

## Curriculum Vita

### Michael “Bodhi” Rogers

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#### Professional Experience:

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- Aug-09-Present: Associate Professor of Physics. Ithaca College. Ithaca, NY 14850
- Aug-03-Aug-09: Assistant Professor of Physics. Ithaca College. Ithaca, NY 14850
- Sep-09-Present: Associated Faculty: Anthropology Program, Cornell University, Ithaca, NY 14850

#### Professional Positions Held:

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- Feb-11-Present: Vice-Chair, New York State Section, American Physical Society
- 2008-Present Co-Director: Kalavosos and Maroni Built Environments Project
- 2008-Present Co-Director: White Springs Native American Settlement Project
- 2007-Present Vice-President, Finger Lakes Chapter, New York State Archaeological Association
- 2003-Present Faculty Advisor, Ithaca College Chapter, Society of Physics Students
- 2005-2011 Executive Committee, New York State Section, American Physical Society
- 2007-2010 Faculty Trustee, Ithaca College Board of Trustees
- 2006-2010 School of Humanities and Sciences Faculty Senate (Vice President 2009-10, Treasurer 2008-09. Executive Committee Member 2006-10)

#### Education:

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- Jun-03: Ph.D. in Physics, Oregon State University, Corvallis, OR. *Effect of iron redistribution in soils on cesium magnetometer surveys at the Oregon State University research dairy*
- Jun-01: M.A. Interdisciplinary Studies with a focus in Archaeology, Oregon State University, Corvallis, OR. *Detection of burials at the Confederated Tribes of Siletz Indians historic period cemetery, Oregon: A comparison of ground-based remote sensing methods.*
- Jun-99: M.S. in Physics, Oregon State University, Corvallis, OR.
- May-94: B.A. in Physics (major), Mathematics (major), Applied Computers (minor), and Anthropology (minor), SUNY at Geneseo, NY.

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**Professional Societies and Memberships:**


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American Geophysical Union	American Museum of Natural History	American Physical Society
Archaeological Institute of America	American Association of Physics Teachers	American Schools of Oriental Research
Council for Undergraduate Research	New York State Section of the American Physical Society	New York State Archaeology Association
Sigma Pi Sigma Physics Honor Society	Sigma Xi Scientific Research Society	Society for American Archaeology
Society of Physics Students		

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**Funded External Grants:**


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		TOTAL:	\$581,112
May 2009- Apr 2012:	PI: National Science Foundation Grant Number BCS-0917734. Collaborative Research: The Kalavassos and Maroni Built Environments Project. Investigating Social Transformation in Late Bronze Age Cyprus +\$107,570 awarded to Cornell		\$60,638
Mar 2009- Apr 2012:	Co-PI: National Science Foundation Grant Number DUE-0837721. Multidisciplinary Sustainability Modules: Integrating STEM Courses		\$149,104
Mar 2009- Feb 2011:	PI: National Science Foundation Grant Number DUE- 0837301. Collaborative Research: Paradigms in Physics: Creating and Testing Materials to Facilitate Dissemination of the Energy and Entropy Module +\$72,136 awarded to U.of Maine and \$44,564 to Oregon State Univ.		\$33,299
Jun 2007- May 2008:	PI: National Science Foundation Grant Number DUE-0722572. Acquisition of Geophysics Survey Instruments for Archaeological Geophysics Research and Training		\$188,071
Jan 2007- Dec 2009:	PI: National Science Foundation Grant Number DUE-0536246. Creating a Performance-Based Physics Program for Introductory Physics and Astronomy Classes Using the SCALE-UP Model of Teaching Physics		\$150,000

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**Book Chapters:**


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Michael Rogers. "Archaeological Geophysics: Seeing Deeper with Technology to Compliment Digging" in *Archaeology in 3D: Deciphering Buried Sites in the Western U.S.* Ed. Matthew Seddon, Heidi Roberts, and Richard V.N. Ahlstrom. SAA Press. 2011.

Barry J. Allred, Michael Rogers, M. Reza Ehsani, and Jeffrey J. Daniels. "Additional Geophysical Methods with Probable Significant Future Use in Agriculture: Magnetometry, Self-Potential, and Seismic" in *Handbook of Agricultural Geophysics.* Ed. Barry Allred, Jeffrey J. Daniels, and Mohammad Reza Ehsani. CRC Press. June 2008. 147-152.

**Peer-Reviewed Publications:** (Student authors in bold face)

Rogers, M., T. Pfaff, J. Hamilton, A. Erkan. Under Review. Incorporating Sustainability and 21st Century Problem Solving into Physics Courses. *The Physics Teacher*.

Fisher, K., J. Leon, S. Manning, M. Rogers, D. Sewell. Under Review. The Kalavastos and Maroni Built Environments Project: Introduction and preliminary report on the 2008 and 2010 Seasons. *Report of the Department of Antiquities, Cyprus*.

Rogers, M., L. Keller, A. Crouse, and M. Price. Under Review. Implementing Comprehensive Reform of Introductory Physics at a Primarily Undergraduate Institution: A Longitudinal Case Study. *Journal of STEM Education Research*.

Price, M., M. Rogers, and **R. Hanrahan**. Under Review. Gains on the Maryland Physics Expectation Survey. *American Journal of Physics*.

Price, M., and M. Rogers. Under Review. Teaching Nature of Science Through Scientific Models: The Geocentric vs. Heliocentric Cosmology. *Journal of College Science Teaching*.

Stull, S., M. Rogers, and **N. Batruch**. Under Review. Finding Fort Hardy: Combining Documentary Research, Remote Sensing, and Excavation to Locate a French and Indian War Fort. *Northeast Historical Archaeology*. CNEHA Press.

Kregenow, J., M. Rogers, M. Price. 2011. Is there a "back" of the room when the teacher is in the middle?. *Journal of College Science Teaching*. Vol. 40 No. 6.

Pfaff, T., A. Erkan, J. Hamilton, M. Rogers. 2011. Multidisciplinary Engagement of Calculus Students in Climate Issues. *Sencer: Science Education and Civic Engagement-An International Journal*.

Pfaff, T., M. Rogers, A. Erkan, and J. Hamilton. 2010. Go Figure, Calculus Students use of Figures and Graphs in Technical Report Writing. *Numeracy*. Volume 4, Issue 1.

**Ahearn, C.** and **C. Howard** [M. Rogers, Faculty Advisor]. 2010. Sustainably Charging Batteries Using Compost. *NCUR 2010 Proceedings*. National Conferences on Undergraduate Research.

Hamilton, J., M. Rogers, T. Pfaff, and A. Erkan. 2010. "Teaching the Earth," a special edition of *Transformations: The Journal of Inclusive Scholarship and Pedagogy*.

