Paul Hutchison

Department of Education
Grinnell College
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EDUCATION

2008 Ph.D., Curriculum and Instruction. University of Maryland (College Park, MD) Area of emphasis: Science education

Dissertation: *Epistemologically authentic student activity in science classrooms*
Dissertation Committee: David Hammer (Advisor), Edward F. "Joe" Redish, Janet Coffey, Dan Chazan, Michael Fuhrer

1997 M.S., Physics. University of Wisconsin – Milwaukee
Area of emphasis: Condensed matter physics

Thesis: *Initial stages of Mg growth on the Si(001) surface studied by STM*
Thesis Advisor: Jun Nogami

1987 B.A., Physics. Cornell College (Mt. Vernon, IA)

PROFESSIONAL EXPERIENCE

2013-present	Associate Professor, Dept. of Education, Grinnell College (Grinnell, IA)
2015	Visiting Associate Professor, Dept. of Physics, Cornell College (Mt. Vernon, IA)
2008-2013	Assistant Professor, Dept. of Education, Grinnell College (Grinnell, IA)
2012	Visiting Assistant Professor, Dept. of Physics, University of Maryland (College Park, MD)
2007-2008	Instructor (tenure track), Dept. of Education, Grinnell College (Grinnell, IA)
2002-2007	Adjunct Lecturer, Dept. of Physics, University of Maryland (College Park, MD)
2006	Physicist-in-Residence, Dept. of Physics, American University (Washington, DC)
2001-2006	Graduate Research Assistant, Dept. of Curriculum and Instruction, University of Maryland (College Park, MD)
1998-2001	Instructor/Instructional Support Coordinator, Dept. of Physics, Mississippi State University (Starkville, MS)
1997	Adjunct Lecturer, Dept. of Physics, Carroll University (Waukesha, WI)
1996-1997	Graduate Research Assistant, Scanning tunneling microscopy lab, University of Wisconsin - Milwaukee

1995-1996 Adjunct Lecturer, Dept. of Physics, University of Wisconsin – Milwaukee

1995-1997 High school math teacher (part-time), Wisconsin Institute for Torah Studies, Milwaukee, WI

1988-1993 Officer, United States Navy

PUBLICATIONS (Grinnell College student co-authors are indicated in **bold**)

REFEREED JOURNAL ARTICLES

Fay, J. & Hutchison, P. (submitted). *Vocabulary supports benefit from multilingual students' expertise*.

Hutchison, P. (2013). The Sun is a star?!: Helping students connect scientifically correct ideas to what makes sense to them, *Science & Children*, 51(3), 82-85.

Frank, B., Goertzen, R.M., & Hutchison, P. (2013). The pedagogical value of 'obvious questions' in introductory physics. *The Physics Teacher*, 51, 487-490.

Hutchison, P. & Hammer, D. (2010). Attending to epistemological framing in a science classroom. *Science Education*, 94(3), 506-524.

Russ, R., Coffey, J., & Hammer, D., & Hutchison, P. (2009). Making assessment in science classrooms more accountable to assessment in science disciplines. *Science Education*, 93(5), 875-891.

Chazan, D., Sword, S., Badertscher, E., Conklin, M., Graybeal, C., Hutchison, P., Marshall, A., & Smith, T., (2007). Learning to learn mathematics: Voices of doctoral students in mathematics education. *The Learning of Mathematics: Sixty-ninth Yearbook.* The National Council of Teachers of Mathematics: Reston, VA.

Cuicchi, P., Hutchison, P., (2003). Using a Simple Optical Rangefinder to Teach Similar Triangles, *Mathematics Teacher* 96(3), 166-168.

Hutchison, P., Evans, M., Nogami, J., (1998). Initial Stages of Mg Growth on the Si(001) Surface Studied by STM, *Surface Science* 411(1-2), 99-110.

REFEREED CONFERENCE PROCEEDINGS

Bartell, R. & Hutchison, P. (2020). Off-task interaction as a mechanism to support on-task participation. *Proceedings of the 2020 International Conference of the Learning Sciences.*

Mehltretter, K. & Hutchison, P. (2020). Variations in student authority in one collaborative small group. *Proceedings of the 2020 International Conference of the Learning Sciences*.

Payne, L. & Hutchison, P. (2019). Intervening in status hierarchies to disrupt inequity. *Proceedings of the 2018 Physics Education Research Conference*.

Slattery, M. & Hutchison, P., (2018). Assessing equity in collaborative learning situations: A comparison of methods. *Proceedings of the 2018 International Conference of the Learning Sciences*.

Hutchison, P., **Monaghan, I.**, & **Morgan, R.** (2016). A multidimensional analysis method for think-aloud protocol data. *Proceedings of the 2015 Physics Education Research Conference*.

