Eleanor C. Sayre

Director and Learning Scientist

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Professional Experience

University of Rochester | Rochester, NY (2025–present)

Assistant Dean and Director of the Office of Honesty and Integrity

Lead the Office of Honesty and Integrity through a transition to a University-wide office. Coordinated outreach and training programs to support students in acting with integrity in their coursework. Supported faculty in developing course policies to reduce cheating in their courses. Liaised across campus build strong programs for academic excellence without harming student retention.

- Lead initiative to revise academic honesty materials in plain language and accessible format.
- Updated training materials to improve relevance in the age of generative AI.

Professional development for Emerging Education Research (PEER) Institute (2014–present)

Co-Director and Founder

The Professional development for Emerging Education Researchers (PEER) Institute runs intensive 1-2 week workshops to help STEM faculty and graduate students develop skills, community, and self-efficacy in discipline-based education research and the scholarship of teaching and learning. PEER centers the development of participants' own research projects and peer-reviewed papers through collaborative work and written reflection. In the last 10 years, there have been more than 1000 participants in PEER workshops worldwide.

- Articulated and refined the PEER model for workshops and professional development to best serve the needs of disciplinary faculty.
- Developed and refined the PEER curriculum, including topics such as research design, project planning, theories, methods, and data in education research; research ethics; publication and authorship; and fundamental skills in research.
- Lead PEER workshops in the US, Mexico, Canada, Rwanda, Germany, and the UK, including partnering with local hosts; localizing the curriculum to be responsive to participants' needs; and facilitating during the field school.

National Science Foundation | Alexandria, VA (2022–2025)

Program Director, Division of Undergraduate Education, Directorate for STEM Education

Managed proposals and awards across 5 NSF programs. Analyzed proposals' intellectual merits and potential for broader impacts, coordinated award and decline recommendations across a diverse team to promote high-quality projects and a balanced portfolio, and negotiated with principal investigators (PIs) about their projects. Broadened participation in the STEM research enterprise among historically underserved and underrepresented groups. Conducted outreach and engagement with STEM education community through conference presentations, webinars, and other materials. Provided organizational work for program meetings and PI 1:1 meetings with prospective PIs, and engagement with professional societies. Represented the Division of Undergraduate Education on inter-divisional, cross-directorate, and inter-agency working groups and programs.

- Portfolio focuses on (a) semiconductor & microelectronics education & workforce development

and (b) broadening participation through programs and strands focused on new PIs and emerging research institutions.
- Promoted programs to build national capacity for high-quality research, improving undergraduate STEM student success, and cutting-edge research partnerships including minority-serving institutions.
- Award portfolio: $65M, >90 awards, 35 states.

Kansas State University | Manhattan, KS (2011–2025)

- Professor, Physics (2020–2025) (on leave, 2022-2025)
- Associate Professor, Physics (2016-2020)
- Assistant Professor, Physics (2011-2016)

Directed internationally recognized research lab in STEM education with substantial external funding. Students are majority women (department overall: 10%), LBGTQ+, and people of color. Raised national and international visibility of physics and STEM education. Built collaborations with researchers across North America, Europe, and Africa. Increased the number of applications and matriculation rate for physics education research graduate students despite declining institutional enrollments. Improved student success in STEM through teaching and faculty development.

Taught core physics classes, introductory service classes, and graduate courses in physics education using evidence-based pedagogy and diverse student-centered teaching methods. Lead cross-functional partnerships across campus to improve research mentor training, disciplinary writing skills, and student success. Founded the Women & Non-binary in Physics group and a founding member of the Diversity, Equity, and Inclusion Committee.

- Awarded $500k annual external funding, exceeding departmental average of $350k.
- Mentored graduate students, postdocs, and undergraduates in research at 3x departmental averages and with 100% postgrad placement rate.
- Published research results in >100 peer-reviewed publications across fields including engineering, physics, computer science, faculty development, and the learning sciences.
- Implemented changes to reduce drop and failure (DFW) rates for introductory courses while doubling enrollments in upper-division and graduate courses.

Research Director, PhysPort (2012–2023)

PhysPort is the leading teaching resource for evidence-based pedagogy and assessment in physics. Evidence-based materials include faculty-centered resources for teaching methods and curricula; deep pedagogical issues in physics; assessment for undergraduate physics and allied fields; and workshop materials instructor development. PhysPort is a partnership with the American Association of Physics Teachers.

- Directed research on PhysPort's impact, leading to dramatic site redesigns. Usage has doubled every 2 years since 2011. 20% of US physics faculty are members, representing 50% of US colleges and universities. There are roughly 5000 regular users worldwide.
- Oversaw research and development of PhysPort's assessment resources, including faculty-friendly "Expert recommendation" articles around assessment issues; overviews and comparisons of research-based assessment instruments; and the Data Explorer where faculty upload their results for automated analysis.
- Developed partnerships to support physics education researchers in conducting research using PhysPort data and using PhysPort tools to collect research and evaluation data.

Additional Appointments

2019–2024 **Research Affiliate, Center for Advancing Scholarship to Transform Learning (CASTLE)**, *Rochester Institute of Technology*, Rochester, New York

2017-2018 **Fulbright Research Chair in STEM Education**, *University of Calgary*, Calgary, Alberta, Canada

2009-2011 **Visiting Assistant Professor & Lilly Teaching Fellow**, *Wabash College*, Crawfordsville, Indiana

2007-2009 **Postdoctoral Researcher**, *The Ohio State University*, Columbus, Ohio
Advisor: Dr. Andrew Heckler

Education

2007 **Doctor of Philosophy (Physics)**, *University of Maine*, Orono, Maine
Plasticity: Resource Justification and Development Advisor: Dr. Michael C Wittmann

2005 **Master of Science in Teaching (Physics)**, *University of Maine*, Orono, Maine
Resource Selection in Nearly-Novel Situations Advisor: Dr. Michael C Wittmann

2002 **Bachelor of Arts (Physics)**, *Grinnell College*, Grinnell, Iowa

Research

- Interplay between equity, identity, and learning for undergraduates in STEM.
- Broadening participation in the scientific enterprise among marginalized groups: women, LBGTQ+ people, people of color, immigrants, and people with disabilities
- Professional development for university faculty around teaching and education research.
- Qualitative, quantitative, and multi-methods education research.

