

DAVID P. JACKSON

CURRICULUM VITAE

CONTACT INFORMATION

ADDRESS	Dept. of Physics & Astronomy Dickinson College P.O. Box 1773 Carlisle, PA 17013	(Home) 845 W. South St. Carlisle, PA 17013
PHONE	(717) 245-1073	(717) 249-7937
EMAIL	jacksond@dickinson.edu	

EDUCATION

1994	Ph.D., Princeton University Dissertation: Pattern Formation in Quasi Two-Dimensional Dipolar Domains Advisor: Raymond E. Goldstein	Princeton, NJ
1991	M.A., Princeton University Experimental Project: A Fourier Optics Experiment for Undergraduates Advisor: Joseph H. Taylor	Princeton, NJ
1989	B.S., University of Washington Magna Cum Laude with Distinction in Physics	Seattle, WA
1987	A.A., Bellevue Community College Engineering Pre-major with Honors Phi Theta Kappa	Bellevue, WA

EMPLOYMENT

7/06–PRESENT	Chair, Dept. of Physics and Astronomy, Dickinson College	Carlisle, PA
7/03–PRESENT	Associate Professor of Physics, Dickinson College	Carlisle, PA
7/01–7/03	Assistant Professor of Physics, Dickinson College	Carlisle, PA
9/97 – 6/01	Assistant Professor of Physics, Santa Clara University	Santa Clara, CA
7/94 – 8/97	Project Director/Assistant Professor of Physics, Dickinson College	Carlisle, PA
9/89 – 6/94	Research Associate/Teaching Assistant, Princeton University	Princeton, NJ

PUBLICATIONS

BOOKS Explorations in Physics: An Activity-Based Approach to Understanding the World, D.P. Jackson, P.W. Laws, and S.V. Franklin (John Wiley & Sons, New York, 2002).

JOURNAL
ARTICLES
(UNDERGRADUATE
CO-AUTHORS
DENOTED BY *)

“Hysteresis and Multiple Stable Configurations in a Magnetic Fluid System,” D.P. Jackson, *Journal of Physics: Condensed Matter* **20**, 204140 (2008).

“Simple Experiments to Help Students Understand Magnetic Phenomena,” K. Browne and D.P. Jackson, *The Physics Teacher* **45**, 425 (2007).

“Confined Ferrofluid Droplet in Crossed Magnetic Fields: Pattern Formation and Mode Selection Mechanism,” D.P. Jackson and J.A. Miranda, *European Physical Journal E* **23**, 389 (2007).

“Width of a Ferrofluid Finger: Hysteresis and a Double Energy Minimum,” N.J. Hillier* and D.P. Jackson, *Physical Review E* **75**, 036314 (2007).

“Dancing Paperclips and the Geometric Influence on Magnetization: A Surprising Result,” D.P. Jackson, *American Journal of Physics* **74** (4), 272 (2006).

“Syringe Thermodynamics: The Many Uses of a Glass Syringe,” D.P. Jackson and P.W. Laws, *American Journal of Physics* **74** (2), 94 (2006).

“Theory, Experiment, and Simulations of a Symmetric Arrangement of Quasi Two-Dimensional Magnetic Fluid Drops,” D.P. Jackson, *Journal of Magnetism and Magnetic Materials* **289**, 188 (2005).

“Adhesion Phenomena in Ferrofluids,” J.A. Miranda, R.M. Oliveira*, and D.P. Jackson, *Physical Review E* **70**, 036311 (2004).

“Orientational Preference and Predictability in a Symmetric Arrangement of Magnetic Drops,” D.P. Jackson, *Physical Review E* **68**, 035301(R) (2003).

“Controlling Fingering Instabilities in Rotating Ferrofluids,” D.P. Jackson and J.A. Miranda, *Physical Review E* **67**, 017301 (2003).

“Energetics of Interacting Magnetized Domains,” D.P. Jackson and B. Gantner*, *Physical Review E* **64**, 056230 (2001).

“Measuring and Modeling Cosmic Ray Showers with an MBL System: An Undergraduate Project,” D.P. Jackson and M.T. Welker*, *American Journal of Physics* **69**, 896 (2001).

“The Magnetic Field of Current-Carrying Polygons: An Application of Vector Field Rotations,” M.I. Grivich* and D.P. Jackson, *American Journal of Physics* **68**, 469 (2000).