Erkan, A., J. Hamilton, T. Pfaff, and M. Rogers. 2010. Use of satellite imagery in multidisciplinary projects. In *SIGCSE '10: Proceedings of the 41st SIGCSE technical symposium on Computer Science education*, pages 32-36, New York, NY, USA, ACM.

Kregenow, J., Rogers, M., and Conostas, M., 2010. Multidimensional Education Research: Managing Multiple Data Streams, *Astronomy Education Review*. 9 (1), 010104, 10.3847/AER2009047

Rogers, M.B., **Faehndrich, K.**, Roth, B., **Shear, G.**, 2010. Cesium magnetometer surveys at a Pithouse Site near Silver City, New Mexico, *Journal of Archaeological Science* (2010), doi:10.1016/j.jas.2009.12.010

Rogers, M. An Inquiry-based course using "Physics?" in Cartoons and Movies. 2006. *The Physics Teacher*. Vol 44

Rogers, M.B., J.E. Baham, M.I. Dragila. 2006. Effect Of Soil Iron Content On Magnetometer Survey's Ability To Locate Subsurface Agricultural Drainage Pipes. *Applied Engineering in Agriculture*. 22(5): 701-704.

Rogers, M. B., J. R. Cassidy, M. I. Dragila. 2005. Ground-based Magnetic Surveys as a New Technique to Locate Subsurface Drainage Pipes: A Case Study. *Applied Engineering in Agriculture*. 21 (3):421-426.

## **Complete list of Invited Talks:**

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"Understanding the Built Environment at the Seneca Iroquios White Springs Site using Large-scale, Multi-instrument Archaeogeophysical Surveys", P. Gerard-Little (Cornell), M. Rogers, K. Hurley (Ithaca College), and K. Jordan (Cornell). Society for American Archaeology. Sacramento, CA, March 2011

"Archaeological Geophysical Surveys at French Azilum", D. Costura (Cornell), M. Rogers, K. Hurley, D. Bradac, Z. Mink, J. Wu (Ithaca College). Society of Historical Archaeology Annual Meeting, Austin, TX, January 2011.

"Performance-based Learning and Multidimensional Assessment Methods", M. Rogers (Ithaca College) Keynote address at the annual SUNY at Oswego Center for Excellence in Learning and Teaching Workshop. Oswego, NY. 25-Sep-09

"Teaching General Education Astronomy Using SCALE-UP/Studio Physics Models", M. Rogers, Luke Keller, Matthew Price, Julia Kregenow (Ithaca College) and Mark Conostas (Cornell University), American Association of Physics Teachers Summer Meeting. Ann Arbor. MI. 27-Aug-09

"Energy and Entropy: A Paradigms in Physics Approach to Thermodynamics", M. Rogers (Ithaca College) and A. Wasserman (Oregon State University), American Association of Physics Teachers Winter Meeting. Baltimore, MD. 22-Jan-08

"Near Surface Archaeological Geophysics: A Review of Methods", M. Rogers (Ithaca College), *Geology Department Seminar Series, Cornell University*. Ithaca, NY. 19-Sep-07

"Efforts of IC's Teacher Education / Physics Education program", M. Rogers (Ithaca College), *The Role of Colleges and Universities in Preparing Future Physics Teachers*". LEPP Facility, Cornell University. Ithaca, NY. 19-Jun-06

"Teaching Critical and Analytical Thinking", M. Rogers and R. Plante, (Ithaca College), *Ithaca College Summer Teaching Institute: "Implementing the Ithaca College Mission"*. Ithaca, NY. 23-May-06

"eClassroom Innovations at IC", M. Rogers and W. Crisp, (Ithaca College), *Education Technology Day at Ithaca College*. Ithaca, NY. 16-Mar-06

"Applying Physics to Archaeology using Ground-based Remote Sensing Instruments", M. Rogers, (Ithaca College), *Dickinson College Physics Department Colloquium*. Carlisle, PA. 06-Mar-06

"Implementing SCALE-UP at Ithaca College", M. Rogers, (Ithaca College), *Visualizing the Future of Physics Education: A Wiley Publishing Faculty Network Workshop*. Ithaca. NY. 29-Oct-2005

"How to See Beneath the Soil" M. Rogers (Ithaca College), *1,000 Island Chapter of the New York State Archaeological Association*. 14-Jul-05.

"Seeing Beneath the Soil" M. Rogers (Ithaca College), *Ithaca College Physics Department Physics Café*. 09-Nov-04.

"Applying Physics to Environmental and Soils Studies" M. Rogers (Ithaca College), *University of New York at Geneseo Physics Department Colloquium*, Geneseo, NY, 26-Feb-04.

"Enhancing Science and Mathematics in Oregon Grades K-12", M. Rogers, and D. Hilger, *2001 Oregon Collaboration for the Excellence of Physics Teachers (OCEPT) Showcase*, Willamette University, Salem, OR, 06-Jun-01.

"Archaeological Geophysical Surveys of Burial Mounds in Ireland: A Physicist's Perspective", M. Rogers, *American Association of Physics Teachers Oregon Section Spring Meeting*, Rock Creek, OR, 11-Mar-00.

### **Contributed Presentations and Workshops While at Ithaca College:**

(undergraduate Ithaca College student presenters in bold)

"Getting Students to Work Together; Is it Really Possible?", M. Rogers (Ithaca College). Workshop at the annual SUNY at Oswego Center for Excellence in Learning and Teaching Workshop. Oswego, NY. 26-Sep-09

"Student Learning of Specific Physics Content in the "Studio/SCALE-UP" Environment", **Sarah Burleson**, Andrew D Crouse, Luke Keller, Matt Price, Michael Rogers (Ithaca College), American Association of Physics Teachers Summer Meeting. Ann Arbor. MI. 27-Aug-09

"Testing The Scale-up Approach To Introductory Astronomy", Julia M. Kregenow (Cornell University and Ithaca College), L. Keller, M. Rogers, D. Romero (Ithaca College), 212<sup>th</sup> meeting of the American Astronomical Society. St. Louis. MO. 02-Jun-08

"Finding Fort Hardy: Remote Sensing, Subsurface Testing, and Documentary Research Combine to Identify the Boundaries of a French and Indian War Fort", Stull, S. (Hartgen Archaeological Associates, Inc.), M. Rogers (Ithaca College), Council for Northeast Historical Archaeology 2007 Annual Conference. Buffalo. NY. 27-Oct-07

"Creating a SCALE-UP classroom at Ithaca College", Rogers, M., L. Keller (Ithaca College), New Faculty Workshop Reunion, Association of American Physics Teachers Workshop. College Park. MD. 25-Jun-07

"Incorporating Sustainability in Thermodynamics", Rogers, M., (Ithaca College), Finger Lakes Project as part of the Ithaca College May Faculty Institute. Ithaca, NY 24-May-07