Grants

As Principal Investigator

2021 **Professional Development for Emerging Education Researchers: Field School in West Kazakhstan**, *US Embassy in Tashkent UniCEN program*, $40k
Develops and conducts a field school in partnership with Universities in West Kazakhstan to improve research skills and pedagogy in English among regional university STEM faculty. PI: E.C. Sayre

2020-2023 **Collaborative Research: Institute in Research Methods for Professional Development for Emerging Education Researchers (PEER) Field Schools**, *NSF BCSER*, $1M
Supports and extends field schools in education research in New York, Illinois, California, and the US Virgin Islands. PIs: E.C. Sayre (KSU; Eugene Vasserman is temp PI); S.V. Franklin(RIT); Mary Bridget Kustusch (DePaul)

2017-2023 **Collaborative Research: PhysPort's impact on teaching practice**, *NSF IUSE*, $2.4M
Investigates and improves the impact of online professional development materials on faculty teaching practice nationwide. PIs: E.C. Sayre (KSU; Eugene Vasserman is temp PI), Sarah McKagan (AAPT and McKagan Enterprises); Co-PIs: Beth Cunningham and Adrian Madsen (AAPT)

2017-2018 **Physics Students' Professional Development**, *Fulbright*, $25k
Investigates how physics students develop professional identity; supports the Fulbright Research Chair position at the University of Calgary. PI: E.C. Sayre

2014-2018 **Foundational Research on Problem Mathematization in Undergraduate Physics**, *NSF IUSE*, $500k
Physics students must learn to *mathematize*: convert physics problems into a form they can "do math on". We track several threads of mathematization across the undergraduate curriculum. PI: E.C. Sayre (KSU); co-PI: Dean Zollman (KSU)

2013-2016 **Collaborative Research: Community Implementation: WIDER: Data Explorer and Assessment Resources for Faculty**, *NSF WIDER*, 1347821, $750k
The DEAR-Faculty project promotes the use of research-based assessments among physics faculty. This proposal supports that goal by building a robust national database of results, and beautiful, intuitive, interactive visualizations of that data. PI: E.C. Sayre, Co-PIs: William Hsu, Eugene Vasserman (KSU); PI: Sarah McKagan (AAPT and McKagan Enterprises); Co-Is: Adrian Madsen and Robert Hilborn (AAPT)

2012-2015 **Collaborative Research: WIDER: EAGER: Increasing Faculty Use of Formative and Summative Assessment through Online Resources and Faculty Development**, *NSF WIDER:EAGER*, 1256354, $300k
Extends PhysPort.org to include faculty-friendly assessment information; develops assessment workshops for physics department chairs; conducts meta-analyses of assessment data. PIs: E.C. Sayre(KSU), Sarah McKagan (AAPT and McKagan Enterprises); Co-PI: Robert Hilborn (AAPT)

2010-2013 **Collaborative Research: Developing a tool for teachers to assess real-time learning and forgetting in large classes**, *NSF CCLI*, 0941889, $200k
Investigates learning and forgetting in large-enrollment introductory physics classes using RAWR, a web-based system for data collecting, analysis, and real-time reporting. PI: E.C. Sayre (KSU); PI: S.V. Franklin(RIT)

As Consultant, Senior Personnel, or Subawardee

2020-2021 **BCSER: Expanding the Pool of Discipline-Based STEM Education Researchers**, *NSF BCSER Conference*, $50,000
My role: Leadership team; PI: Mary Bridget Kustusch, DePaul

2019-2022 **Equity in undergraduate physics labs**, *NSF IUSE*, $30,000
My role: evaluator. PI: Natasha Holmes, Cornell University

2019-2022 **SBE-UKRI: Collaborative Research: Centering Women of Color in STEM: Data-Driven Opportunities for Inclusion**, *NSF SBE-UKRI*, $73,261
My role: Data Explorer director. PI: Apriel Hodari, Eureka Scientific

2019-2022 **Collaborative Research: Building Assessment Capacity in Chemistry Education - The CHemistry Instrument Review and Assessment Library (CHIRAL) Project**, *NSF IUSE*, $5,000
My role: Advisory Board. PI: Jack Barbera, Portland State University

2019-2024 **CAREER: A Computational Approach to the Study of Behavior and Social Interactions**, *NSF CAREER*, $5,000
My role: Educational consultant. PI: Ifeoma Nwosu, Rochester Institute of Technology

2018-2023 **Get the Facts Out: Changing the Conversation around STEM Teacher Recruitment**, *NSF IUSE*, $20,000
My role: Data Explorer director. PI: Wendy Adams, Colorado School of Mines

2016-2021 **A Model of Educational Transformation: Developing a Community of Faculty Implementing Next Generation Physical Science and Everyday Thinking**, *NSF IUSE*, $32,381
My role: Data Explorer director. PI: Edward Price, CSU-San Marcos

Teaching

Physics education	Teaching University Physics (graduate), Methods of Physics Education Research (graduate), Interview intensive (graduate), Learning Assistant seminar (undergraduate)
Upper-level physics	Classical Mechanics, Electromagnetic Fields 1, Electrodynamic Theory
Introductory and service	Intuitive quantum physics with lab, Contemporary Physics, The Physical World, Introductory physics (lab and recitation) (both calculus- and algebra-based), Introductory physics 1 for Tibetan Monks

Presentations & Publications

Journal Papers

1. Modir, B and Sayre, E.C. (submitted) ""Looking ahead" as an extended readout strategy in Electromagnetic Theory"
2. El-Adawy, S, Alexis, C and Sayre, E.C. (submitted) "Emerging STEM education researchers' positioning and perception of discipline-based education research"
3. El-Adawy, S, Franklin, S.V., and Sayre, E.C. (submitted) "Emerging Physics Education Researchers' Growth in Professional Agency: Case Study" arxiv
4. El-Adawy, S, Lau, AC, Sayre, E.C., and Fracchiolla, C (submitted) "Motivation and needs of informal physics practitioners"
5. El-Adawy, S, Huynh, T, Kustusch, MB, and Sayre, E.C. (2022) "Context interactions and physics faculty's professional development: Case study". *Physical Review Physics Education Research* 18 (2), 020104
6. Zohrabi Alaee, D, Sayre, E.C., Kornick, K, and Franklin, S.V. (2022) "How physics textbooks embed meaning in the equals sign" *Physical Review Physics Education Research*
7. Holmes, NG, Heath, G, Hubenig, K, Jeon, S, Kalender, ZY, Stump, E, and Sayre, E.C.. (2022) "Evaluating the role of student preference in physics lab group equity" *Physical Review Physics Education Research* 18, 010106 link
8. Huynh, T., Madsen, AM, McKagan, SB, and Sayre, E.C. (2021) "Building personas from phenomenography: a method for user-centered design in education" *Information and Learning Sciences* link
9. McKagan, SB, Strubbe, LE, Barbato, LJ, Madsen, AM, Sayre, E.C., and Mason, BA (2020) "PhysPort use and growth: Supporting physics teaching with research-based resources since 2011" *The Physics Teacher* 58 (7), 465-469. link
10. Strubbe, LE, Madsen, AM, McKagan, SB, and Sayre, E.C. (2020) "Beyond teaching methods: highlighting physics faculty's strengths and agency" *Physical Review Physics Education Research* link
11. Madsen, A.M., McKagan, S.B, and Sayre, E.C. (2020) "Best Practices for Administering Attitudes and Beliefs Surveys" *The Physics Teacher* arXiv
12. Modir, B., Thompson, J.D., and Sayre, E.C. (2019) "Framing difficulties in quantum mechanics"