“A Strange Behavior of Friction,” R.A. Morrow*, A. Grant*, and D.P. Jackson, *The Physics Teacher* **37**, 412 (1999).

“A Simple Question with an Interesting Answer,” D.P. Jackson, *The Physics Teacher* **36**, 380 (1998).

“Current Loop Model for Patterns in Type-I Superconductors,” R.E. Goldstein, D.P. Jackson, and A.T. Dorsey, *Physical Review Letters* **76**, 3818 (1996).

“Rendering the ‘Not-So-Simple’ Pendulum Experimentally Accessible,” D.P. Jackson, *The Physics Teacher* **34**, 86 (1996).

“Hydrodynamics of Fingering Instabilities in Dipolar Fluids,” D.P. Jackson, R.E. Goldstein, and A.O. Tsebers, *Physical Review E* **50**, 298 (1994). Note: An image from this paper appears on the cover illustration of *Science* **267**, (1995).

“Domain Shape Relaxation and the Spectrum of Thermal Fluctuations in Langmuir Monolayers,” R.E. Goldstein and D.P. Jackson, *Journal of Physical Chemistry* **98**, 9626 (1994).

“Dynamics of Pattern Formation in Magnetic Fluids,” R.E. Goldstein, D.P. Jackson, and S.A. Langer, *Journal of Magnetism and Magnetic Materials* **122**, 267 (1993).

“Labyrinthine Pattern Formation in Magnetic Fluids,” A.J. Dickstein, S. Erramilli, R.E. Goldstein, D.P. Jackson, S.A. Langer, *Science* **261**, 1012 (1993).

“Dynamics of Labyrinthine Pattern Formation in Magnetic Fluids,” S.A. Langer, R.E. Goldstein, and D.P. Jackson, *Physical Review A* **46**, 4894 (1992).

CONFERENCE
PROCEEDINGS

“Workshop Physical Science: Project-Based Science Education for Future Teachers, Parents and Citizens,” D.P. Jackson and P.W. Laws in The Changing Role of Physics Departments in Modern Universities: Proceedings of the International Conference on Undergraduate Physics Education (AIP Conference Proceedings), pp. 623-630 (1997).

“Dynamics of Pattern Formation in Dissipative and Hamiltonian Systems,” R.E. Goldstein, D.P. Jackson, D.M. Petrich, and S.A. Langer in Proceedings of XXI Winter Meeting on Statistical Physics, Oaxtepec, Morelos, Mexico, January 8-11, (1992).

REVIEWS AND
EDITORIALS

“Explorations in Physics: An Activity-Based Curriculum for Non Science Students,” D.P. Jackson, *APS Forum on Education Spring Newsletter* (2004).

“An Introduction to the Theme Issue,” H.S. Leff, D.P. Jackson, K. Browne, and S. Vokos, *American Journal of Physics* **72**, 423 (2004).

“An Introduction to the Theme Issue,” B.A. Thacker, H.S. Leff, and D.P. Jackson, *American Journal of Physics* **70**, 199 (2002).

Book review of “Classical Mechanics,” by T.C. Chow, *American Journal of Physics* **64**, 191 (1996).

TEACHING**COURSES
TAUGHT**

First-Year Seminar—Where is the electron?!? The Strange and Fascinating Theory of Quantum Mechanics

First-Year Seminar—What Makes a Sound Musical?

The Strange Reality of the Quantum World—a ½-credit course for students interested in an introduction to quantum theory

Explorations in Physics—a laboratory course for non-science majors (several versions)

Meteorology—an introduction to atmospheric science for non-science majors

General Physics—the algebra-based introductory sequence for pre-health students

Workshop Physics—the calculus-based introductory physics sequence

Introduction to Relativistic and Quantum Physics—a sophomore level course for physics majors

Introduction to Analog and Digital Electronics—a sophomore level course for physics majors

Mathematical Physics—a sophomore level sequence for physicsmajors

Computational Physics—a junio/senior level course for physics majors

Dynamics and Chaos—a junior/senior level course for physics majors

Electrodynamics and Plasmas—a junior/senior level course for physics majors

Quantum Mechanics—a junior/senior level course for physics majors

Topics in Theoretical Physics (Fluid Mechanics)—a junior/senior level course for physics majors

Junior Seminar

Senior Research Seminar

Directed Readings—The Physics of Richard Feynman, Nonlinear Dynamics and Chaos, General Relativity

**SENIOR
RESEARCH
PROJECTS
SUPERVISED
(HONORS PROJECTS
DENOTED BY *)**

Several (as yet untitled) projects dealing with quantum optics, with Jesse Abrams, Lindsay Currotto, Brendan Hurst, Brandon Jones, and Erin Ryan (2008-09).