"Modification of Laboratory Experiments for use in a New Performance-Based Physics Classroom", **Hanrahan R.**, M. Rogers, L. Keller, M. Sullivan, Society of Physics Students Zone 2 Meeting. University of Rochester, Rochester. NY. 21-Apr-2007

"Infusing Sustainability into Higher Education", Rogers, M., J. Hamilton (Ithaca College), Pre-conference workshop at the annual meeting of the American Conference of Academic Deans in conjunction with the Association of American Colleges and Universities. New Orleans. LO. 17-Jan-07

"Innovative Use of SCALE-UP for Teaching General Education Astronomy", Keller, L., M. Rogers (Ithaca College), American Association of Physics Teachers and Astronomical Society Joint Meeting, Seattle, Washington. 08-Jan-07

"Fort Hardy and the Field of Grounded Arms", Stull, S. (Hartgen Archaeological Associates, Inc.), M. Rogers, Society for Historic Archaeology Annual Meeting, Williamsburg, VA. 13-Jan-07

"Comparison of Archaeological and Magnetic Methods for Identification of Subsurface Housing Structures", **K. Faehndrich** and M. Rogers (Ithaca College) a poster presentation presented at the *Sigma Xi Northeast Symposium*. Cornell University. Ithaca, NY. 26-Apr-2006.

"Physics?' in Cartoons and Movies", M. Rogers (Ithaca College), *Ithaca College Physics Department Seminar Series*. Ithaca. NY. 14-Sep-2005

"The 2004 Nobel Prize in Physics: ...for the discovery of asymptotic freedom in the theory of the strong interaction", M. Rogers (Ithaca College), *Ithaca College Physics Department Seminar Series*. Ithaca. NY. 24-Feb-2005

"Reduction of Parallax Error in Cesium Magnetometer Surveys Using Laser Alignment", **G. Shear**, M. Rogers, **K. Faehndrich** (Ithaca College), *New York State section of the American Physical Society's biannual symposium*. Brooklyn. NY. 15-Oct-2004

"Cesium Magnetometer Surveys at a 1,000-Year-Old Pithouse Village Site in Southwestern, New Mexico", **K. Faehndrich**, M. Rogers, **G. Shear** (Ithaca College), *New York State section of the American Physical Society's biannual symposium*. Brooklyn. NY. 15-Oct-2004

"Who Wants to be a Millionaire? Forget polling the audience, how about polling your students", M. Rogers (Ithaca College), *Ithaca College Campus-wide Faculty Development Colloquium Series*, Ithaca, NY, 13-Nov-03.

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**Contributed Presentations prior to Ithaca College:**

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"Ground-Based Magnetic Remote Sensing Technique for Locating Sub-Surface Features and Tracking Solute Movement Through the Vadose Zone", M. Rogers, M. Dragila, J. Baham (Oregon State University), *American Geophysical Union Meeting*, San Francisco, CA, 09-Dec-02.

"Energy before Kinematics: An Approach to Middle School Physics", M. Rogers (Oregon State University), *American Association of Physics Teachers Summer Meeting*, Boise, ID, 07-Aug-02.

"Applying Physics to Modern Problems: Cesium Magnetometer Surveys to Understand Iron Movement in Soils and Agricultural Contamination Issues", M. Rogers (Department of Physics, Oregon State University), M. Dragila and J. Cassidy (Department of Crop & Soil Science, Oregon State University), *The 2002 Oregon State University Graduate Student Association Conference*, Corvallis, OR, 10-Apr-02.

"Oregon State University's GK-12 Fellowships: Enhancing Science and Mathematics in Oregon Grades K-12", M. Rogers, *American Association of Physics Teachers Oregon Section Fall Meeting*, Eugene, OR, 20-Oct-01.

"Enhancing Science and Mathematics in Oregon Grades K-12 or (Why Being a GK-12 Fellow Beats Being a Physics Department TA)", M. Rogers, D. Hilger, and J. Loats *Oregon State University Physics Department Colloquium*, Corvallis, OR, 21-May-01.

"Color Composite Imaging: A New Archaeological Geophysical Analysis Tool", M. Rogers (Oregon State University), *2001 Oregon State University Graduate Student Association Conference*, Corvallis, OR, 09-Apr-01.

"High-Resolution Cesium Magnetometer Surveys Used as a Tool to Help Solve Water Quality Problems at the Oregon State University Research Dairy", M. Rogers (Department of Physics, Oregon State University), M. Dragila and J. Cassidy (Department of Crop & Soil Science, Oregon State University), *2001 Oregon State University Graduate Student Association Conference*, Corvallis, OR, 09-Apr-01.

"Connecting Nuclear Magnetic Resonance to Middle School Algebra: A Challenge of a GK12 Fellow", D. Hilger, M. Rogers (Oregon State University), C. Nelson (Highland View Middle School), *2001 Oregon State University Graduate Student Association Conference*, Corvallis, OR, 09-Apr-01.

"High-Resolution Cesium Magnetometer Surveys Used as a Tool to Help Solve Water Quality Problems", M. Rogers (Department of Physics, Oregon State University), M. Dragila and J. Cassidy (Department of Crop & Soil Science, Oregon State University), *American Physical Society Meeting*, Seattle, WA, Mar-01.

"Using Puzzles to Make Science Fun for Middle School Students: The Adventures of a GK-12 Fellow", M. Rogers, D. Hilger (Oregon State University), J. Houston, C. Nelson, M. Stephens (Highland View Middle School), *Oregon Academy of Sciences Meeting*, Portland, OR, 24-Feb-01.

"Connecting Nuclear Magnetic Resonance to Middle School Algebra: A Challenge of a GK12 Fellow", D. Hilger, M. Rogers (Oregon State University), C. Nelson (Highland View Middle School), *Oregon Academy of Sciences Meeting*, Portland, OR, 24-Feb-01.

"Physics & Archaeology: Spanning Disciplines During an Archaeological Geophysical Survey of an 8th Century Bridge that Crossed the River Shannon near Clonmacnoise Monastery, Ireland", M. Rogers (Oregon State University), Kevin Barton, Colin Brown, Deirdre O'Hara (National University of Ireland-Galway), *American Physical Society-Northwest Section Meeting*, Eugene, OR, May-00.

"How the Heck Do You Teach an Astronomy Laboratory with Only 75 Clear Days per Year?", D. Hilger, M. Rogers, D. Cebula, D. Gaskell, D. Griffiths, A. Wasserman (Oregon State University), *American Physical Society-Northwest Section Meeting*, Eugene, OR, May-00.

"Archaeological Geophysics in Ireland: A Review of the Surveys at Clonmacnoise Monastery, Rathcroghan, and the Hill of Tara ", M. Rogers, *Oregon State University Physics Department Colloquium*, Corvallis, OR, 15-May-00.

