

David H. McIntyre

Curriculum Vitae

ADDRESS: Department of Physics
Oregon State University
Weniger Hall 301
Corvallis, OR 97331-6507
Tel: (541) 737-1696
email: mcintyre@ucs.orst.edu

PERSONAL: Born 4 July 1958
United States Citizen

EDUCATION:

1987 Ph.D. in Physics, Stanford University
Thesis: "High Resolution Laser Spectroscopy of Tellurium and Hydrogen: A
Measurement of the Rydberg Constant."
Thesis Advisor: Professor Theodor W. Hänsch

1984 M.S. in Physics, Stanford University

1980 B.S. in Physics (with Highest Distinction), University of Arizona

EMPLOYMENT:

2011-present: Professor
Department of Physics, Oregon State University

2015-present Adjunct Professor
Graduate Internship Program, University of Oregon

2013-2014: Interim Associate Dean for Research, Graduate Studies and Administration
College of Science, Oregon State University

1999-present University Honors College Faculty
Oregon State University

1995-1996 Visiting Researcher
Department of Physics and Applied Physics, University of Strathclyde
Glasgow, Scotland

1994-2011: Associate Professor
Department of Physics, Oregon State University

1989-1994: Assistant Professor
Department of Physics, Oregon State University

1987-1989 Scientist in Laser Spectroscopy Group
Max Planck Institute for Quantum Optics, Garching bei München, West
Germany

1983-1987 Graduate Student Research Assistant in Laser Spectroscopy Group
Department of Physics, Stanford University

1981-1982 Research Assistant in Experimental Relativity Group
Department of Physics, University of Arizona

1978-1980 Undergraduate Research Assistant in High Energy Physics Group
Department of Physics, University of Arizona

HONORS:

2018 Honors College Eminent Professor
2011 Frederick H. Horne Award for Sustained Excellence in Teaching Science
1982-1985 National Science Foundation Graduate Fellowship
1980 Phi Beta Kappa
1980 Sigma Pi Sigma
1978 National Science Foundation Undergraduate Summer Research Grant

PROFESSIONAL SOCIETY

MEMBERSHIPS:

American Physical Society
American Association of Physics Teachers
Optical Society of America

PROFESSIONAL SERVICE:

2001 Nominating Committee, Northwest Section of the American Physical Society
2011 Organizing Committee, Program Committee, 13th Annual Meeting of the
Northwest Section of the American Physical Society
2011-2014 American Physical Society Council
2011-2014 Executive Committee, Northwest Section of the American Physical Society
2013-2016 Audit Committee, American Physical Society (2015, 2016 Chair)
2013-2015 Committee on Committees, American Physical Society

GRANT SUPPORT:

2015-2017 Oregon State University General Research Fund, \$9,884
"Micromechanical Evolution of Growing Tumors"

2013 Oregon State University, Summer Undergraduate Research Experience in
Science (SURE Science), \$5000
"Holographic Optical Tweezers", Student support for Emma Krnacik
P.I.: D. H. McIntyre

2013 Oregon State University Technology Resource Fee Fund, \$9,871
Grant Repair and Capacity Expansion Program
"Upgrade of Physical Optics Laboratory at Physics Department"
P.I.: O. Ostroverkhova, co P.I.'s: D. H. McIntyre, W. M. Hetherington, A. Wang

2010-2013 Office of Naval Research, \$3,500,000
"ONAMI ONR Nanoelectronics, Nanobiotechnology, and Nanometrology
Initiative" (FY10)
P.I.: J. R. Carruthers, co-P.I.'s: D. H. McIntyre, R. Taylor, T. Vu

GRANT SUPPORT: (continued)

- 2010-2013 Office of Naval Research, \$259,798
"Enhanced biochemical imaging enabled by holographic optical tweezers"
Subgrant of above FY10 ONAMI ONR Nanoelectronics, Nanobiotechnology, and Nanometrology Initiative
P.I.: D. H. McIntyre, co-P.I.'s: O. Ostroverkhova, V. T. Remcho, S. Prasad, S. M. Reed
- 2010 Oregon State University Research Equipment Reserve Fund, \$32,034
"Olympus Research Grade Microscope"
- 2010 Oregon State University, Undergraduate Research, Innovation, Scholarship and Creativity (URISC), \$1500
"Optical Trapping and Fluorescence Spectroscopy of Nanoparticle Sensors in Microfluidic Devices"
Student support for Jessica Gifford
P.I.: D. H. McIntyre
- 2009-2011 Office of Naval Research, \$3,583,485
"ONAMI ONR Nanoelectronics, Nanobiotechnology and Nanometrology Initiative" (FY09)
P.I.: J. R. Carruthers, co-P.I.'s: D. H. McIntyre, R. Taylor, and T. Vu
- 2009-2011 Office of Naval Research, \$290,080
"Chemical imaging of the bionano interface and thin film nanostructures by micro-Raman/photoluminescence spectroscopy"
Subgrant of above FY09 ONAMI ONR Nanoelectronics, Nanobiotechnology and Nanometrology Initiative
P.I.: G. Rorrer, co-P.I.'s: E. Minot, D. H. McIntyre, O. Ostroverkhova, J. Tate, P. Dhagat, A. Jander
- 2009-2011 Office of Naval Research, \$81,000
"Quantum Dots as Ion-Selective Optical Nanosensors"
Subgrant of above FY09 ONAMI ONR Nanoelectronics, Nanobiotechnology and Nanometrology Initiative
P.I.: D. H. McIntyre, co-P.I.'s: A. Shvarev, O. Ostroverkhova
- 2009-2010 Oregon State University Technology Resource Fee Fund, \$58,769
"Upgrade of Physical Optics Laboratory at Physics Department "
P.I.: O. Ostroverkhova, co P.I.'s: D. H. McIntyre, W. M. Hetherington, T. K. Plant
- 2008-2010 Office of Naval Research, \$1,815,903
"ONAMI ONR Nanometrology/Nanoelectronics Initiative" (FY08)
P.I.: J. R. Carruthers, co-P.I.'s: D. H. McIntyre and R. Taylor

GRANT SUPPORT: (continued)

- 2008-2010 Office of Naval Research, \$240,682
"Biochemical Sensors and Integrated Measurement Platform Controlled by Optical Tweezers and Microfluidics "
Subgrant of above FY08 ONAMI ONR Nanometrology/Nanoelectronics Initiative
P.I.: D. H. McIntyre, co-P.I.'s: O. Ostroverkhova, A. Shvarev, V. T. Remcho, S. Prasad, S. M. Reed
- 2007-2009 Office of Naval Research, \$2,341,443
"ONAMI ONR Nanometrology/Nanoelectronics Initiative" (FY07)
P.I.: J. R. Carruthers, co-P.I.'s: D. H. McIntyre and H. Linke
- 2007-2009 Office of Naval Research, \$116,318
"Micro- and nanoscale building blocks for optoelectronics: solution-based fabrication of high-performance nanophotonic and nanoelectronic devices"
Subgrant of above FY07 ONAMI ONR Nanometrology/Nanoelectronics Initiative
P.I.: J. Tate, co-P.I.'s: D. H. McIntyre, D. A. Keszler
- 2007-2009 Office of Naval Research, \$107,311
"Beyond Sensing under Equilibrium: Photoresponsive Nanoprobes for Rapid Localized Acid-Base Titration"
Subgrant of above FY07 ONAMI ONR Nanometrology/Nanoelectronics Initiative
P.I.: A. Shvarev, co-P.I.'s: O. Ostroverkhova, D. H. McIntyre
- 2007-2009 Office of Naval Research, \$98,144
"Optically controlled DNA sequencing through nanoscale funnels"
Subgrant of above FY07 ONAMI ONR Nanometrology/Nanoelectronics Initiative
P.I.: D. H. McIntyre, co-P.I.: S. Prasad
- 2007-2009 Office of Naval Research, \$102,632
"Identification, imaging and manipulation of charged states in organic semiconductors: from macroscopic to microscopic optoelectronic devices"
Subgrant of above FY07 ONAMI ONR Nanometrology/Nanoelectronics Initiative
P.I.: O. Ostroverkhova, co-P.I.'s: G. Schneider, E. Minot, D. H. McIntyre
- 2007-2008 Oregon State University Research Equipment Reserve Fund, \$43,255
"Ocean Optics UV-Visible-NIR Spectrometer"
P.I.: J. Tate, co-P.I.: D. H. McIntyre

GRANT SUPPORT: (continued)

- 2006-2009 Office of Naval Research, \$93,430
"Optical Field Enhancement in Tweezer Trapping and Single-Molecule Spectroscopy"
P.I.: D. H. McIntyre, co-P.I.: O. Ostroverkhova
- 2006-2009 Office of Naval Research, \$130,098
"Micro- and nanoscale building blocks for optoelectronics: Solution-based writing with inorganic inks"
P.I.: J. Tate, co-P.I.'s: D. H. McIntyre, D. A. Keszler
- 2006-2011 National Science Foundation, \$498,124
"Paradigms in Physics: Multiple Entry Points"
P.I.: C. A. Manogue, co-P.I.'s: T. Dray, B. S. Edwards, D. H. McIntyre, E. H. van Zee
- 2006-2008 Oregon State University Technology Resource Fee Fund, \$51,153
"Equipment Upgrade in Computer Interfacing Classroom"
- 2005 Oregon State University, Undergraduate Research, Innovation, Scholarship and Creativity (URISC), \$2993
"Optical Tweezers"
Student support for Mark Blanding
P.I.: D. H. McIntyre
- 2004-2005 Oregon State University General Research Fund, \$10,000
"Spectroscopic Detection of Trace Gases"
- 2003-2007 National Science Foundation, \$99,940
"Paradigms in Physics -- Faculty Materials"
P.I.: C. A. Manogue, co-P.I.'s: D. H. McIntyre, A. L. Wasserman
- 2001 Oregon State University, Undergraduate Research, Innovation, Scholarship and Creativity (URISC), \$2993
"Diode Laser Cavity Absorption Spectroscopy"
Student support for Jonathon Gillen
P.I.: D. H. McIntyre
- 2001-2002 Oregon State University Foundation, \$2195
Mr. & Mrs. L. L. Stewart Faculty Development Fund
"Quantum Mechanics Simulation Software"
- 2000-2005 National Science Foundation, \$399,636
"Developing a Research-Rich Undergraduate Degree Program in Computational Physics"
P.I.: R. H. Landau, co-P.I.: H. J. F. Jansen
Senior personnel: D. H. McIntyre, A. W. Stetz, M. Paez

GRANT SUPPORT: (continued)

- 1997-2002 National Science Foundation, \$497,063
"Paradigms in Physics"
P.I.: C. A. Manogue; co-P.I.'s: P. J. Siemens, J. Tate
Senior personnel: A. L. Wasserman, D. H. McIntyre, T. Dray, M. Niess
- 1996-1997 Office of Naval Research, \$95,069
"Matter-Wave Interferometry with Laser Cooled Atoms"
- 1995-1996 Engineering and Physical Sciences Research Council (Great Britain), £11,900
"High Resolution Spectroscopy of Laser Cooled Atoms"
Visiting Fellowship support obtained through E. Riis and A. I. Ferguson
- 1995-1998 National Science Foundation, \$50,000
"Physics Laboratory Enhancement in Computer Interfacing and Instrumentation"
P.I.: C. A. Kocher, co-P.I.'s: C. E. Fairchild, J. A. Gardner, D. H. McIntyre
- 1993-1996 Office of Naval Research, \$260,201
"Matter-Wave Interferometry with Laser Cooled Atoms"
- 1993-1994 Research Corporation: Partners in Science, \$14,000
"Diode Lasers for Atomic Physics"
- 1991 M. J. Murdock Charitable Trust, \$326,000
"Instructional Laboratories in Optical Science and Materials"
P.I.: K. S. Krane, co-P.I.'s: C. E. Fairchild, W. M. Hetherington, D. H. McIntyre
- 1991-1993 Office of Naval Research, \$235,593
"Matter-Wave Interferometry with Laser Cooled Atoms"

