

EDUCATION

University of Washington**Seattle, Washington***Ph.D., Physics, 2011.*

Dissertation: An investigation of university student and K-12 teacher reasoning about key ideas in the development of the particulate nature of matter

Supervisor: Professor Peter S. Shaffer

*M.S., Physics, 2008.***Baylor University****Waco, Texas***B.S., Physics, minor in Mathematics, 2006.***APPOINTMENTS**

Seattle Pacific University, Department of Physics**Seattle, Washington***Research Associate Professor, Department of Physics, September 2017 – present.**Research Assistant Professor, Department of Physics, September 2014 – August 2016.**Visiting Assistant Professor, September 2011 – August 2014.***University of Washington, Department of Physics****Seattle, Washington***National Science Foundation Graduate Research Fellow, Department of Physics, September 2008 – July 2011.**Teaching Assistant, Department of Physics, September 2006 – May 2008.***RESEARCH EXPERIENCE**

Seattle Pacific University**Seattle, Washington**

Co-principal investigator, "Understanding centrality and marginalization in undergraduate physics teaching and learning to enhance student persistence and success" (NSF DUE 1760761, \$500K), 2018-2021.

Use theoretical lenses of Critical Whiteness Studies and Situated Learning Theory to identify practices and structures that confer and sustain white male privilege in physics teaching and learning.

Principal investigator, "University student conceptual resources for understanding physics" (NSF DUE 1608510, \$155K), 2016-2019.

Identify prevalent conceptual resources that students marshal to reason about physics; develop instructional materials that embed a resources orientation toward student thinking; and test the effectiveness of these instructional materials in improving students' conceptual understanding.

Co-principal investigator, "Identifying best practices for inclusive physics learning environments" (NSF DUE 1611318, \$300K), 2016-2019.

Identify best practices for supporting women and students of color in physics departments. Learn what physics faculty know, believe, and value that could support them in creating inclusive learning environments.

Co-principal investigator, "Focus on energy: Preparing elementary teachers to meet the NGSS challenge" (NSF DRL 1418211, \$518K), 2014-2018.

Develop a professional development program for elementary teachers to learn about energy and build on students' productive ideas. Assess program's impact on teacher learning about energy and on teacher orientation toward students' energy ideas.

Principal investigator, "Manuscript preparation, 'Engaging the Implicit Structure and Decisions of the Curriculum: A Missing Element in the Development of Novice Teachers' Proximal Formative Assessment Skills'" (Seattle Pacific University Faculty Research Grant, \$2K), 2013.

Prepare manuscript proposing a new form of curricular knowledge and using a case study to illustrate how such knowledge can develop.

Co-Principal investigator, "Assessing, validating, and developing content knowledge for teaching energy" (NSF DRL 1222777, \$821K), 2012-2016.

Develop and validate a set of written assessments and observational protocols to measure content knowledge for teaching energy in physics. Support and evaluate secondary teacher learning about energy in professional development.

Researcher, "Honing diagnostic practice: Toward a new model of teacher professional preparation and development" (NSF DRL 0822342, \$3.7M), 2011-2013.

Conduct qualitative video research to study teacher learning about energy in professional development. Articulate criteria for identifying responsive teaching in K-12 science classrooms.

Assistant Director, Interdisciplinary Research Institute in STEM Education, 2011-2013.

Co-lead team of visiting scholar-videographers in documenting and producing a library of relevant video episodes captured in teacher professional development courses.

University of Washington, Department of Physics

Seattle, Washington

National Science Foundation Graduate Research Fellow, 2008-2011.

Develop written questions to elicit university student and K-12 teacher reasoning about topics related to the particulate nature of matter. Characterize written responses according to the challenges students and teachers face in reasoning about these topics. Develop instructional materials for K-12 teachers that build their understanding of matter as fundamentally discrete.

TEACHING EXPERIENCE

Seattle Pacific University, Department of Physics

Seattle, Washington

Coordinator and Instructor, Undergraduate Learning Assistant Program (PHY 4511, 4512, 4513), Fall 2011-Spring 2016.

Coordinate nationally-recognized undergraduate physics Learning Assistant Program. Prepare learning assistants for weekly in-class experience. Facilitate course on science teaching pedagogy.

Instructor, Independent Study: Theory and Research in Secondary Teacher Pedagogical Content Knowledge (EDU 7900), Winter 2015.

Introduce doctoral students to literature on pedagogical content knowledge and apply theory to analysis of classroom video.

Instructor, Senior Project Laboratory (PHY 4970), Winter 2015.

Supervise undergraduate research in physics education.

Instructor, Science Teaching Immersion Experience (PHY 4515, EDU 6960), Spring 2012 and 2014.

Support teacher candidates and prospective teachers in integrating best practices and theory from STEM education research into planning, assessing, and implementing a science lesson in local schools.

Instructor, Special Topics: Scientific Writing (PHY 4950), Spring 2013.

Induct undergraduate students into scientific writing for education research journals. Collaboratively analyze, frame, and outline manuscript for publication.

University of Washington, Department of Physics

Seattle, Washington

Instructor, NSF Summer Institute for K-12 Teachers in Physics and Physical Science (PHY 405, 406, 407, 408, 409), 2007-2010.