"Preliminary Ground-Penetrating Radar Survey at the Terry Canyon Village Site: A Late Pithouse Period (A.D. 550—A.D. 1000) Village Near Mimbres, New Mexico", M. Rogers, B. Roth, A. Keeton (Oregon State University), *2000 Oregon State University Graduate Student Association Conference*, Corvallis, OR, 05-Apr-00.

"Archaeological Geophysical Investigations of an 8<sup>th</sup> Century Bridge that Spanned the River Shannon near Clonmacnoise Monastery, Ireland", M. Rogers (Oregon State University), Kevin Barton, Colin Brown, Deirdre O'Hara (National University of Ireland-Galway), *2000 Oregon State University Graduate Student Association Conference*, Corvallis, OR, 05-Apr-00.

"Ground-Based Remote Sensing Methods as Aids in Locating Human Burials at the Confederated Tribes of Siletz Indians Historic Period Cemetery", M. Rogers, *2000 Oregon Academy of Science Annual Meeting*, Newberg, OR, 26-Feb-00.

"Where the heck is the Toledo turntable pit; can ground-penetrating radar find it?", M. Rogers, *1999 Oregon State University Graduate Student Association Conference*, Corvallis, OR, 07-Apr-99

"Multimedia tools for physics teaching", M. Rogers, *1994 Undergraduate Research Symposium in the Natural Sciences*, State University of New York at Geneseo, Geneseo, NY.

"Neutron activation studies of Iridium in meteoric and stratified rock near an extinction layer", M. Rogers, J. Pagent, D. Meisel, S. Padalino, J. Over. *1993 Undergraduate Research Symposium in the Natural Sciences*, State University of New York at Geneseo, Geneseo, NY.

### **Non Peer-Reviewed Technical Papers / Project Reports:**

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M. Rogers. 2010. Archaeogeophysical Investigations of the Revolutionary War Era Rockaway Presbyterian Cemetery, Rockaway, NJ. Report for cemetery sexton Robert Nichols.

M. Rogers. 2009. Archaeological Geophysical Investigations of the Springs Preserve Pithouse Village Site, Las Vegas, NV. Report for the Springs Preserve.

M. Rogers. 2007. Cesium Magnetometer and Ground-Penetrating Radar Studies at the Burnt Hill Mound Complex, Finger Lakes National Forest, NY. Report for the National Forest Service and Seneca Nation

M. Rogers. 2006. Cesium Magnetometer and Ground-Penetrating Radar Studies at Fort Hardy Park, Schuylerville, New York. Report for Dr. Scott Stull (Hartgen Archaeological Associates, Inc.), Albany, NY

Rogers, M. 2006. Cesium Magnetometer Studies at the Corey "Healing" Village Site near Aurora, NY. in preparation

Rogers, M. 2006. Cesium Magnetometer Studies at the Betts Historic Farmstead Site near Troy, NY. Submitted to Chris Hazel, RPA, HAZEx, Ithaca, NY

Rogers, M. 2005. Establishing Longitudinal Wildlife Census Quadrangles in Sterling Forest State Park, Sterling Forest, New York.

Rogers, M. 2002. Ultra High Resolution Cesium Magnetometer Feasibility Study at the Bridge Maintenance Shop Site (Site # 35CS64) near Bridge, Oregon. Submitted to Stephan R. Samuels, BLM District Archaeologist Bureau of Land Management Coos Bay District North Bend, OR.

Rogers, M. 2002. Ultra High Resolution Cesium Magnetometer Feasibility Study at the Klondike Gold Rush City of Dyea, Alaska. Submitted to Dr. David Brauner, Department of Anthropology, Oregon State University, Corvallis, OR.

Rogers, M. 2001. Cesium Magnetometer Survey of the Corvallis Historic Water Front, Oregon State University's 2001 Archaeological Field School Site, Corvallis, Oregon, USA. Submitted to Dr. Barbara Roth, Department of Anthropology, Oregon State University, Corvallis, OR.

Rogers, M. 1999. Ground-Penetrating Radar Survey of the Toledo Turntable Site : Toledo, Oregon. Submitted to The Yaquina Pacific Railroad Historical Society, Toledo, OR.

#### **Non Peer-Reviewed Curriculum Materials:**

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Rogers, M., M. Stephens, D. Hilger. 2005. *Physics and Roller Coasters: Content Workbook* 3<sup>rd</sup> Edition.

Rogers, M., M. Stephens, D. Hilger. 2005. *Physics and Roller Coasters: Teacher's Guide* 3<sup>rd</sup> Edition.

Stephens, M., M. Rogers, D. Hilger. 2005. *Physics and Roller Coasters: Activities Workbook* 3<sup>rd</sup> Edition.

Hilger, D., M. Rogers, M. Stephens. 2005. *Physics and Roller Coasters: Problems Workbook* 3<sup>rd</sup> Edition.

From 1996 until 2003 I was extensively involved in writing and editing the astronomy laboratory manuals for Oregon State University's four introductory astronomy courses. I am the sole author of:

PH205 Solar System Laboratory Instructor's Manual

PH206 Stars and Stellar Evolution Laboratory Manual

PH206 Stars and Stellar Evolution Laboratory Instructor's Manual

PH207 Galaxies, Quasars, and Cosmology Laboratory Manual

PH207 Galaxies, Quasars, and Cosmology Laboratory Instructor's Manual

I have also contributed the following laboratory activities to the PH104 Descriptive Astronomy Laboratory Manual and PH205 Solar System Laboratory Manual:

Height of Moon Craters and Moon Mountains

Height of Moon Craters using Computers

Orbit of the Moon

Ancient Observatories (with an Introduction by Allen Wasserman)

Celestial Navigation

Circumference of the Earth (with an Introduction by David Griffiths)

Mass of Saturn

Solar Observing and Spectral Analysis

Telescopes

**External Research Contracts and Research Collaborations:**

	<b>TOTAL:</b>	<b>\$48,544</b>
August 2010:	Archaeogeophysical Investigations of the White Springs Village site, Geneva, NY. Cornell University.	\$1,695
July 2010:	Archaeogeophysical Investigations of the Revolutionary War era Rockaway Presbyterian Cemetery. Robert Nichols.	\$500
August 2009:	Archaeogeophysical Investigations of the White Springs Village site, Geneva, NY. Cornell University.	\$1,906
August 2009:	Archaeogeophysical Investigations of the Colonial Era House Forts in the Mohawk Valley, NY. Funk Foundation.	\$661
January 2009:	Archaeogeophysical Investigations of the Springs Preserve Pithouse Village Site, Las Vegas, NV. Springs Preserve.	\$12,000
Summer 2008:	Archaeogeophysical surveys at a bronze age village site, Cyprus. Travel, Room, and Board funded by Sturt Manning, Cornell Classics Department	\$5,000
Summer 2007:	Equipment training and deployment fee in support of Tiffany Tchakirides's (Cornell Univ. Graduate Student) research in Honduras.	\$875
Summer 2006:	Magnetometer and ground-penetrating radar surveys in support of Schuylerville, New York's National Park Service Battlefield protection program grant to locate the remains of Ft. Hardy. Funded by Hartgen Archaeological Associates, Inc.	\$5028
Summer 2006:	Magnetometer and ground-penetrating radar surveys in support of the family search for the precise location of the three burials in the Weaver family plot north of Watkins Glen, NY	\$100
Fall 2005:	Magnetometer surveys in support of Cultural Resource Management archaeological surveys at the Bett's Historic Farmstead site near Troy, NY	\$2,874
Spring 2004:	John Confer's Sterling Forest Golden-winged Warbler Project: Support for equipment, travel, 3 student salaries, and faculty salary to establish a longitudinal wildlife census survey grid.	\$4,607
Summer 2004:	Travel Reimbursement from University of Nevada-Las Vegas archaeological field school for magnetic investigation of the Gila Encantada Pithouse Village Site near Silver City, NM.	\$1,493