POSTDOCTORAL TRAINEE:

1992-1994 Jeffrey Maki Atom trapping and atom interferometry

GRADUATE THESIS SUPERVISION

As Major Professor:

Holger Delfs	M.S. 1992	"A Magneto-Optic Trap for Rubidium"
Chris Cuneo	M.S. 1994	"Optically Stabilized Diode Laser using High-Contrast Saturated Absorption"
Tom Swanson	Ph.D. 1995	"A Rubidium Atomic Funnel"
Nancy Silva	Ph.D. 1996	"Laser Cooling and Trapping with Electronically Stabilized Grating-Feedback Diode Lasers"
Peggy Lopez	M.S. 1997	"Stabilization of a Three-Grating Interferometer"

Shannon Mayer	Ph.D. 1997	"Low-Velocity Matter-Wave Source for Atom Interferometry Produced by Zeeman-Tuned Laser Cooling and Magneto-Optic Trapping"
Joshua Russell	M.S. 2011	"Optical Properties of Transparent Semiconductors"
Ali Almaqwashi	M.S. 2012	"Optical Trapping and Acoustical probing of Ultrasound Contrast Agent Microbubbles Confined in Capillaries"
Matthew Cibula	Ph.D. 2015	"Applications of Holographic Optical Tweezers: Multiplexed Fluorescence Spectroscopy and the Micromechanics of Type-I Collagen"
Joint supervision:		
Robert Kykyneshi	Ph.D. 2007	"Pulsed laser deposition and thin film properties of p-type BaCuSF, BaCuSeF, BaCuTeF and n-type Zn ₂ In ₂ O ₅ wide band-gap semiconductors" (Major Prof: J. Tate)
Paul Newhouse	Ph.D. 2008	"Growth and characterization of wide-gap semiconducting oxide and chalcogenide thin films by pulsed laser deposition" (Major Prof: J. Tate)
Andriy Zakutayev	Ph.D. 2010	"BaCuChF (Ch = S, Se, Te) p-type transparent conductors" (Major Prof: J. Tate)
Kai Jiang	Ph.D. 2010	"New luminescent materials and high-performance solution-processed oxide thin films" (Major Prof: D. A. Keszler)
Mark Kendrick	Ph.D. 2012	"Light-Matter Interactions: From the Photophysics of Organic Semiconductors to High Spatial Resolution Optical Tweezer-Controlled Nanoprobes" (Major Prof: O. Ostroverkhova)

OTHER GRADUATE RESEARCH SUPERVISION

Dates	Student	Topic/Thesis
1990-1991	David Cebula	Diode laser electronics
1990-1991	Ralph Knorpp	Laser stabilization electronics
1991	Brian Bacher	High voltage amplifiers
1991	Seong Hyun Kim	Diode laser electronics
1991-1992	Gerd Forstmann	Neutral atom detector
1991-1992	Chad McCartney	Computer interfacing
1991-1993	Corinne Grande	Diode laser stabilization
1992	Mike Decker	Diode laser electronics
1993-1995	Steve Sahyun	Diode laser electronics
1993-1995	Mark Shroyer	Magnetic field construction
1996	Andrew Draeske	Atom interferometry
1997	Travis Perry	Diode laser electronics
1997-1998	Bert Laubsch	Magnetic lenses for atoms
1997-1998	Kerry Browne	Atom interferometry
1999	Michel Winz	Diode laser electronics and magneto-optic trapping
2000	Lichun Jia	Java version of Spins software
2009-2010	Eugene Mar	Optical tweezer trapping

UNDERGRADUATE THESIS SUPERVISION:

Date	Student	B.S. Degree	Title
1992	Kamand Mohamadzadeh	Physics	Beam Isolation and Overlap Issues in the Three Grating Interferometer
1994	Jeffery Gruen	Physics	White Light Fringes using the Michelson Interferometer
1997	Eric Bixby	Biology (Honors)	Light Transmittance Properties of Biological Tissues of the Red-sided Garter Snake, <i>Thamnophis sirtalis parietalis</i> , Between 450 and 850 nm
1998	Shawn Redmond	Physics	Laser Cooling, Trapping and Spectroscopy of Rubidium
2000	David Ohm	Physics	Applications of the Hanle Effect
2001	Ross Brody	Physics	Band Gap Analysis of Mg Doped and Undoped CuCrO_2 Thin Films*
2001	Brian McAleer	Physics	The Construction of an Erbium Doped Fiber Amplifier
2002	Derek Tucker	Physics (Honors)	Optical Characterization of Transparent Conductive Thin Films*
2003	Levi Kilcher	Physics	Optical Spectroscopy of Transparent Conducting Oxides from the UV to the near-IR and a Method for Determining the Refractive Index of Transparent Thin Films*
2003	Carl Dreyer	Physics (Honors)	Spectral Ellipsometry [#]
2003	Jon LaFollett	Physics	Observations of Amplified Spontaneous Emission in an Erbium Doped Fiber Amplifier
2003	Adam Campbell	Physics	Spectral Analysis of Chirped Laser and Frequency Modulation (work done at U. Conn. REU)
2004	Thomas Jones	Physics	Characterizing the Radial Trapping Force of an Optical Tweezers
2004	Aqil Sajjad	Physics	FM Spectroscopy and the Measurement of Linewidth
2005	Adam Rand	Physics	FM Spectroscopy
2006	Mark Blanding	Physics	Optical Tweezers
2006	Doug Fetting	Physics	The Effect of Transverse Shifts on the LIGO Interferometer (Simulation Study) (work done at CalTech REU)
2009	Jeff Macklem	Physics	The Art of LABView: Running a Spectrometer for Thin Films and Powders
2010	Daniel Gruss	Physics (Honors)	Applied Computing Techniques for Holographic Optical Tweezers
2014	Cord Meados	Physics	Force Measurements Measured from Reflection in an Optical Tweezer

2014	Aaron Kratzer	Physics	Measurement and Modeling of Zinc Sulfide Thin Films using Ellipsometry and Reflection Spectroscopy: A Comparison of Optical Characterization Techniques*
2014	Kathleen Prudell	Physics	Determining Thickness of Zinc Sulfide Thin Films Through Optical Spectroscopy*
2015	Blake Wells	Physics	Bandgap Measurements of Nonspecular Materials Using a Bifurcated Fiber Optic Method of Diffuse Reflectance *
2017	Zackery Dempsey	Physics	Fourier Analysis of Cell Phone Call Quality
2018	Sean Bullis	Physics	Brownian Motion of Microspheres
2019	Aaron Goschie	Physics	Wavefront Control of Aberrated Optical Beams
2019	Josh Ramm	Physics	Thin Film Optics
2019	Jesse Weller	Physics	Machine Learning for Better Optics

* Joint project with Prof. J. Tate (OSU Physics)

Joint project with Prof. T. K. Plant (OSU Electrical Engineering)

OTHER UNDERGRADUATE RESEARCH SUPERVISION

Dates	Student	Topic
1991-1992	Robert Swetland	Electronics
1996	Mark Muktoyuk	Maple data analysis
1996-1997	Rebecca Holyhead	Magnetic atom optics
1997	Brand LeMaitre	Rubidium vapor cell trap (Summer REU)
1997	Shannon O'Leary	Rubidium vapor cell trap (Summer REU)
1998	Stephen Russel	Magneto-optic trapping (Summer REU)
1998	Jason Speagle	Magneto-optic trapping (Summer REU)
2000	Anne Goodsell	Spectroscopy of trapped atoms (Summer REU)
2000	Katie Mussack	Spectroscopy of trapped atoms (Summer REU)
2002	Conner English	Laser cooling and trapping of rubidium atoms
2001-2003	Jonathon Gillen	Cavity enhanced absorption measurements (URISC)
2005	William Martin	Optical trapping of microspheres
2006-2007	Joe Kinney	Excitons in BaCuSeF*
2007	Sophie Berkman	Optical trapping of microspheres (Summer)
2007	Rebekah Ferrier	Dual frequency modulation spectroscopy (Summer)
2010	Jessica Gifford	Optical trapping of ion sensors [†] (URISC)
2013	Emma Krnacik	Holographic optical tweezers
2016	Carmen Fernandez	Holographic optical tweezers

* Joint project with Prof. J. Tate (OSU Physics)

[†] Joint project with Prof. O. Ostroverkhova (OSU Physics)

PATENTS:

"Solid state laser operating with frequency doubling and stabilized by an external resonator" (A. Hemmerich, D. McIntyre, C. Zimmermann, and T. Haensch), U.S. Patent 5,068,546, Nov. 26, 1991.

OSU INVENTION DISCLOSURES:

"Semiconductor laser system with digitally controllable frequency-offset locking" (D. H. McIntyre, J. J. Maki, and R. P. Knorpp), March 19, 1993.

"Semiconductor diode laser with optical feedback stabilization from saturated absorption in an optically thick atomic vapor" (D. H. McIntyre, C. J. Cuneo, and J. J. Maki), December 16, 1993.

"Simultaneous line center and linewidth measurement using dual frequency modulation" (D. H. McIntyre and J. I. Gillen), April 17, 2003.

TEACHING EXPERIENCE:

Oregon State University:

2018-2019 Physics 411, Analog and Digital Electronics
 Physics 222H, Honors Recitation for Physics 212
 Physics 481, Physical Optics
 Physics 222H, Honors Recitation for Physics 212
 Physics 415, Computer Interfacing and Instrumentation
 Physics 221H, Honors Recitation for Physics 211

2017-2018 Physics 411, Analog and Digital Electronics
 Physics 481, Physical Optics
 Physics 222H, Honors Recitation for Physics 212
 Physics 415, Computer Interfacing and Instrumentation
 Physics 221H, Honors Recitation for Physics 211
 Honors College 407: Isaac Newton: Opticks, Colour, Gravity, and Navigation
 Physics 626, Physical Optics with Labs (U. of Oregon)

2016-2017 Physics 411, Analog and Digital Electronics
 Physics 221H, Honors Recitation for Physics 211
 Physics 481, Physical Optics
 Physics 223H, Honors Recitation for Physics 213
 Physics 415, Computer Interfacing and Instrumentation
 Physics 626, Physical Optics with Labs (U. of Oregon)
 Physics 627, Optical Materials and Devices (U. of Oregon)

2015-2016 Physics 651, Quantum Mechanics
 Physics 222H, Honors Recitation for Physics 212
 Physics 652, Quantum Mechanics
 Physics 222H, Honors Recitation for Physics 212
 Physics 653, Quantum Mechanics
 Physics 221H, Honors Recitation for Physics 211
 Physics 626, Physical Optics with Labs (U. of Oregon)
 Honors College 407: Isaac Newton: Opticks, Colour, Gravity, and Navigation

TEACHING EXPERIENCE: (continued)

