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Senior Associate Dean, Franklin College of Arts and Science  
Professor of Biochemistry  
University of Georgia

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**EDUCATION**

**Duke University**  
Postdoctoral Teaching Fellow, 1999-2001

**University of Kentucky**  
Ph.D., Biochemistry, 1999

**Southern Wesleyan University**  
B.S., Biology, *summa cum laude*, 1994

**PROFESSIONAL APPOINTMENTS**

**University of Georgia, Franklin College of Arts and Sciences**  
Senior Associate Dean, 2024-present

**University of Georgia, Franklin College of Arts and Sciences**  
Associate Dean, 2021-2024

**University of Georgia, Department of Biochemistry and Molecular Biology**  
Professor, 2020-present  
Associate Professor, 2014-2020  
Assistant Professor, 2012-2014

**University of Georgia, Scientists Engaged in Education Research Center**  
Executive Director, 2016-2023

**University of Georgia, Division of Biological Sciences and Department of Plant Biology**  
Assistant Professor, 2009-2012

**University of Georgia, Department of Mathematics, Science, and Social Studies Education**  
Courtesy Faculty, 2011-present

**Duke University, Trinity College of Arts and Sciences, Office of Assessment**  
Research Associate, 2006-2008

**Duke University, Department of Biology**  
Assistant Professor of the Practice, 2001-2008  
Postdoctoral Teaching Fellow and Instructor, 1999-2001

**Lenoir-Rhyne College, Department of Biology**  
Adjunct Professor, 2007

**ADMINISTRATIVE, LEADERSHIP AND ACADEMIC EXPERIENCE AT UNIVERSITY OF GEORGIA**

**Senior Associate Dean of Franklin College of Arts and Sciences, 2024 - present**

Current portfolio includes: Represent the Dean in her absence, strategic projects as appointed by the Dean, administer Franklin's Office of Academic Innovation. The Office of Academic Innovation aims to transform the curricular and academic environment of the college so that we reach new populations of students, advance our undergraduate and graduate programs, develop students as career leaders, and strengthen student, faculty, and staff community. The office oversees all of graduate and undergraduate education, including more than 80 academic programs. I also oversee two administrative fellows for academic innovation, faculty who receive additional support to pursue defined projects that advance the mission of the office and to receive leadership development.

**PRIORITY INITIATIVES INCLUDE:**

**Create and seek approval for new academic programs that focus on multidisciplinary collaboration** across Franklin's arts, humanities, and sciences departments. These include online Master's program, including online MS programs in Applied Data Science and Environmental Geology that should be approved for launch in Fall 2025. These also include undergraduate programs in Neuroscience, Data Visualization, and Technical Writing.

**Provide leadership development and support for graduate and undergraduate coordinators.** These more than 60 faculty leaders across the college receive mentorship, support through workshops, feedback on their programs, and ideas for continuous improvement of student success and program outcomes.

**Create better systems for data collection and sharing back to stakeholders for our graduate programs** (i.e., improve the use of survey data, develop models for visualizing and communicating program outcome data, develop rubrics for graduate programs to self-assess program quality). Working with graduate assistants and graduate coordinators we seek to collect and more effectively analyze and communicate data that will help potential and current students enhance their self-advocacy, productivity, and development as career leaders.

**Develop new career-leadership opportunities for students.** Drawing upon current models within Franklin and at our peer and aspirational institutions we seek to build a network of courses, internship coordinators, online resources, career fairs, alumni, mentors, and business partners who enable our arts, humanities, and sciences undergraduates and graduates to define exciting, purposeful, world-changing careers that work across and in the spaces between our diverse disciplines.

**Enhance the Franklin student, staff, and faculty community.** In partnership with Franklin's Marketing and Communications and Development offices, we are creating events, creative materials, and messaging to build a shared identity among our students, faculty and staff.

**Associate Dean of Franklin College of Arts and Sciences, 2021 – 2024**

Current portfolio includes: Social Sciences, with 5 departments, 1 institute, and 1 cross-college undergraduate program; Graduate Education, with oversight of 38 degree- or certificate-granting programs, 2 fellowship competitions, and multiple scholarships; Strategic Planning for marketing and communications in consultation with SimpsonScarborough. Previous portfolio: Supplemental Instructional Budget of \$19 million annually; enrollment management of all Franklin College courses for fall and spring semesters; liaison to the Jere W. Morehead Honors College, strategic work at the request of the Office of Instruction.

**PRIORITY INITIATIVES INCLUDED:**

**Leadership of graduate programs** to improve recruitment, transparency and equity in program expectations, and mentorship: creating several new online MS degree programs in Data Science; created a new protocol for assessing graduate program diversity and success in order to allocate fellowships to departments; collaborated with graduate coordinators to draft a successful proposal to address concerns about English Language proficiency requirements for Graduate Teaching Assistants; supported individual academic units to clarify their expectations of graduate students and improve mentorship.

**Leadership of the College marketing and communications** effort in consultation with SimpsonScarborough. Organized staff in the Dean's office and across the College to provide data, facilitate feedback groups and forums, offer insights and guidance on SimpsonScarborough's work, and provided overall project management. This work led to updated positioning, branding and creative materials for the college to use in marketing and communications and a new Executive Director of Marketing and Communications.

**Administration of the Supplemental Instructional Budget** to improve communication with stakeholders, including department heads, directors, and graduate coordinators: created a task force of

department heads and graduate coordinators to learn more about the opportunities and challenges with the instructional budget; administered a college-wide survey of instructional-budget utilization, needs, and ideas for innovation; developed educational materials for department heads and directors to improve their knowledge of the budget's purposes and their latitude to use the funds within those purposes.

**Leadership of social sciences units to grow research** through the development of two successful applications for the President's Hiring Initiative on Data Science & Artificial Intelligence (AI) in Computational Social Sciences and the Scholarship of Teaching and Learning; collaborated with Heads in Franklin and Deans and Heads in the School of Political and Public and International Affairs (SPIA), College of Public Health, and Mary Frances Early College of Education (MFE COE); shepherded the creation of a cluster proposal for the Social and Behavioral Dynamics of Health, Well-Being, and Security that resulted in 2 faculty positions in Franklin (Psychology and Sociology) and 2 in SPIA/Public Health; shepherded the creation of a cluster proposal in Leveraging Data Science and AI to Advance Teaching and Learning that resulted in 4 new faculty positions in Franklin (Chemistry, Classics, Microbiology, and Physics) and 2 in MFE COE.

**Leadership of Franklin units to promote inclusive excellence in their work** through leadership of a pilot program on faculty service workloads and perceptions of equity: collaborated with Associate Dean Jamie Kreiner (Franklin) to lead 13 Franklin units to implement a national model on equity in service allocations; recruited volunteer units; provided Department Heads / Directors with surveys to gather data from their faculty on the types of service they conduct and time spent on each type and faculty perceptions of service equity in the department; led Heads / Directors to share these data back to faculty and to create action plans for changes in service transparency and equity in the unit.

**Cooperation with the Office of Instruction to manage enrollment** in response to a nearly 10% increase in the size of the incoming first-year class: collaborated with Associate Dean Tom Mote (Franklin), the Franklin College Business Office, and Heads / Directors to write a proposal to meet the estimated 600-student increase in the Fall 2022 first-year class; secured \$1.8 million in funding from the Office of Instruction to hire 15 new staff and numerous Graduate Teaching Assistants to meet the needs of the 2022 incoming first-year class; managed funding again in 2023 to meet ongoing demands in enrollment growth.

**Cooperation with the Honors College to administer contracts and strategize about new course offerings:** worked with Dean Meg Amstutz on Franklin's Honors-course offerings and with Lead Advisor Steven Honea to promote enrollment in Honors courses.

### **Executive Director of the Scientists Engaged in Education Research Center, 2016 – 2023**

#### PRIORITY INITIATIVES INCLUDED:

**Grant-writing and grant support** to secure millions of dollars in funding for STEM education research and programming; serve as Principal Investigator for the UGA DeLTA project, a \$3 million grant from the National Science Foundation focused on institutional transformation in STEM education; collaborated with a team of SEER Center members to secure \$500,000 from the Howard Hughes Medical Institute to implement evidence-based teaching evaluation practices that improve the fairness and trustworthiness of teaching evaluation; collaborated on numerous other federal grants to promote STEM education research; created procedures for SEER Center members to determine pathways for IDC returns to support departments and the SEER Center; collaborated cross-campus to bring Grant Central to campus for a one-day workshop.

**Establishment of SEER Center administrative structure and reporting lines** to ensure that the center functions within university policy and with fairness and transparency: served as founding Executive Director; led the creation of an Executive Committee; worked with the Executive Committee and the Office of Research to affiliate with the Owens Institute for Behavioral Research; led the Executive Committee to establish by-laws and standard operating procedures.

**Creation and promotion of seminars, workshops, and symposia** to promote STEM education research and to help researchers develop their methodological and theoretical expertise and their knowledge of the field: led the Executive Committee to create a methodology workshop series, administer an annual research symposium, and offer numerous seminars.

### **Leader, Biology Education Research Interdisciplinary Group, Integrated Life Sciences Graduate Program, 2015 – 2021**

Collaborated with peers in the Biochemistry, Cell Biology, Genetics, and Plant Biology Departments of Franklin College to create this interdisciplinary recruiting portal that identifies prospective students interested in biology education research, guides them to appropriate lab groups, and offers guidance about their course of study while at the university.