Hutchison, P. & Elby, A. (2013). Evidence of epistemological framing in survey question misinterpretation. *Proceedings of the 2012 Physics Education Research Conference.*

Russ, R. & Hutchison, P. (2006) It's okay to be wrong: recognizing mechanistic reasoning during student inquiry. *Proceedings of the 2006 International Conference of the Learning Sciences.*

NATIONAL AND INTERNATIONAL CONFERENCE PRESENTATIONS

(Grinnell College student co-presenters are indicated in **bold**)

REFEREED

Binzley, M. & Hutchison, P. (forthcoming, March 2022). *Instructor impact on the equity of collaborative small groups in a science class*. Interactive poster presentation accepted to the 2022 National Association for Research in Science Teaching annual meeting, Vancouver, BC Canada.

Bartell, R. & Hutchison, P. (June 2020). *Off-task interaction as a mechanism to support on-task participation*. Paper presented at the 2020 International Conference of the Learning Sciences, virtual.

Mehltretter, K. & Hutchison, P. (June 2020). *Variations in student authority in one collaborative small group*. Paper presented at the 2020 International Conference of the Learning Sciences, virtual.

Collins, S. & Hutchison, P., (June 2019). *Panel transition closure patterns in comic strips: Incongruity and relief*. Poster presented at the 2019 Conference of the International Society for Humor Studies, Austin, TX.

Slattery, M. & Hutchison, P., (June 2018). *Assessing equity in collaborative learning situations: A comparison of methods*. Paper presented at the 2018 International Conference of the Learning Sciences, London, UK.

Calabrese-Barton, A., Berland, L, Braaten, M., Hutchison, P., Kang, H., Levin, D., Luna, M., Russ, R., Schwartz, C., & Thompson, J. (April 2015). *Symposium - Developing, Refining, and Sustaining the Next Generation of Responsive Science Teaching.* Presented at the 2015 annual meeting of the National Association for Research in Science Teaching, Chicago, IL.

Schultz, Z. & Hutchison, P. (January 2011). *Why won't the 'scientific method' go away?* Presented at the 2011 annual meeting of the Association of Science Teacher Educators, Minneapolis, MN.

Hutchison, P., Kulin, S., Allie, S., & Hammer, D., (March 2007). *Attending to student epistemological stances in a science classroom.* Paper presented at the 2007 annual meeting of the American Educational Research Association, Chicago, IL.

Russ, R. & Hutchison, P. (June 2006) *It's okay to be wrong: recognizing mechanistic reasoning during student inquiry.* Paper presented at the 2006 International Conference of the Learning Sciences, Bloomington, IN.

Hutchison, P. & Hammer, D. (April 2005). *Epistemic roles for students and teachers in a 'science as inquiry' classroom.* Paper presented at the annual meeting of the American Educational Research Association, Montreal, QU.

Levin, D., Hutchison, P., & Honda, S. (April 2005). *Teacher thinking about student inquiry in secondary biology.* Paper presented at the annual meeting of the American Educational Research Association, Montreal, QU.

van Zee, E., Horne, C., Mikeska, J., Roy, P., & Hutchison, P. (Feb. 2004). *Elementary students' inquiry in the physical sciences.* Session presented at the 25th annual Ethnography in Education Forum, Philadelphia, PA.

van Zee, E. & Hutchison, P. (Feb. 2003). *Initiating inquiries into science learning and teaching.* Talk presented at the 24th annual Ethnography in Education Forum, Philadelphia, PA.

INVITED

Hutchison, P. & Sikoski, T. (July 2013). *Scientific practices in NGSS and physics courses for K-12 teachers.* Talk presented at the annual summer meeting of the American Association of Physics Teachers, Portland, OR.

Atkinson, R., Hutchison, P., & Mzoughi, T. (Jan. 2001). *Assessing the efficacy of web-delivered tutorials: A case study.* Talk presented at the annual winter meeting of the American Association of Physics Teachers, San Diego, CA.

CONTRIBUTED

Payne, L. & Hutchison, P. (August 2018). *Intervening in status hierarchies to disrupt inequity.* Poster presented at the annual Physics Education Research Conference, Washington, DC.

Gaffney, J. & Hutchison, P. (August 2018). *How instructors leverage the unpredictable in their classrooms*. Poster presented at the annual Physics Education Research Conference, Washington, DC.

Hutchison, P. & Gaffney, J. (July 2018). *How we learned to stop worrying and love RBISs*. Talk presented at the 2018 summer meeting of the American Association of Physics Teachers, Washington, DC.