- 2014-2015 Physics 651, Quantum Mechanics
Physics 222H, Honors Recitation for Physics 212
Physics 652, Quantum Mechanics
Physics 222H, Honors Recitation for Physics 212
Physics 653, Quantum Mechanics
Physics 221H, Honors Recitation for Physics 211
Physics 610, Geometric Optics and Intro to Quantum Mechanics (U. of Oregon)
- 2013-2014 Physics 481, Physical Optics
Physics 610, Geometric Optics and Intro to Quantum Mechanics (U. of Oregon)
- 2012-2013 Physics 431, Electromagnetism Capstone
Physics 481, Physical Optics
Physics 610, Geometric Optics (University of Oregon)
- 2011-2012 Physics 431, Electromagnetism Capstone
Physics 221H, Honors Recitation for Physics 211
Physics 451, Quantum Mechanics Capstone
Physics 426, Central Forces
Physics 585, Atomic, Molecular, and Optical Physics
Physics 610, Introduction to Optics (University of Oregon)
- 2010-2011 Physics 431, Electromagnetism Capstone
Physics 221H, Honors Recitation for Physics 211
Physics 451, Quantum Mechanics Capstone
Physics 222H, Honors Recitation for Physics 212
Physics 632, Electrodynamics
Physics 610, Introduction to Optics (University of Oregon)
- 2009-2010 Physics 431, Electromagnetism Capstone
Physics 221H, Honors Recitation for Physics 211
Physics 451, Quantum Mechanics Capstone
Physics 222H, Honors Recitation for Physics 212
Physics 435, Mechanics Capstone
Physics 223H, Honors Recitation for Physics 213
- 2008-2009 Physics 201H/211H General Physics (Honors)
Physics 202H/213H General Physics (Honors)
Physics 203H/213H General Physics (Honors)
Physics 610, Optical Materials (University of Oregon)
- 2007-2008 Physics 681, Atomic, Molecular, and Optical Physics
Physics 451, Quantum Mechanics Capstone
Physics 223H, Honors Recitation for Physics 213
Physics 415, Computer Interfacing and Instrumentation
Physics 610, Optical Materials (University of Oregon)
- 2006-2007 Physics 265, Introductory Scientific Computing
Physics 451, Quantum Mechanics Capstone
Physics 223H, Honors Recitation for Physics 213
Physics 415 Computer Interfacing and Instrumentation
Physics 435, Mechanics Capstone
Physics 610, Optical Materials (University of Oregon)

TEACHING EXPERIENCE: (continued)

- 2005-2006 Physics 681, Atomic, Molecular, and Optical Physics
 Physics 222H, Honors Recitation for Physics 212
 Physics 451, Quantum Mechanics Capstone
 Physics 222H, Honors Recitation for Physics 212
 Physics 429, Reference Frames
 Physics 435, Mechanics Capstone
- 2004-2005 Physics 265, Introductory Scientific Computing
 Physics 222H, Honors Recitation for Physics 212
 Physics 451, Quantum Mechanics Capstone
 Physics 222H, Honors Recitation for Physics 212
 Physics 428, Rigid Bodies
 Physics 485, Atomic, Molecular, and Optical Physics
- 2003-2004 Physics 211, General Physics with Calculus
 Physics 431, Electromagnetism Capstone
 Physics 265, Introductory Scientific Computing
 Physics 211, General Physics with Calculus
 Physics 223H Honors Recitation for Physics 213
- 2002-2003 Physics 211, General Physics with Calculus
 Physics 421, Oscillations
 Physics 212, General Physics with Calculus
 Physics 265, Introductory Scientific Computing
 Physics 211, General Physics with Calculus
- 2001-2002 Physics 421, Oscillations
 Physics 221H, Honors Recitation for Physics 211
 Physics 265, Introductory Scientific Computing
 Physics 223H, Honors Recitation for Physics 213
 Physics 435, Mechanics Capstone
 Physics 429, Reference Frames
- 2000-2001 Physics 212, General Physics with Calculus
 Physics 421, Oscillations
 Physics 425, Quantum Measurement and Spin
 Physics 435, Capstones in Physics: Classical Mechanics
 Physics 221H, Honors Recitation for Physics 211
- 1999-2000 Physics 212, General Physics with Calculus
 Physics 425, Quantum Measurement and Spin
 Physics 212, General Physics with Calculus
 Physics 223H, Honors Recitation for Physics 213
 Physics 435, Capstones in Physics: Classical Mechanics
- 1998-1999 Physics 211, General Physics with Calculus
 Physics 425, Quantum Measurement and Spin
 Physics 223H, Honors Recitation for Physics 213
 Physics 211, General Physics with Calculus
- 1997-1998 Physics 211, General Physics with Calculus
 Physics 425, Quantum Measurement and Spin
 Physics 211, General Physics with Calculus

TEACHING EXPERIENCE: (continued)

1996-1997	Physics 481, Physical Optics Physics 422, Classical Dynamics Physics 211, General Physics with Calculus
1994-1995	Physics 481, Physical Optics Physics 683, Atomic, Molecular, and Optical Physics Physics 482, Optical Electronics Physics 211, General Physics with Calculus
1993-1994	Physics 481, Physical Optics Physics 681, Atomic, Molecular, and Optical Physics Physics 415, Computer Interfacing and Instrumentation
1992-1993	Physics 481, Physical Optics Physics 415, Computer Interfacing and Instrumentation
1991-1992	Physics 651, 652, 653, Graduate Quantum Mechanics
1990-1991	Physics 651, 652, 653, Graduate Quantum Mechanics
1989-1990	Physics 517, 518, 519, Graduate Quantum Mechanics

INVITED TALKS:

"The Rydberg Constant," October 2, 1986, Yale University, New Haven, Connecticut.

"High Resolution Laser Spectroscopy of Atomic Hydrogen," November 1986, University of Munich, Munich, Germany.

"High Resolution Spectroscopy of Tellurium and Hydrogen," April 7, 1987, IBM Almaden Research Laboratories, San Jose, California.

"Precision Measurement of the $1S$ Lamb Shift in Atomic Hydrogen," April 28, 1987, XV International Quantum Electronics Conference, Baltimore, Maryland.

"High Resolution Laser Spectroscopy of Atomic Hydrogen," August 1987, JILA, Boulder, Colorado.

"The Determination of the Rydberg Constant," September 2, 1987, XXIIInd General Assembly of the International Union of Radio Science, Tel Aviv, Israel.

"High Resolution Laser Spectroscopy of Atomic Hydrogen," November 10, 1987, Dutch Atomic Physics Conference, Luntern, Netherlands.

"High Resolution Spectroscopy of Atomic Hydrogen," September 2, 1988, Adriatico Research Conference on Coherent Sources for Frontier Spectroscopy, Trieste, Italy.

INVITED TALKS (continued):

"High Resolution Laser Spectroscopy of Atomic Hydrogen,"

November 1, 1988, San Jose State University, San Jose, California.

November 3, 1988, University of California at Davis, Davis, California.

November 8, 1988, University of Washington, Seattle, Washington.

January 23, 1989, Texas A&M University, College Station, Texas.

January 27, 1989, Sandia National Laboratories, Albuquerque, New Mexico.

January 27, 1989, University of New Mexico, Albuquerque, New Mexico.

February 1, 1989, Harvard University, Cambridge, Massachusetts.

April 3, 1989, University of Texas at Austin, Austin, Texas.

April 5, 1989, Oregon State University, Corvallis, Oregon.

"Laser Cooling of Atomic Rubidium," April 6, 1989, Oregon State University, Corvallis, Oregon.

"Tests of QED with High Resolution Laser Spectroscopy of Atomic Hydrogen," August 21, 1989, NATO Advanced Study Institute on New Frontiers in Quantum Electrodynamics and Quantum Optics, Istanbul, Turkey.

"Laser Spectroscopy and Laser Cooling with Diode Lasers," November 13, 1989, Oregon State University, Corvallis, Oregon.

"Laser Cooling and Trapping with Diode Lasers," April 26, 1990, University of Oregon, Eugene, Oregon.

"Laser Cooling with Diode Lasers," May 19, 1990, Oregon Materials Science Symposium, Oregon State University, Corvallis, Oregon.

"Laser Cooling and Atomic Interferometry,"

September 19, 1991, Eleventh Annual University of Oregon Chemical Physics Institute Retreat, Charleston, Oregon.

September 24, 1991, Washington State University, Pullman, Washington.

October 12, 1992, Portland State University, Portland, Oregon.

November 1, 1993, Oregon State University, Corvallis, Oregon.

November 10, 1993, Reed College, Portland, Oregon.

"Atom Interferometry with Cold Atoms," November 22, 1995, University of Strathclyde, Glasgow, Scotland.

"Donuts in Scotland: A Kinder, Gentler Trap," September 19, 1996, Sixteenth Annual University of Oregon Chemical Physics Institute Retreat, Charleston, Oregon.

"Jelly Donuts in Scotland: A Kinder, Gentler Trap," October 7, 1996, Oregon State University, Corvallis, Oregon.

"Atom Interferometry with Cold Atoms," March 2, 1998, Lewis and Clark College, Portland, Oregon.

INVITED TALKS (continued):

"Jelly Donuts in Scotland: A Kinder, Gentler Trap," March 4, 1998, Reed College, Portland, Oregon.

"Atom Interferometry with Cold Atoms," April 9, 1998, Linfield College, McMinnville, Oregon.

"1997 Nobel Prize in Physics - The Recipients and Their Work," April 20, 1998, Oregon State University, Corvallis, Oregon.

"A Doughnut Mode Magneto-Optical Trap," May 5, 1999, Portland State University, Portland, Oregon.

"Great Circles and Motion on a Rotating Sphere," May 24, 1999, Oregon State University, Corvallis, Oregon.

"Using Great Circles to Understand Motion on a Rotating Sphere", March 1, 2000, Reed College, Portland, Oregon.

"Laser Cooling and Trapping of Atomic Rubidium", October 25, 2001, Willamette University, Salem, Oregon.

"2001 Nobel Prize in Physics - Bose-Einstein Condensation," February 25, 2002, Oregon State University, Corvallis, Oregon.

"Zeeman-Tuned Slowing of Rubidium Using Circularly Polarized Light," February 24, 2003, Oregon State University, Corvallis, Oregon.

"Zeeman-Tuned Slowing of Rubidium Using Circularly Polarized Light," January 12, 2004, University of Oregon, Eugene, Oregon.

"2005 Nobel Prize in Physics – Precision Laser Spectroscopy," November 28, 2005, Oregon State University, Corvallis, Oregon.

"Computation in the Paradigms Curriculum at Oregon State University," July 30, 2007, 2007 American Association of Physics Teachers Summer Meeting, Greensboro, North Carolina.

"Computation in the Paradigms Curriculum at Oregon State University," October 15, 2007, Oregon State University, Corvallis, Oregon.

"Optical Trapping and Manipulation of Atoms and Particles", October 22, 2007, Lewis and Clark College, Portland, Oregon.

"Computation in the Paradigms Curriculum at Oregon State University," June 12, 2008, Gordon Research Conference on Physics Research and Education: Computation and Computer-Based Instruction, Bryant University, Smithfield, Rhode Island

INVITED TALKS (continued):

"Using matter to control light and light to control matter," November 16, 2008, Oregon State University, Corvallis, Oregon.

"Quantum Mechanics in the Paradigms in Physics Curriculum," July 20, 2010, 2010 American Association of Physics Teachers Summer Meeting, Portland, Oregon.

"Optical Trapping and Manipulation of Particles," October 15, 2010, Willamette University, Salem, Oregon.

"Optical Tweezers Trapping for Biochemical Imaging," November 8, 2010, Oregon State University, Corvallis, Oregon.

"Quantum Mechanics in the Paradigms in Physics Curriculum," April 1, 2011, Pacific Northwest Association for College Physics (PNACP) Spring 2011 conference, University of Idaho, Moscow, ID.

"Teaching Quantum Mechanics in the Paradigms in Physics Curriculum," July 30, 2011, 2011 American Association of Physics Teachers Summer Meeting, Omaha, Nebraska.

"Nobel Prize in Physics 2012: Measuring and Manipulating Individual Quantum Systems," November 26, 2012, Oregon State University, Corvallis, Oregon.

"Optics in the lab and Quantum Mechanics in the classroom," May 6, 2013, Portland State University, Portland, Oregon.