Instruct in intensive five-week summer course to prepare K-12 teachers to teach physics and physical science using the *Physics by Inquiry* curriculum.

Head graduate teaching assistant, 2007-2008.

Oversee day-to-day operation of introductory physics tutorials sequence using *Tutorials in Introductory Physics* curriculum. Develop exam questions for introductory physics course exams. Lead preparation sessions for teaching assistants. Teach and grade introductory physics tutorials.

Graduate teaching assistant, 2006-2007.

Teach and grade introductory physics labs and tutorials. Lead recitation sections for Science and Society course.

CONSULTING EXPERIENCE**American Physical Society****College Park, Maryland***Consultant, "APS Bridge Program" (NSF HRD 1143070, \$3M), 2018-2019.*

Conduct research to support the evaluation of the APS Bridge Program, which has the goal of increasing the fraction of physics PhDs awarded to underrepresented minority students to match the fraction of physics Bachelor's degrees granted to these groups. Interview faculty and students at Bridge sites to understand their goals and experiences. Synthesize findings in project reports.

Tufts University**Medford, Massachusetts***Consultant, "Developing Teacher Noticing in Engineering in an Online Professional Development Program" (NSF DRL 1720334, \$564,443), 2017-2019.*

Interview teacher participants in the Tufts Teacher Engineering Education Program, an online program to support the development of teacher noticing of students' engineering ideas. Identify focal teachers whose noticing practices shift over the course of the program.

PUBLICATIONS*Peer-reviewed publications*

1. R. S. Russ, A. Elby, **A. D. Robertson**, J. Richards, M. J. Luna, and J. Walkoe, "Exploring patterns of differences in teacher professional development that supports responsive teaching," under review for *Journal of Teacher Education*.
2. L. M. Goodhew, **A. D. Robertson**, P. R. L. Heron, and R. E. Scherr, "Examining the productiveness of students' conceptual resources over the course of problem-solving interviews," under revision for *2018 Physics Education Research Conference Proceedings*.
3. **A. D. Robertson**, W. T. Hairston, and R. E. Scherr, "Belonging, success, access, and disruption: Physics faculty goals for inclusive physics learning environments," under revision for *2018 Physics Education Research Conference Proceedings*.
4. J. Richards, A. Elby, M. J. Luna, **A. D. Robertson**, D. M. Levin, and C. Nyeggen, "Reframing the responsiveness challenge: What prevents novice teachers from attending and responding to the substance of student thinking?," under revision for *Cognition and Instruction*.
5. **A. D. Robertson**, K. E. Gray, C. E. Lovegren, K. L. Rininger, and S. T. Wenzinger, "Curricular Knowledge as an Entry Point for Responsive Instruction," under revision for *Cognition and Instruction*.
6. **A. D. Robertson**, L. Seeley, O. T. Wentink, and S. Vokos, "Taking Teachers' Ideas Seriously: Exploring the Role of Physics Faculty in Preparing Teachers in the Era of the Next Generation Science Standards," in press at *American Journal of Physics*.
7. A. R. Daane, J. Haglund, **A. D. Robertson**, H. G. Close, and R. E. Scherr, "The pedagogical value of conceptual metaphor for secondary science teachers," *Science Education* **102**(5), 1051-1076 (2018).
8. **A. D. Robertson**, S. B. McKagan, and R. E. Scherr, "Selection, Generalization, and Theories of Cause in Case-Oriented Physics Education Research: Connecting Paradigms and Practices," *Reviews in PER* **2**(5), 1-46 (2018).
9. J. Radoff, **A. D. Robertson**, S. Fargason, and F. Goldberg, "Responsive teaching in the age of high-stakes testing: Does pursuing students' ideas mean they will perform poorly?," *Science & Children* **55**(9), 88-91 (2018).
10. **A. D. Robertson**, L. M. Goodhew, R. E. Scherr, and P. R. L. Heron, "University student conceptual resources for understanding forces," in *2017 Physics Education Research Conference Proceedings*, edited by L. Ding, A. Traxler, and Y. Cao (Cincinnati, OH: AIP), p. 332-335 (2018).
11. L. M. Goodhew, **A. D. Robertson**, P. R. L. Heron, and R. E. Scherr, "University student conceptual resources for understanding mechanical wave generation and propagation," in *2017 Physics Education Research Conference Proceedings*, edited by L. Ding, A. Traxler, and Y. Cao (Cincinnati, OH: AIP), p. 148-151 (2018).

