Meeting & Expo, San Diego, CA, March 24, 2025
58. Department of Chemistry, University of Nebraska-Lincoln, March 14, 2025
57. Department of Chemistry, University of Pennsylvania, March 5, 2025
56. Department of Chemistry, University of Utah, February 27, 2025
55. CAN Seminar, Corteva Agriscience, February 13, 2025
54. Department of Chemistry, UF Scripps Institute for Biomedical Innovation and Technology, January 30, 2025
53. Department of Chemistry, Rose-Hulman Institute of Technology, January 22, 2025
52. 2025 Natural Product Discovery and Development in the Genomic Era Society for Industrial Microbiology and Biotechnology Conference, San Diego, CA, January 8, 2025
51. Department of Chemistry, Alfred University, November 2024 (Virtual)
50. Department of Chemistry, Ball State, September 2024
49. Department of Chemistry, University of Michigan, September 2024
48. ACS Fall 2024, Denver, CO, August 2024
47. 2024 US-Japan Seminar on Biosynthesis of Natural Products, Karuizawa, Japan, May 2024
46. 4th Synthetic Biology of Natural Products Fusion Conference, Cancun, Mexico, May 2024
45. Department of Chemistry and Biochemistry, University of Texas at Dallas, Dallas, TX, April 26, 2024
44. Department of Chemistry, Emory University, Atlanta, GA, April 17, 2024
43. Department of Chemistry, Georgia Tech, Atlanta, GA, April 16, 2024
42. 2024 Marine Natural Products Gordon Research Conference, Ventura, CA, March 2024
41. 2024 Chemistry and Biology of Peptides Gordon Research Conference, Ventura, CA, February 2024
40. Department of Chemistry, University of Cincinnati, Cincinatti, OH, January 19, 2024
39. Department of Chemistry, Northern Kentucky University, Highland Heights, KY, January 17, 2024
38. Department of Chemistry, University of California Santa Cruz, Santa Cruz, CA, November 27, 2023
37. Department of Chemistry, Washington University in St. Louis, St. Louis, MO, October 26, 2023
36. 2023 Joint Midwest and Great Lakes Regional ACS Meeting, St. Louis, MO, October 20, 2023
35. Department of Chemistry, University of Illinois at Urbana Champaign, Urbana, IL October 5, 2023
34. Department of Chemistry, Vanderbilt University, Nashville, TN, Sept. 26, 2023
33. Chemical Biology Initiative, University of Minnesota, Minneaspolis, MN, Sept. 21, 2023
32. Department of Chemistry, University of Wisconsin Madison, Madison, WI, Sept. 12, 2023
31. Department of Molecular and Cellular Biochemistry, Indiana University, Bloomington, IN, Sept. 1, 2023
30. Pharmaceutical Sciences Department, University of Kentucky, Lexington, KY, August 29, 2023
29. 2023 Natural Products & Bioactive Compounds Gordon Research Conference, Andover, NH, August 3,2023
28. 2023 Enzymes, Coenzymes, & Metabolic Pathways GRC, Waterville Valley, NH, July 2023
27. 28th American Peptide Symposium, Scottsdale, AZ, June 27, 2023
26. 2023 Mid-Atlantic Graduate Student Symposium (MAGSS), The Ohio State University, Columbus, OH, June 2023
25. Canadian Chemistry Conference and Exhibition 2023, Vancouver, Canada, June 8, 2023
24. Department of Chemistry & Biochemistry, University of California San Diego, San Diego, CA, May 15, 2023
23. Department of Biological Sciences, University of Alabama, Tuscaloosa, AL, April 14, 2023
22. 2023 Antimicrobial Resistance (AMR) Conference: Determinants, Dynamyics, and Deterrence of Drug Resistance, Purdue University, April 6, 2023
21. Society for Industiral Microbiology and Biotechnology (SIMB) 4th International Conference on Natural Product Discovery and Development in the Genomic Era, San Diego, CA, January 2023
20. Department of Chemistry, University of North Carolina at Greensboro, Greensboro, NC, October 13, 2022
19. Department of Chemistry and Biochemistry, Purdue University Fort Wayne, Fort Wayne, IN October 7, 2022
18. Department of Chemistry, University of Nevada at Reno, Reno, NV, September 30, 2022
17. Purdue Institute of Inflammation, Immunology, and Infectious Disease (PI4D) Symposium Research Recap, West Lafayette, IN, September 23, 2022
16. American Chemical Society Fall 2022 Meeting, Chicago, IL, August 2022
15. 2022 Society for Industrial Microbiology and Biotechnology Annual Meeting, San Francisco, CA, August 2022