"Modern Quantum Mechanics in the Paradigms in Physics Curriculum," July 17, 2013, 2013 American Association of Physics Teachers Summer Meeting, Portland, Oregon.

"Simply Elegant: Lessons from Ted," November 19, 2016, Symposium in Honor of the 75th Birthday of Ted Hänsch: From Laser Spectroscopy to Quantum Science, Munich, Germany.

"Nobel Prize in Physics 2018: Optical Tweezers And Generation Of High-Intensity, Ultra-Short Optical Pulses," January 14, 2019, Oregon State University, Corvallis, Oregon.

PROFESSIONAL MEETINGS

Fourteenth International Conference of the Physics of Electronic and Atomic Collisions, July 24-30, 1985, Stanford, California.

XIV International Quantum Electronics Conference, June 9-13, 1986, San Francisco, California.

Workshop on Fundamental Measurements on Optically Prepared Atoms, September 29-30, 1986, Gaithersburg, Maryland. *Presenter.*

XV International Quantum Electronics Conference, April 26-May 1, 1987, Baltimore, Maryland. *Invited speaker.*

XXIInd General Assembly of the International Union of Radio Science, August 24-September 2, 1987, Tel Aviv, Israel. *Invited Speaker.*

PROFESSIONAL MEETINGS (continued):

- Dutch Atomic Physics Conference, November 10, 1987, Luntern, Netherlands. *Invited Speaker.*
- Antimatter '87 Workshop, November 30-December 2, 1987, Karlsruhe, Germany.
- The Hydrogen Atom, June 30-July 2, 1988, Pisa, Italy.
- Eleventh International Conference on Atomic Physics, July 3-8, 1988, Paris, France
- Adriatico Research Conference on Coherent Sources for Frontier Spectroscopy, August 30-September 2, 1988, Trieste, Italy. *Invited Speaker.*
- 1988 Optical Society of America Annual Meeting, October 31-November 4, 1988, Santa Clara, California. *Presenter.*
- NATO Advanced Study Institute on New Frontiers in Quantum Electrodynamics and Quantum Optics, Istanbul, Turkey, August 14-26, 1989. *Invited speaker.*
- Matter-Wave Interferometry Workshop, January 15-16, 1990, Santa Fe, New Mexico. *Presenter.*
- XVII International Quantum Electronics Conference, May 21-25, 1990, Anaheim, California.
- Twelfth International Conference on Atomic Physics, July 29-August 3, 1990, Ann Arbor, Michigan.
- Oregon Conference on Modern Optics Research, September 17-18, 1990, Corvallis and Eugene, Oregon. *Organizer, presenter.*
- Tenth Annual University of Oregon Chemical Physics Institute Retreat, September 20-22, 1990, Charleston, Oregon.
- Eleventh Annual University of Oregon Chemical Physics Institute Retreat, September 18-20, 1991, Charleston, Oregon. *Invited speaker.*
- 1991 Optical Society of America Annual Meeting, November 4-8, 1991, San Jose, California.
- 1992 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics, American Physical Society, May 20-22, 1992, Chicago, Illinois. *Symposium chair, presenter.*
- Thirteenth International Conference on Atomic Physics (ICAP-XIII), August 3-7, 1992, Munich, Germany. *Presenter.*
- 1993 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics, American Physical Society, May 17-19, 1993, Reno, Nevada.
- Thirteenth Annual University of Oregon Chemical Physics Institute Retreat, September 22-24, 1993, Charleston, Oregon.
- 1993 Optical Society of America Annual Meeting and 1993 Interdisciplinary Laser Science Conference (ILS IX), October 4-8, 1993, Toronto, Canada. *Presenter.*
- 14th International Conference on Atomic Physics (ICAP), July 31-August 5, 1994, Boulder, Colorado. *Presenter.*
- Sixteenth Annual University of Oregon Chemical Physics Institute Retreat, September 18-20, 1996, Charleston, Oregon. *Invited speaker.*
- Atom Optics Conference, Photonics West '97, February 8-14, 1997, San Jose, CA. *Presenter.*
- Oregon Spring Meeting of the American Association of Physics Teachers, Portland State University, April 24, 1999, Portland, Oregon. *Presenter.*
- Symposium in Honor of Peter Franken, University of Arizona, November 13, 1999, Tucson, Arizona.
- Second Annual Meeting of the American Physical Society Northwest Section, May 19-20, 2000, Eugene, Oregon. *Co-convenor of AMO session, session chair, and presenter.*
- 125th American Association of Physics Teachers National Meeting, Boise State University, August 3-7, 2002, Boise, Idaho. *Presenter.*
- 126th American Association of Physics Teachers National Meeting, January 11-15, 2003, Austin, Texas. *Workshop Presenter.*
- Fifth Annual Meeting of the American Physical Society Northwest Section, Reed College, May 30-31, 2003, Portland, Oregon. *Presenter.*

PROFESSIONAL MEETINGS (continued):

- Frontiers in Optics. The 87th Optical Society of America Annual Meeting, October 5-9, 2003, Tucson, Arizona. *Presenter.*
- 128th American Association of Physics Teachers National Meeting, January 24-28, 2004, Miami Beach, Florida. *Workshop Presenter.*
- 2005 Micro Nano Breakthrough Conference, July 25-28, 2005, Portland, Oregon. *Presenter.*
- Achieving Systemic Changes in Physics Teaching at Leading Research Universities, June 2-3, 2006, College Park, Maryland. *Presenter.*
- 2006 Micro Nano Breakthrough Conference, July 24-26, 2006, Vancouver, Washington.
- American Association of Physics Teachers Topical Conference: Computational Physics for Upper-Level Courses, Davidson College, July 27-28, 2007, Davidson, North Carolina. *Presenter.*
- 2007 American Association of Physics Teachers Summer Meeting, July 29-August 3, 2007, Greensboro, North Carolina. *Invited speaker.*
- 2007 Micro Nano Breakthrough Conference, September 10-12, 2007, Portland, Oregon.
- 2008 Gordon Research Conference on Physics Research and Education: Computation and Computer-Based Instruction, June 8-13, 2008, Bryant University, Smithfield, Rhode Island. *Invited speaker.*
- 2008 Micro Nano Breakthrough Conference, September 8-10, 2008, Vancouver, Washington.
- 2008 Oregon Center for Optics Retreat, September 18-19, 2008, Cottage Grove, Oregon. *Presenter.*
- Spring 2009 meeting of the Oregon Chapter of the American Association of Physics Teachers, March 14, 2009, Corvallis, Oregon. *Presenter*
- Optical Society of America Optics and Photonics Congress: Optical Trapping Applications, April 26-30, 2009, Vancouver, Canada.
- SPIN-UP (Strategic Programs for Innovations in Undergraduate Physics, National Task Force on Undergraduate Physics) Regional Workshops Planning Meeting, May 29-30, 2009, Greenbelt, Maryland.
- 2009 Micro Nano Breakthrough Conference, September 21 - 23, 2009, Portland, Oregon. *Presenter.*
- 2010 March Meeting of the American Physical Society, March 15-19, 2010, Portland, Oregon.
- 2010 American Association of Physics Teachers Summer Meeting, July 17-21, 2010, Portland, Oregon. *Invited speaker.*
- ONAMI Mixer, August 27, 2011, Corvallis, Oregon. *Presenter.*
- 2010 Willamette Innovators Night, November 11, 2010, Corvallis, Oregon. *Presenter.*
- Transforming Undergraduate Education in STEM: Making and Measuring Impacts. 2011 CCLI/TUES Principal Investigators (PIs) Conference, January 26-28, 2011, Washington, DC. *Presenter and Workshop Leader.*
- Pacific Northwest Association for College Physics (PNACP) Spring 2011 conference, April 1-2, 2011, University of Idaho, Moscow, Idaho. *Invited Speaker.*
- American Physical Society Council Meeting, April 28-29, 2011, Anaheim, California.
- Faculty Working Group for Upper-Division E&M, Boulder, CO, June 23-24, 2011
- AAPT Summer Meeting 2011, July 30-August 3, 2011, Omaha, Nebraska. *Invited speaker.*
- Physics Education Research Conference 2011, August 3-4, 2011, Omaha, Nebraska.
- ONAMI ONR Nanoelectronics, Nanobiotechnology and Nanometrology Initiative program review, August 18, 2011, Portland, Oregon.
- Oregon Center for Optics Fall Retreat, September 15-16, Gleneden Beach, Oregon.
- ONAMI Mixer, September 25, 2011, Silverton, Oregon. *Presenter.*

PROFESSIONAL MEETINGS (continued):

13th Annual Meeting of the Northwest Section of the American Physical Society, October 20-22, 2011, Oregon State University, Corvallis, Oregon. *Organizing Committee, Program Committee.*
American Physical Society Council Meeting, November 12-13, 2011, Salt Lake City, Utah.
American Physical Society Council Meeting, March 29-30, 2012, Atlanta, Georgia.
Conference on Lasers and Electro-Optics (CLEO) 2012, May 6-11, 2012, San Jose, California.
Conference on Lab Instruction Beyond the 1st Year of College, July 25-27, 2012, Philadelphia, Pennsylvania. *Presenter.*
Frontiers in Optics 2012, Optical Society of America Annual Meeting, October 14-18, 2012, Rochester, New York.
American Physical Society Council Meeting, November 2-3, 2012, Providence, Rhode Island.
American Physical Society Council Meeting, April 11-12, 2013, Denver, Colorado.
2013 OSA Optics & Photonics Congress: Optical Trapping Applications, April 14-18, 2013, Waikoloa Beach, Hawaii. *Presenter.*
2013 American Association of Physics Teachers Summer Meeting, July 14-17, 2013, Portland, Oregon. *Invited Speaker.*
SPIE Optics + Photonics, Optical Trapping and Optical Micromanipulation X, 25 - 29 August 2013, San Diego, California. *Presenter*
American Physical Society Council Meeting, November 22-23, 2013, Pittsburgh, Pennsylvania.
American Physical Society Council Meeting, April 3-4, 2014, Savannah, Georgia.
15th Annual Meeting of the Northwest Section of the American Physical Society, May 1-3, 2014, University of Washington, Seattle, Washington.
American Physical Society Council Meeting, November 21-22, 2014, San Francisco, California.