**Internal Funding Grants:**

	<b>TOTAL:</b>	<b>\$96,721</b>
Fall 2008:	Center for Faculty Research and Development Release Time: Assessing teaching innovations to enhance student learning in general education astronomy and introductory algebra-based physics	\$3,350

Summer 2008:	Physics Department Ford Research Fund matching grant	\$1,000
Spring 2008:	2008 Physics Ford Research Fund: Christopher Hastings	\$3,350
Spring 2008:	2008 Physics Ford Research Fund: Kevin Hurley	\$3,350
Spring 2008:	2008 Physics Ford Research Fund: Charlie Simkin	\$3,350
Spring 2008:	2008 Summer Faculty Salary Grant: Archaeological Geophysical Surveys at an Iron Age Hill Top Fort in Azerbaijan and a Bronze Age Village Site in Cyprus.	\$3,350
Spring 2008:	Grants for Creative, Collaborative, and Community Service and/or Service Learning Projects: Archaeological Geophysical Surveys at an Iron Age Hill Top Fort in Azerbaijan and a Bronze Age Village Site in Cyprus.	\$750
Spring 2008:	Humanities and Sciences Educational Initiative Grant: Travel funds for undergraduate student researcher to travel with me to conduct archaeological geophysical surveys in Cyprus summer 2008.	\$1000
Fall 2007:	Humanities and Sciences Education Grant: Equipment for Applied Geophysics research/course to purchase a range of archaeological instruments to include Munsell soil charts, trowels, and measuring instruments.	\$800
Fall 2007:	Center for Faculty Research and Development Release Time: Manuscript preparation of summer research conducted 2005 and 2006 at the Corey Cayuga Village Site and at the Burnt Hills Mound Complex	\$3,350
Spring 2007:	2007 Physics Ford Research Fund: John Bassage	\$3,350
Spring 2007:	2007 Physics Ford Research Fund: George DeBeck V	\$3,350
Spring 2007:	2007 Dana Internship: Colin Howard	\$5,000
Spring 2007:	2007 Dana Internship: Nik Batruch	\$5,000
Summer 2007:	Physics Department Ford Research Fund matching grant	\$1,000
Fall 2006:	Center for Faculty Research and Development Release Time: Manuscript preparation of summer research conducted 2005 and 2006 at the Corey Cayuga Village Site and at the Burnt Hills Mound Complex	\$3,350
Fall 2006:	Small Grants for Faculty Research / Scholarship: Page Charges for: <i>Soil Iron Content Effects on the Ability of Magnetometer Surveying to Locate Buried Agricultural Drainage Pipes.</i>	\$250
Summer 2006:	Grants for Creative, Collaborative, and Community Service and/or Service Learning Projects: Cesium Magnetometer and Topographic Survey Studies at the Burnt Hill Mound Complex in the Finger Lakes National Forest, New York.	\$750
Summer 2006:	Physics Department Ford Research Fund matching grant	\$1,000
Spring 2006:	Summer Faculty Salary Grant: Cesium Magnetometer and Topographic Survey Studies at the Burnt Hill Mound Complex in the Finger Lakes National Forest, New York.	\$3,350

Spring 2006:	Ithaca Fund: Proposal submitted by my research students Michael Stark and Kevin Faehndrich titled " Acquiring a clinometer to support studies to correct for the pitch and roll of a ground-penetrating radar antenna.	\$531
Spring 2006:	Sustainability Mini-Grant	\$1,000
Spring 2006:	2006 Dana Internship: Nik Batruch	\$5,000
Spring 2006:	2006 Physics Ford Research Fund: Kyle Stone	\$3,350
Fall 2005:	Center for Faculty Research and Development Release Time: Coordination and support of faculty efforts to move introductory physics courses into the SCALE-UP model of teaching physics	\$3,500
Fall 2005:	Physics Department Ford Research Fund matching grant to the Ithaca Fund for acquisition of extension cables.	\$475
Fall 2005:	Ithaca Fund: Acquisition of magnetometer control extension cables to further error reduction studies using a non-magnetic survey cart designed and built by Ithaca College student researchers summer 2005.	\$475
Summer 2005:	Grants for Creative, Collaborative, and Community Service and/or Service Learning Projects: Cesium Magnetometer Studies to Locate a War of 1812 Shipbuilding Site Near Sackets Harbor, NY	\$750
Summer 2005:	Physics Department Ford Research Fund matching grant	\$1,000
Spring 2005:	Applying Science to Sustainability summer 2005 mini-grant: Incorporating sustainability in PHYS32000 Thermodynamics	\$1,000
Spring 2005:	2005 Dana Internship: Kristiyan Georgiev	\$4,375
Spring 2005:	2005 Physics Ford Research Fund: Kevin Faehndrich	\$3,350
Spring 2005:	Ithaca Fund: Interdisciplinary Magnetic Surveys at the Corey Site, Aurora, NY	\$900
Fall 2004:	Center for Faculty Research and Development Release Time: Curriculum development in support of the Physics Department's adaptation and implementation of the SCALE-UP approach to teaching introductory physics.	\$3,500
Summer 2004:	Physics Department Ford Research Fund matching grant	\$1,000
Spring 2004:	2004 Dana Internship: Greg Shear	\$4,375
Spring 2004:	2004 Physics Ford Research Fund: Kevin Faehndrich	\$3,350
Spring 2004:	Grants for Creative, Collaborative, and Community Service and/or Service Learning Projects: Cesium Magnetometer Studies at the Gila Encantada Pit House Village Site, Southwestern New Mexico	\$750
Spring 2004:	2004 Summer Faculty Salary Grant	\$3,350
Spring 2004:	Ithaca Fund. Installing personal response receivers in Textor 102 in support of PHYS10100 and PHYS10200	\$990
Fall 2003:	Center for Faculty Research and Development Release Time: Developing a collaborative research design to conduct remote sensing surveys at the Corey and Wells Barn sites with Jack Rossen, IC Anthropology.	\$3,500
Fall 2003:	H&S Honors Program Faculty Release Time for Development of Honors	\$3,500

## Seminar

Other Significant Funding:

TOTAL: \$655,000

Summer 2006:	Ithaca College capital equipment allocation for procurement of a ground-penetrating radar instrument.	\$30,000
Summer 2006:	Ithaca College capital funding to renovate Center for Natural Sciences to create a performance-based physics laboratory.	\$425,000
Spring 2006:	School of Humanities & Sciences capital funding to purchase computers and experimental equipment in support of the creation of a performance-based physics laboratory	\$100,000
Spring 2005:	School of Humanities & Sciences capital funding to purchase computers and experimental equipment in support of the creation of a performance-based physics laboratory	\$100,000

**Research Students Supervised**

\* Numbers indicate the number of semesters and summers (10-week) students conducted research in my laboratory. A T means that this student is working on / completed a thesis. Note: the thesis requirement only started for the class of 2008.