Physical Review Physics Education Research link

13. Chari, D.N., Nguyen, H.D., Zollman, D.A, and Sayre, E.C. (2019) "Student and instructor framing in upper-division physics" *American Journal of Physics* arXiv
14. Waters, D.P, Amarie, D, Booth, R.A, Conover, C, Sayre, E.C. (2019) "Investigating students seriousness during selected conceptual inventory surveys" *Physical Review Physics Education Research* link
15. Madsen, A.M., McKagan, S.B, Paul, C and Sayre, E.C. (2019) "Resource Letter RBAI-2: Research-based Assessments in Physics and Astronomy: Beyond physics topics" *American Journal of Physics* link
16. Weliweriya, N., Sayre, E.C., and Zollman, D.A. (2019) "Case Study: Coordinating Among Multiple Semiotic Resources to Solve Complex Physics Problems" *European Journal of Physics* 40 (2), 025701. link
17. Franklin, S.V., Hane, E, Kustusch, MB, Ptak, C, and Sayre, E.C.(2018) "Improving retention through metacognition: a program for deaf/hard-of-hearing and first-generation STEM college students" *Journal of College Science Teaching* 48 (2), 21-27. link
18. Modir, B., Thompson, J.D., and Sayre, E.C. (2018) "Students' epistemological framing in quantum mechanics problem solving" *Physical Review Physics Education Research* 13, 020108 link
19. Madsen, A.M., McKagan, S.B, and Sayre, E.C. (2018) "Best Practices for Administering Concept Inventories" *The Physics Teacher* 55 (9), 530-536 link
20. Weliweriya, N.L., Sayre, E.C., and Zollman, D.A. (2018) "The Effectiveness of 'Pencasts' in Physics Courses" *The Physics Teacher* 56 (3), 161-164. link
21. Mitchem, S.L., Zohrabi Alaee, D, and Sayre, E.C. (2017) "Student Understanding of Electric and Magnetic Fields in Materials" *American Journal of Physics* 85 (9), 705-711 link
22. Anderson, K. A., Crespi, M., and Sayre, E.C. (2017). "Linking behavior in the physics education research coauthorship network." *Physical Review Physics Education Research*, 13(1), 10121. link
23. Madsen, A.M., McKagan, S.B, and Sayre, E.C. (2017) "Resource Letter RBAI: Research-based Assessments in Physics and Astronomy" *American Journal of Physics* 85, 245 (2017)link
24. Irving, P.W. and Sayre, E.C. (2016) "Developing Physics Identity", *Physics Today* 69(5), 46 link
    - A letter to the editor and our response appeared in May, 2017.
    - This paper was translated into Japanese and reprinted in *Parity* 32(3), 2017.
25. Von Korff, J., Archibeque, B., Gomez, K.A., Heckendorf, T., McKagan, S.B., Sayre, E.C., Schenk, E.W., Shepard, C. and Sorell, L. (2016) "Secondary Analysis of Teaching Methods in Introductory Physics: a 50k-Student Study" *American Journal of Physics* 84, 969 (2016) link
26. Nguyen, H.D., Chari, D.N, and Sayre, E.C. (2016) "Dynamics of students' epistemological framing in group problem solving" *European Journal of Physics* 37 (6), 065706 link
27. Irving, P.W. and Sayre, E.C. (2016) "A case study of upper-level physics students' individual pathways through physics", *Cultural Studies of Science Education* link
28. Madsen, A.M, McKagan, S.B., Martinuk, M."S"., Bell, A, and Sayre, E.C. (2016) "Research-based assessment affordances and constraints: Perceptions of physics faculty" *Physical Review Special Topics – Physics Education Research Focused Collection: Faculty Practices* link
29. Irving, P.W. and Sayre, E.C. (2015) "Becoming a Physicist: The Roles of Research, Mindsets, and Milestones in upper-division student perceptions", *Physical Review Special Topics – Physics Education Research Focused Collection: Upper Division* 11(2), 020120. link
30. Sayre, E.C. and Irving, P.W. (2015) "Brief, embedded, spontaneous metacognitive talk indicates thinking like a physicist", *Physical Review Special Topics – Physics Education Research Focused Collection: Upper Division* 11(2), 020121. link

31. Madsen, A, McKagan, S.B, and Sayre, E.C. (2015) "How physics instruction impacts students' beliefs about learning physics: a meta-analysis of 24 studies", *Physical Review Special Topics – Physics Education Research*, 10(1), 1103. link
32. Franklin, S.V., Sayre, E.C., and J. Clark (2014) "Traditionally taught students learn; actively-engaged students remember", *American Journal of Physics* 82(8), 798-801. link
33. Sayre, E.C. (2014) "Oral exams as a tool for teaching and assessment", *Teaching Science* 60(2), 29-33. link
34. Irving, P. W., & Sayre, E. C. (2014). "Conditions for building a community of practice in an advanced physics laboratory", *Physical Review Special Topics – Physics Education Research*, 10(1), 10109. link
35. Aubrecht II, G.J. and Sayre, E.C. (2014) "Newton's Third Law in Middle School", *Association for University Regional Campuses of Ohio (AURCO) Journal* 20, 22-30. link
36. Madsen, A.M, McKagan, S.B, and Sayre, E.C. (2013) "Gender gap on concept inventories in physics: what is consistent, what is inconsistent, and what factors influence the gap?", *Physical Review Special Topics – Physics Education Research* 9, 020121. (**Editors' Suggestion**). link
37. Irving, P.W. and Sayre, E.C. (2013) "Physics Identity Development: A snapshot of the stages of development of upper-level physics students", *Journal of the Scholarship of Teaching and Learning*, 13(4) 68-84. link
38. Irving, P.W., Martinuk, M."S." and Sayre, E.C. (2013) "Transitions in students' epistemic framing along two axes", *Physical Review Special Topics – Physics Education Research* 9, 010111. link
39. Chen, Y., Irving, P.W., and Sayre, E.C. (2013) "Epistemic game for answer making in learning about hydrostatics", *Physical Review Special Topics – Physics Education Research* 9, 010108. link
40. Sayre, E.C., Franklin, S.V., Clark, J., and Sun, Y. (2012) "Learning, Retention, and Forgetting of Newton's Third Law throughout University Physics", *Physical Review Special Topics – Physics Education Research* 8, 010116. doi:10.1103/PhysRevSTPER.8.010116
41. Heckler, A.F. and Sayre, E.C. (2010) "What happens between pre- and post-tests: Multiple measurements of student understanding during an introductory physics course", *American Journal of Physics* 78, 768. doi:10.1119/1.3384261
42. Sayre, E.C. and Heckler, A.F. (2009) "Peaks and decays of student knowledge in an introductory E&M course", *Physical Review Special Topics – Physics Education Research* 5, 013101. doi:10.1103/PhysRevSTPER.5.013101
43. Sayre, E.C. and Wittmann, M.C. (2008) "Plasticity of intermediate mechanics students' coordinate system choice", *Physical Review Special Topics – Physics Education Research* 4, 020105. doi:10.1103/PhysRevSTPER.4.020105