“Dynamics of Soap Bubble Deflation,” Jacob Heberling, Thomas Schenck, and Sara Sleyman, Dickinson College (2007-08).

“Measuring the Fluid-Ferrofluid Surface Tension in a Hele-Shaw Cell,” Sean Diamond, Nicko Evagelou, and Giles Howlett, Dickinson College (2007-08).

“Classification of Ferrofluid Shapes in a Hele-Shaw Cell,” Colin Dew-Becker, Kaloyan Todorov, and Karen Younkins, Dickinson College (2007-08).

“Width of a Ferrofluid Finger: Hysteresis and Multiple Energy Minima,” Narelle Hillier, Dickinson College (2005-06).*

“Chaotic Systems and Circuit Implementation of the Lorenz Equations,” Linnea Engstrom, Dickinson College (2004-05).*

“String Analysis and the Sound Output of a Sonometer,” Joseph Ferretti and Brian McGlinchey, Dickinson College (2004-05).

“Modeling Single Finger Formation in 2-Dimensional Ferrofluids,” Scott Robison and Theresa Sparacio, Dickinson College (2003-04).

“Theoretical Modeling and Construction of an Electrostatic Loudspeaker,” Smith Freeman and William Menzie, Dickinson College (2001-02).

“Similarities Between Electromagnetism and General Relativity,” Matthew Grivich, Santa Clara University (1999-2000).*

“Interacting Ferrofluid Drops,” Brennan Gantner, Santa Clara University (1998-99).*

“An Investigation of the Fractal Dimension of Ferrofluid Patterns,” Russell LaMantia and Matthew Welker, Dickinson College (1995-96).

OTHER PROFESSIONAL ACTIVITIES

GRANTS AND OTHER AWARDS Selected for the 2008-09 Willoughby Fellows Program in Academic Technology at Dickinson College.

Received, with Hans Pfister and Brett Pearson, a \$145,261 National Science Foundation (NSF) curriculum development grant to support “Integrating Photon Quantum Mechanics in the Undergraduate Curriculum” (May, 2007).

Selected to attend the 2007 Pan American Advanced Studies Institute (PASI) on Interfacial Fluid Dynamics in Mar del Plata, Argentina. Received financial support from PASI to attend this workshop (August 6-17, 2007).

Received a \$3,000 Professional Development grant from Dickinson College to attend the 2007 Pan American Advanced Studies Intstitute (August, 2007).

Received a CPC-Mellon grant of \$6,000 to support “An Experimental Investigation of the Labyrinthine Finger Width in a Magnetic Liquid” (November 2006).

Received a CPC-Mellon grant of \$6,000 to support “Investigating Finger Width in Magnetic Liquids” (November 2005).

Received, with Harvey S. Leff, an American Association of Physics Teachers grant of \$2,600.00 to provide support for four physics teachers to attend the 2004 Gordon Research Conference on Physics Research and Education (August 2004).

Received a Dickinson College pre-tenure sabbatical grant of \$3,200 (May 2003).

Received a pre-tenure sabbatical leave from Dickinson College for the 2003-04 academic year (March, 2003).

Received an Arthur Vining Davis Junior Faculty Fellowship of \$3,000 (December, 2000).

Received a one-quarter junior-faculty leave from Santa Clara University for Winter, 2001 (December, 2000).

Received, with Priscilla W. Laws and Scott Franklin, a three-year grant of \$429,368 from the Fund for the Improvement of Post-Secondary Education (FIPSE) for “Workshop Science: Implementation of a Project-Centered Curricula for Non-Scientists” (September 2000).

“Hands-on Physics” is chosen (one of 40 courses nationwide) for presentation at the Association of American Colleges and University’s SENCER (Science Education for New Civic Engagements and Responsibilities) symposium (January 22, 1999).

Received a Santa Clara University Curriculum Development grant of \$5,200 for “Making In-Class Demonstrations Interactive with the Real-Time Display and Analysis of Experimental Data” (December 1998).

Received a Cottrell College Science award from Research Corporation for \$30,000 to investigate “The Effects of Interactions on the Dynamics and Formation of Patterns in Dipolar Domains” (May 1998).