#	Student	Grad Year	Project Title	Sem/ Sum *	Comments
43	Samantha Epstein	2013	Designing and building a cylindrical scanner	1 / 0	
42	Danny Bradac	2013	Archaeogeophysical surveys at the White Springs Site, NY, Rockaway Presbyterian Cemetery, NJ, French Azilum Site, PN, and the Knapp Site, NY	2 / 1	Physics Ford Research Fund 2010
41	Zach Mink	2013	Creation and calibration of a non-magnetic switch for triggering magnetic data collection using the wheel of a non-magnetic cart.	5 / 1	Dana Internship 2010
40	Joyce Wu	2013	Archaeogeophysical surveys at the White Springs Site, NY, Rockaway Presbyterian Cemetery, NJ, French Azilum Site, PN, and the Knapp Site, NY	0 / 1	Dana Internship 2010
39	Ryan Jeffris	2012	Creation and calibration of a non-magnetic switch for triggering magnetic data collection using the wheel of a non-magnetic cart.	1 / 1	Physics Ford Research Fund 2009
38	Jodi Ann Mclean	2012	Exploring methods of measuring hamster wheel use through optical and magnetic methods.	1 / 0	
37	Michael Frasco	2011	Exploring the use of high frequency GPR to locate turtle eggs	1 / 0	

36	Perri Gerard-Little		Archaeogeophysical surveys at the White Springs Village Site, Geneva, NY	5 / 2	Cornell Anthropology Graduate Student
35	Christopher Hastings	2011	Archaeogeophysical surveys at Late Bronze Age cities in Cyprus.	1 / 1	Physics Ford Research Fund 2008
34	Kevin Hurley	2011	Archaeogeophysical surveys at Late Bronze Age cities in Cyprus, at the White Springs Village Site, Geneva, NY, and a variety of other sites.	7 / 3 T	Physics Ford Research Fund 2008, 09, 10
33	Adam Iaizzi	2011	Exploring the use of high frequency GPR to locate turtle eggs	1 / 0	
32	Katie Kearns		Archaeogeophysical surveys at Late Bronze Age cities in Cyprus.	1 / 1	Cornell Classics Graduate Student
31	Jeff Leon		Archaeogeophysical surveys at Late Bronze Age cities in Cyprus.	6 / 2	Cornell Classics Graduate Student
30	Eilis Monohan		Archaeogeophysical surveys at Late Bronze Age cities in Cyprus.	1 / 1	Cornell Classics Graduate Student
29	Nathan Porter	2011	Site location analysis for the Ithaca College Naked-eye Observatory project, and analysis of student's understanding of the nature of science.	3 / 2 T	NSF student researcher 2009, 10
28	Ann Velazquez	2011	Compost Thermal Heating: Exploring the use of energy by heating from a compost pile to warm greenhouse soil beds and to generate electricity.	2 / 0	
27	Caitlin Ahearn	2010	Compost Thermal Heating: Exploring the use of energy by heating from a compost pile to warm greenhouse soil beds and to generate electricity. Part II: Charging Batteries.	3 / 1 T	Dana Internship 2009
26	John Bassage	2010	Designing and Building a cart to carry a ground-penetrating radar antenna and control unit. Building a scanner to scan cylinders.	3 / 1	Physics Ford Research Fund 2007
25	Taylor Boyd	2010	Creation and calibration of a non-magnetic switch for triggering magnetic data collection using the wheel of a non-magnetic cart.	1 / 1	Physics Ford Research Fund 2009
24	Rebecca Grollman	2010	1.Comparing learning gains in an active-learning general education astronomy class to a traditional section of the same class. 2. Examining post-acquisition processing techniques for archaeological geophysics.	6 / 2	NSF student researcher 2008, 09
23	Jordan Hyatt	2010	Measuring temperature fluctuations in the science building due to sliding doors using a thermister array	2 / 0	
22	Charlie Simkin	2010	Archaeogeophysical surveys of an Iron Age Hill Top Fort in Azerbaijan and a Bronze Age Village Site in	0 / 1	Physics Ford Research Fund 2008

## Cyprus

21	Rhea Hanrahan	2009	1. Developing new experiments for Introduction to Physics I and II and examining student learning. 2. Gathering and examining the baseline magnetic data for magnetic studies of the Center for Natural Sciences Alternative Landscape plot.	6 / 2 T	NSF student 2007. Physics Ford Research Fund 2006
20	Colin Howard	2009	Compost Thermal Heating: Exploring the use of energy by heating from a compost pile to warm greenhouse soil beds and to generate electricity.	3 / 1 T	Dana Intern Summer 2007
19	Blaine Laughlin	2009	Measuring temperature fluctuations in the Center for Natural Sciences due to sliding doors using a thermister array	3 / 0	
18	Justin Sousa	2009	Designing an adjustable, constant speed motor for use in remote sensing error reduction studies.	1 / 0	
17	Kyle Stone	2009	Creation and calibration of a non-magnetic switch for triggering magnetic data collection using the wheel of a non-magnetic cart.	1 / 1	Physics Ford Research Fund 2006
16	David Baker	2008	Creation and calibration of a non-magnetic rotating platform to enhance studies to understand the role that magnetic properties of rocks have on magnetic surveys.	1 / 0	
15	Nik Batruch	2008	Creation and calibration of a non-magnetic switch for triggering magnetic data collection using the wheel of a non-magnetic cart.	5 / 2	Dana Intern Summer 2007 & 2006
14	George DeBeck V	2008	Creation and calibration of a non-magnetic rotating platform to enhance studies to understand the role that magnetic properties of rocks have on magnetic surveys.	2 / 1 T	Physics Ford Research Fund 2007
13	Maria Gonzalez	2008	Creation and calibration of a non-magnetic rotating platform to enhance studies to understand the role that magnetic properties of rocks have on magnetic surveys.	1 / 0	
12	James Grandner	2008	Comparing learning gains in an active-learning algebra-based introductory physics class to a traditional section of the same class.	2 / 2	MAT in Physics 2008. NSF student 2007
11	Penyo Michev	2008	Investigations of a method to adjust ground-penetrating radar signals to account for the pitch and roll of the radar antenna.	1 / 0	
10	Darius Romero	2008	Creating active learning classroom instruments for general education astronomy	0 / 2	MAT in Physics 2008. NSF student 2007
9	Lia Stelljes	2008	Creation and calibration of a non-magnetic rotating platform to enhance studies to understand the role that magnetic properties of rocks have on magnetic surveys.	1 / 0	