### **Campus Leadership and Service**

- Search committee member for university-level administrative positions: Associate Vice President for Instruction, 2023; Quality Enhancement Plan Director, 2022; Center for Teaching and Learning Assistant Director, 2015
- Search committee member for college and department-level positions: Biology Division Lecturer, 2019; Biochemistry and Molecular Biology Lecturer, 2017-2018; UGA Athletic Association Endowed Professorship in Science Education Research, 2014 – 2016; Department Head for Biochemistry and Molecular Biology, 2014; Senior Scholar in Biology Education, 2010-2011
- Committee member for university-level work: University Curriculum Committee and Executive Committee, 2023-present; Owens Institute for Behavioral Research Executive Committee, UGA, 2017-present; Quality Enhancement Plan Development and Implementation Committee, 2021-2022; Program Review and Assessment Committee, 2019 – 2022; Task Force on Gateway Courses, UGA, 2017-2018; Provost's Committee on External Faculty Awards, 2017; Research Scientist Promotion Committee in the Office of the Vice President for Research, 2015-2017; Clicker System Committee of UGA's Center for Teaching and Learning, 2011
- Committee member for Department of Biochemistry and Molecular Biology: Awards Committee, 2020-present; Assessment Committee, 2017-2022; Undergraduate Affairs Committee, 2014 – 2022; Diversity and Inclusion Committee (Chair), 2020 – 2021; Executive Committee, 2016 – 2021; Undergraduate Adviser, 2014 – 2015
- Representative of the university to external stakeholders: Association of American Universities and the National Science Foundation, participant in workshop on Essential Questions and Measures: Assessing Institutional Transformation of Undergraduate STEM Education, 2019; Southeastern Regional Pulse (Partnership for Undergraduate Life Sciences Education) Institute, Wofford College, June 2016; The Reinvention Center Assessment Network, Fall 2009

### **Disciplinary Leadership and Service in Biology Education Research**

- American Society for Biochemistry and Molecular Biology, Education and Professional Development Committee, 2022 - present
- *CBE-Life Sciences Education*, Monitoring Editor, 2021 – present
- National Science Foundation-funded projects, Advisory Board member on more than 8 projects, 2009 – present
- Undergraduate Biology Education Gordon Research Conference, Co-Vice Chair for 2023 conference
- *Course Source*, Editor, 2020 – 2022
- Gordon Research Conference on Undergraduate Biology Education, Discussion Leader, 2019
- Society for the Advancement of Biology Education Research, Membership Committee, 2012 – 2015

## **SELECTED AWARDS AND DISTINCTIONS**

### **United States Government**

Presidential Early Career Award for Scientists and Engineers, 2019

### **Science**

Editor's Choice for Lemons, P.P. and Lemons, J.D. Questions for Assessing Higher-Order Cognitive Skills: It's Not Just Bloom's. *CBE-Life Sciences Education*; March 22, 2013

### **National Academies of Science**

Education Fellow in the Life Sciences, 2010-2011

### **University System of Georgia Board of Regent's**

Excellence in Teaching Award, 2015

### **University of Georgia**

University Professorship, 2024-present

Teaching Academy, 2022 - present

Southeastern Conference Academic Leadership Development Program, 2023-2024

University of Georgia Women's Leadership Fellows Program, 2022-2023  
Franklin College of Arts and Sciences, Sandy Beaver Teaching Professorship, 2021-2023  
Owens Institute for Behavioral Research Distinguished Scholar, 2018-present  
Study in a Second Discipline program, 2017-2018  
Writing Fellow, 2009-2010

#### **Southern Wesleyan University**

Honorary Doctor of Science, 2019  
Alumni Association Professional Excellence Award, 2019  
Young Leader Alumni Award, 2002

#### **Duke University**

Center for Teaching, Learning, and Writing Senior Fellow, 2000-2003

### **TEACHING**

#### **University of Georgia**

Introductory Biochemistry and Molecular Biology (BCMB 3100), 17 semesters  
Honors Organismal Biology (BIOL 2108H), 4 semesters  
Non-majors Organismal Biology (BIOL 1104), 8 semesters

#### **Duke University**

Introductory Biology, 8 semesters

#### **Lenoir-Rhyne College**

Cell and Molecular Biology lecture and laboratory, 1 semester

### **PUBLICATIONS**

[Symbols indicate graduate student/postdoctoral<sup>#</sup> or undergraduate<sup>^</sup> author; status as project leader and/or corresponding author\*.]

#### **Journal Articles on Education Research and Practice**

1. He, C-W and Lemons, P.P. (under review) An instruction-followed-by-problem-solving approach to facilitate biochemistry students' transfer of learning in noncovalent interactions *CourseSource*.
2. He, C-W, Fiorella, L., and **Lemons, P.P.** (in revision) Does Instruction-First or Problem-Solving-First Depend on Learners' Prior Knowledge? *Educational Psychology Review*.
3. Rosenzweig, E. Q., Song, Y., Chen, X.-Y., Baldwin, A., Barger, M., Cotterrell, M., Dees, J. A., Injaian, A. S., Weliweriya, N., Walker, J. R., Wiegert, C. C., & **Lemons, P. P.** (in press). Switching within STEM: Examining the motivational concerns that college students report considering when changing career plans within STEM fields. *Journal of Educational Psychology*.
4. Rosenzweig, E. Chen, X-Y., Song, Y., Baldwin, A., Barger, M., Cotterrell, M., Dees, J., Injaian, A., Liyanage, N., Walker, J., Weigert, C. and **Lemons, P.P.** (in press) Beyond STEM Attrition: Changing Career Plans Within STEM Fields in College Is Associated with Lower Career Motivation, Satisfaction, and Certainty. *International Journal of STEM Education*.
5. Feola, S.<sup>#</sup> **Lemons, P.P.**, Loertscher, J., Minderhout, V., and Lewis, J.E. (2023) Assessor in Action: Assessment literacy development in a biochemistry context. *Chemistry Education Research and Practice*. [doi.org/10.1039/D2RP00334A](https://doi.org/10.1039/D2RP00334A).
6. Bhatia, K.S.<sup>#</sup>, Stack, A.<sup>^</sup>, Sensibaugh, C.A.<sup>#</sup>, and **Lemons, P.P.**<sup>\*</sup> (2022) Putting the Pieces Together: Student Thinking about Transformations of Energy and Matter. *CBE-Life Sciences Education*. [doi.org/10.1187/cbe.20-11-0264](https://doi.org/10.1187/cbe.20-11-0264)
7. McDaniel, M., Cahill, M., Frey, R., Limeri, L., and **Lemons, P.P.** (2022) Learning Introductory Biology: Students' Concept-Building Approaches Predict Transfer on Biology Exams. *CBE-Life Sciences Education*. [doi.org/10.1187/cbe.21-12-0335](https://doi.org/10.1187/cbe.21-12-0335)

8. Krishnan, S., Gehrtz, J., **Lemons, P.P.**, Dolan, E.L, Brickman, P. and Andrews, T.C. (2022) Guides to Advance Teaching Evaluation (GATES): A Resource for STEM Departments Planning Robust and Equitable Evaluation Practices. *CBE-Life Sciences Education*. [doi.org/10.1187/cbe.21-08-0198](https://doi.org/10.1187/cbe.21-08-0198)
9. Frey, R., Brame, C.J., Fink, A., and **Lemons, P.P.** \* (2022) Teaching Discipline-Based Problem Solving *CBE-Life Sciences Education*. June 1, 2022 21:fe1 [doi.org/10.1187/cbe.22-02-0030](https://doi.org/10.1187/cbe.22-02-0030)
10. Jeong, S. #, Clyburn, J. ^, Bhatia, N.S. ^, McCourt, J. #, and **Lemons, P.P.** \* (2022) Student thinking in the professional development of college biology instructors: An analysis through the lens of sociocultural theory. *CBE-Life Sciences Education*. [doi.org/10.1187/cbe.21-01-0003](https://doi.org/10.1187/cbe.21-01-0003)
11. M. Segura-Totten, B. Dewsbury, S. M. Lo, E. G. Bailey, L. Beaster-Jones, R. J. Bills, et al. **Lemons, P.P.** et al. (2021) Chronicling the Journey of the Society for the Advancement in Biology Education Research (SABER) in its Effort to Become Antiracist: From Acknowledgement to Action. *Frontiers in Education* 6(479) <https://www.frontiersin.org/article/10.3389/educ.2021.780401>
12. Andrews, T.C., Brickman, P., Dolan, E.L., and **Lemons, P.P.** \* (2021) Every Tool in the Toolbox: Pursuing Multilevel Institutional Change in the DeLTA Project. *Change: The Magazine of Higher Learning* Volume 53(2), 2021. [doi.org/10.1080/00091383.2021.1883974](https://doi.org/10.1080/00091383.2021.1883974)
13. Halmo, S. #, Sensibaugh, C.A. #, Reinhart, P. ^, Stogniy, O. ^, Fiorella, L., and **Lemons, P.P.** \* (2020) Advancing the guidance debate: Lessons from Educational Psychology and Implications for Biochemistry Learning. *CBE-Life Sciences Education*. Sep;19(3):ar41. [doi.org/10.1187/cbe.19-11-0260](https://doi.org/10.1187/cbe.19-11-0260)
14. Stack, A. ^, Bhatia, K. #, Sensibaugh, C. #, and **Lemons, P.P.** \* (2019) Undergraduate Biology Student Ideas About Biochemical Pathway Dynamics. *Proceedings of the National Conference on Undergraduate Research (NCUR)* 2019.
15. Zagallo, P. #, McCourt, J., Idsardi, R. #, Haudek, K., Knight, J., Merrill, J., Nehm, R., Prevost, L., Smith, M., Urban-Lurain, M. and **Lemons, P.P.** \* (2019) Through the eyes of faculty: using personas as a tool for user-centered professional development. *CBE-Life Sciences Education*. <https://doi.org/10.1187/cbe.19-06-0114>
16. Halmo, S. #, Sensibaugh, C.A. #, Bhatia, K.S. #, Howell, A.H. ^, Ferryanto, E.P. ^, Choe, B. ^, Kehoe, K.P. ^, Watson, M. ^ and **Lemons, P.P.** \* (2018) Student Difficulties During Structure-Function Problem Solving. *Biochemistry and Molecular Biology Education*. 46(5): 453-463: <https://doi-org.proxy-remote.galib.uga.edu/10.1002/bmb.21166>
17. Pelletreau, K.N., Knight, J.K., **Lemons, P.P.**, McCourt, J.#, Merrill, J., Nehm, R., Prevost, L., Urban-Lurain, M. and Smith, M.K. (2018) Using a Faculty Instructional Development Network to Design Instructional Materials that Improve Student Learning. *CBE-Life Sciences Education*. 17(2): <https://doi.org/10.1187/cbe.17-12-0260>
18. McCourt#, J., Andrews, T. C., Knight, J. K., Merrill, J., Nehm, R., Prevost, L. B., Smith, M. K., Urban-Lurain, M., and **Lemons, P.P.** \* (2017) What Motivates Biology Instructors to Engage and Persist in Teaching Professional Development? *CBE-Life Sciences Education*. 16: ar54: <https://doi.org/10.1187/cbe.16-08-0241>
19. Prevost L.B. and **Lemons, P.P.** \* (2016) Step by step: Biology Undergraduate's Problem-Solving Steps During Multiple-Choice Testing. *CBE-Life Sciences Education* 15:ar71: <https://doi.org/10.1187/cbe.15-12-0255>.
20. Terry, D. R., **Lemons, P. P.**, Armstrong, N., Brickman, P., Ribbens, E., and Herreid, C.F. (2016) Eight is Not Enough: Case Study Questions and Student Learning. *Journal of College Science Teaching* 46(2): 82-92: [https://10.2505/4/jcst16\\_046\\_02\\_82](https://10.2505/4/jcst16_046_02_82)
21. Kim, H.S.#, Prevost, L.B., and **Lemons, P.P.** \* (2015) Students' Usability Evaluation of a Web-based Tutorial Program for College Biology Problem Solving. *Journal of Computer Assisted Learning* 31(4): 362-277, <https://doi:10.1111/jcal.12102>.
22. Urban-Lurain, M., Cooper, M. M., Haudek, K. C., Kaplan, J. J., Knight, J. K., **Lemons, P. P.**, Lira, C.T., Merrill, J.E., Nehm, R., Prevost, L.B., Smith, M.K., and Sydlík, M. (2015) Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM. *Computers in Education* 25(2).
23. Andrews, T.M. and **Lemons, P.P.** \* (2015) It's Personal: Biology Instructors Prioritize Personal Evidence Over Empirical Evidence in Teaching Decisions. *CBE-Life Sciences Education* 14(1):ar7, <https://doi:10.1187/cbe.14-05-0084>.
24. Herreid, C. F., Terry, D.R., **Lemons, P.P.**, Armstrong, N., Brickman, P. and Ribbens, E. (2014) Emotion, Engagement and Case Studies. *Journal of College Science Teaching* 44(1). [https://10.2505/4/jcst14\\_044\\_01\\_86](https://10.2505/4/jcst14_044_01_86).
25. **Lemons, P. P.** \* and Lemons, J. D. (2013) Questions for Assessing Higher-Order Cognitive Skills: It's Not Just Bloom's. *CBE-Life Sciences Education* 12(1): 47-58: <https://doi:10.1187/cbe.12-03-0024>.
26. Grimes, M. L., and **Lemons, P. P.** (2013, January). Clustering and Graphical Approaches to Examine Diversity in Student Learning Patterns. In *Molecular Biology of the Cell* Vol. 24.
27. Andrews, T.M.#, Price, R. M., Mead, L. S., McElhinny, T. L., Thanukos, A., Perez, K. E., Herreid, C. F., Terry, D.R. and **Lemons, P. P.** \* (2012) Biology Undergraduates' Misconceptions about Genetic Drift. *CBE-Life Sciences Education* 11(3): 248-259: <https://doi:1187/cbe.11-12-0107>.
28. Fleet, C.#, Rosser, M.#, Zufall, R.A.#, Pratt, M.#, Feldman, T. S.#, and **Lemons, P. P.** \* (2006) Hiring Criteria in Biology Departments of Academic Institutions. *BioScience* 56(5), 430-436: [https://doi-org.proxy-remote.galib.uga.edu/10.1641/0006-3568\(2006\)056\[0430:HCIBDO\]2.o.CO;2](https://doi-org.proxy-remote.galib.uga.edu/10.1641/0006-3568(2006)056[0430:HCIBDO]2.o.CO;2)