Peer-reviewed Conference Proceedings

1. Hass, CAF, El-Adawy, S.E, S.V. Franklin, Kustusch, MB, Sayre, E.C. and, Vasserman, EY, (2023) "Emerging Education Research Practitioners and Theory" *International Conference of the Learning Sciences 2023*
2. Hass, CAF, El-Adawy, S.E, S.V. Franklin, Hancock, E, Kustusch, MB, and Sayre, E.C. (2023) "Gatekeeping of Emerging Discipline-Based Education Researchers" *International Conference of the Learning Sciences 2023*
3. El-Adawy, S.E, Alexis, C, and Sayre, E.C. (2023) "Figured worlds of emerging STEM education researchers" *International Conference of the Learning Sciences 2023*
4. El-Adawy, S.E, Hass, CAF, Vasserman, EY, Kustusch, MB, S.V. Franklin, and Sayre, E.C. (2023) "A Professional Development Program for Emerging STEM Education Researchers" *American Society for Engineering Education*
5. Changstrom, J, Kustusch, M.B., and Sayre, E.C. (2022) "Using communities of practice to explore departmental values" *Physics Education Research Conference 2022*
6. El-Adawy, S, Sayre, E.C., Lau, A, and Fracchiolla, C (2022) "Personas for supporting physicists' engagement in informal education" *Physics Education Research Conference 2022*
7. Khong, H, Lohman, BC, Foth, N and Sayre, E.C. (2021) "Senior undergraduate students developing and envisioning possible selves after graduation" *Physics Education Research Conference 2021*
8. Hass, CAF, Hancock, E, Wilson, S, El-Adawy, S, and Sayre, E.C. (2021) "Community Roles for Supporting Emerging Education Researchers" *Physics Education Research Conference 2021*
9. Khong, H, El-Adawy, S, and Sayre, E.C. (2021) "Community of Practice in a physics department: double-majored students' perspectives" *International Conference of the Learning Sciences 2021*
10. Jeon, S, Holmes, N.G., Sayre, E.C., Franklin, S.V. (2021) "An Interplay of Problem-Solving Modes and Authority: Framework for Equitable Collaboration in Undergraduate Physics Labs" *International Conference of the Learning Sciences 2021*
11. Strubbe, L, Madsen, A.M., McKagan, S.B, and Sayre, E.C. (2020) "PhysPort as professional development to foster creativity in teaching" *Physics Education Research Conference 2020*
12. Sirnoorkar, A, Hass, C.A.F., Ryan, Q, and Sayre, E.C. (2020) "Qualitative Analysis of Students' Epistemic Framing Surrounding Instructor's Interaction" *Physics Education Research Conference 2020*
13. Ryan, Q, Agunos, D, Franklin, S.V, Gomez-Bera, M and Sayre, E.C. (2020) "Question Characteristics and Students' Epistemic Framing" *Physics Education Research Conference 2020*
14. Jeon, S, Kalender, Z, Sayre, E.C. and Holmes, N.G. (2020) "How do gender and inchargeness interact to affect equity in lab group interactions?" *Physics Education Research Conference 2020*
15. Franklin, M, Strubbe, L, and Sayre, E.C. (2020) "Physics education research's implicit views of physics faculty" *Physics Education Research Conference 2020*
16. Jeon, S, Sayre, E.C., Holmes, N.G. (2020) "What do equitable physics lab groups look like in light of inchargeness?" *International Conference of the Learning Sciences 2020*
17. Hass, C.A.F., Ryan, Q. and Sayre, E.C. (2020) "Teacher Noticing and Shifting of Student Epistemic Framing" *International Conference of the Learning Sciences 2020*
18. Huynh, T and Sayre, E.C. (2020) "Undergraduate Research Personas" *International Conference of the Learning Sciences 2020*
19. Huynh, T, Jambuge, AP, Khong, H, Laverty, JT, and Sayre, E.C.(2020) "Positioning in groups: The roles of expertise and being in charge" *International Conference of the Learning Sciences 2020*
20. Madsen, AM, McKagan, SB, Strubbe, LE, Sayre, E.C., Zohrabi Alaee, D, and Huynh, T, (2020) "User-centered personas for PhysPort" *Physics Education Research Conference 2019*