Received a Santa Clara University Technology Steering Committee cost-sharing grant of \$5,000 for the purchase of a high performance computer workstation (March 1998).

Received an IBM Faculty Research grant of \$4,492 to investigate “Interacting Dipolar Domains” (December 1997).

Received funds to hire a student intern from Dickinson College’s Dana internship program on four occasions (Summer 1995 through Summer 1996) and was awarded supplementary funds to continue a summer student research project (August 1996).

Received, with Priscilla W. Laws and Ronald K. Thornton, a grant from the National Science Foundation (NSF) for \$183,249 to continue development and begin dissemination of the Workshop Physical Science curriculum (February 1996).

Received, with Priscilla W. Laws and Ronald K. Thornton, a grant from the Fund for the Improvement of Post-Secondary Education (FIPSE) for \$156,675 to develop, test, and assess the Workshop Physical Science Curriculum (September 1995).

COLLOQUIUM,
CONFERENCE,
AND WORKSHOP
PRESENTATIONS

Delivered an invited presentation at the *Ferrofluid Frontiers* workshop titled, “Magnetic Fluid Pattern Formation,” at Montclair State University in Montclair, NJ (May 9, 2008).

Delivered an oral presentation at the winter meeting of the American Association of Physics Teachers entitled “Simple Experiments to Help Students Understand Magnetic Phenomena,” in Baltimore, MD (January 21, 2008).

Presented a Mathematical Sciences Seminar called “Magnetic Fluid Pattern Formation: Taming the Fingering Instability” at the University of Delaware in Newark, DE (November 27, 2007).

Delivered a public lecture titled “The Strange and Mysterious World of Quantum Mechanics” at Dickinson College in Carlisle, PA (November 3, 2007).

Delivered an oral presentation at the 2007 Pan-American Advanced Studies Institute (PASI) entitled “An Accurate Mode Selection Mechanism for Magnetic Fluids in a Hele-Shaw Cell,” in Mar del Plata, Argentina (August 15, 2007).

Delivered an oral presentation at the 11th International Conference on Magnetic Fluids entitled “Finger Width of Ferrofluids in Hele-Shaw Cells,” in Košice, Slovakia (July 26, 2007).

Delivered a poster presentation at a Gordon Research Conference on Physics Research and Education focusing on Electromagnetism entitled “The Width of a Ferrofluid Finger: Hysteresis and Multiple Energy Minima in a Self-Interacting Current Loop,” in South Hadley, MA (June 15, 2006).

Delivered an oral presentation at the March Meeting of the American Physical Society entitled “An Accurate Mode-Selection Mechanism for Magnetic Fluids,” in Baltimore, MD (March 13, 2006).

Gave a physics department colloquium presentation at Kent State University (Kent, OH) entitled, “Pattern Formation in Magnetic Fluids: The Motion of Tense Current Ribbons” (December 1, 2005).

Delivered an oral presentation at the 10th International Conference on Magnetic Fluids entitled “Theory, Experiment and Simulations of a Symmetric Arrangement

of Quasi Two-Dimensional Magnetic Fluid Drops,” in Guarujá, Brazil (August 3, 2004).

Delivered a poster presentation at a Gordon Research Conference on Physics Research and Education focusing on Classical Mechanics and Nonlinear Dynamics entitled “Dynamics and Chaos: A Project-Centered Course in Classical Mechanics,” in South Hadley, MA (June 15, 2004).

Presented the keynote address entitled “How Nature Unfolds: The Science of Pattern Formation,” at Dickinson College’s 19th Annual Science Student Research Symposium (April 19, 2004).

Delivered an oral presentation at the March Meeting of the American Physical Society entitled “Controlling Pattern Formation in Magnetic Fluids,” in Montreal, Quebec, Canada (March 23, 2004).

Delivered an invited presentation at the Oregon section of the American Association of Physics Teachers entitled “Explorations in Physics,” in Corvallis, OR (March 13, 2004)

Presented a Gallery of Fluid Motions poster at the American Physical Society’s 56th Annual Meeting of the Division of Fluid Dynamics entitled, “Time Evolution of Magnetic Fluid Drops,” in East Rutherford, NJ (November 23-25, 2003).

Led a one-day workshop for high-school and college teachers at Chestnut Hill College in Philadelphia, PA (November 15, 2003).

Gave a physics department colloquium presentation at Rochester Institute of Technology (Rochester, NY) entitled “Magnetic Liquids and Pattern Formation” (October 31, 2003).