29. Bissell, A. and **Lemons, P. P.\*** (2006) A New Method for Assessing Critical Thinking in the Classroom. *BioScience* 56(1), 66-72: [https://doi-org.proxy-remote.galib.uga.edu/10.1641/0006-3568\(2006\)056\[0066:ANMFAC\]2.o.CO;2](https://doi-org.proxy-remote.galib.uga.edu/10.1641/0006-3568(2006)056[0066:ANMFAC]2.o.CO;2)
30. Winter, D, **Lemons, P. P.**, Hoese, W. J., and Bookman, J. (2001) Novice Instructors and Student-Centered Instruction: Identifying and Addressing Obstacles to Learning in the College Science Laboratory. *The Journal of the Scholarship of Teaching and Learning*, 2(1).

## BOOK CHAPTERS, FEATURES, AND OTHER EDUCATION-RELATED PRODUCTS

[Symbols indicate graduate student/postdoctoral\* or undergraduate^ author; status as project leader and/or corresponding author\*.]

1. Jeong, S., Yauck, J., Robinson, S., Zagallo, P., & **Lemons, P.P.\*** (2023). A Case of Violet's GLUT1: What is wrong with Violet? In F.S. Allaire & J.E. Killham (Eds.), *Teaching and Learning Online: Science for Secondary Grade Levels*. Charlotte, NC: Information Age Publishing.
2. Frey, R., Brame, C.J., Fink, A., and **Lemons, P.P.\*** (2022) Evidence-Based Teaching Guide: Discipline-Based Problem Solving *CBE-Life Sciences Education*. [https://lse.ascb.org/evidence-based-teaching-guides/problem-solving/?\\_ga=2.110428677.126259814.1661894493-762316734.1660938823](https://lse.ascb.org/evidence-based-teaching-guides/problem-solving/?_ga=2.110428677.126259814.1661894493-762316734.1660938823)
3. Robinson, S., Dolan, E.L., Cornely, K., Lee, J-K., Medlock, A. and **Lemons, P.P.\*** (2019) The Development and Use of Case Studies in Bussey, T.J., Cortes, K.L., and Austin, R.C. (Eds.), *Biochemistry Education: From Theory to Practice*. American Chemical Society Press. DOI: 10.1021/bk-2019-1337
4. **Lemons, P.P.** (2019) Qualitative Research Interviews. Video series produced by the UGA Center for the Integration of Research, Teaching, and Learning and SEER Center:
  - [https://kaltura.uga.edu/media/t/1\\_on6roh9/31868161](https://kaltura.uga.edu/media/t/1_on6roh9/31868161);
  - [https://kaltura.uga.edu/media/t/1\\_r56hzbeg/31868161](https://kaltura.uga.edu/media/t/1_r56hzbeg/31868161)
  - [https://kaltura.uga.edu/media/t/1\\_3hmbxirz/31868161](https://kaltura.uga.edu/media/t/1_3hmbxirz/31868161)
  - [https://kaltura.uga.edu/media/t/1\\_mehva7ja/31868161](https://kaltura.uga.edu/media/t/1_mehva7ja/31868161)
  - [https://kaltura.uga.edu/media/t/1\\_digevgs5/31868161](https://kaltura.uga.edu/media/t/1_digevgs5/31868161)
  - [https://kaltura.uga.edu/media/t/1\\_ssujliqj/31868161](https://kaltura.uga.edu/media/t/1_ssujliqj/31868161)
5. Erol, M., Idsardi, R., Luft, J.A., Myers, D.L., and **Lemons, P.P.** (2015) Creating Active Learning Environments in Undergraduate STEM Courses a publication sponsored by the University of Georgia SEER (Scientists Engaged in Education Research) Center and Center for Teaching & Learning.
6. Huber, S. K. and **Lemons, P. P.\*** (2014) Threats to Biodiversity: A Case Study of Hawaiian Birds in Herreid, C. F., Schiller, N. A., and Herreid, C. F. (Eds.) *Using Case Studies to Teach Quantitative Reasoning*. NSTA Press.
7. **Lemons, P. P.\***, Reynolds, J. A., Curtin-Soydan, A, J. and Bissell, A. N. (2013) Improving Critical-Thinking Skills in Introductory Biology Through Quality Practice and Metacognition in Kaplan, M., Silver, N., LaVaque-Manty, D., and Meizlish, D. (Eds.), *Using Reflection and Metacognition to Improve Student Learning* (pp. 53-77). Sterling, VA: Stylus.
8. **Lemons, P.P.** (2012) Teach with a Story: Using Case Studies to Help Students Learn Science. *ASPB News: The Newsletter of the American Society of Plant Biologists* 39(4): 20.
9. Fleet, C.#, and **Lemons, P. P.\*** (2005) Survey of Hiring Practices Indicates Need for Changes in Graduate Education. *American Society for Plant Biology News* 32(6), 24.
10. **Lemons, P.P.** (2001) Teaching Postdocs: An Alternative Approach to an Academic Career. *Science Next Wave: Postdoc Network*, <http://nextwave.sciencemag.org/cgi/content/full/2001/10/04/7>.

## CASE STUDIES FOR TEACHING SCIENCE

1. Pelletreau, K.N., Andrews, T., Armstrong, N., Bedell, M.A., Dastoor, F., Dean, N., Erster, S., Fata-Hartley, C., Guild, N., Greig, H., Hall, D., Knight, J.K., Koslowsky, D., **Lemons, P.P.**, Martin, J., McCourt, J., Merrill, J., Moscarella, R., Nehm, R., Northington, R., Olsen, B., Prevost, L., Stoltzfus, J., Urban-Lurain, M., Smith, M.K. (2016) A clicker-based case study that untangles student thinking about the processes in the central dogma, *Course Source*.
2. Herreid, C.F. and **Lemons, P.P.** (2012) Mendel Dreams: The Beginning of Genetics. *National Center for Case Study Teaching in Science Case Collection*

[http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case\\_id=652&id=652](http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=652&id=652)

3. Prevost, L. # and **Lemons, P. P.**\* (2011) Mildred Using Plants: The Medicinal Value of Plants. *National Center for Case Study Teaching in Science Case Collection*  
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5. **Lemons, P. P.**\* and Huber, S. K. (2001) Dr. Collins and the Case of the Mysterious Infection. *Collection of Case Studies in Science*, [http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case\\_id=348&id=348](http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=348&id=348).

## SCIENCE PUBLICATIONS

1. Schraw, T. D., **Lemons, P. P.**, Dean, W. L., and Whiteheart, S. W. (2003) A Role for Sec1/Munc18 Proteins in Platelet Exocytosis. *Biochemical Journal*, 374, 207-217.
2. **Lemons, P. P.**, Chen, D., and Whiteheart, S. W. (2000) Molecular Mechanisms of Platelet Exocytosis: Requirements for  $\alpha$ -Granule Release. *Biochemical and Biophysical Research Communications*, 267, 875-880.
3. Chen, D., **Lemons, P. P.**, Schraw, T., and Whiteheart, S. W. (2000) Molecular Mechanisms of Platelet Exocytosis: Role of SNAP-23 and Syntaxin 2 and 4 in Platelet Lysosome Release. *Blood*, 96, 1782-1788.
4. Chen D., Bernstein, A. M., **Lemons, P. P.**, and Whiteheart, S. W. (2000) Molecular Mechanisms of Platelet Exocytosis: Role of SNAP-23 and Syntaxin 2 in Dense Core Granule Release. *Blood*, 95, 921-929.
5. **Lemons, P. P.**, Chen, D., Bernstein, A. M., Bennett, M. K., and Whiteheart, S. W. (1997) Regulated Secretion in Platelets: Identification of Elements of the Platelet Exocytosis Machinery. *Blood* 90, 1490-1500.