WEB SITES:

Coriolis Force and Noninertial Effects

<http://www.physics.orst.edu/~mcintyre/coriolis/>

Explanations and animations demonstrating Coriolis effects

69000 visitors since 2000

SPINS Java software

<http://www.physics.orst.edu/~mcintyre/ph425/spins/>

Free Java software to simulate Stern-Gerlach quantum mechanics experiments

Computational Physics for Undergraduates (CPUG)

<http://www.physics.orst.edu/~mcintyre/cpug/>

Instructional materials for OSU CPUG program

Balance and Center of Mass

<http://www.physics.orst.edu/~mcintyre/smile/>

Instructional workshop material for SMILE teachers

SERVICE

University Service

April 7, 1990	Beaver Open House: demonstration and explanation of optical phenomena
April 21, 1992	Judge for 1992 Sigma Xi Graduate Student Research poster competition
Feb. 19, 1994	Beaver Open House: demonstration and explanation of optical phenomena
Feb. 11, 1995	Beaver Open House: demonstration and explanation of optical phenomena
Sept. 1995	OSU Liaison Trip to Uzhgorod, Ukraine
Nov. 9, 1996	Beaver Open House: demonstration and explanation of optical phenomena
1999-2000	University Honors College Board of Readers
2005-2006	University Honors College Board of Readers
2005-present	Oregon Nanoscience and Microtechnologies Institute (ONAMI) Nanometrology Leadership Team. ONAMI is a collaboration among OSU, University of Oregon (UO), Portland State University (PSU), and Pacific Northwest National Laboratories (PNNL) in Richland, WA. I am the OSU member of the leadership team, which is headed by John Carruthers (PSU) and also includes Richard Taylor (UO) and Tania Vu (OHSU).
2008-2010	OSU Faculty Senate
2009	Search Committee for Manager of Arts and Sciences Business Center
2009-2015	University Undergraduate Research Working Group
2012-2016	Conflict of Interest Committee
2013-2014	University Assessment Council
2013-2014	Associate Deans Research Advisory Council
2013-2014	Electron Microscopy Facility Steering Committee, Administrative Liaison
2013-2014	Graduate Education Advisory Committee
2013-2014	Outreach and Engagement Council
2013	Search Committee for Director of Electron Microscopy Facility
2013-2016	Phi Beta Kappa Faculty Committee
2014-2019	OSU Faculty Senate
2016-2018	Learning Innovation Grants Review Team
2018	Laurel's Block Grant Review Committee

College Service

1991-1995	College of Science Scholarship Committee, Dean's Scholarship in Natural Sciences
1996-1999	College of Science Scholarship Committee, Dean's Scholarship in Natural Sciences
2009	College of Science Consultative Committee on Reorganization
2011	College of Science Head Advisor Search Committee
2013	SURE Science selection committee
2014	SURE Science selection committee
2013-2014	Honors and Awards Committee (Chair)
2013	Search Committee for Associate Dean for Academic Affairs
2014	Search Committee for Executive Assistant to the Dean (Chair)
2015-2017	College of Science Promotion and Tenure Committee
2018-2021	College of Science Promotion and Tenure committee

Department Service

1989-1991 Graduate Curriculum Committee (Chair 1990-1991)
1989-1991 Shop and Safety Committee
1989-1992 Building and Space Committee (Chair 1991-1992)
1990-1991 Engineering Physics advising of pro-engineering seniors
1991-1994 Graduate Admissions Committee (Chair 1993-1994)
1991-1994 Murdock Lab Committee
1991-1992 Engineering Physics advising of pre-engineering freshman
1992-1994 Undergraduate Curriculum Committee
1992-1995 Physics Department Equipment Inventory
1992-1993 Engineering Physics advising of pre-engineering sophomores and upper class
1993-1994 Computing Committee
1993-1994 Engineering Physics advising of pro-engineering juniors and non-grad seniors
1994-1995 Graduate Curriculum Committee
1994-1995 Colloquium Committee
1994-1995 Policy Committee
1994-1995 Engineering Physics advising of pro-engineering graduating seniors
1996-1999 Graduate Curriculum Committee (Chair 1997-1999)
1996-1998 Building and Space Committee (Chair 1996-1997)
1996-2000 Comprehensive Exam Committee (Chair 1998-1999)
1996-2005 Engineering Physics advising
1997-1998 Long Range Planning Committee (Chair)
1998-1999 Graduate Admissions Committee
1998-2000 Policy Committee
2000-2001 Faculty Search Committee (Chair)
2000-2001 Colloquium Committee (Chair, Winter Term)
2000-2001 Promotion and Tenure committee
2001-2003 Graduate Admissions Committee (Chair 2002-2003)
2002-2003 Faculty Search Committee
2003-2004 Faculty Search Committees (Chair both, 2 searches)
2004-2005 Faculty Search Committees (2 searches)
2005-2006 Promotion and Tenure committees (Chair teaching subcommittees, 2 candidates)
2005-2006 Graduate Admissions Committee (Chair)
2005-2006 Instructor Evaluation Committee (Chair)
2005-2012 Head Undergraduate Physics advisor
2006-2007 Solid State and Optics Seminar Committee (Chair, Winter term)
2007-2011 Comprehensive Exam Committee (Chair 2010-2011)
2007-2008 Colloquium Committee
2008-2009 Promotion and Tenure committee (Chair)
2008-2009 Solid State and Optics Seminar Committee (co-Chair, Fall term)
2009-2011 Advisory Committee
2009-2010 Promotion and Tenure committee (Chair)
2009-2010 Solid State and Optics Seminar Committee (co-Chair, Spring term)
2009-2010 Upper Division Course Group (Chair)
2010-2011 Upper Division Course Group

2011-2012	Promotion and Tenure committee (Chair)
2011-2012	Promotion and Tenure committee
2011-2012	Solid State and Optics Seminar Committee (co-Chair, Fall term)
2011-2012	Upper Division Course Group
2011-2012	Graduate Course Group
2011-2012	Graduate Admissions (Chair)
2012-2013	Promotion and Tenure committee (Teaching subcommittee Chair)
2012-2013	Promotion and Tenure committee (Teaching subcommittee Chair)
2012-2013	Promotion and Tenure committee
2012-2013	Upper Division Course Group (Chair)
2012-2013	Graduate Admissions
2012-2013	Assessment
2013-2014	Promotion and Tenure committee
2013-2014	Promotion and Tenure committee
2014-2018	Graduate Course Group (Chair)
2014-2015	Graduate Admissions (Chair)
2014-2017	Solid State and Optics Seminar Committee (co-Chair, Fall term)
2015-2018	Head Graduate Physics advisor
2015-2016	Promotion and Tenure committee
2015-2016	Promotion and Tenure committee (Chair)
2016-2017	PER Coordination Committee
2017-2018	Promotion and Tenure committee (teaching subcommittee Chair)
2018-	Head Undergraduate Physics advisor
2018-2019	Promotion and Tenure committees (x6, two as Chair)
2018-2019	Colloquium committee
2018-2019	Comprehensive exam committee
2018-2019	Solid State and Optics Seminar Committee (co-Chair, Fall term)
2018-2019	Upper-division Course Group

Professional Leadership

2001	Nominating Committee, Northwest Section of the American Physical Society.
2005-present	ONAMI Nanoelectronics, Nanobiotechnology and Nanometrology Initiative Leadership Team (OSU coordinator)
2011-2014	American Physical Society Council
2011-2014	Executive Committee, Northwest Section of the American Physical Society.
2013-2016	Audit Committee, American Physical Society (Chair 2015, 2016)
2013-2015	Committee on Committees, American Physical Society

Professional Meetings

Sept 17-18, 1990	Served on the organizational committee for the Oregon Conference on Modern Optics Research, which was held in Corvallis and Eugene, Oregon. Also served on the program committee and chaired one session.
May 20-22, 1992	Chaired Symposium on Atomic Interferometry at 1992 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics, American Physical Society, Chicago, Illinois.
1993-1995	Physics section co-Chair, Oregon Academy of Science.
1996-1997	Physics section co-Chair, Oregon Academy of Science.

- May 19-20, 2000 Co-Convener and Chair of Atomic, Molecular, and Optical Physics section of Second Annual Meeting of the Northwest Section of the American Physical Society, Eugene, Oregon.
- 2011 Organizing Committee, Northwest Section of the American Physical Society.
- 2011 Program Committee, Northwest Section of the American Physical Society.

Journal Reviews

- American Journal of Physics April 2000, Sept 2002, Nov 2003, June 2004, Apr 2006, May 2008, Jan 2009, Nov 2011, Aug 2012, June 2013, Aug 2013, Oct. 2014, Dec 2014, July 2015, Oct. 2015, Jan. 2016, March 2017, Dec 2017, June 2018
- Applied Optics May 1995, Oct 1996, May 2003, June 2007
- European Journal of Physics Feb 2018
- IEEE J. of Lightwave Technology May 2012
- J. of Vacuum Sci. and Technol. July 1992
- Optics Communication Aug 1998, Sept 2002, Apr 2003
- Optics Express June 2004, May 2006, Nov 2007, July 2008, Jan 2014, Oct 2015
- Optics Letters May 1996, Aug 1997, Feb 2004, May 2004, July 2004, Jan 2007, Dec 2007, Mar 2008, Mar 2010
- Physical Review A June 1999, Oct 1999
- Physical Review Letters March 1998, Feb 1999, Apr 2003, Sept 2005, Jan 2006, Mar 2006, Mar 2006, June 2006
- Physical Review ST-PER Nov. 2014
- Physics Essays Oct 1998, Jan 1999

Proposal Reviews

- NSF panel (ILI program) Feb 1997
- Canada Foundation for Innovation Aug 2000
- U. S. Civilian Research & Development Fund June 2001
- NSF AMO program Nov 2002, Dec 2003, Dec 2004, Feb 2014
- Murdock Trust Jan 2005
- ONAMI Nanometrology program May 2006 (50 proposals)
May 2007 (52 proposals)
April 2008 (30 proposals)
April 2009 (46 proposals)
January 2010 (58 proposals)
- NSF panel (CCLI program) March 2007
- NSF Major Research Instrumentation program June 2010
- National Energy Technology Laboratory May 2014
- OSU RERF program May 2015, Feb 2016

Textbook Reviews

- John Wiley & Sons April 1995, Jan 1996
- Brooks/Cole Publishing Co. Nov 1998

W.W. Norton & Co.	Dec 1999
McGraw Hill	Feb 2003
Thomson	Dec 2004
Addison Wesley	Feb 2004, June 2005
Cambridge University Press	Dec 2012, Sept. 2015

Service to the Public (professionally related)

March 9, 1991	Judge at Fifth Annual Southwestern Oregon Regional Science Exposition, Gold Beach, Oregon
April 25, 1992	Visual Cascade of Science, Presentation on Lasers and Optics, Corvallis, OR
July 19, 1992	da Vinci Days, Visual Cavalcade of Science, Presentation on Lasers and Optics, Corvallis, OR
April 10, 1993	Odyssey of the Mind, Laboratory tours for students and families attending the competition at OSU
April 23, 1994	Visual Cascade of Science, Presentation on Lasers and Optics, Corvallis, OR
April 22, 1995	Visual Cascade of Science, Presentation on Lasers and Optics, Corvallis, OR
April 26, 1997	Visual Cascade of Science, "Fun with Optics" demonstration, Corvallis, OR
July 19, 1997	da Vinci Days, "Let There Be Light - Fun with Optics" demonstration, Corvallis, OR
March 9, 2000	Science Connections optics lecture for high school students and teachers, Cleveland High School, Portland, OR
July 15, 2000	da Vinci Days, "Lucy in the Sky with Prisms," lecture on optics, Corvallis, OR
February 17, 2007	Oregon Science Olympiad, Organized, supervised, and graded physics portion of high school competition, Blanchet Catholic School, Salem, OR
April 18, 2015	Oregon Science Olympiad, Organized, supervised, and graded physics portion of high school competition, Oregon State University, Corvallis, OR

Graduate Student Committees

(M. S.* indicates non-thesis option. 201x# indicates estimated degree date)

Student	Department	Degree	Role
Thomas B. Swanson	Physics	M.S.* (1991) and Ph.D. (1995)	Major Professor
Holger Delfs	Physics	M.S. (1992)	Major Professor
Brian Bacher	Physics	M.S.* (1992)	Major Professor
Nancy Silva	Physics	M.S.* (1993) and Ph.D. (1996)	Major Professor
Corinne Grande	Physics	M.S.* (1993)	Major Professor
Chris Cuneo	Physics	M.S. (1994)	Major Professor
Shannon Mayer	Physics	Ph.D. (1997)	Major Professor
Peggy Lopez	Physics	M.S. (1997)	Major Professor
Joshua Russell	Physics	M.S. (2011)	Major Professor
Ali Almaqwashi	Physics	M.S. (2012)	Major Professor
Matthew Cibula	Physics	Ph.D. (2015)	Major Professor
Michael Lampert	Physics	M.S.* (1990)	Committee member
Michael Morgan	Physics	M.S.* (1991)	Committee member
Yiqing Zhou	Physics	M.S.* (1991)	Committee member