Led a week-long FIPSE funded summer seminar entitled “Explorations in Physics: A Project Centered Curriculum for Non-Scientists” at Dickinson College in Carlisle, PA (June 15-20, 2003).

Directed a half-day workshop with Kerry Browne and Scott Franklin at the summer meeting of the American Association of Physics Teachers in Boise, ID (August 4, 2002).

Led a week-long FIPSE funded summer seminar entitled “Explorations in Physics: A Project Centered Curriculum for Non-Scientists” at Dickinson College in Carlisle, PA (July 7-12, 2002).

Delivered an oral presentation at the March Meeting of the American Physical Society entitled “Dampening the Fingering Instability in Rotating Magnetic Fluids,” in Indiannapolis, IN (March 18, 2002).

Gave a physics department colloquium presentation at Dickinson College (Carlisle, PA) entitled “The Motion of Tense Current Ribbons” (September 17, 2001).

Led a week-long FIPSE funded summer seminar entitled “Explorations in Physics: A Project Centered Curriculum for Non-Scientists” at Dickinson College in Carlisle, PA (July 9-13, 2001).

Delivered an oral presentation at the March Meeting of the American Physical Society entitled “The Effects of Interactions on the Pattern Formation of Magnetic Fluids,” in Seattle, WA (March 15, 2001).

Gave a physics department colloquium presentation at Texas Tech. University (Lubbock, TX) entitled “Changing the Way Students Think About Physics: A Win-Win-Win Proposition” (January 18, 2001).

Gave a physics department colloquium presentation at San Jose State University (San Jose, CA) entitled “Pattern Formation in Magnetic Fluids” (December 6, 2000).

Delivered an invited presentation at the summer meeting of the American Association of Physics Teachers entitled, “Hands-On Physics: A Workshop Style Course for Non-Science Majors,” in Guelph, Ontario (August 2, 2000).

Delivered an oral presentation at the summer meeting of the American Association of Physics Teachers entitled “The Magnetic Field of Current-Carrying Polygons: An Application of Vector Field Rotations,” in Guelph, Ontario (August 2, 2000).

Delivered an oral presentation at the northern California Section of the American Association of Physics Teachers entitled “A Strange Behavior of Friction,” in Stanford, CA (April 8, 2000).

Gave a mathematics department colloquium presentation at Santa Clara University (Santa Clara, CA) entitled “The Dynamics of Dipolar Domains: Patterns Formed by Current Loops” (April 5, 2000).

Gave a physics department colloquium presentation at Willamette University (Salem, OR) entitled “The Dynamics of Dipolar Domains: Patterns Formed by Current Loops” (March 13, 2000).

Gave a physics department colloquium presentation at Dickinson College (Carlisle, PA) entitled “The Dynamics of Dipolar Domains: Patterns Formed by Current Ribbons” (March 6, 2000).

Gave a physics department colloquium presentation at the University of Richmond (Richmond, VA) entitled “The Dynamics of Dipolar Domains: Patterns Formed by Current Loops” (February 24, 2000).

Delivered an oral presentation at the Centennial Meeting of the American Physical Society entitled “The Effects of Multi-Domain Interactions on the Pattern Formation of Dipolar Systems,” in Atlanta, GA (March 25, 1999).

Participated as an invited member of the Association of American Colleges and University's SENCER (Science Education for New Civic Engagements and Responsibilities) symposium in Washington, D.C. (January 22, 1999).

Directed a half-day workshop with Priscilla Laws and Scott Franklin entitled "Workshop Science: Exploring Nature Through Active Learning" at the summer meeting of the American Association of Physics Teachers in Lincoln, Nebraska (August 4, 1998).

Delivered an oral presentation at the summer meeting of the American Association of Physics Teachers entitled "Inducing and Measuring Cosmic Ray Showers Using MBL Equipment," in Lincoln, Nebraska (August 5, 1998).

Delivered an invited presentation and directed three 90-minute mini-workshops at an NSF sponsored summer seminar entitled "Teaching Introductory Physics Using Interactive Teaching Methods and Computers" in Eugene, Oregon (June 25, 1998).

Delivered an oral presentation at the Northern California Section of the American Association of Physics Teachers entitled "High Altitude Free Fall in the Standard Atmosphere," in Santa Cruz, CA (April 25, 1998).