## REFEREED CONFERENCE PRESENTATIONS

[\*Student or postdoctoral fellow; ^High school teacher; \*Project leader and/or corresponding author]

1. Gouvea, J., Adams, A., Bolger, M., Doherty, J., Lemons, P.P., Lira, M. (2025) Applying a Knowledge-in-Pieces Perspective to Biology Education Research. A poster symposium for the National Association of Research in Science Teaching Annual International Conference, Washington, DC.
2. He, C.-W. #, Fiorella, L., & Lemons, P.P. (2025). *Students Use of Knowledge Resources to Solve Problems in a Problem-Solving First Lesson*. A paper presentation for the National Association of Research in Science Teaching Annual International Conference, Washington, DC.
3. Zaagbil, P#, Wood, R. #, Fiorella, L., and **Lemons, P.P.** (2024) Deciphering Undergraduates' Mechanistic Reasoning in Metabolic Pathway Dynamics and Regulation. Poster presented at the Society of the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
4. He, C.-W. #, Fiorella, L., & Lemons, P.P. (2024) *Comparing the Effects of Two Instructional Sequences for Students with Varying Levels of Prior Knowledge*. A paper presentation for the Society of the Advancement of Biology Education Research, Minneapolis, MN.
5. He, C.-W. #, Fiorella, L., & Lemons, P.P. (2024). *Instructional Sequence Matters: Problem-Solving First Approach Leads to Superior Transfer Learning Outcomes in Introductory Biology*. A paper presentation for the National Association of Research in Science Teaching Annual International Conference, Denver, CO.
6. He, C.-W.#, Fiorella, L., & **Lemons, P.P.**\* (2023) Instructional Sequence Matters: Problem-Solving First Approach Leads to Superior Near-Transfer Learning Outcomes in Introductory Biology. Poster presented at the Society of the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
7. Andrews, T.C., Ericson, H. #, **Lemons, P.P.**, Dolan, E., and Brickman, P. (2023) Ready or Not? Convening Department Heads to Reform Teaching Evaluation. Talk presented at the Transforming Institutions Conference, Minneapolis, MN.
8. He, C.-W.#, **Lemons, P.P.**\*, & Fiorella, L. (2023). Exploring Effects of Different Instructional Sequences on Students' Transfer of Learning from an AOT Perspective. Poster presented at the American Educational Research Association Annual International Conference, Chicago, IL.
9. He, C.-W.#, **Lemons, P.P.**\*, & Fiorella, L. (2023). PS-I Instructional Approach's Effects on Transfer of Learning from an AOT Perspective: A Case Study. Paper presented at the National Association of Research in Science Teaching Annual International Conference, Chicago, IL.



10. **Lemons, P.P.**, He, C-W, Fiorella, L. (2023) Does Order Matter when Teaching Noncovalent Interactions: A Comparison of the Sequence of Explicit Instruction and Problem Solving. Poster presented at the American Society for Biochemistry and Molecular Biology Annual Meeting <https://doi.org/10.1016/j.jbc.2023.103547>.
11. McDaniel, M., Cahill, M., Frey, R.F., Limeri, L, and **Lemons, P.P.** (2022) Individual Differences in Students' Concept-Learning Approaches Predict Transfer on Biology Exams  
Session: Learning and Instruction II. Talk presented at the *Psychonomic Society Annual Meeting*.
12. Ericson H, **Lemons P.P.**, Brickman P, Dolan E, Andrews TC (2022) How do we change the departmental culture? Ideas that aid teaching evaluation reform. Talk presented at the Society for the Advancement of Biology Education Research.
13. Parbhoo, K. # and **Lemons, P.P.** \* (2022) BioSTEPS: Biochemistry Problem Solving and Its Role in Undergraduate Success and Persistence. Poster presented at the National Conference on Undergraduate Research, *virtual*.
14. King, G.#, Sensibaugh, C.A. and **Lemons, P.P.** \* (2021) Partial, Temporary, Induced: Student knowledge of terms that contribute to conceptual understanding of structure and function. Talk presented at the Society for the Advancement of Biology Education Research Annual Meeting, *virtual*.
15. Andrews, T.C. and **Lemons, P.P.** (2021) Achieving department change through theoretically-guided work with department heads: The DeLTA Project. Presentation at the Accelerating Systemic Change Network annual meeting.
16. Jeong, S., Clyburn, J. # and **Lemons, P.P.** (2021) Vygotskian professional development for biology instructors focusing on student thinking. Paper presented at the National Association of Research in Science Teaching Annual International Conference, *virtual*.
17. Halmo, S.M.#, Stogniy, O.#, Sensibaugh, C.A., Reinhart, P.#, Alele, V.#, Snuggs, G.#, Fiorella, L., and **Lemons, P.P.**\* (2020) Advancing the Guidance Debate: Lessons from Educational Psychology and Implications for Biochemistry Learning. Talk presented at the Society for the Advancement of Biology Education Research Annual Meeting, *virtual*.
18. Stogniy, O.#, Halmo, S.M.#, Sensibaugh, C.A., Reinhart, P.#, Fiorella, L., and **Lemons, P.P.**\* (2020) Advancing the Guidance Debate: Lessons from Educational Psychology and Implications for Biochemistry Learning. Poster prepared for the Annual Meeting of the American Society for Biochemistry and Molecular Biology, *virtual*.
19. Feola, S.#, **Lemons, P.P.**, Loertscher, J., Thorsell, V.M, and Lewis, J.E. (2020) Assessment Practices of a Biochemistry Instructor Using Community Derived Knowledge. Talk presented at the Biennial Conference on Chemical Education, University of Corvallis, OR – cancelled due to COVID-19.
20. Worth, E.B. #, Luft, J.A., White, D.Y., **Lemons, P.P.**, Przybyla-Kuchek, J.E, # & Ozen, H.# (2020). The Missing Link in Science Teacher Recruitment: STEM Faculty. Paper presented at the National Association of Research in Science Teaching Annual International Conference, Portland, OR – canceled due to COVID-19.
21. Worth, E.B. #, Przybyla-Kuchek, J.E#, Luft, J.A., White, D.Y., **Lemons, P.P.**, Ozen, H. # & Whitt, B#. (2020). Science Teacher Talk: Principals' and Teachers' Perceptions from the Field. Association of Science Teacher Educators, San Antonio, TX.
22. Luft, J.A., Worth, E.B. #, Przybyla-Kuchek, J.E#, Ozen, H. #, White, D.Y., & **Lemons, P.P.** (2020). A Self-Study of One Science Teacher Education Program: A Report of Process and Findings. Association of Science Teacher Educators, San Antonio, TX.
23. Luft, J.A., **Lemons, P.P.**, White, D.Y., Worth, E.B. #, Przybyla-Kuchek, J.E. #, & Whitt, B. # (2019). A 360 view of a secondary science teacher education program: Recruiting and preparing well-started teachers. European Science Education Research Association, Bologna, Italy.
24. Halmo, S. #, Stogniy, O. #, Fiorella, L., Reinhart, P. # and **Lemons, P.P.** \* (2019) A Comparison of Instructional Design Approaches for Teaching Noncovalent Interactions in Biochemistry. Poster presented at the Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
25. Bhatia, K. #, Stack, A. #, Sensibaugh, C.A. #, and **Lemons, P.P.** \* (2019) Student Thinking About Metabolic Pathway Dynamics and Regulation. Talk presented at the Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
26. **Lemons, P.P.** \*, McCourt, J., Zagallo, P., Smith, M.K., Knight, J.K., Andrews, T.C., Haudek, K., Idsardi, R., Meaders, C., Merrill, J., Nehm, R., Pelletreau, K., Prevost, L.B., and Urban-Lurain, M. (2019) Teaching Professional Development: A Trajectory Toward Effectively Fostering a Focus on Student Thinking. Talk presented at the Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
27. Luft, J.A., **Lemons. P.P.**, White, D.Y., Worth, E.B. #, Przybyla-Kuchek, J.E. #, Whitt, B.A. #, & Ozen, H#. (2019). Georgia Educators in Mathematics and Science (GEMS): A Capacity Building Grant. Poster at the Noyce/AAAS Annual meeting, Washington DC.
28. Przybyla-Kuchek, J. #, Worth, E. #, Ozen Tasdemir, H. #, Luft, J.A., White, D. Y., Whitt, B. #, **Lemons, P.P.** (2019). *GEMS: A capacity building project*. Poster presented at the Southeastern Regional Robert Noyce Conference, Mobile, AL.
29. Andrews, T.C., Dolan, E.L., Brickman. P., Covert, S., **Lemons, P.P.** (2019). Pursuing systemic change in undergraduate STEM education through Departmental and Leadership Teams for Action (DeLTA). Talk presented at the ASCN Transforming Institutions, Pittsburgh PA.

30. Stack, A. #, Bhatia, K. #, and **Lemons, P.P.** \* (2019) Undergraduate Biology Student Ideas About Biochemical Pathway Dynamics. Talk presented at the National Conference on Undergraduate Research, Kennesaw, GA.
31. Jeong, S. #, Halmo, S. #, Robinson, S., Strunk, K. ^, Yauck, J. ^, and **Lemons, P.P.** \* (2019) A Professional Learning Community of High School and College Instructors Focused on Biology Concepts, Scientific Practices, and Student Thinking. Talk presented at the Annual Meeting of the National Science Teachers Association, St. Louis, MO.
32. Halmo, S. #, Stogniy, O. #, Fiorella, L., and **Lemons, P.P.** \* (2019) A Comparison of Instructional Design Approaches for Teaching Noncovalent Interactions. Poster presented at the Annual Meeting of the American Society for Biochemistry and Molecular Biology, Orlando, FL.
33. Bhatia, K. #, Stack, A. #, Sensibaugh, C.A. #, and **Lemons, P.P.** \* (2019) Student Thinking About Metabolic Pathway Dynamics and Regulation. Poster presented at the Annual Meeting of the American Society for Biochemistry and Molecular Biology, Orlando, FL.
34. Yauck, J., Elder, J., Strunk, K., and **Lemons, P.P.** \* (2019) Professional Learning Communities: Adding Another Dimension to Three-Dimensional Science Practices. Talk presented at the Georgia Science Teachers Association, Columbus, GA.
35. Luft, J.A., **Lemons, P.P.**, White, D.Y., Whitt, B. #, Worth, E. #, McElheny, C. #, & Przybyla-Kuchek, J#. (2019). A Cross-College Approach to Encourage Discussion of the Recruitment, Preparation, and Induction of Science Teachers. Association of Science Teacher Educators, Savannah, GA.
36. **Lemons, P.P.** \*, Haudek, K., Hoskinson, A-M., Jescovitch, L. #, Knight, J.K., Merrill, J., Nehm, R., Prevost, L., Smith, M.K., Sripathi, K. #, Urban-Lurain, M., and Wilson, C. (2018) Seeking Synergy: K-12 Professional Development as a Model for College Science Faculty. Talk presented at the Association of American Colleges and Universities Transforming STEM Higher Education Conference, Atlanta, GA.
37. Feola, S. #, Loertscher, J., Minderhout, V., **Lemons, P.P.**, and Lewis, J.E. (2018) "Investigating student understanding of noncovalent interactions in undergraduate biochemistry." Talk presented at the Biennial Conference on Chemical Education, University of Notre Dame, IN.
38. Zagallo, P. #, McCourt, J., Idsardi, R. #, Haudek, K., Knight, J., Merrill, J., Nehm, R., Prevost, L., Smith, M., Urban-Lurain, M. and **Lemons, P.P.** \* (2018) "Through the eyes of faculty: using personas as a tool for user-centered professional development." Talk presented at the Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
39. **Lemons, P.P.** \*, Sensibaugh, C.A. #, Halmo, S. #, Jeong, S. #, Idsardi, R. #, and Bhatia, K. # (2018) "How do I solve biochemical problems? What Analyzing Students' Domain-Specific Problem Solving Reveals about Their Biochemical Ideas." Talk presented at the Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
40. Halmo, S. #, Sensibaugh, C.A. #, Fiorella, L., and **Lemons, P.P.** \* (2018) "Is there a time for telling and a time for failing in biochemistry? Instructional Design Approaches for Teaching Noncovalent Interactions." Poster presented at the Society for the Advancement of Biology Education Research Annual Meeting, Minneapolis, MN.
41. Kim, H., Dye, K., Hill, J., and **Lemons, P. P.** \* (2018) Online Tutorial SOLVEIT for Enhancing Biology Undergraduates' Problem-Solving Skill. Poster presented at the American Educational Research Association Annual Meeting, New York, NY.
42. **Lemons, P.P.** \*, Sensibaugh, C.A. #, Halmo, S. #, Jeong, S. #, Idsardi, R. #, Bhatia, K. #, Choi, H-J. and Cohen, A. (2018) BioSTEPS: Biochemistry Problem Solving and Its Role in Undergraduate Success and Persistence. Poster presented at the Annual Meeting of the American Society for Biochemistry and Molecular Biology, San Diego, CA. DOI:10.13140/RG.2.2.11304.62720
43. Halmo, S. #, Bhatia, K.S. #, Howell, A.H. #, Ferryanto, E.P. #, Choe, B. #, Sensibaugh, C.A. #, Kehoe, K.P. #, Watson, M. and **Lemons, P.P.** \* (2018) Protein X Structure and Function: How Undergraduate Students Solve a Well-Defined Biochemistry Problem. Paper presented at the National Association of Research in Science Teaching Annual International Conference, Atlanta, GA.
44. Feola, S.#, Mercer, A. #, **Lemons, P.P.**, Loertscher, J., Minderhout, V., and Lewis, J. (2018) Research to practice: examining the application of a construct map in support of biochemistry students' understanding of the physical basis of interactions. American Chemical Society National Meeting, New Orleans, LA.
45. Sensibaugh, C.A. #, Choi, H.J., Cohen, A., and **Lemons, P.P.** \* (2017) The SAVI Survey: Self-Appraisal, Values, and Intentions. Poster presented at the Society for the Advancement of Biology Education Research Annual Meeting. DOI: 10.13140/RG.2.2.12877.49125
46. Wingfield, J. #, Idsardi, R. #, Whitt, B. #, Barriga, P. #, **Lemons, P.P.**, Brickman, M., and Luft, J.A. (2017) Supporting undergraduate STEM educators' instruction: Examining the participation of faculty/instructors in professional development programs. Paper presented at the National Association of Research in Science Teaching Annual International Conference, San Antonio, TX.
47. Idsardi, R. #, Wingfield, J. #, Whitt, B. #, Barriga, P. #, **Lemons, P. P.**, Brickman, M., and Luft, J.A. (2017) Congruence of faculty perceptions of learning and instruction prior to engagement in professional development programs. Paper presented at the National Association of Research in Science Teaching Annual International Conference, San Antonio, TX.