Bradley Matson	Physics	M.S.* (1991), Ph.D. (1998)	Committee member
Wei-Heng Li	Physics	M.S.* (1996)	Committee member
Ernesta Meintjes	Physics	Ph.D. (1998)	Committee member
Brian Wichner	Physics	Ph.D. (1998)	Committee member
Kerry Browne	Physics	M.S.* (1998), Ph.D. (2001)	Committee member
Travis Peery	Physics	M.S.* (1998), Ph.D. (2003)	Committee member
Nicki Perreault	Physics	M.S. (1999)	Committee member
Mark Shroyer	Physics	Ph.D. (1999)	Committee member
David Gaskell	Physics	Ph.D. (2001)	Committee member
Bryan Norton	Physics	M.S. (2005)	Committee member
Walter Hurlbut	Physics	Ph.D. (2006)	Committee member
Alexander Govyadinov	Physics	Ph.D. (2007)	Committee member
Jeremy Danielson	Physics	Ph.D. (2008)	Committee member
Jonathon Day	Physics	Ph.D. (2008)	Committee member
Andriy Zakutayev	Physics	Ph.D. (2010)	Committee member
Sukosin Thongrattanasiri	Physics	Ph.D. (2010)	Committee member
Andrew Platt	Physics	Ph.D. (2010)	Committee member
Mark Kendrick	Physics	Ph.D. (2011)	Committee member
Landon Prisbey	Physics	Ph.D. (2011)	Committee member
Nicholas Kuhta	Physics	Ph.D. (2012)	Committee member
Jason Francis	Physics	Ph.D. (2013)	Committee member
Michael Paul	Physics	Ph.D. (2014)	Committee member
Andrew Svesko	Physics	M.S. (2014)	Committee member
Zack Thompson	Physics	Ph.D. (2015)	Committee member
Eric Krebs	Physics	Ph.D. (2015)	Committee member
Andrew Stickel	Physics	Ph.D. (2015)	Committee member
Rebecca Grollman	Physics	Ph.D. (2017)	Committee member
Joshua Kincaid	Physics	Ph.D. (2017)	Committee member
Jordan Pierce	Physics	Ph.D. (2018) at UO	Committee member
Christopher Jones	Physics	Ph.D. (2017)	Committee member
Liangdong Zhu	Physics	Ph.D. (2017)	Committee member
Ali Mousavian	Physics	Ph.D. (2018)	Committee member
Jihan Kim	Physics	Ph.D. (2019 [#])	Committee member
Tyler Parsotan	Physics	Ph.D. (2019 [#])	Committee member
Chris Eddy	Physics	Ph.D. (2019 [#])	Committee member
Jordan Pommerenck	Physics	Ph.D. (2019 [#])	Committee member
Amit Bashyal	Physics	Ph.D. (2019 [#])	Committee member
Lan Peng	ECE	M.S. (1990)	Committee member
Donald Schulte	ECE	M.S. (1992)	Committee member
John Summerfield	Chemistry	Ph.D. (1994)	Committee member
Lichun Jia	Comp. Sci.	M.S.* (2000)	Committee member
Anthony Masiello	Chemistry	M.S. (2001) and Ph.D. (2003)	Committee member
Jeffrey Bender	ECE	Ph.D. (2003)	Committee member

William Brassfield	ECE	M.S. (1993)	Graduate Council Rep.
Tin Trung Nguyen	ECE	M.S. (1993)	Graduate Council Rep.
Lynn Berkery	Oceanog.	M.S. (1995)	Graduate Council Rep.
Brian Ballweber	ECE	M.S. (1998)	Graduate Council Rep.
Jeyanandh Paramesh	ECE	M.S. (1998)	Graduate Council Rep.
Gwang-Myung Kim	ECE	M.S. (1999)	Graduate Council Rep.
Dongling Pan	ECE	M.S. (2000)	Graduate Council Rep.
Devavrata Godbole	ECE	M.S. (2000)	Graduate Council Rep.
David Bruneau	ECE	M.S. (2002)	Graduate Council Rep.
Shashidhar Lakkavalli	ECE	M.S. (2002)	Graduate Council Rep.
Donald Heer	ECE	M.S. (2002)	Graduate Council Rep.
ChiYoung Lim	ECE	M.S. (2003)	Graduate Council Rep.
Duncan Hazenboom	EECS	M.S. (2004)	Graduate Council Rep.
David Ohm	EECS	M.S. (2004), Ph.D. (2007)	Graduate Council Rep.
Shiwei Zhao	EECS	Ph.D. (2006)	Graduate Council Rep.
Xia Zeng	Chemistry	Ph.D. (2007)	Graduate Council Rep.
Jack Spies	EECS	M.S. (2007)	Graduate Council Rep.
Yoshio Nishida	EECS	Ph.D. (2008)	Graduate Council Rep.
KyeHyung Lee	EECS	Ph.D. (2008)	Graduate Council Rep.
Daniel Peterson	MIME	M.S. (2010)	Graduate Council Rep.
Seungjin Baek	EECS	M.S. (2010)	Graduate Council Rep.
Zhiqiang Cui	EECS	Ph.D. (2010)	Graduate Council Rep.
Rajan Juniku	Chemistry	Ph.D. (2012)	Graduate Council Rep.
Alex Smoot	Atmos. Sci.	M.S. (2012)	Graduate Council Rep.
Josef Hortnagl	MIME	M.S. (2010)	Graduate Council Rep.
Ryan Seward	MIME	M.S. (2013)	Graduate Council Rep.
Chris Patton	MIME	Ph.D. (2013)	Graduate Council Rep.
Rosa Grajczyk	Chemistry	Ph.D. (2014)	Graduate Council Rep.
Oleksii Motorykin	Chemistry	Ph.D. (2014)	Graduate Council Rep.
Colin Harthcock	Chemistry	Ph.D. (2015)	Graduate Council Rep.
Adeniyi Adenuga	Chemistry	Ph.D. (2016)	Graduate Council Rep.
Leah Chibwe	Chemistry	Ph.D. (2016)	Graduate Council Rep.
Joshua Flynn	Chemistry	Ph.D. (2017)	Graduate Council Rep.
Charlie Manion	Mech. Engr.	Ph.D. (2017)	Graduate Council Rep.
Susan Schnur	CEOAS	Ph.D. (2017)	Graduate Council Rep.
Sumate Pengpumkiat	Chemistry	Ph.D. (2017)	Graduate Council Rep.
Donovon A. Adpressa	Chemistry	Ph.D. (2018)	Graduate Council Rep.
Lulu Zhang	Chemistry	Ph.D. (2018)	Graduate Council Rep.
Ryan McQuade	Chemistry	Ph.D. (2018)	Graduate Council Rep.
Lindsay Wills	Chemistry	Ph.D. (2018 [#])	Graduate Council Rep.
Senthil Perumal	Chemistry	Ph.D. (2019 [#])	Graduate Council Rep.
Karoly Kozma	Chemistry	Ph.D. (2019 [#])	Graduate Council Rep.
Juan Muglia	CEOAS	Ph.D. (2019 [#])	Graduate Council Rep.
Kerstin Cullen	CEOAS	Ph.D. (2019 [#])	Graduate Council Rep.

David H. McIntyre
15 February 2019

Taylor Krueger	Chemistry	Ph.D. (2019#)	Graduate Council Rep.
Yuzhong Yao	Chemistry	Ph.D. (2019#)	Graduate Council Rep.

Honors College Student Committees

<u>Student</u>	<u>Department</u>	<u>Degree</u>	<u>Role</u>
Emma Krnacik	Bioch/Bioph	B.S. (2015)	Committee member
Jake Busche	Physics	B.S. (2015)	Committee member
Michael Perlin	Physics	B.S. (2015)	Committee member

PUBLICATIONS: attached

Publications by David H. McIntyre

• *Books*

1. **Quantum Mechanics: A Paradigms Approach** (D. H. McIntyre), Pearson Addison Wesley, 2012. ISBN-10: 0321765796, ISBN-13: 978-0321765796.

• *Chapters In Books*

1. The Rydberg Constant (T. W. Hänsch and D. H. McIntyre), **Units and Fundamental Constants in Physics and Chemistry**, Landolt-Börnstein Series, edited by J. Bortfeldt and B. Kramer (Springer-Verlag, Berlin, 1992), chapter 3.2.10, pp. 3-132 - 3-139.
2. **Physics: HITS. on the Web**, Carol Lea Clark and David McIntyre (Harcourt College Publishers, Fort Worth, 2001) ISBN: 0-03-047927-4. (DM responsible for Part III - Physics Websites, pp. 69-85.)
3. Zeeman-Tuned Slowing: Surfing the Resonance Wave (D. H. McIntyre, S. K. Mayer, N. S. Minarik, and M. H. Shroyer), in **Laser Physics at the Limits**, edited by H. Figger, D. Meschede, and C. Zimmermann (Springer-Verlag, Berlin 2002), pp. 313-327.
4. **Physics: HITS. on the Web**, Carol Lea Clark and David H. McIntyre (Thomson Learning, Mason, Ohio, 2002) ISBN: 0-75930-727-x. (DHM responsible for Part III - Physics Websites, pp. 69-85.)

• *Refereed Publications:*

1. Measurement of the $1S$ - $2S$ Frequency in Atomic Hydrogen (E. A. Hildum, U. Boesl, D. H. McIntyre, R. G. Beausoleil, and T. W. Hänsch), *Phys. Rev. Lett.* **56**, 576-579 (1986).
2. Absolute Calibration of the $^{130}\text{Te}_2$ Reference Line for Positronium 1^3S_1 - 2^3S_1 Spectroscopy (D. H. McIntyre and T. W. Hänsch), *Phys. Rev. A* **34**, 4504-4507 (1986).
3. Continuous-Wave Measurement of the $1S$ Lamb Shift in Atomic Hydrogen (R. G. Beausoleil, D. H. McIntyre, C. J. Foot, E. A. Hildum, B. Couillaud, and T. W. Hänsch), *Phys. Rev. A* **35**, 4878-4881 (1987).
4. Interferometric Frequency Measurement of a $^{130}\text{Te}_2$ Reference Line for Muonium $1S$ - $2S$ Spectroscopy (D. H. McIntyre and T. W. Hänsch), *Phys. Rev. A* **36**, 4115-4118 (1987).
5. Precision Measurements of the Rydberg Constant (D. H. McIntyre and T. W. Hänsch), *Metrologia* **25**, 61-66 (1988).