21. Booth, R and Sayre, E.C. (2019) "Measuring student seriousness during conceptual surveys" *AERA 2019*
22. Zohrabi Alaee, D. and Sayre, E.C. (2019) "How groups of students frame discussions in a physics class" *AERA 2019*
23. Zohrabi Alaee, D., Franklin, S.V., and Sayre, E.C. (2018) "What Physicists Mean By The Equals Sign In Undergraduate Education" *Physics Education Research Conference 2018*
24. Hass, CA, Ouimet, PA, Genz, F, Kustusch, MB, Pomian, K, Sayre, E.C., and Zwolak, JP (2018) "Studying Community Development: A Network Analytical Approach" *Physics Education Research Conference 2018*
25. Archibeque, B.A., Genz, F., Franklin, S.V. and Sayre, E.C. (2018) "Qualitative Measures of Equity in Small Groups" *International Conference of the Learning Sciences*
26. Huynh, T. and Sayre, E.C. (2018) "Blending Mathematical and Physical Negative-ness" *International Conference of the Learning Sciences*
27. Kustusch, M.B., Franklin, S.V., and Sayre, E.C. (2018) "Identifying shifts in agency by analyzing authority in classroom group discussion" *International Conference of the Learning Sciences*
28. Franklin, S.V., Kustusch, M. B., and Sayre, E.C. (2018) "PEER: Professional Development Experiences for Education Researchers" *ASEE CoNECD Proceedings*
29. Weliweriya, N.J., Huynh, T., and Sayre, E.C. (2018) "Standing fast: Translation among durable representations using evanescent representations in upper-division problem solving" *Physics Education Research Conference 2017*
30. Archibeque, B.A., Genz, F., Franklin, M., Franklin, S.V., and Sayre, E.C. (2018) "Quantitative Measures of Equity in Small Groups" *Physics Education Research Conference 2017*
31. Sayre, E.C., Madsen, A.M., and McKagan, S.B. (2016) "Research-based Assessment Resources to Improve Teaching in Physics Classrooms and Departments" *Proceedings of NSF EnFUSE Symposium*
32. Thompson, J.D., Modir, B. and Sayre, E.C. (2016) "Algorithmic, Conceptual, and Physical Thinking: A Framework for Understanding Student Difficulties in Quantum Mechanics" *International Conference of the Learning Sciences*
33. Bertram, C., Leak, A., Sayre, E.C., Kustusch, M.B., and Franklin, S.V. (2016) "Student Conceptions of Expertise" *International Conference of the Learning Sciences*
34. Bell, R.S., Vasserman, E.Y. and Sayre, E.C. (2015) "Developing and Piloting a Quantitative Assessment Tool for Cybersecurity Courses", *ASEE Proceedings 2015* link
35. Modir, B, Irving, P.W., Wolf, S.F, and Sayre, E.C. (2015) "Learning about the Energy of a Hurricane System through an Estimation Epistemic Game", *Physics Education Research Conference Proceedings 2014* link
36. Wolf, S.F., Doughty, L., Irving, P.W., Sayre, E.C., and Caballero, M.D. (2015) "Just Math: A new epistemic frame" *Physics Education Research Conference Proceedings 2014* link
37. Irving, P.W. and Sayre, E.C. (2014) "Upper-level physics students' perceptions of physicists", *Proceedings of the 2014 International Conference of the Learning Sciences* link
38. Madsen, A.M, McKagan, S.B.,Sayre, E.C., Martinuk, M."S"., and Bell, A (2014) "Personas as a Powerful Methodology to Design Targeted Professional Development Resources", *Proceedings of the 2014 International Conference of the Learning Sciences* link
39. Bell, R.S., Vasserman, E.Y. and Sayre, E.C.. (2014) "A longitudinal study of students in an introductory cybersecurity course." *ASEE Proceedings 2014* link
40. Irving, P.W. and Sayre, E.C. (2013) "Upper Level Physics Students Conceptions Of Understanding", *Physics Education Research Conference Proceedings 2012*, AIP Conference Proceedings 1513, 198.

doi:10.1063/1.4789686
41. Rebello, C.M., Sayre, E.C., and Rebello, N.S. (2012) "Effects of Argumentation Scaffolds and Problem Representation on Students' Solutions and Argumentation Quality in Physics", *Proceedings of the 2012 International Conference of the Learning Sciences* link
42. Sayre, E.C. and Franklin, S.V. (2011) "Learning, Retention, and Forgetting in University Physics", *American Educational Research Association 2011 Conference* link
43. Heckler, A.F., Scaife, T.M., and Sayre, E.C. (2010) "Response Times and Misconception-like Responses to Science Questions", *Proceedings of the CogSci 2010,* Cognitive Science Society link
44. Clark, J., Sayre, E.C., and Franklin, S.V. (2010) "Fluctuations in Student Understanding of Newton's Third Law", *Physics Education Research Conference Proceedings 2010,* AIP Conference Proceedings 1289, 101 doi:10.1063/1.3515171
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46. Hawkins, J.M., Thompson, J.R., Wittmann, M.C., Sayre, E.C., and Frank, B.W. (2010) "Students' responses to different representations of a vector addition question", *Physics Education Research Conference Proceedings 2010,* AIP Conference Proceedings 1289, 165 doi:10.1063/1.3515188
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Workshops

1. Models for research, collaboration, and design. E.C. Sayre, S.V. Franklin, Online workshop for American Education Research Association (AERA) PEERS Data Hub series, 2021 November
2. Equitable practices for mentoring students. E.C. Sayre, Workshop at the Kansas State University Center for Teaching and Learning, 2021 March
3. Finding helpful information: PhysPort and ComPADRE. E.C. Sayre, Workshop at the Physics New Faculty Workshop, online, 2020 October