48. Miller, K., Brickman, P., **Lemons, P.P.** and Malmberg, R. (2017) Tackling Curriculum Reform using Vision and Change: Efforts at a Research-Intensive University. Association of Southeastern Biologists Conference, Montgomery, AL. Mar. 28 - Apr. 1.
49. Ferryanto, E.#, Kush Bhatia#, Bryant Choe#, Stephanie Halmo#, Alexandra Howell#, Kaitlin Kehoe#, Cheryl Sensibaugh#, Morgan Watson#, and **Paula P. P.\*** (2016) Domain-Specific Biochemistry Problem Solving in Undergraduate Students, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
50. Halmo, S. #, Sensibaugh, C. #, Novick, L. R., and **Lemons, P. P.\*** (2016) Using Comparison to Frame Conditional Knowledge in Biochemistry Problem Solving, poster presented at the Society for the Advancement of Biology Education Research Annual Meeting.
51. McCourt#, J., Andrews, T.C., Knight, J.K., Merrill, J., Nehm, R., Prevost, L.B., Smith, M.K., Urban-Lurain, M., and **Lemons, P.P.\*** (2016) Examining Persistence in Faculty Learning Communities by Biology Faculty, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
52. Sensibaugh, C. # and **Lemons, P.P.\*** (2016) An Analytical Framework for Domain-Specific Problem Solving, roundtable presented at the Society for the Advancement of Biology Education Research Annual Meeting.
53. Idsardi, B. #, Luft, J.A., Wingfield, J. #, **Lemons, P.P.**, Brickman, P. (2016) Faculty Perceptions of Student Learning While Engaged in Professional Development Programs, poster presented at the Society for the Advancement of Biology Education Research Annual Meeting.
54. Wingfield, J. #, Luft, J.A., Idsardi, B. #, **Lemons, P.P.**, Brickman, P. (2016) Supporting Undergraduate STEM Educators' Instruction: Evaluating the Impact of Different Professional Development Programs on Educators Use of Active Learning, poster presented at the Society for the Advancement of Biology Education Research Annual Meeting.
55. Pelletreau, K., Knight, J.K., **Lemons, P.P.**, McCourt, J.S. #, Moscarella, R., Nehm, R., Smith, M. K., and Urban-Lurain, M. (2016) Using student constructed responses to guide the development and adoption of instructional activities by a cross-institutional instructional development team, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
56. Urban-Lurain, M., Knight, J, **Lemons, P.P.**, Merrill, J, Nehm, R., Prevost, L. Smith, M., Haudek, K., Bierema, A. #, Hoskinson, A-M., Moscarella, R., Steele, M., Mazur, A. (2016) Insight into student thinking: Informing instruction with the Automated Analysis of Constructed Response Assessments, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
57. Luft, J.A., Idsardi, B. #, Erol, M. and **Lemons, P.P.** (2016) Initiating Instructional Change of STEM Faculty at a Large Research Institution, poster presented at the Association for Science Teacher Education.
58. **Lemons, P.P.\***, McCourt, J.#, Knight, J., Merrill, J.E., Nehm, R.H., Prevost, L., Smith, M.K., Sydlik, M.A., and Urban-Lurain, M. (2016) A community of enhanced assessment facilitates reformed teaching, talk presented at AAAS Envisioning the Future of Undergraduate STEM Education: Research and Practice.
59. Prevost, L., Bierema, A., Kaplan, J., Knight, Jennifer, **Lemons, P.P.**, Lira, C.T., Merrill, J.E., Moscarella, R., Nehm, R.H., Sydlik, M.A., and Urban-Lurain, M. (2016) An iterative approach to developing, refining, and validating machine-scored constructed response assessments, talk presented at AAAS Envisioning the Future of Undergraduate STEM Education: Research and Practice.
60. Urban-Lurain, M., Bierema, A.M.-K., Haudek, K.C., Hoskinson, A-M, Kaplan, J., Knight, J.K., **Lemons, P.P.**, Lira, C.T., McCourt, J., Merrill, J.E., Moscarella, R., Nehm, R.H., Smith, M.K., Steele, M., Sydlik, M.A. (2016) Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM, talk presented at AAAS Envisioning the Future of Undergraduate STEM Education: Research and Practice.
61. Howell, A.#, Ferryanto, E.#, Bhatia, K.#, Choe, B.#, and **Lemons, P.P.\*** (2015) Undergraduates' Solutions to Problems about Protein Structure and Function and Biological Membranes, poster presented at the Society for the Advancement of Biology Education Research Annual Meeting.
62. McCourt, J. #, Andrews, T.C., Crumbs, T. #, Knight, J.K., Merrill, J., Merrill, S., Nehm, R., Pelletreau, K., Prevost, L.B., Smith, M.K., Urban-Lurain, M. and **Lemons, P.P.\*** (2015) Using Faculty Learning Communities to Promote the Development of Student-Centered Biology Instructors, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
63. Voreis, J.#, Andrews, T.C., Federer, M. #, Knight, J.K., Merrill, J., Nehm, R., Prevost, L.B., Smith, M.K., Sydlik, M., Urban-Lurain, M., and **Lemons, P.P.\*** (2014) Investigating the Impact of Faculty Learning Communities on Biology Instructors, poster presented at the Society for the Advancement of Biology Education Research Annual Meeting.
64. Urban-Lurain, M., Cooper, M. M., Haudek, K. C., Kaplan, J. J., Knight, J. K., **Lemons, P. P.**, Lira, C.T., Merrill, J.E., Nehm, R., Prevost, L.B., Smith, M.K., and Sydlik, M. (2014). Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM, paper presented at the American Society for Engineering Education, Indianapolis, IN.
65. Andrews, T. M.# and **Lemons, P. P.** (2013) How Do Biology Instructors Make Decisions about Case Study Teaching? talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.

66. Prevost, L.<sup>#</sup> and **Lemons, P. P.** (2013) What steps do students use to solve problems in introductory. biology and how does it relate to their course performance? talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
67. **Lemons, P. P.**, Terry, D.R., and Herreid, C. F. (2013) Case Study Teaching in Introductory Biology: How Do Questions Impact Student Learning? poster presented at the NSF Transforming Undergraduate Education in STEM PIs Conference.
68. **Lemons, P. P.** and Lemons, J. D. (2012) Questions for Higher-Order Cognition: It's Not Just Bloom's, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
69. Kim, H. S. <sup>#</sup>, Prevost, L. <sup>#</sup>, and **Lemons, P. P.** (2012) SOLVE-IT! A Self-Directed Online Tutorial to Teach Problem-Solving Skills in an Introductory Biology Course, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
70. Price, R. M., Andrews, T.M. <sup>#</sup>, Mead, L. S., McElhinny, T. L, Thanukos, A., Perez, K. E., Herreid, C. F., Terry, D. R. and **Lemons, P. P.** (2012) Undergraduates' Misconceptions about Genetic Drift, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
71. Terry, D. R., **Lemons, P. P.**, and Herreid, C. F. (2012) Case Study Teaching in Introductory Biology: How Do Questions Impact Student Learning? poster presented at the Society for the Advancement of Biology Education Research Annual Meeting.
72. Snyder, L.<sup>#</sup>, Bowsher, A.<sup>#</sup>, and **Lemons, P. P.**<sup>\*</sup> (2012) Environmental Attitudes: A Tool to Measure the Effect of College Courses, poster presented at the Botanical Society of America.
73. **Lemons, P. P.** and Lemons, J. D. (2011) Challenges Uncovered: What Biologists Say About Higher-Order Questions, talk presented at the American Society for Cell Biology, Annual Meeting, Education Initiative Forum.
74. **Lemons, P. P.** and Prevost, L. <sup>#</sup> (2011) Multiple-Choice Testing and Cognition in an Introductory Biology Course, talk presented at the Society for the Advancement of Biology Education Research Annual Meeting.
75. Reynolds, J., and **Lemons, P. P.** (2009) Teaching Metacognition to Improve Critical-Thinking Skills in Introductory Science Courses, talk presented at The SoTL Commons: A Conference for the Scholarship of Teaching and Learning.
76. Fleet, C.<sup>#</sup> and **Lemons P. P.**<sup>\*</sup> (2005) Analysis of Hiring Practices in Biology Departments of Post-Secondary Educational Institutions, presented at The American Society for Plant Biology Annual Meeting.
77. Schraw, T. D., **Lemons, P. P.**, Wimmer, C., and Whiteheart, S. W. (2002) Role of Syntaxin Effector Proteins in Platelet Exocytosis, poster presented at The American Society for Cell Biology Annual Meeting, presentation number L324.
78. **Lemons, P. P.** and Whiteheart, S. W. (1998) Characterization of the Interaction Between Munc-18-3 and Syntaxin 4 In Resting and Stimulated Platelets, *Molecular Biology of the Cell* 9, 202a.
79. **Lemons, P. P.** and Whiteheart, S. W. (1997) Identification and Characterization of a Human Platelet Munc-18, *Molecular Biology of the Cell* 8, 201a.
80. Bernstein, A. M., **Lemons, P. P.**, Bennett, M. K., Waters, M. G., and Whiteheart, S. W. (1996) "A Novel Synaptobrevin in Human Platelets," *Molecular Biology of the Cell* 7, 446a.