14. 2022 American Society of Pharmacognosy: Natural Product Solutions to Global Challenges, Charleston, SC, July 2022
13. Novo Nodisk Foundation Science Cluster: Natural Products (Meta) Genome Mining, Copenhagen, Denmark, May 2022
12. The Hitchhiker's Guide to the Biomolecular Galaxy, West Lafayette, IN, May 2022
11. Illinois State University Department of Chemistry, Normal, IL, April 22, 2022
10. 2021 Society for Industrial Microbiology and Biotechnology Annual Meeting, Austin, TX, August 2021
9. University of California Santa Barbara Chemistry and Biochemistry Colloquium, June 2, 2021 (Virtual)
8. Cinvestav UGA-LANGEBIO, Irapuato, Mexico, March 23, 2021 (Virtual)
7. Purdue Center for Cancer Research Discover to Translation Seminar Series, December 9, 2020
6. Department of Chemistry, Rhodes College, November 10, 2020 (Virtual)
5. Department of Pharmaceutical Sciences, University of Illinois Chicago, September 23, 2020 (Virtual)
4. 2019 Society for Industrial Microbiology and Biotechnology Annual Meeting, Washington D.C., July 2019
3. Department of Biochemistry, Purdue University, West Lafayette, IN, January 2019
2. MCMP Departmental Retreat, Purdue University, Turkey Run, IN, October 2018
1. Drug Discovery Symposium, Purdue University, West Lafayette, IN, September 2018

CURRENT GRANTS

Maximizing Investigators' Research Award (R35GM138002)
Title: Mining Cryptic Biosynthetic Gene Clusters for Novel Bioactive Compounds
07/01/2020 – 05/31/2030
Role: PI; Initial Sponsor Award: $1,852,360 ($1,250,000 direct cost)
Instrument Supplement: $101,000 for purchase of an UPLC-HRMS
Renewal Sponsor Award: $2,211,006 ($1,375,000 direct cost and $126,977 for peptide synthesizer)

Herman Frasch Foundation Grant, American Chemical Society
Title: Streptomyces Hormones as Quorum Sensing Inhibitors for Phytopathogens
07/01/2022 – 06/30/2027
Role: PI; Total Sponsor Award: $250,000

Joint Genome Institute, Department of Energy
Title: Evaluation of the Gamma-Butyrolactone Repressors of Streptomyces Natural Product Biosynthetic Gene Clusters
07/01/2022—06/30/2026
Role: PI; This grant does not have a monetary amount. Instead, they provide synthesized DNA (2200 constructs, 467 KB total) and DAP-seq services

National Science Foundation (CHE 2236897)
Title: CAREER: A Multidisciplinary Approach for the Discovery and Characterization of Hormone Inducers of Natural Product Biosynthetic Gene Clusters
02/01/2023-01/31/2028
Role: PI; Total Sponsor Award: $759,423.00

COMPLETED GRANTS

Ralph W. and Grace M. Showalter Research Trust
Title: Discovery of Bioactive Natural Products by Inducing Biosynthetic Gene Clusters
07/01/19-06/30/20
Role: PI; Total Sponsor Award: $75,000 ($60,000 direct cost)

Robbers New Investigator Award
Title: Development of Stapled Peptides as Nrf2 MafG Inhibitors for the Treatment of Cancer
07/01/2020-07/01/2021
Role: PI; Total Sponsor Award: $30,000 direct cost

PIDD Institutional Programatic Areas
Title: The seeds of destruction: Identification of dominant interfering SARS-CoV-2 peptides for the development of new antiviral drugs
2021-2021
Role: Co-PI with Prof. Doug LaCount and Prof. Richard Kuhn;
Total Sponsor Award: $50,000 direct cost (Parkinson Lab: $15,000)

PICR Shared Resource Project
Title: Development of Neocarzilin A Derivatives as Antimetastasis Agents Targeting VAT1
02/01/2024-07/31/2024
Role: PI; Total Sponsor Award: $6000 to be used at the Biological Evaluation Core

PIDD EAB Award
Title: First-in-class bacterial peptide hits as potential novel anti-Balamuthia mandrillaris therapeutics
Funding Period: 06/16/2024-06/15/2025
Role: PI with co-PIs Prof. Christopher Rice and Prof. Bryon Drown;
Total Award: $35,000 (Parkinson Lab: $10,000)