4. Online information sources: PhysPort and ComPADRE. E.C. Sayre, Workshop at the Physics New Faculty Workshop, College Park MD, 2019 November
5. Periscope Video Lessons: Looking into Learning. E.C. Sayre, and R.E. Scherr, Workshop at the POD Network annual conference, Pittsburgh, PA, 2019 November
6. Finding Helpful Information About Teaching: PhysPort and ComPADRE. E.C. Sayre, A.M. Madsen, and S.B. McKagan, Workshop at the Physics New Faculty Workshop, College Park MD, 2019 July
7. Video data analysis in KiP. E.C. SayreWorkshop at the Knowledge-in-Pieces preconference day at the American Education Research Association (AERA) annual meeting, Toronto, ON, Canada, 2019 April
8. Finding Helpful Information About Teaching: PhysPort and ComPADRE. E.C. Sayre, A.M. Madsen, and S.B. McKagan, Workshop at the Physics New Faculty Workshop, College Park MD, 2018 November
9. Developing research questions and designing research studies. E.C. Sayre, workshop at University of British Columbia, Vancouver BC, 2018 April
10. Equity in undergraduate classrooms. E.C. Sayre, Science teaching forum, University of Calgary, Calgary AB, 2017 October
11. Resources on PhysPort. E.C. Sayre, A.M. Madsen, and S.B. McKagan, Workshop at the Physics New Faculty Workshop, College Park MD, 2017 November
12. Online resources for teaching. E.C. Sayre, A.M. Madsen, and S.B. McKagan, Workshop at the Physics New Faculty Workshop, College Park MD, 2017 June
13. How to foster inclusivity and equity in the classroom. S.V. Franklin, E.C. Sayre, Workshop at Rochester Institute of Technology 2017 August
14. Creating Inclusive Environments at Conferences. G. Quan and E.C. Sayre, Panel at American Association of Physics Teachers National Meeting, Atlanta GA, 2017 February
15. PhysPort. E.C. Sayre, A.M. Madsen, and S.B. McKagan, Workshop at the Physics New Faculty Workshop, College Park MD, 2016 November
16. Assessment in Your Course and Degree Program: Research Results and Resources on PhysPort. E.C. Sayre. Workshop at 7th Annual Celebration of Teaching, University of Missouri, Columbia MO, 2016 May
17. Online tools for physics education. E.C. Sayre. Workshop at the Physics New Faculty Workshop, Washington DC 2014 November
18. Assessment issues in physics. S.B. McKagan and E.C. Sayre. Workshop at the Physics Department Chairs Conference, Washington, DC 2014 June.
19. Student learning and forgetting. E.C. Sayre. Workshop at New York Regional PKAL meeting, Rochester NY 2012 October
20. Grant Writing. P Engelhardt, E.C. Sayre, and W. Christensen. Full day workshop, American Association of Physics Teachers National Meeting, Philadelphia PA 2012 July
21. Real-time Assessments of Student Understanding, S.V. Franklinand E.C. Sayre. Half-day workshop, American Association of Physics Teachers National Meeting, Philadelphia PA 2012 July
22. Sensemaking, Answermaking, and Resource Coordination across the Undergraduate Physics Curriculum E.C. Sayre and M. Martinuk, organizers. Symposium at 2012 Biennial Meeting of the EARLI Special Interest Group: Conceptual Change
23. Integrating Knowledge and Interaction in Analyses of Cognitive Activity M. Levin, O. Parnafes, E.C. Sayre, A. Gupta, V.R. Lee, and R. Russ. Half-day workshop at the International Conference of the Learning Sciences (ICLS) 2010 Meeting
24. Modeling Conceptual Dynamics, M. Levin, O. Parnafes, E.C. Sayre, A. Gupta, and V.R. Lee.

Full-day workshop at the American Educational Research Association (AERA) 2009 Meeting

Invited Conference Presentations

1. "Education Researchers' Characterizations of Physics Faculty", Linda E. Strubbe, Brycen Parker, AM Madsen, SB McKagan, and E.C. Sayre, invited talk at *American Association of Physics Teachers National Meeting*, Provo UT, 2019 July
2. "Problem solving in physics and theory building in physics education", E.C. Sayre, Bridging the Skills Gap in Physics Education at Institute of Physics, London UK, 2019 July
3. "Helping students learn more", E.C. Sayre, Plenary at the BESTM orientation conference, Homi Bhabha Centre for Science Education, Mumbai India, 2019 June
4. "Periscope and Pause: learning to listen to students" E.C. Sayre, Spotlight K-State, 2019 March
5. "Fostering inclusivity and equity in the classroom" E.C. Sayre, plenary at PHASERCon, Vancouver BC, 2018 April
6. "PhysPort: Supporting Physics Teaching with Research-based Resources" E.C. Sayre, AM Madsen, and SB McKagan, invited talk at *American Association of Physics Teachers National Meeting*, Washington DC, 2018 July
7. "Professional Development for Research; Research on Professional Development" E.C. Sayre, MB Kustusch, and S.V. Franklin, invited talk at *American Association of Physics Teachers National Meeting*, Washington DC, 2018 July
8. "Challenges for Women in STEM" E.C. Sayre, plenary at Conference for Undergraduate Women in Physics, Lawrence KS, 2018 January
9. "Using Action Cameras to Enhance Learning and Facilitate Research" F. Genz, S.V. Franklin, and E.C. Sayre Invited talk at *American Association of Physics Teachers National Meeting*, San Diego, 2018 January
10. "Innovative Teaching, Learning, and Assessment" E.C. Sayre. Plenary at *The Impact of Internet of things and Big Data Analytics*, Kigali, Rwanda, 2017 July
11. "Equity in Education – How to Make it Visible" E.C. Sayre, S.V. Franklin. Invited talk at *Kompetenzen Inklusiv*, Cologne, Germany, 2017 February
12. "Connecting math and physics across the upper-division" E.C. Sayre. Invited talk at *American Association of Physics Teachers National Meeting*, Atlanta GA, 2017 February
13. "Research-based resources for teaching and assessment on PhysPort". E.C. Sayre, A.M. Madsen, and S.B.McKagan. Invited talk at *PhysTEC National meeting*, Atlanta GA 2017 February
14. "Research-based resources on PhysPort" E.C. Sayre. Invited talk at *American Physical SocietyApril*, Washington DC, 2017 January
15. "Research-based Assessment Affordances and Constraints: Perceptions of Physics Faculty" A.M. Madsen, S.B.McKagan, M."S". Martinuk, A. Bell., and E.C. Sayre. Invited talk at *American Association of Physics Teachers National Meeting*, Sacramento CA, 2016 July
16. "Big Data and PhysPort" E.C. Sayre, A.M. Madsen, and S.B.McKagan. Invited talk at *American Association of Physics Teachers National Meeting*, Sacramento CA, 2016 July
17. "Assessment Tools & the PhysPort Data Explorer". E.C. Sayre, A.M. Madsen, and S.B.McKagan. Invited talk at the Physics Department Chairs Conference, Washington, DC 2016 June
18. "Theoretical model of student understanding" E.C. Sayre, Gordon Conference on Physics and Education Research, Newport RI, 2016 June
19. "Assessment Research Results and Resources on PhysPort" E.C. Sayre. Invited talk at *7th Annual Celebration of Teaching*, University of Missouri, Columbia MO, 2016 May
20. "Physics faculty perceptions of research-based assessment" E.C. Sayre. Invited talk at *American Physical Society April Meeting*, Salt Lake City UT, 2016 April.