6. Laser Spectroscopy of Very Simple Atoms (D. H. McIntyre), *Comments At. Mol. Phys.* **21**, 295-305 (1988).
7. Continuous-Wave Measurement of the Hydrogen $1S$ - $2S$ Transition Frequency (D. H. McIntyre, R. G. Beausoleil, C. J. Foot, E. A. Hildum, B. Couillaud, and T. W. Hänsch), *Phys. Rev. A* **39**, 4591-4598 (1989).
8. A Blue Dye Laser with Sub-KiloHertz Stability (R. Kallenbach, C. Zimmermann, D. H. McIntyre, T. W. Hänsch, and R. G. DeVoe), *Opt. Commun.* **70**, 56-60 (1989).
9. Absolute Measurement of the Diameter of a Fused Quartz Hemisphere at 6K (J. Tate, D. H. McIntyre, and B. Cabrera) *Rev. Sci. Instrum.* **60**, 985-992 (1989).
10. Optically Stabilized Narrow Linewidth Semiconductor Laser for High Resolution Spectroscopy (A. Hemmerich, D. H. McIntyre, D. Schropp, Jr., D. Meschede, and T. W. Hänsch), *Opt. Commun.* **75**, 118-122 (1990).
11. Second Harmonic Generation and Optical Stabilization of a Diode Laser in an External Ring Resonator (A. Hemmerich, D. H. McIntyre, C. Zimmermann, and T. W. Hänsch), *Opt. Lett.* **15**, 372-374 (1990).
12. Interferometric Frequency Measurement of $^{130}\text{Te}_2$ Reference Transitions at 486 nm (D. H. McIntyre, W. M. Fairbank, Jr., S. A. Lee, T. W. Hänsch, and E. Riis), *Phys. Rev. A* **41**, 4632-4635 (1990).
13. Stabilized Diode-Laser System with Grating Feedback and Frequency-Offset Locking (J. J. Maki, N. S. Campbell, C. M. Grande, R. P. Knorpp, and D. H. McIntyre), *Opt. Commun.* **102**, 251-256 (1993).
14. Diode Laser Noise Spectroscopy of Rubidium (D. H. McIntyre, C. E. Fairchild, J. Cooper, and R. Walser), *Opt. Lett.* **18**, 1816-1818 (1993).
15. Optically Stabilized Diode Laser using High-Contrast Saturated Absorption (C. J. Cuneo, J. J. Maki, and D. H. McIntyre), *Appl. Phys. Lett.* **64**, 2625-2627 (1994).
16. Rubidium Atomic Funnel (T. B. Swanson, N. J. Silva, S. K. Mayer, J. J. Maki, and D. H. McIntyre), *J. Opt. Soc. Am. B* **13**, 1833-1836 (1996).
17. A Doughnut Mode Magneto-Optical Trap (M. J. Snadden, A. S. Bell, R. B. M. Clarke, E. Riis, and D. H. McIntyre), *J. Opt. Soc. Am. B* **14**, 544-552 (1997).

18. An Atomic Funnel for Atom Interferometry (D. H. McIntyre, S. K. Mayer, and N. J. Silva), in **Atom Optics**, edited by M. G. Prentiss and W. D. Phillips, Proceedings of SPIE, **2995**, 68-77 (1997).
19. Using Great Circles to Understand Motion on a Rotating Sphere (D. H. McIntyre), *Am. J. Phys.* **68**, 1097–1105 (2000).
20. Zeeman-Tuned Slowing of Rubidium Using σ^+ and σ^- Polarized Light (S. K. Mayer, N. S. Minarik, M. H. Shroyer, and D. H. McIntyre), *Opt. Commun.* **210**, 259-270 (2002).
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22. Measurements and Analysis of Sidemode Noise for a Diode Laser in an External Grating Cavity (C. E. Fairchild, E. Zubek, and D. H. McIntyre), in **Fluctuations and Noise in Photonics and Quantum Optics II**, edited by P. Heszler, D. Abbott, J. R. Gea-Banacloche, and P. R. Hemmer, Proc. of SPIE, **5468**, 198-207 (2004).
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24. Integrating Computational Activities into the Upper-Level Paradigms in Physics Curriculum at Oregon State University (D. H. McIntyre, J. Tate, and C. A. Manogue), *Am. J. Phys.* **76**, 340-346 (2008).
25. Chalcogen-based transparent conductors (J. Tate, P. F. Newhouse, R. Kykyneshi, P. A. Hersh, J. Kinney, D. H. McIntyre, D. A. Keszler), *Thin Solid Films* **516**, 5795-5799 (2008).
26. Electrical and optical properties of epitaxial transparent conductive BaCuTeF thin films deposited by pulsed laser deposition (R. Kykyneshi, D. H. McIntyre, J. Tate, C.-H. Park, and D. A. Keszler), *Solid State Sci.* **10**, 921-927 (2008).
27. Low temperature, solution processing of TiO₂ thin films and fabrication of multilayer dielectric optical elements (K. Jiang, A. Zakutayev, J. Stowers, M. D. Anderson, J. Tate, D. H. McIntyre, D. C. Johnson, and D. A. Keszler), *Solid State Sci.* **11**, 1692-1699 (2009).

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 29. Wavelength dependence of optical tweezer trapping forces on dye-doped polystyrene microspheres (M. J. Kendrick, D. H. McIntyre, and O. Ostroverkhova), *J. Opt. Soc. Am.* **26**, 2189-2198 (2009).
 30. Electronic structure and excitonic absorption in BaCuChF ($\text{Ch} = \text{S}, \text{Se}, \text{Te}$) (A. Zakutayev, R. Kykyneshi, G. Schneider, D. H. McIntyre and J. Tate), *Phys. Rev. B* **81**, 155103 (2010).
 31. Tunable properties of wide-bandgap p -type $\text{BaCu}(\text{Ch}_{1-x}\text{Ch}'_x)\text{F}$ ($\text{Ch} = \text{S}, \text{Se}, \text{Te}$) thin-film solid solutions (A. Zakutayev, D. H. McIntyre, G. Schneider, R. Kykyneshi, D. A. Keszler, C.-H. Park, and J. Tate), *Thin Solid Films* **518**, 5494-5500 (2010).
 32. Simultaneous Line Center and Linewidth Measurement Using Dual Frequency Modulation Spectroscopy (J. I. Gillen and D. H. McIntyre), *Appl. Opt.* **49**, 5528-5536 (2010).
 33. Optimization of the diffraction efficiency of a spatial light modulator through phase error minimization (M. A. Cibula and D. H. McIntyre), in **Optical Trapping and Optical Micromanipulation X**, edited by K. Dholakia and G. C. Spalding, *Proc. of SPIE*, **8810**, 88102N1-88102N11 (2013).
 34. General algorithm to optimize the diffraction efficiency of a phase-type spatial light modulator (M. A. Cibula and D. H. McIntyre), *Opt. Lett.* **38**, 2767-2769 (2013).
 35. Multiplexed Spectroscopy with Holographic Optical Tweezers (M. A. Cibula and D. H. McIntyre), in **Optical Trapping and Optical Micromanipulation XI**, edited by K. Dholakia and G. C. Spalding, *Proc. of SPIE*, **9164**, 91642T1-91642T7 (2014).
 36. Micromechanics of cellularized biopolymer networks (C. A. R. Jones, M. Cibula, J. Feng, E. A. Krnacik, D. H. McIntyre, H. Levine, and B. Sun), *Proc. Natl. Acad. Sci. USA* **112**, E5117-E5122 (2015).
- *Conference Proceedings And Abstracts:*
 1. CW Two-Photon Spectroscopy of Hydrogen $1S$ - $2S$ and New Precision Measurements of Fundamental Constants (C. J. Foot, B. Couillaud, R. G. Beausoleil, E. A. Hildum, D. H. McIntyre, and T. W. Hänsch), in **Laser Spectroscopy VII**, Springer Series in Optical Sciences, Vol. **49**, edited by T. W. Hänsch and Y. R. Shen (Springer-Verlag, Berlin, 1985), pp. 33-36.

2. The Hydrogen Atom in a New Light (T. W. Hänsch, R. G. Beausoleil, U. Boesl, B. Couillaud, C. J. Foot, E. A. Hildum, and D. H. McIntyre), in **Methods of Laser Spectroscopy**, edited by Y. Prior, A. Ben-Reuven and M. Rosenbluh (Plenum, New York, 1986), pp. 163-173.
3. High Resolution Laser Spectroscopy of Atomic Hydrogen: Advances and Prospects (T. W. Hänsch, R. G. Beausoleil, B. Couillaud, E. A. Hildum, and D. H. McIntyre), in **Proceedings of the Workshop on Fundamental Muon Physics: Atoms, Nuclei, and Particles**, Los Alamos, New Mexico, January 20-22, 1986.
4. High Resolution Laser Spectroscopy of Atomic Hydrogen (R. G. Beausoleil, B. Couillaud, C. J. Foot, T. W. Hänsch, E. A. Hildum, and D. H. McIntyre), in **Advances in Laser Science I**, American Institute of Physics Conference Proceedings No. **146**, edited by W. C. Stwalley and M. Lapp (American Institute of Physics, New York, 1986), pp. 366-369.
5. High Resolution Laser Spectroscopy of the $1S$ - $2S$ Transition in Atomic Hydrogen (R. G. Beausoleil, B. Couillaud, C. J. Foot, T. W. Hänsch, E. A. Hildum, and D. H. McIntyre), in **Proceedings of the XIV International Quantum Electronics Conference**, San Francisco, California, June 9-13, 1986, p. 162; *J. Opt. Soc. Am. B* **3** (8, Part 2), P162 (1986).
6. Two-Photon Optical Ramsey Spectroscopy of Freely Falling Atoms (D. H. McIntyre, R. G. Beausoleil, and T. W. Hänsch), in **Proceedings of the Workshop on Fundamental Measurements on Optically Prepared Atoms**, September 29-30, 1986, Gaithersburg, Maryland, p. A3.
7. Precision Measurement of the $1S$ Lamb Shift in Atomic Hydrogen (R. G. Beausoleil, D. H. McIntyre, C. J. Foot, B. Couillaud, E. A. Hildum, and T. W. Hänsch), in **Proceedings of the XV International Quantum Electronics Conference**, Baltimore, Maryland, April 26-May 1, 1987, pp. 92-94; *J. Opt. Soc. Am. B* **4** (13), P114-P116 (1987).
8. High Resolution Laser Spectroscopy of Atomic Hydrogen (T. W. Hänsch, R. G. Beausoleil, B. Couillaud, C. J. Foot, E. A. Hildum, and D. H. McIntyre), in **Laser Spectroscopy VIII**, Springer Series in Optical Sciences, Vol. **55**, edited by W. Persson and S. Svanberg (Springer-Verlag, Berlin, 1987), pp. 2-7.
9. High Resolution Spectroscopy of Atomic Hydrogen (D. H. McIntyre), **Adriatico Research Conference on Coherent Sources for Frontier Spectroscopy**, Trieste, Italy, August 30-September 2, 1988.

10. A Novel Optical Frequency Divider and Synthesizer (D. H. McIntyre and T. W. Hänsch), **Technical Digest of the 1988 Annual Meeting of the Optical Society of America**, Santa Clara, California, October 31-November 4, 1988, p. 131.
11. Second Harmonic Generation and Optical Stabilization of a Diode Laser in an External Ring Resonator (A. Hemmerich, C. Zimmermann, T. W. Hänsch, and D. H. McIntyre), in **Proceedings of the Conference on Lasers and Electro-Optics**, Anaheim, California, May 21-25, 1990, p. 20.
12. Tests of QED with High Resolution Laser Spectroscopy of Atomic Hydrogen (D. H. McIntyre and T. W. Hänsch), in **New Frontiers in Quantum Electrodynamics and Quantum Optics**, edited by A. O. Barut (Plenum Press, New York, 1990), pp. 275-284.
13. Use of External Cavity Semiconductor Lasers in High Resolution Spectroscopy (T. W. Hänsch, A. Hemmerich, D. Meschede, B. Scheumann, D. Schropp, Jr., R. Wynands, C. Zimmermann, D. H. McIntyre, J. L. Hall and H. R. Telle), **LEOS'90 Summer Topical Conference on New Semiconductor Laser Devices and Applications**, Monterey, California, Aug. 1-3, 1990.
14. A Rubidium Vapor Cell Trap: Applications to Atomic Interferometry (D. H. McIntyre, H. Delfs, and T. B. Swanson), **1992 Annual Meeting of the Division of Atomic, Molecular, and Optical Physics, American Physical Society**, Chicago, Illinois, May 20-22, 1992; *Bull. Am. Phys. Soc.* **37**, 1139 (1992).
15. Laser Cooling and Trapping of Rubidium: Applications to Atomic Interferometry (H. Delfs, T. B. Swanson, and D. H. McIntyre), **Book of Abstracts of the Thirteenth International Conference on Atomic Physics**, Munich, Germany, August 3-7, 1992, p. C10.
16. Optically Stabilized Diode Laser using High-Contrast Saturated Absorption (C. J. Cuneo, J. J. Maki, and D. H. McIntyre), **1993 Interdisciplinary Laser Science Conference (ILS IX)**, Toronto, Canada, October 3-8, 1993; *Bull. Am. Phys. Soc.* **38**, 1714 (1993).
17. Diode Laser Noise Spectroscopy of Rubidium (D. H. McIntyre, J. Cooper, C. E. Fairchild, and R. Walser), **1993 Interdisciplinary Laser Science Conference (ILS IX)**, Toronto, Canada, October 3-8, 1993; *Bull. Am. Phys. Soc.* **38**, 1758 (1993).
18. Rubidium Atomic Funnel for Atom Interferometry (T. B. Swanson, J. J. Maki, N. S. Campbell, and D. H. McIntyre), **Technical Digest of the 1994 International Quantum Electronics Conference**, Anaheim, California, May 8-13, 1994, p. 37.
19. A Rubidium Atomic Funnel (T. B. Swanson, J. J. Maki, N. S. Campbell, and D. H. McIntyre), **Book of Abstracts of the Fourteenth International Conference on Atomic Physics**, Boulder, Colorado, July 31-August 5, 1994, p. 1H-10.