## GRANTS

### Grants - Active [Total = \$2,708,291]:

- Dolan, E., PI, Andrews, T., **Lemons, P.P.**, Stanton, J., Young, H., and Brickman, M., Co-PIs (2023-2028) Howard Hughes Medical Institute: *Evaluation of Effective and Inclusive Teaching*. \$493,065.
- **Lemons, P.P.**, PI, (2022-2026) National Science Foundation, Division of Molecular and Cellular Biosciences: Investigator-initiated research projects *Collaborative Research: Defining How a Unique Transmembrane Protein Arose to Integrate Mitochondrial Function Within the Cell*. \$327,027.
- Fiorella, L. and **Lemons, P.P.**, Co-PI (2021-2025) National Science Foundation Education and Human Resources Core Research, *Advancing the Cognitive Science of Instruction: Testing the Role of Pedagogical Sequences, Scaffolding, and Prior Knowledge*. \$688,201.
- Luft, J.A., PI, Hunsu, N., White, D.Y., and **Lemons, P.P.**, Co-PIs (2020-2025) National Science Foundation Division of Undergraduate Education: Robert Noyce Scholarship Program *Recruiting, Preparing and Inducting Secondary Mathematics and Science Teachers in Northeast Georgia*. \$1,199,998.

### Grants – Pending [Total = \$4,996,679]:

- Luft, J., PI and Lemons, P.P., Co-PI (2025-2030) National Science Foundation, *National STEM Teacher Corps Pilot Program: GA-Elevating Science Teachers' Excellence Everyday Matters (GA-ESTEEM)*. \$4,996,679.

## Grants – Completed [Total = \$5,419,490]:

- **Lemons, P. P.**, PI, Andrews, T.C., Brickman, P., and Dolan, E.L., Co-PIs (2018-2024) National Science Foundation Division of Undergraduate Education: Improving Undergraduate STEM Education (IUSE) *Transforming STEM Education at a Research 1 University through Multi-Level Action Teams*. \$2,998,335.
- **Lemons, P.P., PI**, Prevost, L., Wilson, C., Haudek, K., Knight, J. (2018-2021) National Science Foundation Division of Undergraduate Education: Conference Proposal. *Seeking Synergy: K-12 Professional Development as a Model for College Science Faculty*. \$49,005.
- **Lemons, P.P.**, PI (2017-2021) Subcontract from Michigan State University: *Collaborative Research: Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM*. \$236,250.
- **Lemons, P.P.**, PI. (2014-2021) National Science Foundation, Division of Research on Learning: Faculty Early Career Development (CAREER) Program. *CAREER: Problem Solving Skills as Predictors of Success and Persistence in Biology*. \$913,450.
- Kaplan, J., PI, **Lemons, P.P.**, Co-PI (2013-2020) National Science Foundation, Division of Undergraduate Education: Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics Type 3 *Collaborative Research: Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM*. \$502,755.
- Luft, J., PI and **Lemons, P. P.**, Co-PI (2018-2019) National Science Foundation Division of Undergraduate Education: Robert Noyce Teacher Scholarship Program *Georgia Educators in Mathematics and Science*. \$75,000.
- Andrews, T.C., PI, Brickman, P. and **Lemons, P.P.**, Co-PIs (2015-2018) National Science Foundation, Division of Undergraduate Education: Improving Undergraduate STEM Education (IUSE) *Promoting active learning in large undergraduate STEM courses: Identifying critical knowledge used by effective instructors*. \$249,887.
- **Lemons, P.P.**, PI, Farmer, M and Moore, A.J., Co-PIs (2013-2018) National Science Foundation, Division of Undergraduate Education: Widening Implementation and Demonstration of Evidence-Based Reforms (WIDER) *Collaborative Research: A Community of Enhanced Assessment Facilitates Reformed Teaching*. \$225,557.
- Luft, J., PI, Brickman, P., Co-PI and **Lemons, P. P.** (2016-2017) National Science Foundation RAPID Division of Undergraduate Education *Study of STEM Professional Development Programs*. \$74,748.
- **Lemons, P.P.** (2013). UGA Innovative Instruction Faculty Grants *Reinvigorating BCMB 3100 with Case Studies and Flipped Class Sessions* \$5,000.
- **Lemons, P.P.** (2012-2013). UGA Faculty Research Grants Program *Impact of SOLVE-IT! On Students' Problem-Solving Skills in Introductory Biology* \$10,000.
- **Lemons, P.P.** (2012) UGA Innovative Instruction Faculty Grants. *SOLVE-IT! An online, self-directed tutorial to teach problem-solving skills in biology*. \$5,000.
- Herreid, C. F., PI, **Lemons, P. P.**, Co-PI, and Terry, D., Co-PI. (2009-2012). National Science Foundation: Course, Curriculum, and Laboratory Improvement Phase 2 (Expansion). *Case Study Teaching: How Do Questions and Emotional Engagement Impact Student Learning?* Total costs: \$499,664; Subcontract to UGA: \$30,533
- **Lemons, P.P.** (2011-2012). UGA Office of STEM Education *SOLVE-IT! Tutorials: How Do Online Problem-Solving Tutorials Using Faded Scaffolding Impact Student Learning?* \$9,000.
- **Lemons, P.P.** (2011-2012). UGA Faculty Research Grants Program *SOLVE-IT! Tutorials: Building and Testing a Set of Online Tools to Teach Problem-Solving Strategies in Introductory Biology*. \$9,975.
- **Lemons, P. P.** (2010-2011) UGA Office of STEM Education: *What Cognitive Steps Does Multiple Choice Testing Trigger?* \$6,000.
- **Lemons, P. P.** (2010-2011) UGA Office of STEM Education: *Infusing Introductory Biology Courses with Higher-Order Curricula*. \$6,000.
- **Lemons, P. P.** (2009-2010) UGA Office of STEM Education: *Infusing Introductory Biology Courses with Higher-Order Curricula*. \$8,000.
- **Lemons, P.P.** (2003-2003) Duke University Center for Instructional Technology, *The Use of Digital Video Technologies to Help TAs Discover Principles of Teaching and Learning Biology*. \$2,500.
- **Lemons, P.P.** (2002-2003) Duke University Arts and Sciences Committee on Faculty Research, *Factors Affecting the Critical Thinking Ability of Beginning Biology Students*. \$2,945.

## KEYNOTE PRESENTATIONS

- Washington University Conference on Integrating Psychology and STEM Education Research to Promote Innovative Teaching (April 2022) “Uniting Theory and Practice in Biochemistry Learning.”

- University of North Carolina Charlotte STEM Summit (May 2021) “Promoting Educational Reform in STEM at the Course, Department, and Institutional Level.”
- Tennessee STEM Education Research Conference (January 2020) “Teaching Professional Development: A Trajectory Toward Effectively Fostering a Focus on Student Thinking.”

## INVITED PRESENTATIONS

- National Academies of Science, Engineering and Medicine Roundtable on Systemic Change in Undergraduate STEM Education (October 2024) Panelist in a webinar entitled “Graduate Students as Part of the Instructional Workforce for Undergraduate STEM Education.”
- Tulane University for the Mathematics Colloquium and funded by Tulane’s participation in the AAU Teaching Evaluation Learning Community (February 2024) “DeLTA: Changing Teaching Evaluation through Departmental Action.”
- **Lemons, P.P.** and Mitchell, A., (November 2023) “UGA\_DeLTA Leveraging university change and departmental leadership to improve teaching evaluation.” Talk presented at the Association of American Universities Teaching Evaluation Learning Community, virtual.
- Gordon Research Conference on Undergraduate Biology Education Research (June 2021 – postponed due to COVID-19) “Advancing Learning in the Life Sciences with Attention to Chemistry and Cognitive Science.”
- **Lemons, P.P.** and Andrews, T.C. (January 2021) “Facilitating Change in Undergraduate STEM Education by Partnering with Departments: The DeLTA Project.” Workshop presented at the Association of American Universities STEM Department Chairs Meeting, virtual
- Savannah State University FACE Faculty Seminar (November 2020) “Increasing Student Interest with Case-Based Problem Solving.”
- University of Maryland Biology Faculty Learning Community workshop (January 2020) “Second-Order Educational Change: Layer by Layer.”
- **Lemons, P.P.**, Andrews, T.C., Brickman, P, Dolan, E.L., Covert, S. (September 2019) “The University of Georgia DeLTA Project.” Flash Talk presented at the National Academies of Science Workshop on Transforming the Evaluation of Teaching, Washington, DC.
- Andrews, T.C., Brickman, P, Dolan, E.L., Covert, S., **Lemons, P.P.** (June 2019) “Promoting Educational Reform in Biology Departments by Bringing Together Department Heads to Tackle Structural Barriers.” Talk presented at the Undergraduate Biology Education Research Gordon Research Conference, Lewiston, ME.
- Gordon Research Conference on Chemistry Education Research and Practice (June 2019) “How can I help students solve real biochemical problems? Insights for educators from students’ solutions to biochemistry problems.”
- Center for Teaching and Learning Pedagogy and Practice Workshops (February 2019) “Teaching Problem Solving in Biochemistry.”
- Kennesaw State University, Department of Chemistry and Biochemistry (October 2018) “Nonpolar groups, Arrows, and End Points: Students’ Difficulties in Biochemistry Problem Solving Reveal Targets for Evidence-Based Instruction.”
- University of Colorado Boulder, Knight-Auchincloss Group Meeting (September 2018). “Nonpolar groups, Arrows, and End Points: Students’ Difficulties in Biochemistry Problem Solving Reveal Targets for Evidence-Based Instruction.”
- Ceballos Madrigal, I., Zagallo, P., Idsardi, R., and Lemons, P.P. (July 2018) “Improving Tools for Measuring Faculty’s Teaching Conceptions and Practices.” Poster presented at the UGA NSF REU poster reception.
- Vanderbilt University, Novick Group Meeting (February 2018) “Undergraduate Problem Solving in Biochemistry.”
- Washington University, CIRCLE (Center for Integrative Research on Cognition, Learning, and Instruction) Education Research Group brown bag series (October 2017) “Undergraduate Problem Solving in Biology.”
- University of Georgia, Center for Teaching and Learning workshop (April 2017) “Introduction to Qualitative Data Analysis.” Co-Presenter, Tessa Andrews.