12. L. A. Wood and **A. D. Robertson**, "Characterizing practices and resources for inclusive physics teaching," in *2017 Physics Education Research Conference Proceedings*, edited by L. Ding, A. Traxler, and Y. Cao (Cincinnati, OH: AIP), p. 448-451 (2018).
13. **A. D. Robertson**, "Supporting the Development of Curricular Knowledge Among Novice Physics Teachers," *American Journal of Physics* **86**(4), 305-315 (2018).
14. **A. D. Robertson** and L. J. Atkins Elliott, "'All students are brilliant: A confession of injustice and a call to action,'" *The Physics Teacher* **55**(9), 519-523 (2017).
15. **A. D. Robertson** and J. Richards, "Teacher sense-making about being responsive to students' science ideas: A case study," *European Journal of Science and Math Education* **5**(4), 314-342 (2017).
16. R. E. Scherr and **A. D. Robertson**, "Unveiling privilege to broaden participation in physics," *The Physics Teacher* **55**(7), 394-397 (2017).
17. **A. D. Robertson** and A. R. Daane, "Energy Project Professional Development: Promoting Positive Attitudes About Science Among K-12 Teachers," *Physical Review Physics Education Research* **13**(2), 020102 1-10 (2017).
18. L. M. Goodhew and **A. D. Robertson**, "Exploring the Role of Content Knowledge in Responsive Teaching," *Physical Review Physics Education Research* **13**(1), 010106 1-24 (2017).
19. **A. D. Robertson**, R. E. Scherr, L. M. Goodhew, A. R. Daane, K. Gray, and L. B. Aker, "Identifying content knowledge for teaching energy: Examples from high school physics," *Physical Review Physics Education Research* **13**(1), 010105 1-14 (2017).
20. **A. D. Robertson** and L. M. Goodhew, "Exploring the role of content knowledge in responsive teaching," in *2016 Physics Education Research Conference Proceedings*, edited by D. L. Jones, L. Ding, and A. Traxler (Sacramento, CA: AIP), p. 272-275 (2016).
21. **A. D. Robertson** and P. S. Shaffer, "University Student and K-12 Teacher Reasoning About the Basic Tenets of Kinetic-Molecular Theory: Part II – Pressure," *American Journal of Physics* **84**(10), 795-809 (2016).
22. H. C. Sabo, L. M. Goodhew, and **A. D. Robertson**, "University Student Conceptual Resources for Understanding Energy," *Physical Review Physics Education Research* **12**(1), 010126 1-28 (2016).
23. **A. D. Robertson**, "Valuing student ideas morally, instrumentally, and intellectually," in *2015 Physics Education Research Conference Proceedings*, edited by A. D. Churukian, D. L. Jones, and L. Ding (College Park, MD: AIP), p. 275-278 (2015).
24. M. S. Sabella, **A. D. Robertson**, and A. G. Van Duzor, "The Teacher Immersion Course Model: A Reform-Oriented Early Teaching Experience that Capitalizes on the Expertise of Multiple Communities," in *Recruiting and Educating Future Physics Teachers: Case Studies and Effective Practices*, edited by E. Brewster and C. Sandifer (Melville, NY: AIP Press), p. 117-128 (2015).
25. E. W. Close, L. Seeley, **A. D. Robertson**, L. S. DeWater, and H. G. Close, "Seattle Pacific University: Nurturing Physics Teachers at a Small Liberal-Arts School," in *Recruiting and Educating Future Physics Teachers: Case Studies and Effective Practices*, edited by E. Brewster and C. Sandifer (Melville, NY: AIP Press), p. 37-52 (2015).
26. R. E. Scherr, B. W. Harrer, A. R. Daane, H. G. Close, **A. D. Robertson**, L. Seeley, and S. Vokos, "Energy Tracking Diagrams," *The Physics Teacher* **54**, 96-102 (2015).
27. R. E. Scherr and **A. D. Robertson**, "Productivity of 'collisions generate heat' for reconciling an energy model with mechanistic reasoning: A case study," *Physical Review Special Topics: Physics Education Research* **11**(1), 010111 1-16 (2015).
28. L. M. Goodhew and **A. D. Robertson**, "Investigating the Relationship Between the Substance Metaphor for Energy and Its Proposed Affordances and Limitations," in *2014 Physics Education Research Conference Proceedings*, edited by P. V. Englehardt, A. D. Churukian, and D. L. Jones (Minneapolis, MN: AIP Press), p. 103-106 (2014).
29. A. Elby, J. Richards, R. Russ, M. Luna, J. Walkoe, J. Coffey, **A. D. Robertson**, A. Edwards, A. Gupta, M. Sherin, and E. van Es, "Differing notions of responsive teaching across

mathematics and science: Does the discipline matter?," in *Proceedings of the 2014 International Conference of the Learning Sciences*, edited by J. L. Polman, E. A. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, and L. D'Amico (Boulder, CO: ICLS), p. 1406-1415 (2014).

30. **A. D. Robertson** and P. S. Shaffer, "'Combustion always produces carbon dioxide and water': A Discussion of University Chemistry Student Use of Rules in Place of Principles," *Chemistry Education Research and Practice* **15**(4), 763-776 (2014).
31. C. E. Lovegren and **A. D. Robertson**, "Development of Novice Teachers' Views of Student Ideas as Sensible and Productive," in *2013 Physics Education Research Conference Proceedings*, edited by P. V. Englehardt, A. D. Churukian, and D. L. Jones (Portland, OR: AIP Press), p. 225-228 (2013).
32. R. E. Scherr, **A. D. Robertson**, L. Seeley, and S. Vokos, "Content knowledge for teaching energy: An example from middle-school physical science," in *2013 Physics Education Research Conference Proceedings*, edited by P. V. Englehardt, A. D. Churukian, and D. L. Jones (Portland, OR: AIP Press), p. 114-117 (2013).
33. R. E. Scherr, H. G. Close, E. W. Close, V. J. Flood, S. B. McKagan, **A. D. Robertson**, L. Seeley, M. C. Wittmann, and S. Vokos, "Negotiating energy dynamics through embodied action in a materially structured environment," *Physical Review Special Topics: Physics Education Research* **9**, 020105 1-18 (2013). * *Editor's Suggestion*
34. **A. D. Robertson** and P. S. Shaffer, "University Student and K-12 Teacher Reasoning About the Basic Tenets of Kinetic-Molecular Theory: Part I – Volume," *American Journal of Physics* **81**(4), 303-312 (2013).