Gaffney, J. & Hutchison, P. (July 2017). *Instructional messiness and why we need to understand it*. Poster presented at the annual Physics Education Research Conference, Cincinnati, OH.

Clark, C., Daly, J., Jennings, J., May, M., Nelson, E., von Holst, R., & Hutchison, P. (Feb. 2017). *With all due respect: Physics students speak to physics teachers*. Talk and poster presented at the 2017 winter meeting of the American Association of Physics Teachers, Atlanta, GA.

Genz, F., Archibeque, B., Hutchison, P., Franklin, M., & Sayre, E. (Feb. 2017). *Equity in the IMPRESS program*. Talk and poster presented at the 2017 winter meeting of the American Association of Physics Teachers, Atlanta, GA.

Monaghan, I., & Hutchison, P. (July 2016). *"This sounds like science": The impact of epistemological framing.* Poster presented at the annual Physics Education Research Conference, Sacramento, CA.

Hutchison, P., **Monaghan, I.**, & **Morgan, R.** (July 2015). *A multidimensional analysis method for think-aloud protocol data.* Poster presented at the annual Physics Education Research Conference, College Park, MD.

Hutchison, P. & Kuo, E. (July 2012). *Authoritative sources in a physics class for future elementary teachers.* Talk presented at the annual summer meeting of the American Association of Physics Teachers, Philadelphia, PA.

Hutchison, P., **McDonald, M.**, & Goertzen, R. (July 2010). *What does epistemological priming look like?* Talk and poster presented at the annual summer meeting of the American Association of Physics Teachers, Portland, OR.

McDonald, M. & Hutchison, P. (July 2010). *How students promote and discourage each others' answer-making.* Poster presented at the annual summer meeting of the American Association of Physics Teachers, Portland, OR.

McDonald, M. & Hutchison, P. (Feb 2009). *Modifying our conceptualization of 'framing'.* Talk and poster presented at the annual winter meeting of the American Association of Physics Teachers, Chicago, IL.

Hutchison, P. & Goertzen, R.M. (July 2007). *Priming epistemological framing in a college physics class.* Talk and poster presented at the annual summer meeting of the American Association of Physics Teachers, Greensboro, NC.

Hutchison, P. (July 2006). *Recognizing what physics students are doing: Answer-making and sense-making.* Talk and poster presented at the annual summer meeting of the American Association of Physics Teachers, Syracuse, NY.

Hutchison, P., Kulin, S., & Hammer, D., (Aug. 2005). *Dialogues concerning two interpretations of inquiry.* Talk presented at the annual summer meeting of the American Association of Physics Teachers, Salt Lake City, UT.

Hutchison, P. & Lau, M., (Aug. 2003). *Good at inquiry but bad at science: A case study.* Talk presented at the annual summer meeting of the American Association of Physics Teachers, Madison, WI.

Atkins, L., Hammer, D., & Hutchison, P., (Aug. 2003). *Functional vs. structural analogies: A conceptual or epistemological basis?* Poster presented at the annual summer meeting of the American Association of Physics Teachers, Madison, WI.

Mzoughi, T., Atkinson, R., Hutchison, P., Li, Q., & Liang J., (Jan. 2002). *Assessing the effectiveness of web-based tutorials in kinematics and optics.* Talk presented at the annual winter meeting of the American Association of Physics Teachers, Philadelphia.

Harpole, S., Cuicchi, P., & Hutchison, P., (Aug. 2000) *Science on the green.* Talk presented at the annual summer meeting of the American Association of Physics Teachers, San Antonio, TX.

COURSES TAUGHT

Grinnell College (2007-present)

EDU 101 Educational Principles in a Pluralistic Society – F07, F08, S09, F09, F10, F11, S13, S14, F15, S16, S18, F19, S20

EDU 211 The Politics of Educational Assessment – F13, F14, F17, F20

EDU 214 Nature of Science and Science Teaching – S08, S09

EDU 221 Educational Psychology – S10, S11, S13, S14, S16, S17, S18, S19, S20, S21

EDU 295 School, Mathematics, and Equity – F09, S11

EDU 344 Secondary Science Teaching Methods – F07, S10, S11, S13, S17, S18, S19, S20, S21

EDU 345 Secondary Math Teaching Methods – S08, S10, S13, S18, S19

EDU 460 Student Teaching Seminar – F11, F12, F13, F14, F17, F18, F20

EDU/PHY 115 How to Learn Physics – F15, S17, S19

PHY 131 General Physics 1 – S09

TUT 100 First year tutorial – F08, F10, F12, F16, F18

Cornell College (2015)

PHY 155 How to Learn Physics – S15

Grinnell High School (2015, 2021-22)