8	Kris Georgiev	2007	Investigations of a method to adjust ground-penetrating radar signals to account for the pitch and roll of the radar antenna. Cesium Magnetometer Studies of the Corey Village Site, Aurora, NY (2005)	1 / 1	Dana Intern Summer 2005
7	Reuben Gergen	2007	Exploring Connections Between Gravity and Electricity & Magnetism	4 / 0	
6	Sanya Levi	2007	Investigating black holes and reconciling modern theories.	1 / 0	
5	Kevin Faehndrich	2006	Cesium Magnetometer Studies of the Gila Encantada Pit House Village Site, NM (2004). Cesium Magnetometer Studies of the Corey Village Site, Aurora, NY (2005)	5 / 2	Physics Ford Research Fund 2004 and 2005
4	Christina Hollister	2006	Creating a sustainable renovation plan for the creation of the new physics classroom during summer 2006.	1 / 0	
3	Greg Shear	2006	Cesium Magnetometer Studies of the Gila Encantada Pit House Village Site, NM	1 / 1	Dana Intern Summer 2004
2	Michael Stark	2006	Investigations of a method to adjust ground-penetrating radar signals to account for the pitch and roll of the radar antenna.	3 / 0	Spring 2006 Ithaca Fund Research Award for \$550
1	Dan Varney	2006	Developing machine shop skills, constructing an aluminum, non-ferrous laser alignment tool, and conducting experiments to determine this tool's ability to reduce parallax error during magnetic surveys.	1 / 0	

### Student Presentations at the Ithaca College Physics Department Seminar Series:

Student	Presentation Title	Date
Kevin Hurley	Cesium Magnetometer Surveys at a Late Bronze Age City in Cyprus	31-Mar-09
Chris Hastings	Resistivity Surveys at a Late Bronze Age City in Cyprus	31-Mar-09
Charlie Simkin	Ground-penetrating Radar Surveys at a Late Bronze Age City in Cyprus	31-Mar-09
Darius Romero	Developing Astronomy Activities for SCALE-UP Astronomy at Ithaca College	18-Mar-08
Colin Howard	The Compost Thermal Heating Project	11-Dec-07
George DeBeck V.	Identification and Reduction of Positional Errors in Cesium Magnetometer Surveys	11-Dec-07
Rhea Hanrahan and James Grandner	Comparing student learning in an algebra-based introductory physics course using traditional lecture and Studio Physics	27-Nov-07

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Nik Batruch	Identification and Reduction of Positional Errors in Cesium Magnetometer Surveys using fiber optic switches and a motorized track system	18-Apr-07
Rhea Hanrahan	Creating a Performance-based Physics Teaching Laboratory	29-Nov-06
Kevin Faehndrich	A Summary of Summer 2005 Ground-based Remote Sensing Surveys at Three Contrasting Sites	19-Oct-05
Kris Georgiev	Identification and Reduction of Positional Errors in Cesium Magnetometer Surveys: An Ithaca College Dana Internship Summer Research Experience	19-Oct-05
Greg Shear	Reduction of Parallax Error in Cesium Magnetometer Surveys Using Laser Alignment	02-Nov-04
Kevin Faehndrich	Cesium Magnetometer Surveys at a 1,000-Year-Old Pithouse Village Site in Southwestern, New Mexico	02-Nov-04

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**Student Presentations at the Ithaca College J.J. Whalen Academic Symposium:**


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<b>Student</b>	<b>Presentation Title</b>	<b>Date</b>
Nathan Porter	The Ithaca College Naked-Eye Observatory Project	APR-10
Rebecca Grollman	Archaeological Geophysical Surveys at a 300-year-old Native American Village in the Finger Lakes Region, NY	APR-10
Kevin Hurley	Archaeological Geophysical Surveys at Old Fort Johnson; A Pre-Revolutionary War House Fort near Albany, NY.	APR-10
Caitlin Ahearn	Sustainably Charging Batteries Using Compost	APR-10
Colin Howard	The Compost Thermal heating Project – Using the Seebeck Effect to Charge Batteries	08-APR-09
Chris Hastings	Archaeogeophysical Investigations of a Late Bronze Age City in Cyprus: Methods	08-APR-09
Kevin Hurley	Archaeogeophysical Investigations of a Late Bronze Age City in Cyprus: Results	08-APR-09
Rebecca Grollman	Archaeogeophysical Investigations of a 300-Year-Old Native American Village in Central New York	08-APR-09
Rhea Hanrahan	Understanding Student Expectations in Introductory Physics	08-APR-09
James Grandner	Comparing Student Performance on Homework, Exams, a Pre-Test, and a Post-Test in an Introductory Physics Course”	08-APR-08
Rhea Hanrahan	Examining Student Perceptions of a Course Taught in Two Very Different Types of Classrooms	08-APR-08
Darius Romero	Developing Active-Learning Materials for General Education Astronomy	08-APR-08
Colin Howard	Compost Thermal Heating: Drawing Energy From a Compost Pile	08-APR-08
George DeBeck V	Identifying and Reducing Positional Errors in Magnetometer Surveys	08-APR-08
Rhea Hanrahan	Acquisition of New Equipment and Modification of Laboratory Experiments for us in the New Performance-based Physics Teaching Laboratory	03-APR-07
Nik Batruch	Construction of a Test Facility to Identify the Source of a Positional Error Encountered During Magnetometer Surveys	03-APR-07
Kevin Faehndrich	Comparison of Archaeological and Magnetic Methods for	03-APR-06

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	Identification of Subsurface Pre-historic Native American House Features	
Kris Georgiev	Identifying and Reducing Positional Errors Encountered During Ground-based Magnetic Surveys	03-APR-06
Kevin Faehndrich	Cesium Magnetometer Surveys at a 1,000-Year-Old Pithouse Village Site in Southwestern, New Mexico	06-APR-05

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**Service While at Ithaca College:**


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***Professional Level Service***

- Mar-07—Present: Vice-President, Finger Lakes Chapter of the New York State Archaeological Association
- Mar-05—Present: Executive Committee Member, New York State Section of the American Physical Society