Books and other publications

35. **A. D. Robertson**, R. E. Scherr, and D. Hammer, Eds., "Responsive Teaching in Science and Mathematics," Routledge Press (2016).
36. **A. D. Robertson**, L. Atkins, D. Levin, and J. Richards, "What is Responsive Teaching," in *Responsive Teaching in Science and Mathematics*, edited by A. D. Robertson, R. E. Scherr, and D. Hammer (New York, NY: Routledge), p. 1-35 (2016).
37. J. Richards and **A. D. Robertson**, "A Review of the Research on Responsive Teaching in Science and Mathematics," in *Responsive Teaching in Science and Mathematics*, edited by A. D. Robertson, R. E. Scherr, and D. Hammer (New York, NY: Routledge), p. 36-55 (2016).
38. **A. D. Robertson**, J. Richards, A. Elby, and J. Walkoe, "Documenting Variability Within Teacher Attention and Responsiveness to Student Thinking," in *Responsive Teaching in Science and Mathematics*, edited by A. D. Robertson, R. E. Scherr, and D. Hammer (New York, NY: Routledge), p. 227-247 (2016).
39. **A. D. Robertson**, E. P. Eppard, L. M. Goodhew, E. L. Maaske, H. C. Sabo, F. C. Stewart, D. L. Tuell, and S. T. Wenzinger, "Being a Seattle Pacific University Learning Assistant: A transformative experience of listening and being heard," *APS Forum on Education Newsletter* (2014).

SELECTED PRESENTATIONS

Physics Education Research Conference, August 2018.

Washington, DC

(Invited poster) "University Student Conceptual Resources for Understanding Energy,"
H. C. Sabo, L. M. Goodhew, and A. D. Robertson.

(Contributed poster) "Belonging, Success, Access, and Disruption: Physics Faculty Goals and Practices for Inclusive Physics Learning Environments," A. D. Robertson, W. T. Hairston, and R. E. Scherr.

(Contributed poster) "Examining the situated productivity of students' conceptual resources over the course of problem-solving interviews," L. M. Goodhew, A. D. Robertson, P. R. L. Heron, and R. E. Scherr.

(Contributed poster) "Teachers' Energy Model as a Tool for Interpreting Student Ideas in a Community of Practice," O. Wentink and A. D. Robertson.

AAPT Summer National Meeting, July 2018. Washington, DC

(Contributed talk) "Truth, Success, and Faith: Teacher Perceptions of What Responsive Teaching Puts at Risk," A. D. Robertson and L. J. Atkins Elliott.

(Contributed talk) "Teachers' Energy Model as a Tool for Interpreting Student Ideas in a Community of Practice," O. Wentink and A. D. Robertson.

(Contributed poster) "Teachers' Energy Model as a Tool for Interpreting Student Ideas in a Community of Practice," O. Wentink and A. D. Robertson.

(Contributed talk) "Commonly Activated Conceptual Resources for Mechanical Wave Propagation," L. M. Goodhew, A. D. Robertson, P. R. L. Heron, and R. E. Scherr.

Northwest Section American Physical Society Meeting, June 2018. Tacoma, Washington

(Contributed talk) "Commonly-Activated Resources for Mechanical Wave Propagation," L. M. Goodhew, A. D. Robertson, P. R. L. Heron, and R. E. Scherr.

Gordon Research Conference on Physics Research and Education: Energy, June 2018. Smithfield, Rhode Island

(Invited talk) "The Having of Wonderful Ideas About Energy," A. D. Robertson.

University of British Columbia Physics Education Research Group Open Retreat, April 2018. Vancouver, British Columbia

(Plenary) "University Student Conceptual Resources for Understanding Physics," A. D. Robertson.

AAPT Winter National Meeting, January 2018. San Diego, California

(Invited talk) "University Student Conceptual Resources for Understanding Forces and Mechanical Waves," A. D. Robertson, L. M. Goodhew, P. R. L. Heron, and R. E. Scherr.

(Invited talk) "Exploring the Role of Content Knowledge in Responsive Teaching," L. M. Goodhew and A. D. Robertson.

(Contributed poster) "Taking Elementary Teachers' Ideas Seriously in Professional Development," A. D. Robertson, O. Wentink, L. Seeley, and S. Vokos.

(Contributed poster) "Identifying Students' Productive Conceptual Resources for Wave Superposition," L. Goodhew, A. D. Robertson, R. E. Scherr, and P. R. L. Heron.