Participated as an invited panel member to present and discuss innovative programs for non-science students at the winter meeting of the American Association of Physics Teachers in New Orleans, LA (January 5, 1998).

Delivered an oral presentation at the summer meeting of the American Association of Physics Teachers entitled "Workshop Physical Science: A Progress Report" in Denver, CO (August 13, 1997).

Directed a half-day workshop with Priscilla Laws at the summer meeting of the American Association of Physics Teachers entitled "Workshop Physical Science: A Project-Centered Course Sequence for Future Teachers and Non-Science Majors" in Denver, CO (August 12, 1997).

Directed a half-day workshop entitled "A project-Based Physical Science Curriculum" at La Salle University (July 25, 1997).

Presented a condensed matter physics seminar at Carnegie Mellon University on the fractal behavior of ferrofluids (May, 1997).

Delivered an oral presentation at the Central Pennsylvania Section of the American Association of Physics Teachers entitled "Freefall in the Standard Atmosphere" at Shippensburg, PA (April, 1997).

Delivered an oral presentation at the March Meeting of the American Physical Society entitled "Investigating the Fractal Dimension of Dipolar Systems" in Kansas City, MO (March 18, 1997).

Delivered an oral presentation at the March Meeting of the American Physical Society entitled “Cooperative Behavior of Interacting Dipolar Domains” in Kansas City, MO (March 18, 1997).

Gave a physics department colloquium presentation at Santa Clara University (Santa Clara, CA) entitled “Interfacial Pattern Formation in Quasi Two-Dimensional Dipolar Systems” (February 24, 1997).

Gave a physics department colloquium presentation at the University of the Pacific (Stockton, CA) entitled “Interfacial Pattern Formation in Quasi Two-Dimensional Dipolar Systems” (February 1997).

Gave a physics department colloquium presentation at Carleton College (Northfield, MN) entitled “Interfacial Pattern Formation in Quasi Two-Dimensional Dipolar Systems” (January 20, 1997).

Led a workshop presentation with Priscilla Laws entitled “A Project-Based Physical Science Curriculum” at Mount Saint Mary’s College in Emmitsburg, MD (November 9, 1996).

Gave a physics department colloquium presentation at Dickinson College (Carlisle, PA) entitled “Freefall in the Standard Atmosphere” (November, 1996).

Delivered an invited poster presentation entitled “Workshop Physics Science: Project-Based Science Education for Future Teachers, Parents, and Citizens” at the 1996 International Conference on Undergraduate Physics Education (July 31-August 3, 1996).

Conducted a workshop for an NSF-sponsored seminar entitled “Teaching Introductory Physics Using Interactive Teaching Methods and Computers” at Dickinson College in Carlisle, PA (July 1996).

Directed a half-day workshop with Priscilla Laws at the winter meeting of the American Association of Physics Teachers entitled “Interactive Learning in Workshop Physical Science” in Reno, NV (January 1996).

Delivered an oral presentation at the winter meeting of the American Association of Physics Teachers entitled “Workshop Physical Science: A Progress Report” in Reno, NV (January 1996).

Led a one-hour workshop (with Priscilla Laws) on teaching science and technology to non-science majors at Princeton University’s Council on Science and Technology in Princeton, NJ (May 16, 1995).

Delivered an oral presentation at the Central Pennsylvania section of the American Association of Physics Teachers on Cosmic Ray Showers (April, 1995).

Presented a physics education research seminar on the Workshop Physical Science

Project at the University of Washington in Seattle, WA (November, 1994)

Gave a physics departmental colloquium presentation titled “Magnetic Fluid Patterns: Form Simplicity to Complexity to Simplicity...” at Dickinson College in Carlisle, PA (September 12, 1994).

Gave a physics departmental colloquium presentation on magnetic fluid pattern formation and physics education at Dickinson College in Carlisle, PA (July 8, 1994).

Presented a research seminar at MIT’s Lincoln Laboratory in Lexington, MA (April, 1994).

Presented a research seminar at Schlumberger Research, Inc. in Ridgefield, CT (February, 1994).

Presented a poster entitled “Fingering Instabilities in Dipolar Fluids” at the 11th Jerusalem Winter School in Theoretical Physics on Dynamical Systems (December 29, 1993-January 7, 1994).

Delivered an oral presentation at the March Meeting of the American Physical Society entitled “Hydrodynamics of Labyrinth Formation in Magnetic Fluids” in Seattle, WA (March, 1993).