21. "Becoming a Physicist: The Roles of Research, Mindsets, and Milestones", P.W. Irving and E.C. Sayre. Invited presentation at *American Association of Physics Teachers National Meeting*, New Orleans LA, 2016 January
22. "Advanced Lab as a Community of Practice", P.W. Irving and E.C. Sayre. Invited presentation at *Physics Education Research Conference*, College Park, MD 2015 July.
23. "Two decades of FCI and FMCE gains: a meta-analysis", J. Von Korff, E.C. Sayre, S.B. McKagan, T. Heckendorf, C. Shepard. Invited talk at *American Association of Physics Teachers National Meeting*, College Park, MD 2015 July
24. "PhysPort: Supporting Physics Teaching with Research-based Resources" S.B.McKagan, A.M.Madsen, and E.C. Sayre, Invited talk at *American Association of Physics Teachers National Meeting*, College Park, MD 2015 July
25. "Using research-based assessment to improve teaching in your classroom and department: New resources on PhysPort.org" S.B. McKagan, A.M Madsen, E.C. Sayre, Invited talk at PhysTEC Site Leaders Meeting, College Park MD, 2015 July.
26. "PhysPort Data Explorer". S.B.McKagan, A.M. Madsen, and E.C. Sayre. Invited talk at the Physics Department Chairs Conference, Washington, DC 2015 June.
27. "Research-based assessment resourceson PhysPort.org", S.B. McKagan, A.M. Madsen, and E.C. Sayre. Invited talk at *Workshop for New Faculty in Physics and Astronomy*, College Park MD, June 2015
28. "Research-based Assessment Resources to Improve Teaching in Your Classroom and Department", S.B. McKagan, A.M. Madsen, E.C. Sayre. Invited talk at *American Association of Physics Teachers National Meeting*, Minneapolis, MN 2014 July
29. "Professional Development of Preservice Physicists: Affordances and Constraints", E.C. Sayre, P.W. Irving. Invited talk at *American Association of Physics Teachers National Meeting*, Minneapolis, MN 2014 July
30. "Using Research-based Assessment to Improve Teaching in Your Classroom and Department: New Resources on the PER User's Guide", A.M. Madsen, S.B. McKagan, E.C. Sayre. Invited talk at *American Physical Society March Meeting*, Denver, CO, 2014 March.
31. "We know it when we see it: Thinking Like a Physicist" E.C. Sayreand P.W. Irving. Invited talk at *American Association of Physics Teachers National Meeting*, Orlando, FL, 2014 January
32. "What are resources and how can we tell?" E.C. Sayre. Invited talk at *American Association of Physics Teachers National Meeting*, Portland OR, 2013 July
33. "RAWR: Rapid Assessment and Web Reports" S.V. Franklinand E.C. Sayre. Invited talk at *American Association of Physics Teachers National Meeting*, Portland OR, 2013 July
34. "PER Co-Authorship Network" E.C. Sayre and K.A. Anderson. Invited poster at *Physics Education Research Conference*, Portland OR, 2013 July
35. "Multiple pathways to the development of a physics identity", P.W. Irving and E.C. Sayre. Invited poster at *Physics Education Research Conference*, Portland OR, 2013 July
36. "Conversations between theory and data" E.C. Sayre, Plenary at *Foundations and Frontiers of Physics Education Research*, 2013 June
37. "Epistemological Framing: Asynchronous Individuals in Group Problem Solving", P.W. Irving and E.C. Sayre. Symposium on *Sensemaking, Answermaking, and Resource Coordination across the Undergraduate Physics Curriculum* at the *Biennial Meeting of the EARLI Special Interest Group: Conceptual Change*, 2012 August
38. "Measuring the dynamics of student learning" E.C. Sayre, keynote at Project Kaleidoscope (PKAL) Upstate New York Regional Network Fall Meeting, 2012 October

39. "RAWR: Rapid Assessment and Web Reports," S.V. Franklinand E.C. Sayre in "Homework Systems for Learning" Round Table Presentation, *Physics Education Research Conference*, Lincoln NE, 2011 August
40. "Paraphrase and interpretation in peer physics interviews," E.C. Sayre, R.E. Scherr, and H. Close, in "Proximal Formative Assessment" Poster Gallery Session, *Physics Education Research Conference*, Lincoln NE, 2011 August
41. "Using extant data to predict future data" E.C. Sayre,*American Association of Physics Teachers National Meeting*, Jacksonville FL, 2011 January
42. "What happens to student performance between the pre and post test?" A.F. Heckler and E.C. Sayre, *American Association of Physics Teachers National Meeting*, Ann Arbor, 2009 July

Colloquia and Seminars

1. "Learning to be a physicist", E.C. Sayre, colloquium at Stockton University, 2021 March
2. "Helping students learn more", E.C. Sayre, colloquium at the University of Central Florida, 2019 March
3. "Helping students learn more", E.C. Sayre, seminar at the University of Cardiff, 2019 February
4. "Resources for research-based teaching and assessment on PhysPort", E.C. Sayre, colloquium at Georgia Southern University, 2018 September
5. "Everything is horrible: sexism and racism in science", E.C. Sayre, seminar for High School Teacher Professional Development at Rothney Astrophysical Observatory, 2018 May
6. "Learning to be a physicist", E.C. Sayre, colloquium at North Carolina State University, 2018 April
7. "Physics learning and learning to be a physicist", E.C. Sayre, colloquium at University of British Columbia, 2018 April
8. "Measuring equitable participation in undergraduate science classrooms", E.C. Sayre, colloquium at George Mason University, Fairfax VA, 2018 February
9. "Equity in STEM", E.C. Sayre, seminar to Laboratory for Knowledge Discovery in Databases at Kansas State University, 2016 December
10. "Physics learning across scales", E.C. Sayre, PER Seminar at Creighton University, 2016 November
11. "Physics learning at large and small scales" E.C. Sayre, Physics Department Colloquiumat University of Calgary, 2016 October
12. "Thinking like a physicist: What is it, and how can we tell?" E.C. Sayre, Physics Department Colloquium at Texas A&M University – Commerce, 2015 October
13. "Math dialects and becoming a physicist" E.C. Sayre, Physics Department Colloquium at Creighton University, 2014 October
14. "Learning, forgetting, becoming: how students become physicists, and how we can help." E.C. Sayre, PER Seminar at Purdue University, 2014 April
15. "Thinking like a physicist: What is it, and how can we tell?" E.C. Sayre, Physics Department Colloquium at Dickinson College, 2013 November
16. "What's important about PER?" E.C. Sayre, PER Seminar at Seattle Pacific University, 2013 November
17. "Assessing thinking like physicists" E.C. Sayre, Physics Department Colloquium at Ohio State University, 2013 September
18. "Thinking like a physicist" E.C. Sayre, Invited Speaker Series at Kansas State University – Olathe, 2013 April
19. "Assessing thinking like physicists" E.C. Sayre, Physics Department Colloquium at Illinois State University, 2013 March
20. "Thinking like a physicist" E.C. Sayre, *Science and Mathematics Education Research Collaborative*

(SMERC) Invited Speaker Series at Rochester Institute of Technology, 2012 October