Western Washington University Department of Physics, November 2017. Bellingham, Washington

(Colloquium) "Misconceptions, Resources, and Energy: Thinking About Student Thinking in Physics," A. D. Robertson.

Physics Education Research Conference, July 2017. Cincinnati, Ohio

(Contributed poster) "Characterizing Practices and Resources for Inclusive Learning Environments," L. A. Wood and A. D. Robertson.

(Contributed poster) "University Student Conceptual Resources for Understanding Forces," A. D. Robertson, L. M. Goodhew, P. R. L. Heron, and R. E. Scherr.

(Contributed poster) "University Student Conceptual Resources for Understanding Mechanical Waves," L. M. Goodhew, A. D. Robertson, R. E. Scherr, and P. R. L. Heron.

AAPT Summer National Meeting, July 2017. Cincinnati, Ohio

(Invited talk) "Faculty Images of Equity and Inclusion in Physics," R. E. Scherr, T. Hairston, A. D. Robertson, A. R. Daane, and A. M. Knowles.

(Contributed talk) "Characterizing Practices and Resources for Inclusive Learning Environments," L. A. Wood and A. D. Robertson.

(Contributed poster) "Characterizing Practices and Resources for Inclusive Learning Environments," L. A. Wood and A. D. Robertson.

(Contributed talk) "University Student Conceptual Resources for Understanding Forces," A. D. Robertson, L. M. Goodhew, P. R. L. Heron, and R. E. Scherr.

(Contributed talk) "University Student Conceptual Resources for Understanding Mechanical Waves," L. M. Goodhew, A. D. Robertson, R. E. Scherr, and P. R. L. Heron.

(Contributed poster) “How can we shape our resources-oriented research to be most useful to university physics instructors?,” A. D. Robertson, L. M. Goodhew, P. R. L. Heron, and R. E. Scherr.

(Contributed poster) “Leveraging Students’ Intuitions: An Exploration of How Students’ Intuitive Ideas About Mechanical Waves Evolve,” L. Goodhew, A. D. Robertson, R. E. Scherr, and P. R. L. Heron.

Annual Meeting of the American Educational Research Association, April 2017.

San Antonio, Texas

(Invited poster) “A Responsive Approach to Supporting Pre-Service Physics Teachers in Enacting Responsive Teaching,” A. D. Robertson and J. Richards.

AAPT Winter National Meeting, January 2017.

Atlanta, Georgia

(Contributed poster) “University Student Conceptual Resources for Understanding Waves,” L. M. Goodhew, A. D. Robertson, R. E. Scherr, and P. R. L. Heron.

Physics Education Research Conference, July 2016.

Sacramento, California

(Invited poster) “Making Sense of Different Generalization and Selection Practices in PER,” A. D. Robertson, S. B. McKagan, and R. E. Scherr.

(Contributed poster) “Exploring the Role of Content Knowledge in Responsive Teaching,” A. D. Robertson and L. M. Goodhew.

(Workshop) “Physics Teaching for Social Justice,” A. D. Robertson, M. Rifkin, and A. R. Daane.

AAPT Summer National Meeting, July 2016.

Sacramento, California

(Contributed talk) “Curricular Knowledge as an Entry Point for Responsive Instruction,” A. D. Robertson, C. E. Lovegren, K. L. Rininger, S. T. Wenzinger, and K. E. Gray.

Foundations and Frontiers of Physics Education Research – Puget Sound, June 2016.

Diablo, Washington

(Contributed poster) “University Student Conceptual Resources for Understanding Energy,” H. C. Sabo, L. M. Goodhew, and A. D. Robertson.

(Contributed poster) “Novice Teacher Sense-Making About Responsive Teaching: Important Points in the Development of Language and Practice,” A. D. Robertson and J. Richards.

Annual Meeting of the American Educational Research Association, April 2016.

Washington, DC

(Invited poster) “Exploring Diversity in Researchers’ Conceptualizations of Responsive Teaching,” R. Russ, A. Elby, J. Richards, A. D. Robertson, J. Walkoe, and M. J. Luna.

(Invited poster) “Conceptions of and Research on Responsive Teaching,” A. D. Robertson and J. Richards.

Tufts University Data Sharing Session, March 2016.

Medford, Massachusetts

(Invited talk) “Productivity of ‘collisions generate heat’ for reconciling an energy model with mechanistic reasoning,” A. D. Robertson and R. E. Scherr.

Seattle Pacific University Creative Conversations, February 2016.

Seattle, Washington

(Invited talk) “Responsive Teaching in Science and Mathematics,” A. D. Robertson and R. E. Scherr.

Kansas State University Physics Education Research Group, November 2015.

Manhattan, Kansas

(Invited seminar) “Productivity of ‘collisions generate heat’ for reconciling an energy model with mechanistic reasoning,” A. D. Robertson and R. E. Scherr.

Physics Education Research Conference, July 2015.

College Park, Maryland

(Contributed poster) “Valuing Student Ideas Morally, Instrumentally, and Intellectually,” A. D. Robertson.

AAPT Summer National Meeting, July 2015.

College Park, Maryland

(Invited talk) “Making Sense of Different Generalization and Selection Practices in PER,” A. D. Robertson, S. B. McKagan, and R. E. Scherr.