- Augusta University, Innovative Teaching and Experiential Learning Symposium (March 2017) “Solving Educational Problems: Opportunities and Challenges in Innovative Teaching.”
- University of Georgia, Department of Biochemistry and Molecular Biology (February 2017) “Solving Educational Problems: Difficulties and Opportunities Revealed in Student and Faculty Thinking.”
- University of Sydney, Australia (July 2016) “Domain Specific Biochemistry Problem Solving in Undergraduate Students.”
- University System of Georgia, Scholarship of Teaching and Learning Fellows Conference, Scholarship of Teaching and Learning Methodologies (April 2016).
- University System of Georgia, Scholarship of Teaching and Learning in STEM Fields: Getting Your Feet Wet in Teaching and Learning Research (November 2015).
- University of Georgia, Department of Cellular Biology (October 2015) “Undergraduates’ Solutions to Problems about Key Concepts in Biology.”
- University System of Georgia Teaching and Learning Conference (April 2015) “Using Case Studies to Teach Problem Solving in Undergraduate Biochemistry.”
- King’s College, London, UK, Science and Technology Education Group in the Department of Education and Professional Studies (February 2015) “Designing Research-Based Learning Environments for Students and Faculty.”
- Biochemistry Core Collaborators Workshop, Grand Valley State University (August 2014) “Problem-Solving Skills as Predictors of Success and Persistence in Science.”
- University of Tennessee, Department of Ecology and Evolutionary Biology (March 2014) “Active Learning in Biology Classrooms: Getting Students to Use Their Minds in Class.”
- University of Maine, Center for Research in STEM Education (RISE) (February 2014) “Helping Biology Students Develop Problem-Solving Skills.”
- American Society of Plant Biologists, Annual Meeting, Education Workshop (July 2012) “Case Study Teaching: Engaging Students in Plant Biology Problem Solving.”
- Association of Southeastern Biologists, Annual Meeting (April 2012) “What Type of Multiple-Choice Questions Help Students Practice the Process of Science? A Study of Student Cognition During Multiple-Choice Testing.”
- National Center for Case Study Teaching in Science, Annual Meeting, SUNY at Buffalo (September 2011). “Cases That Make You Think ... The Secret’s in the Questions.”
- Duke University, Department of Biology and Center for Instructional Technology, (April 2010) Biology Workshop: “When to Use Multiple Choice and When to Use Short Essays: Designing Tests That Tell Us Something Without Breaking our Backs.” And Public Seminar: “Using Case Studies to Teach Science and Higher-Order Reasoning.”
- National Center for Case Study Teaching in Science, Annual Meeting, SUNY at Buffalo (September 2008). “Assessing Critical Thinking in the Sciences.”
- University of Georgia, Department of Plant Biology (March 2008) “Assessing Critical Thinking in the Biology Classroom.”
- University of Rochester, Department of Biology (February 2007) “Assessing Critical Thinking in the Biology Classroom.”
- National Center for Case Study Teaching in Science, Annual Meeting, SUNY at Buffalo (October 2006). “A New Method for Assessing Critical Thinking in the Science Classroom” and “Using TAs to Teach Case Studies in Large-Enrollment Science Courses.”
- University of New Mexico Health Science Center, Cell and Molecular Basis of Disease Seminar (May 2006). “Teaching College Biology: A Training Program for Biomedical Graduate Students that Addresses the Values of Diverse Academic Institutions.”
- Mt. Sinai School of Medicine, Medical Education Grand Rounds (November 2003). “Training Graduate Students to Teach the Biomedical Sciences: Duke University’s Certificate in Teaching College Biology.
- Duke University, A Conference on the Scholarship of Teaching and Learning at a Research University (September 2002). “Approaches to the Scholarship of Teaching and Learning in Biology.”

- International Conference on Problem-Based Learning in Higher Education (June 2002). “Novice Instructors and Student-Centered Instruction: Identifying and Addressing Obstacles to Learning in the College Science Laboratory.”
- University of Louisville Health Sciences Center, Career Forum for Biomedical Scientists, (May 2002). “Careers for the Biomedical Scientist in the 21<sup>st</sup> Century.”
- American Society for Cell Biology Annual Meeting, Education Initiative Forum (December 2001). “Preparing Future Faculty: The Certificate in Teaching College Biology Program at Duke University.”
- Wake Forest University, Graduate Student Association, (December 2001). “Careers in Teaching.”

## POSTDOCS AND STUDENTS MENTORED AT UGA

### Postdoctoral Associates (7 associates)

- Terri Dunbar, Owens Institute for Behavioral Research Postdoctoral Associate, August 2023-2024. Project: Dynamic Cognition among Undergraduate Life Sciences Students
- Gretchen King, Biochemistry Postdoctoral Research Associate, June 2019 – 2020. Project: Linguistic demand of key terms associated with conceptual biochemistry learning.
- Sophia Jeong, Biochemistry Postdoctoral Research Associate, August 2018 – 2020. Project: Sociocultural learning among biology faculty engaged in learning communities focused on new methods of assessment.
- Patricia Zagallo, Biochemistry Postdoctoral Research Associate, August 2017 – 2018. Project: A Community of Enhanced Assessment Facilitates Reformed Teaching.
- Cheryl Sensibaugh, Biochemistry Postdoctoral Research Associate, June 2015 – 2018. Project: Problem-Solving Skills as Predictors of Success and Persistence in Science.
- Jill McCourt (Voreis prior to 2015), Biochemistry Scholar-Teacher Postdoctoral Associate, January 2014 – August 2017. Project: A Community of Enhanced Assessment Facilitates Reformed Teaching.
- Tessa Andrews, Biology Teacher-Scholar Postdoctoral Associate, Division of Biological Sciences, Summer 2012-Summer 2013. Project: Implementing case study pedagogy: What do instructors need to succeed?

### GRADUATE STUDENTS (20 students)

- **Eric Kusi**, ILS student, Biochemistry and Molecular Biology, Thesis Adviser, 2024-present
- **Philimon Zaagbil**, Biochemistry and Molecular Biology, Thesis Adviser, 2022-present
- Emily Bremers, Biochemistry, Thesis Committee Member, 2021-present
- **Cheng-Wen He**, Science Education, College of Education, Thesis Adviser, co-mentoring with Julie Luft, 2021-present
- **Kush Bhatia**, Genetics, Thesis Adviser, co-mentoring with Jonathan Eggenschwiler, 2017 – present
- Alex Waugh, Genetics, Thesis Committee Member, 2020-2024
- Zaka Asif, Biochemistry and Molecular Biology, Thesis Committee Member, 2018 – 2023
- Qian Zhang, Educational Psychology, Thesis Committee Member, 2020-2022
- Mariel Pfeiffer, ILS student, Rotation Adviser and Thesis Committee Member, 2016 – 2021
- Blake Whitt, Science Education, College of Education, Thesis Committee Member, 2017 – 2020
- **Stephanie Halmo**, Biochemistry and Molecular Biology, Thesis Adviser, co-mentoring with Lance Wells, 2015 – 2020
- Bo Idsardi, Science Education, College of Education, Thesis Committee Member, 2017 – 2018
- Katy Dye, Cell Biology, Thesis Committee Member, 2015 – 2016
- Tyler Carter, ILS student, Rotation Adviser, 2015
- Josephine Bou Dagher, ILS student, Rotation Adviser, 2015
- Hyun S. Kim, Educational Design and Technology Program, College of Education, Thesis Committee Member, 2011- 2014
- Alan Bowsher, Plant Biology, Research Assistant, Spring 2012
- Michael McKain, Plant Biology, Teaching Intern, Spring 2011



- Luke Snyder, Plant Biology, Research Assistant, Spring 2011
- Luanna Prevost, Plant Biology, Research Assistant, Spring 2010 – Spring 2011
- Jason Comer, Plant Biology, Teaching Intern, Spring 2010

### **UNDERGRADUATE RESEARCH ASSISTANTS (42 students)**

- Cameron Tagilaferi, 2025
- Ryan Wood, 2024 - present
- Kyle Nuckles, 2023
- Brooke Coates, 2023
- Jessica Barnes, 2022
- Demetrius Jelks, 2021-present
- Olivia King, 2021-present
- Seeta Patel, 2021-present
- Aparna Pateria, 2021-present
- Karishma Parbhoo, 2021 UGA UBERV3 Fellow through the NSF REU program
- Austin Stack, 2018 - present
- Oliksandra Stogniy, 2018 - present
- Joel Gabriel, 2020-2021
- Jade Adhola, 2020 -2021
- Kedriana Brown, 2020 UGA UBERV3 Fellow through the NSF REU program
- Vanessa Alele, 2019 – 2020: Peach State Louis Stokes Alliance for Minority Participation Research Scholar
- Grace Snuggs, 2019 – 2020, CURO Scholar
- Jakayla Clyburn, 2019: UGA UBERV2 Fellow through the NSF REU program
- Peter Reinhart, 2019: UGA UBERV2 Fellow through the NSF REU program
- Ivan Ceballos Madrigal, 2018: UGA UBERV2 Fellow through the NSF REU program
- Seble Negatu, 2017 – 2018: Peach State Louis Stokes Alliance for Minority Participation Research Scholar
- Hailey Clark, 2016 – 2018
- Jamie Pham, 2016 – 2018
- Lisa Blais, 2017: UGA UBERV2 Fellow through the NSF REU program
- Quinton Blount, 2017
- Yvonne Webb, Spring 2017
- Briel Power, 2016-2017
- Lavanya Ramakrishnan, 2015- 2017
- Mariann Jarhaus, 2016: UGA UBERV2 Fellow through the NSF REU program
- Morgan Watson, 2016
- Kaitlin Kehoe, 2015 - 2016
- Kush Bhatia, 2015 – 2016
- Ersta Ferryanto, 2014 –2016
- Bryant Choe, 2014 –2016
- Tamera Martin, 2015 – 2016
- Tre'cherie Crumbs, 2014 –2016; 2015 UGA UBERV2 Fellow through the NSF REU program
- Alexandra Howell, 2014 – 2015
- Taylor Adkins, 2013-2014; Peach State Louis Stokes Alliance for Minority Participation Research Scholar; 2014 UGA UBERV2 Fellow through the NSF REU program
- Gilbert Nwaopara, 2013: Peach State Louis Stokes Alliance for Minority Participation Research Scholar
- Alex O. Rothbaum, 2011- 2012
- Katherine Keck, 2011
- Roxanne Lanier, 2011

### **UNDERGRADUATE PEER LEARNING ASSISTANTS, INTRODUCTORY BIOCHEMISTRY (~80 students)**

- Berkley Bertrand, Spring 2023
- Adrian Bozocea, Spring 2023
- Shervin Eskandari, Spring 2023
- Tarik Itum, Spring 2023