21. "Short-term learning and long-term understanding" E.C. Sayre, Physics Department Colloquium at Columbus State University, 2012 March
22. "Learning, Retention, and Forgetting in University Physics" E.C. Sayre, Physics Department Colloquium at Oregon State University, 2011 November
23. "Oral exams as a tool for teaching and research" E.C. Sayre, seminar at Chicago State University, 2011 March
24. "Changes and Differences in Student Understanding" E.C. Sayre, Physics Department Colloquium at Rochester Institute of Technology, 2009 October
25. "Understanding student understanding in physics," E.C. Sayre, Physics Department Colloquium at Grinnell College, 2009 January
26. "Learning, decay, and interference: Moving beyond the pre/post test," E.C. Sayre and A.F. Heckler, seminar to the Physics Education Research and Development Group, North Carolina State University, 2008 September
27. "Detecting changes to student responses over time," E.C. Sayre and A.F. Heckler, seminar to the Physics Education Research Group, University of Maryland, 2008 June
28. "Building a response curve to physics instruction," E.C. Sayre and A.F. Heckler, seminar to the Cognitive Science Lab, The Ohio State University, 2008 May
29. "Resource development and justification: Examples from damped harmonic motion," E.C. Sayre, seminar to the Physics Education Research Group, University of Maryland, 2006 October.
30. "Resources in Physics Education Research," E.C. Sayre, seminar to Tedlab in the Brain and Cognitive Science Department, Massachusetts Institute of Technology, 2006 September.

Service

Physics education research

AAPT: American Association of Physics Teachers; APS: American Physical Society

Guest Editor	Physical Review - Physics Education Research: Focused Collection: Curriculum Development Theory into Design, B. Harrer, E.C. Sayre, and L. Atkins Elliot (2018-2020)
National Committees	Executive Program Committee of the AAPT (2015-2019)
	Professional Concerns Committee of the AAPT (2015-2018) (Chair 2017)
	PERC Proceedings Update Committee (2016-2018) (Chair 2017-2018)
	Physics Education Research Leadership Organizing Council (PERLOC) (2013-2015)
	Research in Physics Education (RiPE) of the AAPT (2012-2015)
	APS Group on PER (GPER) Nomination Committee (2013-2014)
	Childcare Grant Committee of the AAPT (2013-2014, 2017)
Conference organizer	"Physics Education Research Conference," E.C. Sayre, A. Gupta, C. Turpen, and J. Watkins. Premier national conference for PER, hosted by the AAPT. 2012 August.
	"Upper Division Physics Education Research," E.C. Sayre. National topical conference for researchers in PER at the upper division. 2010 August
Resources	Editor-in-Chief, PER Jobs (2007-2016); List manager, Grad Students in PER (2004-2007)

Science education research

Panelist	National Science Foundation, 2013–2021
Participant	AAAS Workshop on Assessment, classroom observations working group, 2012
Women in physics	Women in Physics (WiP) and Women in Mathematics and Science (WIMS) at Ohio State University (2007-2009); Saturday Science for Girls at Grinnell College (2001)

Outreach and community partnerships

Mentor	Grinnell College Externship Program, 2017-2018
Mentor	NeXXt Scholars Program, New York Academy of Sciences, 2012-2014
Workshop leader	GROW program for middle school girls, Kansas State University, 2013
Judge	Ohio State University Math & Physical Sciences Undergraduate Research Expo (2008), Ohio State Science Fair (2007)

Kansas State University

Department	Colloquium Committee Chair (2014-2021, except AY2017-2018)
	Equity, Diversity, and Inclusion committee (2020-2021)
	Assessment committee (2019-2021)
	Women in Physics faculty lead (2018-2021)
	Grad admissions committee (2014-2017 and 2020-2021)
	Scholarship committee (2012-2013)
University	K-State Faculty Exchange for Teaching Excellence Advisory Board (2019-2021)

Memberships

American Association of Physics Teachers (PER Topical Group), American Physical Society (Forum on Education, Topical Group in PER), International Society of the Learning Sciences

Postdocs and students supervised

Postdocs	Chris Hass (2023)	Hai Dong Nguyen (2015-2016)
	Shams El-Adawy (2023)	Deepa Chari (2015-2016)
	Safia Malallah (2022-2023)	Ulas Ustun (2014-2016)
	Juan Yang (2021-2022)	Brian Danielak (2014-2015)
	Linda Strubbe (2018-2019)	Paul Irving (2012-2014)
		Adrian Madsen (2013-2014)
Current grad students	Brandi Lohman, PhD (2019-)	
PhD grads	Jessy Changstrom (2022)	Tra Huynh (2022)
	Shams El-Adawy (2023)	Dina Zohrabi Alaee (2020)
	Hien Khong (2022)	Nandana Weliweriya (2019)
	Chris Hass (2023)	Bahar Modir (2017)
MS grads	Ying Chen (2014), Nick Fowler (2016)	
Post-bacc	Maxwell Franklin (2019-2020)	

As committee member

PhD committees	Dehui Hu, physics (2011-2012); R. Scott Bell, computer science (2012-2014); Joshua Weese, computer science (2014-2017); Nathan Bean, education (2014-2022); Amali Jambuge, physics (2019-2021)
MS committees	Tia Camarillo, physics (2017-2018); Ginny Coghlan, physics (2018-2019); Santosh Budhathoki, physics (2018-2019)

Undergrads

K-State	Ben Archibeque (2014-2018)	Daryl McPadden (2012)
	Tim Brown (2012)	Aurora Meyer (2018-2020)
	Joe Carson (2011)	Benjamin Miller (2017-2018)
	Christopher Conover (2018-2020)	Brycen Parker (2019)
	Nolan Foth (2021-2022)	Martha Rangel (2015)
	Natasha Graham (2017)	Chelsea Rasing (2013)
	Alison Gomez (2014)	Jaime Richards (2014)
	Austin Hahner (2018-2019)	Ed Schenk (2014-2015)
	Lauren Harris (2013)	Lane Sorell (2014-2015)
	Sarah Keffer (2014-2016)	Ben Stiglitz (2019)
	Noah-Kee Marks (2015)	John Thompson (2014-2016)
	Devon McCarthy (2015-2016)	Wai-Ka Wong Situ (2017)
	Dylan McKnight (2015)	Madeleine Wolff (2016-2017)
University of Calgary	Rebecca Booth (2017-2019)	Alan Luu Ngo (2017)
	Christopher Hass (2017-2018)	Lincoln Phung (2017)
Wabash College	Conor Frame (2011)	Yifei Sun (2010-2011)
	Tyler Koch (2010-2011)	Tienren Wang (2010)