(Invited talk) "Recruiting and Preparing Teachers Through Inclusive, Collaborative Physics Education Community," E. W. Close, L. Seeley, A. D. Robertson, L. S. DeWater, and H. G. Close.

(Contributed talk) "Toward a Practice-Based Theory of Content Knowledge for Teaching Energy in High School Physics," A. D. Robertson, R. E. Scherr, L. M. Goodhew, A. R. Daane, K. E. Gray, and L. B. Aker.

(Contributed talk) "University Student Conceptual Resources for Understanding Energy," H. C. Sabo, L. M. Goodhew, and A. D. Robertson.

(Contributed talk) "The Pedagogical Value of Conceptual Metaphor for Secondary Science Teachers," A. R. Daane, J. Haglund, A. D. Robertson, R. E. Scherr, and H. Close.

(Contributed poster) "The Pedagogical Value of Conceptual Metaphor for Secondary Science Teachers," A. R. Daane, J. Haglund, A. D. Robertson, R. E. Scherr, and H. Close.

(Contributed poster) "If Energy Is Always Conserved, Then Why Do We Care About Saving It?," A. R. Daane, A. D. Robertson, and L. S. DeWater.

(Contributed poster) "Novice Teacher Sense-Making About Responsive Teaching: Important Points in the Development of Language and Practice," A. D. Robertson and J. Richards.

Foundations and Frontiers in Physics Education Research, June 2015. Bar Harbor, Maine

(Contributed poster) "Novice Teacher Sense-Making About Responsive Teaching: Important Points in the Development of Language and Practice," A. D. Robertson and J. Richards.

Regional Learning Assistant Workshop, February 2015. Seattle, Washington

(Workshop) "SPU Learning Assistant Pedagogy Course," A. D. Robertson.

PhysTEC National Meeting, February 2015. Seattle, Washington

(Invited workshop) "Adapting the Colorado LA Pedagogy Course for Your Institution," A. D. Robertson and L. Seeley.

(Contributed poster) "Novice Teacher Sense-Making About Responsive Teaching: Important Points in the Development of Language and Practice," A. D. Robertson and J. Richards.

Seattle Pacific University Creative Conversations, February 2015. Seattle, Washington

(Invited talk) "Content Knowledge for Teaching – What Does it Look Like, and How Do We Measure It?: An Example From Physics," A. D. Robertson and K. E. Gray.

Physics Education Research Conference, July 2014. Minneapolis, Minnesota

(Contributed poster) "Investigating the Proposed Affordances and Limitations of the Substance Metaphor for Energy," L. M. Goodhew and A. D. Robertson.

International Conference of the Learning Sciences, July 2014. Boulder, Colorado

(Invited poster) "A Discussion of Differences: Exploring Conceptualizations of Responsive Teaching," R. Russ, A. Elby, J. Richards, A. D. Robertson, J. Walkoe, and M. Luna.

Northwest Section American Physical Society Meeting, May 2014. Seattle, Washington

(Contributed poster) "Content Knowledge for Teaching Energy: An Example from Middle School Physical Science," A. D. Robertson, R. E. Scherr, L. Seeley, and S. Vokos.

AAPT Winter National Meeting, January 2014. Orlando, Florida

(Contributed talk) "Assessing Energy Project Learning Goals Using Energy Tracking Diagrams," A. D. Robertson and R. E. Scherr.

Physics Education Research Conference, July 2013. Portland, Oregon

(Invited poster) "Paradigms in Physics Education Research," A. D. Robertson, R. E. Scherr, and S. B. McKagan.

(Contributed poster) "Valuing Student Ideas Morally, Instrumentally, and Intellectually," A. D. Robertson.

(Contributed poster) "Development of Novice Teachers' Views of Student Ideas As Sensible and Productive," C. E. Lovegren and A. D. Robertson.

AAPT Summer National Meeting, July 2013. Portland, Oregon

(Contributed talk) "Content Knowledge for Teaching Energy: An Example from Middle School Physical Science," R. E. Scherr, A. D. Robertson, L. Seeley, and S. Vokos.

Science Teacher Responsiveness Conference, July 2013. Seattle, Washington

(Contributed poster) "Documenting Variability Within Teacher Attention and Responsiveness to the Disciplinary Substance of Student Thinking," J. Richards, A. D. Robertson, A. Elby, and J. Walkoe.

Foundations and Frontiers of Physics Education Research, June 2013. Bar Harbor, Maine

(Contributed poster) "Engaging the Implicit Decisions of the Curriculum: A Missing Element in LA Development," A. D. Robertson, K. E. Gray, C. E. Lovegren, K. L. Rininger, and S. T. Wenzinger.

SPU Erickson Undergraduate Research Conference, May 2013. Seattle, Washington

(Contributed poster) "Process, Product, and Effect on Learning Assistants' Teaching Practice via Identification of the Implicit Decisions of Physics Tutorials Curriculum," C. Lovegren, K. L. Rininger, S. T. Wenzinger, A. D. Robertson, and K. E. Gray. * *Best poster award*

PhysTEC National Meeting, March 2013. Baltimore, Maryland

(Contributed poster) "Engaging the Implicit Decisions of the Curriculum: A Missing Element in LA Development," A. D. Robertson, K. E. Gray, C. E. Lovegren, K. L. Rininger, and S. T. Wenzinger.