Pre-calculus – S15 trimester

Integrated Math 2AxB – W21-22 trimester

University of Maryland (2001-2007; 2012)

PHYS 115 Inquiry Into Physics - F02, S03, F03, S04, F04, F06, S07, S12 (An inquiry-based physics content course for education majors)

EDCI 372 Curriculum and Instruction in Elementary Education: Science – F01

American University (2006)

PHYS 100 Physics for the Modern World – S06

Mississippi State University (1998-2001)

PH 4990/6990 Seminar in teaching introductory laboratories - S00, F00

PH 2223 Physics 2 (calculus) - F99

PH 2213 Physics 1 (calculus) - Sum99, F99, S00, F00

PH 1123 General Physics 2 (algebra) - S99, S01

PH 1113 General Physics 1 (algebra) - F98, S99

PH 1023 Physical Science Survey - F00, S01

Carroll University (1997)

Physics 2 (calculus) – S97

General Physics 2 (algebra) – Sum97

General Physics 1 (algebra) – Sum97

University of Wisconsin – Milwaukee (1996-1997)

PHYS 120 General Physics 1 (algebra) – Sum96, Sum97

Wisconsin Institute for Torah Studies, private high school (1995 – 1997)

High school Calculus 1 – 95-96, 96-97

High school Calculus 2 – 96-97

PRESENTATIONS AND WORKSHOPS FOR TEACHERS

Hutchison, P. & Jacobsen, C. (July 2021, August 2020, August 2019). *Tutorial Instructor workshop.* Grinnell College faculty-development summer workshop

Hutchison, P. (March 2018). *That kid just gave a wrong answer. Now what do I do?* 2018 STEM Pre-service Teacher Conference, Coralville, IA.

Gaffney, J. & Hutchison, P. (Jan. 2018). *Some challenges of implementing RBISs*. Presentation to the American Physical Society's Faculty On-line Community.

Hutchison, P (Feb. 2017). *Responsive Science Teaching*. 2017 STEM Pre-service Teacher Conference, Coralville, IA.

Hutchison, P. (Nov. 2015). *When is the wrong answer a good answer? Assessing and responding to student sense-making*. 2015 STEM Pre-service Teacher Conference, Coralville, IA.

Hutchison, P. (June 2013). *Metacognition and Science Teaching*. Summer faculty workshop for Grinnell College science faculty.

Levin, D. & Hutchison, P. (June 2009). *Inquiry into Biology.* Summer course (University of Maryland, EDCI 606) in biology content for elementary teachers.

Hutchison, P. (June 2006). *Sense-making, answer-making, and why it's important to pay attention to what students are doing.* Presentation to high school science teachers participating in the Responsive Teaching Project, University of Maryland, College Park.

Hutchison, P. (Aug. 2005). *Can the wrong answer be a good answer?: What exactly does inquiry mean in a classroom?* Presentation to K-12 teachers participating in NASA's Fellowships in Math and Science (FIMS) program, NASA Goddard, Greenbelt, MD.

Levin, D. & Hutchison, P. (Jul./Aug. 2004). *Science inquiry in the high school biology classroom.* Workshop series conducted for high school biology teachers participating in University of Maryland Biotechnology Institute's Extended Professional Experience in Research for Teachers (ExPERT) program, Baltimore, MD.

Coffey, J. & Hutchison, P. (June 2004). *Everyday assessment.* Workshop presented to the annual training seminar of Montgomery County (Maryland) Public Schools biology teachers.

SERVICE

Grinnell College

College Personnel Committee, Social Studies Div. rep.: 19-20, 20-21

Faculty Organizing Committee: 10-11, 12-13 (chair-elect), 13-14 (chair), 18-19 (chair-elect), 19-20 (chair)

Ad hoc committee overseeing FYE pilot: 17-18, 18-19

Education Department Chair: 15-16, 16-17, 17-18, Spring 19 (interim)

Task Force on Residential Learning (co-Chair): 15-16, 16-17

Tutorial and Advising Committee: 15-16, 16-17, 17-18

ARH-Carnegie Planning Committee: 15-16, 16-17, 17-18

College Curriculum Committee: 13-14, 14-15

Institutional Review Board: 12-13

Admissions and Student Financial Aid Committee: 09-10, 10-11

Committee on Student Life: 08-09, 09-10

Iowa Academy of Sciences

Finance Committee: 09-10, 10-11

Iowa Math Science Education Partnership

Annual Summit Organizing Committee: 09-10 (host institution), 10-11

Iowa STEM Education Roadmap Authoring Committee: 11

PROFESSIONAL AFFILIATIONS

American Association of Physics Teachers

International Society of the Learning Sciences

National Association for Research on Science Teaching