***College Level Service***

- May-07—May-10: Faculty Trustee on the Ithaca College Board of Trustees
- 2005-2007: Worked with Terry Ruger, Will Crisp, and Susanne Morgan on obtaining faculty and staff input on selecting a student polling device to be the fully supported, standard device at Ithaca College.
- Aug-04—Present: Academic Justice, Office of Judicial Affairs

***School Level Service***

- Aug-04—Present: Center for Natural Sciences Sustainability Group Core Committee member
- Aug-04—May-10: Environmental Studies & Sciences Program Steering Committee
- Aug-04—May-06: H&S 50<sup>th</sup> Anniversary Planning Committee
- Aug-04—May-10: H&S Faculty Senate (Vice President May 2009-10, Treasurer May 2008-09. Executive Committee member Fall 2006-10)

***Department Level Service***

- Aug-04—Present: Society of Physics Students Club and National Chapter Advisor
- Aug-03—Present: Physics Department Faculty Search Committee
- Aug-03—May-06: Sigma Pi Sigma Physics Honor Society Advisor
- Aug-03—Present: Physics Department Five-Year Planning and Assessment Committee
- Aug-03—Present: Physics Department Web Profile Manager
- Aug-03—Present: Physics Department K-12 Pre-Service Teacher Training Advisor

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**Professional Development Activities while at Ithaca College:**


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- Jun-07: Participant in American Association of Physics Teachers New Faculty Workshop

Reunion.

- Oct-05: Co-organized a physics-teaching workshop with Wiley publishing. *Visualizing the Future of Physics Education: A Wiley Publishing Faculty Network Workshop*. October 29<sup>th</sup>, 2005. Ithaca College, Ithaca, NY. This workshop was attended by ~25 physics faculty with individuals coming from as far away as Louisiana.
- Sep-04: Organizer and Participant in Student Centered Activities for Large Enrollment Undergraduate Physics (SCALE-UP) Implementer's workshop run by Dr. Bob Beichner, North Carolina State University.
- Nov-03: Participant in American Association of Physics Teachers New Faculty Workshop.
- Jun-03: Participant in Oregon State University's Paradigms in Physics, Energy and Entropy Summer Faculty Workshop.

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### **Outreach Activities:**

- 2005-Present: Working with Society of Physics Students Ithaca College chapter offices to obtain funding to create "physics circus" outreach kits, establish connections with local schools, and train students to give our physics circus at local schools.
- July-05: Guest Lecturer on "Physics?" in Cartoons and Movies at the Cornell Center for Nanoscale Institute for Physics Teachers.
- May-05: Consultant, Physics and Roller Coasters, Westland Middle School, Corvallis, OR. In collaboration with Matt Stephens.
- May-04: Consultant, Physics and Roller Coasters, Westland Middle School, Corvallis, OR. In collaboration with Matt Stephens.

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### **Complete List of Honors and Awards:**

- Nov-10: Society of Physics Students Ithaca College Chapter recognized as an outstanding chapter by the National Office for the 2009-2010 school year
- Nov-09: Society of Physics Students Ithaca College Chapter recognized as an outstanding chapter by the National Office for the 2008-2009 school year
- Nov-08: Society of Physics Students Ithaca College Chapter recognized as an outstanding chapter by the National Office for the 2007-2008 school year
- Nov-07: Society of Physics Students Ithaca College Chapter recognized as an outstanding chapter by the National Office for the 2006-2007 school year
- Apr-07: Department Merit Pay Raise for Excellence in Teaching
- Feb-06: Society of Physics Students Ithaca College Chapter recognized as an outstanding chapter by the National Office for the 2005-2006 school year
- May-06: School of H&S Merit Recognition for Outstanding Department

- May-06: School of H&S Merit Recognition for Outstanding Ground: Center for Natural Science Sustainability Group.
- May-06: Ithaca College Excellence in Teaching Award
- Feb-06: Society of Physics Students Ithaca College Chapter recognized as an outstanding chapter by the National Office for the 2004-2005 school year
- Apr-05: Induction as a full member of Sigma Xi Scientific Research Society. Ithaca College, NY
- Mar-05: Inducted into Ithaca College's Oracle Society as a faculty member.
- Aug-03—May-04: Department Merit Pay Raise for Excellence in Teaching
- Jul-00—Jun-03: US National Science Foundation, GK-12 Teaching Fellowship
- Aug-01: Oregon State University's nomination for WAGS/UMI Distinguished Masters Thesis.
- May-01: Inducted in as an associate member of Sigma Xi Scientific Research Society. Oregon State University, Corvallis, OR.
- Apr-01: First Place Oral Presentation (Liberal Arts/Home Economics/Education Category), and Sigma Xi Engineering Poster Award. 2001 Graduate Student Conference. Oregon State University, Corvallis, OR.
- Apr-00: Best Oral Presentation and Best Poster Presentation. Liberal Arts/Home Economics/Education Category. 2000 Graduate Student Conference. Oregon State University, Corvallis, OR.
- Apr-00: Bioethics Conference Scholarship, "Life Beginnings, Life Endings: Ethical Issues". Program for Ethics, Science, and the Environment. Oregon State University, Corvallis.
- Sep-98—Sep-99: US Department of Education GAANN Fellowship
- Apr-99: First Place Oral Presentation. Social Sciences Category. 1999 Graduate Student Conference. Oregon State University, Corvallis, OR.
- 1996: New York State Conspicuous Service Award: US Army
- 1988— United States National Defense Service Medal,  
 1991: United States Army Good Conduct Medal,  
 United States Army Commendation Medal,  
 United States Army Achievement Medal (awarded twice),  
 Letter of Commendation, US Federal Bureau of Investigations,  
 Letter of Commendation, US Army Fort Drum Security Division
- Apr 1994: Philip K. Alley Physics Department Service Award, SUNY @ Geneseo, Geneseo, NY
- Apr 1993: Inducted into Sigma Pi Sigma (the National Physics Honor Society)

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**Courses Taught While at Ithaca College:**

PHYS101L: Introduction to Physics Lab Fall-03

PHYS101: Introduction to Physics I: Co-Instructor Fall-09

PHYS114: Introduction to Experimental Physics (each physics faculty member runs a two-week-long section) Fall-06, 07, 08, 09

PHYS117: Principles of Physics I: Mechanics w/ Lab Fall-05, 06, 07, 08

PHYS117: Principles of Physics I: Mechanics w/ Rec. Fall-03, 04

PHYS120: Freshman Laboratory Spring-04, 05, 06, 07, 08, 09, 10

PHYS231: "Physics?" in Cartoons and Movies (H&S Intermediate Honors Seminar) Spring-05, 06, 08

PHYS320: Thermodynamics Spring-04, 06, 07, 08, 09, 10

PHYS451: Advanced Physics Laboratory Fall-09

PHYS299, 399, 499, 699: Physics Research Fall & Spring: Every term 2003-Present

IISP-30000: H&S Honors Junior Seminar (taught a two-week-long section) Fall-07