(Workshop) "Immersing Science Students in the Teaching Process: The Importance of Multiple Communities," M. Sabella, A. Robertson, J. Passehl, K. Weisenburger, and A. Van Duzor.

AAPT Winter National Meeting, January 2013. New Orleans, Louisiana

(Invited talk) "Engaging the Implicit Structure and Decisions of the Curriculum: A Missing Element in the Development of Learning Assistants' Proximal Formative Assessment Skills," A. D. Robertson.

(Contributed talk) "When Does a Group Ignore their Own Question?," A. M. Barr and A. D. Robertson.

University of Maryland Physics Education Research Group, December 2012.

College Park, Maryland

(Invited seminar) "Engaging the Implicit Structure and Decisions of the Curriculum: A Missing Element in the Development of Learning Assistants' Proximal Formative Assessment Skills," A. D. Robertson.

Colorado Learning Assistant Workshop, October 2012. Boulder, Colorado

(Contributed poster) "The Physics Learning Assistant Program at Seattle Pacific University," A. D. Robertson, K. E. Gray, L. S. DeWater, H. Close, and S. Vokos.

Washington Section AAPT National Meeting, October 2012. Bellingham, Washington

(Contributed poster) "Toward Assessing K-12 Teacher Responsiveness to the Disciplinary Substance of Student Ideas," A. D. Robertson, R. E. Scherr, S. B. McKagan, and S. Vokos

AAPT Summer National Meeting, July 2012. Philadelphia, Pennsylvania

(Contributed talk) "Toward Assessing K-12 Teacher Responsiveness to the Disciplinary Substance of Student Ideas," A. D. Robertson, R. E. Scherr, S. B. McKagan, and S. Vokos.

(Contributed poster) "Toward Assessing K-12 Teacher Responsiveness to the Disciplinary Substance of Student Ideas," A. D. Robertson, R. E. Scherr, S. B. McKagan, and S. Vokos.

(Contributed talk) "How Energy Theater Supports Participants in Accounting for Energy," S. B. McKagan, A. R. Daane, A. D. Robertson, and R. E. Scherr.

(Contributed poster) "How Energy Theater Supports Participants in Accounting for Energy," S. B. McKagan, A. R. Daane, A. D. Robertson, and R. E. Scherr.

(Contributed poster) "Defining 'Research Validation' for PER Users and Researchers," S. B. McKagan and A. D. Robertson

Foundations and Frontiers of Physics Education Research – Puget Sound, June 2012.**Diablo, Washington**

(Plenary) “Toward Clarifying Paradigms in Physics Education Research,” A. D. Robertson.

(Contributed poster) “Assessing a Wide Range of Instructional Goals for K-12 Teacher Professional Development,” A. D. Robertson, S. B. McKagan, R. E. Scherr, and S. Vokos.

AAPT Winter National Meeting, February 2012.**Ontario, California**

(Contributed talk) “Assessing a Wide Range of Instructional Goals for K-12 Teacher Professional Development,” A. D. Robertson, S. B. McKagan, R. E. Scherr, and S. Vokos.

(Contributed poster) “Assessing a Wide Range of Instructional Goals for K-12 Teacher Professional Development,” A. D. Robertson, S. B. McKagan, R. E. Scherr, and S. Vokos.

(Contributed talk) “Learners’ understanding of energy: Conservation of amount, decrease of value,” A. R. Daane, L. Seeley, A. D. Robertson, S. Vokos, and R. E. Scherr.

(Contributed poster) “Learners’ understanding of energy: Conservation of amount, decrease of value,” A. R. Daane, L. Seeley, A. D. Robertson, S. Vokos, and R. E. Scherr.

UNIVERSITY SERVICE**“How to Do Scholarship” Series, May 2018.**

Panelist, “How to Fund Your Research.”

Share experience seeking and receiving external funding for research.

University Scholars Program, 2012, 2014, 2017.

First reader, undergraduate honors theses.

Supervise undergraduate research projects. Mentor students as they collect, analyze, and synthesize results of physics education research. Provide feedback on drafts of theses.

Department of Physics, 2015, 2017.

Advisor, undergraduate senior projects.

Advise senior research projects. Mentor students as they collect, analyze, and synthesize results of physics education research. Support students in writing conference proceedings papers.

Faculty Development Committee, 2012-2014.

Member

Support efforts of Center for Scholarship and Faculty Development. Review Faculty Research Grant applications, recruit and select awardees for Teaching Idea of the Year. Update faculty teaching evaluation forms and procedures.

Day of Common Learning, 2012.

Co-organizer and co-facilitator of breakout session, “Fostering Productive Dialogue in Science Classrooms.”

Use classroom video to facilitate conversation around opportunities for hospitality, mutual understanding, and human flourishing in student-instructor dialogue.

Faculty Retreat, 2012.

Co-organizer and co-facilitator of breakout session, “Fostering an Interactive Classroom through use of Learning Assistants.”