Delivered an oral presentation at the American Physical Society’s Division of Fluid Dynamics annual meeting entitled “Pattern Formation in Quasi Two-Dimensional Ferrohydrodynamics” in Tallahassee FL (November 22, 1992).

Delivered a condensed matter physics seminar at Princeton University (Princeton NJ) entitled “Conformal Ferrohydrodynamics” (October 7, 1992).

PROFESSIONAL
SOCIETIES,
COMMITTEES,
AND REVIEW
PANELS

Member of the American Physical Society (APS).

Member of the American Association of Physics Teachers (AAPT).

Member of Sigma-Pi-Sigma, the national physics honor society.

Frequent reviewer for *Physics of Fluids*, *Physical Review E*, *American Journal of Physics*, and *The Physics Teacher*.

Webmaster, Dickinson College Physics Department (2002-present).

Budget manager, Dickinson College Physics Department (2002-present).

Chair, Dickinson College Department of Physics and Astronomy (2006-present).

Member of the Dickinson College Planning and Budget Committee (2007-2009, Committee Chair for AY 2008-09).

Chair of a Planning and Budget mental health benefits subcommittee (Fall 2008).

Member of the Dickinson College Science Executive Committee (2006-2009).

NSF evaluation panel member to review Course, Curriculum, and Laboratory Improvement (CCLI) grant proposals (July 2008).

Chair of the Dickinson College Physics Department Curriculum Revision Committee (2006-2007).

Chair of the Dickinson College Physics Department Hiring Committee (2006-2007).

Member of the scientific organizing committee for the 10th International Conference on Magnetic Fluids held in Guarujá, Brazil, August 2-6, 2004.

Co-chair of the Gordon Research Conference on Physics Research and Education: Classical Mechanics and Non-Linear Dynamics, June 13-18, 2004.

Guest Editor, Classical Mechanics and Nonlinear Dynamics Theme Issue of the *American Journal of Physics*, April issue, 2004.

Member of the American Association of Physics Teacher's committee on Science Education for the General Public (2001-2004).

Member of the Dickinson College Science Executive Committee (2002-2003).

Member of the Dickinson College Physics Department Hiring Committee (2 tenure track and 1 sabbatical replacement positions) (2002-2003).

Pre-Engineering advisor, Dickinson College (2002-2004).

Colloquium organizer, Dickinson College Physics Department (2001-2002).

Sigma-Pi-Sigma faculty advisor, Dickinson College Physics Department (2001-2003).

Co-vice-chair of the Gordon Research Conference on Physics Research and Education: Quantum Mechanics, June 2002.

Guest Editor, Quantum Mechanics Theme Issue of the *American Journal of Physics*, March issue, 2002.

Session Chair at the summer meeting of the American Association of Physics Teacher for a session on *Electromagnetism, Relativity, and Quantum Mechanics* (August 2, 2000).

Member of the Santa Clara University Core Laboratory Science sub-committee (1999-2000).

Member of the Santa Clara University Physics Department hiring committee (1999-2000).

Faculty associate for the Santa Clara University Center for Multi-Cultural learning (1998-2000).

Chair of an NSF evaluation panel for Spelman College's CCD grant "Infusion of Laser Technology in Science Courses: An Interdisciplinary Approach" (1998-1999).

Organizer for a session entitled "Undergraduate Research: Who is it good for?" at Santa Clara University's College of Arts and Sciences *Conversations and Explorations* conference (Oct. 19, 1998).

Invited member of an NSF evaluation panel to assess Drury College's CCD grant entitled "An Integrated Mathematics and Science Curriculum" (1997-1998).

Event Supervisor for the Pennsylvania Science Olympiad (March, 1997).

NSF evaluation panel member to review Course and Curriculum Development (CCD) and Faculty Enhancement (FE) grant proposals (July 1996).

Chair for a national advisory meeting at Dickinson College on project-based education, assessment of student learning, and curriculum development and dissemination (April 1996).

Event Supervisor for the Pennsylvania Science Olympiad (March, 1996).

Chair for a national advisory meeting at Dickinson College on project-based education, assessment of student learning, and curriculum development and dissemination (February 1995).

PERSONAL

BACKGROUND	Born in Calgary, Alberta on March 6, 1965. United States Citizen. Married with two children (Adam, 7 and Kyra, 5).
HOBBIES	Hiking, music (guitar, mandolin, piano), athletics (soccer, volleyball, golf), flying (licensed pilot).