- Linda Al-Sabbah, Fall 2021
- Jessica Barnes, Fall 2021
- Alexis Coullias, Fall 2021
- Azmath Farooqi, Fall 2021
- Madeleine Lawson, Fall 2021
- Diego Serrano, Fall 2021
- Yosef Smadi, Fall 2021
- Samantha Smith, Fall 2021
- London Nava, Fall 2020
- Alberto Perez, Fall 2020
- Lukas Veltmaat, Fall 2020
- Rohan Vuppala, Fall 2020
- Noah Weinstein, Fall 2020
- Katherine Batchler, Spring & Fall 2020
- Renato Leon, Spring & Fall 2020
- Amy Lin, Spring & Fall 2020
- Cole McBay, Spring 2020
- Olivia Norris, Fall 2019 – Spring 2020
- Andrew Rowan, Fall 2019 – Spring 2020
- Cherith Blair, Fall 2019
- Amanda Smith, Fall 2019
- Jenny Zhang, Fall 2019
- Jaser Doja, Spring 2019 – Fall 2019
- David Davis, Spring 2019
- Ave Fouriezos, Spring 2019
- Alyssa Moffit, Spring 2019
- Mira Patel, Spring 2019
- Reema Patel, Spring 2019
- Justin Rubin, Spring 2019
- Jada Summerville, Spring 2019
- Adam Whitsett, Spring 2019
- Zachary Bennett, Fall 2018
- Nina Mbonu, Fall 2018
- Benga Sodiya, Fall 2018
- Florence Urum, Fall 2018
- Dru Adams, Fall 2016
- Harris Burton, Fall 2016
- Adelyn Duck, Fall 2016
- Jacob Eskew, Fall 2016
- Arshia Ghodrati, Fall 2016
- Soo Min Lee, Fall 2016
- Namita Mathew, Fall 2016
- Herrington Murray, Fall 2016
- Rilee Racine, Fall 2016
- Chandler Rountree, Fall 2016
- Danish Singh, Spring 2016 – Fall 2016
- Silas Money, Spring 2016 – Fall 2016
- Mimi Ackleh, Spring 2016
- Prentiss Autry, Spring 2016
- Ryan Devine, Spring 2016
- Holly Ebbets, Spring 2016
- Carver Goodhue, Spring 2016
- Jennifer Khong, Spring 2016
- Rowan Kubelus, Spring 2016
- Morgan Najdowski, Spring 2016
- Rahul Shah, Spring 2016
- Allen Vickers, Spring 2016
- Mandy Wachtel, Spring 2016
- Marshall Akin, Spring 2015
- Justin Dumrongkulraksa, Spring 2015
- Charlotte Greenway, Spring 2015
- Alexandra Howell, Spring 2015
- Nathan Howell, Spring 2015
- Lindsey Kangas, Spring 2015
- Kaitlin Kehoe, Spring 2015
- Laura Ryan, Spring 2015
- Anjalie Subramanian, Spring 2015
- Joshua Abad, Fall 2014 – Spring 2015
- Kush Bhatia, Fall 2014 – Spring 2015
- Daven Khana, Fall 2014 – Spring 2015
- Julie Howell, Fall 2014 – Spring 2015
- Allison O’Neal, Fall 2014 – Spring 2015
- Angela Barton, Fall 2014
- Maya Firsowicz, Fall 2014
- Jonathan Stewart, Fall 2014
- Rebecca Web, Fall 2014
- Sonya Khimani, Spring 2014 – Fall 2014
- Raja Atchutuni, Spring 2014
- Anoosh Bahraini, Spring 2014
- Karthik Bhat, 2014

- Joseph Coppiano, Spring 2014
- Guilherme Costa, Spring 2014
- Megan Meyers, Spring 2014
- Ly Nguyen, Spring 2014
- Tracy Phan, Spring 2014
- Lucas Wachsmuth, Fall 2013-Spring 2014

## **SERVICE, PROFESSIONAL DEVELOPMENT, AND OUTREACH WHILE AT UGA**

### **Disciplinary Service**

- American Society for Biochemistry and Molecular Biology, Education and Professional Development Committee, 2022 - present
- Monitoring Editor, *CBE-Life Sciences Education*, 2021 – present
- Undergraduate Biology Education Gordon Research Conference, Co-Vice Chair for 2023 conference
- Editor, *Course Source*, 2020 – 2022
- Guest, Online with *LSE*, (American Society for Cell Biology): Using Personas as a Tool for Learner-Centered Professional Development, 2020
- Discussion Leader, Gordon Research Conference on Undergraduate Biology Education, 2019
- Participant, Essential Questions and Measures: Assessing Institutional Transformation of Undergraduate STEM Education a workshop sponsored by Association of American Universities and the National Science Foundation, 2019
- Committee Member, Society for the Advancement of Biology Education Research, Membership Committee, 2012 – 2015
- Consultant, Wofford College Biology Department, NSF-Funded Curriculum Innovation project, 2009-2011

### **University Service at the University of Georgia**

- University Curriculum Committee, Executive Committee Member, 2023-present
- Member, School Nominee, Program Review Committee, School of Ecology, 2023-2024
- Reviewer, Presidential Interdisciplinary Seed Grants, 2023
- Member, Search committee for Associate Vice President for Instruction, 2023
- Member, Search committee for Quality Enhancement Plan Director, 2022
- Member, Quality Enhancement Plan Development and Implementation Committee, 2021-2022
- Member, University Council's Program Review and Assessment Committee, 2019 – 2022
- Executive Committee, Owens Institute for Behavioral Research, UGA, 2017-present
- Participant, University System of Georgia Momentum Summit II, 2019
- Task Force on Gateway Courses, UGA, 2017-2018
- Provost's Committee on External Faculty Awards, UGA, 2017
- Co-facilitator, with Julie Luft, of a UGA-based faculty learning community focused on STEM K-12 Teacher Recruitment, Preparation, and Induction, 2016-2018
- UGA Research Scientist Promotion Committee in the Office of the Vice President for Research, 2015-2017
- Participant, Faculty Learning Community on expanding the Peer Learning Assistant model to more courses at UGA, August 2015-May 2016
- Represented UGA at the Southeastern Regional Pulse (Partnership for Undergraduate Life Sciences Education) Institute, Wofford College, June 2016
- Advisor, Clicker System Committee of UGA's Center for Teaching and Learning, 2011
- UGA Liaison, The Reinvention Center Assessment Network, Fall 2009

### **College Service in the Franklin College of Arts and Sciences**

- Leader, Biology Education Research Interdisciplinary Group of the Integrated Life Sciences Graduate Program, UGA, 2015 – 2021
- Member, Biology Division Lecturer Search Committee, 2019
- Biochemistry and Molecular Biology Lecturer Search Committee, 2017-2018
- Co-leader, with Peggy Brickman, Russell Malmberg, and Kristen Miller, of the Biology Instruction Retreat for all instructors who teach courses in the biology major at UGA, June 2016 – January 2017
- Third Year Review Committee for Tessa Andrews, Assistant Professor, Department of Genetics, 2015-2016
- Search Committee, UGA Athletic Association Endowed Professorship in Science Education Research, 2014 - 2016
- Search Committee, UGA Center for Teaching and Learning, Assistant Director for the Scholarship of Teaching and Learning, 2015
- Committee Member, Senior Scholar in Biology Education Search Committee, 2010-2011

### **Department Service in Biochemistry and Molecular Biology**

- Member, Biochemistry and Molecular Biology Assessment Committee, 2017-2022
- Biochemistry and Molecular Biology Undergraduate Affairs Committee, 2014 - 2022
- Chair, UGA Department of Biochemistry and Molecular Biology Diversity and Inclusion Committee, 2020 – 2021
- Executive Committee, Department of Biochemistry and Molecular Biology, UGA, 2016 - 2021
- Adviser, Biochemistry and Molecular Biology Major, Spring 2014 and Fall 2015
- Search Committee, Department Head for the Department of Biochemistry and Molecular Biology, University of Georgia, 2014

### **Professional Development**

- Participant, Aspire Summer Institute for STEM Faculty and Faculty Developers, 2020
- Participant, National Science Foundation-funded BioMolViz Workshop on assessment of visualization skills in biochemistry, Atlanta, GA, 2018

### **Outreach**

- Guest, Classic City Science, 2019
- Co-Chair, Super Scientist program, Malcom Bridge Elementary School, Oconee County Schools, Georgia, 2014 – 2016
- Co-Chair, Malcom Bridge Elementary School Science Lab Committee, Oconee County Schools, Georgia, 2013 – 2016
- Presenter, “What is it like to be a scientist?” Malcom Bridge Elementary School, Oconee County Schools, Georgia, Kindergarten class, November 2013

### **SERVICE AS ADVISORY BOARD MEMBER AND EVALUATOR**

- Project Advisory Board *Show me the data: Exploring the impact of observation protocol data in changing instructor motivation and practice* funded by NSF IUSE, 2023-2026
- Project Advisory Board *Molecular Case Studies at the Interface of Biology and Chemistry* PI: Shuchismita Dutta, Institute for Quantitative Biomedicine and RCSB Protein Data Bank funded by NSF RCN UBE, 2020-2025

- Project Advisory Board *Collaborative Research: Intuitive Biological Reasoning and the Role of Cognitive Construals* PIs: Kimberly Tanner, San Francisco State University, and John Coley, Northeastern University funded by NSF ECR, 2020-2023
- Project Advisory Board *Collaborative Research: Exploring the (Meta)Comprehension Benefits of Learner-Generated Drawings in Science*, PI: Logan Fiorella, UGA, and Allison Jaeger, St. John's University, funded by NSF ECR, 2020-2023
- Project Advisory Board *Preparing TAs for Model-Based Inquiry Instruction*, PI: Molly Bolger funded by NSF IUSE, 2020-2023
- Project Advisory Board *Problem Solving*, PI: Jenny Knight, CU Boulder funded by NSF IUSE, 2017-2021
- Project Advisory Board, PI: John Stoltzfus, Michigan State University funded by NSF IUSE, 2017-2020
- Project Evaluator, Biology Teaching Assistant Project (Bio-TAP), an NSF-funded research coordination network that focuses on research and resources to improve teaching professional development for graduate students, 2016-present

## **SERVICE AS REVIEWER**

### Journals

*CBE-Life Sciences Education*  
*Chemistry Education Research and Practice*  
*International Journal of STEM Education*  
*Frontiers in Education*  
*Journal of Engineering Education*  
*Journal of Computer-Assisted Learning*  
*Journal of Research in Science Teaching*  
*PLOS ONE*

### Funding Agencies

National Science Foundation, Directorate for STEM Education, Division of Research on Learning, Division of Research on Undergraduate Education, CAREER

### Conferences

Society for the Advancement of Biology Education Research  
 National Association for Research in Science Teaching  
 Psychology of Mathematics Education – North American Chapter of the International Group

## **PROFESSIONAL SOCIETIES**

- Accelerating Systemic Change in STEM Higher Education, 2021-present
- American Society for Biochemistry and Molecular Biology, 2017-present
- Society for the Advancement of Biology Education Research, 2011-present
- American Association for the Advancement of Science, 2009-present