Organize and facilitate faculty introduction to Learning Assistant model.

Center for Scholarship and Faculty Development, 2012-2013.

Consultant.

Consult with CSFD about implementation of university-wide Learning Assistant Program.

Natural Sciences Capstone Seminar, 2011, 2012.

Guest presenter.

Introduce capstone students to physics education research through interactive presentations.

PROFESSIONAL SERVICE AND DEVELOPMENT**Ad Hoc Committee for Improving the Journal Review Process in PER, 2018-present.**

Member (with K. Harper, C. Henderson, M. Wittmann, and G. White).

Conduct survey of physics education research community members' experiences of PER journal reviews. Use results to inform policy and practices for field's premier journals.

Physics Education Research Conference, 2018.**Washington, DC**

Co-organizer (with L. Atkins Elliott, A. Elby, and J. Richards).

Coordinate with stakeholders to organize national conference for the physics education research community, centered on the "having of wonderful ideas." Recruit plenary speakers, set conference schedule, solicit and select parallel sessions and juried talks, plan closing session, and provide administrative structure and support throughout conference.

AAPT National Meetings, 2013, 2014, 2016, 2018.**Various locations**

Organizer of invited talk sessions.

Organize invited talk sessions about research traditions, physics teaching for social justice, responsive teaching, and research paradigms in physics education research. Propose session to committee, identify and recruit relevant speakers, and provide opportunities for speakers to connect with one another before session. Preside over talk session.

Physics Education Research Consortium of Graduate Students, 2018. Sacramento, California

Panelist, "Professional Skills for Graduate Students" session at AAPT Winter National Meeting.

Participate in conversation about organizing principles for writing Physics Education Research Conference proceedings papers.

Reviews in PER, 2016-2018.

Guest editor (with K. Harper and C. Henderson).

Solicit contributions to "Research Traditions in PER" special volume. Provide feedback on author prospectuses. Oversee review process. Organize invited session at AAPT Summer National Meeting featuring manuscript authors.

Foundations and Frontiers of Physics Education Research – Puget Sound, 2012, 2016.**Diablo, Washington**

Co-organizer (with A. Boudreaux, K. Chowdary, A. Daane, and S. McKagan).

Organize regional conference for faculty, graduate, and undergraduate researchers and consumers of physics education research. Recruit plenary speakers and workshop leaders, set conference schedule, and solicit contributed posters. Manage conference budget and recruit conference participants. Provide support as needed throughout conference.

AAPT National Meetings, 2012, 2013, 2015.**Various locations**

Session presider.

Preside over sessions of contributed talks. Introduce speakers and ensure that talks begin and end at scheduled times.

Science Teaching Responsiveness Conference, 2013.**Seattle, Washington**

Co-organizer (with D. Hammer and R. Scherr).

Organize national conference for faculty and graduate students who conduct research on responsive teaching. Recruit plenary speakers. Co-edit book with chapters contributed by conference participants.

University of Maryland College of Education, 2012.**College Park, Maryland**

Scholar-in-residence (with A. Elby and J. Richards), funded by \$2450 grant from the Physics Education Research Topical Group.

Engage in two-week collaborative visit to refine existing work on assessing responsive teaching *in situ*.

University of Washington Department of Physics, 2008-2011.**Seattle, Washington**

Graduate student representative, Mentoring Committee, 2008-2011; Graduate Committee, 2009-2011.

Spearhead mentoring program for graduate students and represent graduate student interests on two committees. Present proposal for proactive mentoring program to faculty. Develop a series of worksheets about mentoring and organize forums for faculty and graduate students.

University of Washington Department of Physics, 2007-2011. Seattle, Washington

Founder and leader, informal community service organization.

Organize, advertise, and provide leadership for monthly service opportunities for physics graduate students and faculty.

AWARDS AND FELLOWSHIPS

Physics Education Research Topical Group Mini-Grants

Travel awards ranging from \$500-\$2300, 2016, 2014, 2012, 2011.

Received support for travel and expenses for speakers in AAPT organized sessions, Science Teaching Responsiveness Conference, and Foundations and Frontiers in Physics Education Research – Puget Sound.

University of Washington Seattle, Washington

National Science Foundation Graduate Fellow, 2008-2011 (\$127,500).

Department of Physics Miller Award (\$750), 2010.

Given to a senior or graduate student on the basis of need, excellence of character, and scholarship.

UNDERGRADUATE STUDENTS

Laura Wood, Undergraduate Honors Thesis and Physics Senior Project, 2017; “Characterizing Practices and Resources for Inclusive Physics Learning.” Currently PhD student in Physics at Michigan State University.

Hannah Sabo, Physics Senior Project, 2015; “University Student Conceptual Resources for Understanding Energy.” Currently PhD student in Education at the University of Maryland.

Lisa Goodhew, Undergraduate Honors Thesis, 2014; “Investigating the Relationship Between the Substance Metaphor for Energy and Its Proposed Affordances and Limitations.” Currently PhD student in Physics at the University of Washington.

Ashleigh Chambers, Undergraduate Honors Thesis, 2012; “Assessing the Effectiveness of Energy Project Professional Development.” Currently PhD student in Engineering at Louisiana State University.