20. A Rubidium Atomic Funnel (N. J. Silva, T. B. Swanson, S. K. Mayer, J. J. Maki, and D. H. McIntyre), **Optical Society of America 1995 Annual Meeting**, Portland, Oregon, September 10-15, 1995.
21. Two-Photon Spectroscopy with a Modelocked Laser in Doughnut Mode Laser-Cooled Rb (M. J. Snadden, A. S. Bell, R. B. M. Clarke, E. Riis, and D. McIntyre), **Technical Digest of the 1996 Quantum Electronics and Laser Science Conference**, Anaheim, California, June 2-7, 1996, p. 16.
22. Two-Photon Spectroscopy with a Mode-Locked Laser in Doughnut Mode Laser-Cooled Rb (M. J. Snadden, A. S. Bell, R. B. M. Clarke, E. Riis, and D. McIntyre), **Proceedings of the XX International Quantum Electronics Conference**, Sydney, Australia, July 14-19, 1996.
23. Great Circles and Motion on a Rotating Sphere (D. H. McIntyre), **Spring Meeting of the Oregon Section of the American Association of Physics Teachers**, Portland State University, April 24, 1999, Portland, Oregon.
24. Conversion of Diode-Laser Phase Noise to Amplitude Noise in Oxygen Gas at A-band Frequencies (C. E. Fairchild, B. D. Wichner, E. Zubek, D. H. McIntyre, R. Walser, and J. Cooper), **1999 Optical Society of America Annual Meeting**, Santa Clara, California, September 26-30, 1999.
25. Using Great Circles to Understand Motion on a Rotating Sphere (D. H. McIntyre), **Second Annual Meeting of the Northwest Section of the American Physical Society**, University of Oregon, Eugene, Oregon, May 19-20, 2000, B1.006.
26. Quantum Mechanics in the Paradigms in Physics Curriculum (C. A. Manogue, K. P. Browne, D. H. McIntyre, J. Tate, and A. L. Wasserman), **123rd American Association of Physics Teachers National Meeting**, Rochester, New York, July 21-25, 2001.
27. Oxygen-intercalated CuScO_2 (A. Draeseke, H. Yanagi, D. Tucker, D. Easley, D. H. McIntyre, J. Tate, J. Li, and A. W. Sleight), **2002 March Meeting of the American Physical Society**, Indianapolis, Indiana, March 18-22, 2002. (B23.013).
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29. Using Great Circles to Understand Motion on a Rotating Sphere (D. H. McIntyre), **125th American Association of Physics Teachers National Meeting**, Boise, Idaho, August 3-7, 2002, DI06.

30. Stern-Gerlach Simulation Software in Java (D. H. McIntyre), **125th American Association of Physics Teachers National Meeting**, Boise, Idaho, August 3-7, 2002, DN23.
31. Simultaneous Line Center and Linewidth Stabilization using Dual Frequency Modulation (J. I. Gillen and D. H. McIntyre), **Fifth Annual Meeting of the Northwest Section of the American Physical Society**, Reed College, Portland, Oregon, May 30-31, 2003.
32. Simultaneous Line Center and Linewidth Stabilization using Dual Frequency Modulation (J. I. Gillen and D. H. McIntyre), **Frontiers in Optics: The 87th Optical Society of America Annual Meeting**, Tucson, Arizona, October 5-9, 2003.
33. Optical Trapping and Manipulation of Nanoparticles (D. H. McIntyre, M. D. Blanding, W. G. K. Martin, and T. R. Jones) **2005 Micro Nano Breakthrough Conference**, Portland, Oregon, July 25-28, 2005.
34. Room temperature excitons in BaCuSF (J. Kinney, R. Kykyneshi, D. McIntyre, and J. Tate), **Oregon Academy of Science Annual Meeting**, Monmouth, Oregon, February 24, 2007.
35. Transparent conductive BaCuTeF thin films by pulsed laser deposition (R. Kykyneshi, D. H. McIntyre, J. Tate, C.-H. Park, and D. A. Keszler), **2007 March Meeting of the American Physical Society**, Denver, Colorado, March 5-9, 2007, D39.00013.
36. Optical Field Enhancement in Tweezer Trapping (M. J. Kendrick, M. Blanding, D. H. McIntyre, and O. Ostroverkhova), **2007 Conference on Lasers and Electro-Optics**, Baltimore, Maryland, May 6-11, 2007, JWA62.
37. Computation in the Paradigms Curriculum at Oregon State University (D. H. McIntyre), **AAPT Topical Conference: Computational Physics for Upper Level Courses**, Davidson College, Davidson, North Carolina, July 27-28, 2007.
38. Computation in the Paradigms Curriculum at Oregon State University (D. H. McIntyre), **2007 American Association of Physics Teachers Summer Meeting**, Greensboro, North Carolina, July 28-August 1, 2007, BV01.
39. Integrating Computational Activities into the Upper-division Paradigms Curriculum (C. A. Manogue, D. McIntyre, and J. Tate), **2008 American Association of Physics Teachers Winter Meeting**, Baltimore, Maryland, January 19-23, 2008.
40. Beyond Sensing under Equilibrium: Photoresponsive Nanoprobes for Rapid Localized Acid-Based Titration (A. Shvarev, O. Ostroverkhova, and D. H. McIntyre), **59th**

Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, New Orleans, Louisiana, March 2-7, 2008.

41. Effect of spin-orbit coupling on excitonic levels in layered chalcogenide-fluorides (A. Zakutayev, R. Kykyneshi, J. Kinney, D. H. McIntyre, G. Schneider, and J. Tate), **2008 March Meeting of the American Physical Society**, New Orleans, Louisiana, March 10-14, 2008, P37.00008.
42. Optical Tweezers with Resonant Particles (M. J. Kendrick, D. H. McIntyre and O. Ostroverkhova), **2008 Conference on Lasers and Electro-Optics**, San Jose, California, May 5-9, 2008, JWA122.
43. Epitaxial BaCuSeF thin films: a new blue LED candidate? (A. Zakutayev, R. Kykyneshi, D. McIntyre, H. Platt, D. Keszler, and J. Tate), **Tenth Annual Meeting of the Northwest Section of the American Physical Society**, Portland, Oregon, May 15-17, 2008.
44. TiO₂/AlPO multilayered dielectric elements via low temperature inorganic solution deposition method (A. Zakutayev, K. Jiang, D. A. Keszler, J. Tate, and D. H. McIntyre), **Oregon Center for Optics Fall Retreat**, Cottage Grove, Oregon, September 17-18, 2008.
45. Chalcogenide-based p-type wide-gap semiconductors for optoelectronics (J. Tate, A. Zakutayev, R. Kykyneshi, P. Newhouse, D. H. McIntyre, G. Schneider, D. A. Keszler, P. A. Hersh), **Fall Meeting of the Materials Research Society**, Boston, Massachusetts, 1-5 Dec, 2008.
46. Low-temperature, solution-based processing of TiO₂ thin films; Fabrication of dielectric mirrors and microcavities (K. Jiang, A. Zakutayev, J. Tate, D. McIntyre and D. Keszler), **Fall Meeting of the Materials Research Society**, Boston, Massachusetts, 1-5 Dec, 2008.
47. Engineering of physical properties in transparent p-type semiconductors (A. Zakutayev, D. McIntyre, G. Schneider, R. Kykyneshi and J. Tate), **Spring Meeting of the Materials Research Society**, San Francisco, California, 13-17 April, 2009.
48. Wavelength dependence of optical tweezer trapping forces on resonant particles (M. J. Kendrick, D. H. McIntyre and O. Ostroverkhova), **2009 OSA Optics & Photonics Congress: Optical Trapping Applications**, Vancouver, Canada, April 26-30, 2009, OMC5.
49. Optical Tweezers with Optically Resonant Particles (M. J. Kendrick, D. H. McIntyre and O. Ostroverkhova), **2009 Conference on Lasers and Electro-Optics**, Baltimore, Maryland, June 1-5, 2009, JWA121.

50. Solution-processed multilayer dielectric optical elements (A. Zakutayev, K. Jiang, J. Stowers, M. D. Anderson, J. Tate, D. A. Keszler, D. C. Johnson, and D. H. McIntyre), **Micro-Nano Breakthrough Conference**, Portland, Oregon, September 21-23, 2009.
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52. Nanoprobes with optical tweezers for biological applications (M. J. Kendrick, D. H. McIntyre, O. Ostroverkhova, V. Bychkova, A. Shvarev), **2010 March Meeting of the American Physical Society**, Portland, Oregon, March 15-19, 2010, X29.00002.
53. pH/Ion Sensitive Nanoparticles with Optical Tweezers (M. J. Kendrick, D. Gruss, D. H. McIntyre, O. Ostroverkhova, V. Bychkova, A. Shvarev, N. Pylypiuk, M. Koesdjojo, V. T. Remcho, S. Prasad), **2010 Conference on Lasers and Electro-Optics**, San Jose, California, May 17-21, 2010, JWA82.
54. Quantum Mechanics in the Paradigms in Physics Curriculum (D. H. McIntyre), **2010 American Association of Physics Teachers Summer Meeting**, Portland, Oregon, July 17-21, 2010, ED03.
55. Paradigms In Physics: Multiple Entry Points (D. H. McIntyre), **Transforming Undergraduate Education in STEM: Making and Measuring Impacts, 2011 CCLI/TUES Principal Investigators (PIs) Conference**, Washington, DC, January 26-28, 2011; poster 379.
56. Using Computer Visualization to Improve Learning (D. McIntyre and R. Zollars), **Transforming Undergraduate Education in STEM: Making and Measuring Impacts, 2011 CCLI/TUES Principal Investigators (PIs) Conference**, Washington, DC, January 26-28, 2011; A11.
57. Teaching Quantum Mechanics in the Paradigms in Physics Curriculum (D. H. McIntyre), **2011 American Association of Physics Teachers Summer Meeting**, Omaha, Nebraska, Jul. 30–Aug. 3, 2011, AG01.
58. Operators and Measurements in Paradigms in Physics, Part 1 (C. A. Manogue, E. Gire, D. McIntyre, J. Tate, and D. Demaree), **2011 American Association of Physics Teachers Summer Meeting**, Omaha, Nebraska, Jul. 30–Aug. 3, 2011, CI01.
59. Operators and Measurements in Paradigms in Physics, Part 2 (E. Gire, C. A. Manogue, D. McIntyre, J. Tate, and D. Demaree), **2011 American Association of Physics Teachers Summer Meeting**, Omaha, Nebraska, Jul. 30–Aug. 3, 2011, CI02.

60. Multiplexed fluorescence spectroscopy with holographic optical tweezers (M. A. Cibula, M. J. Kendrick, D. S. Gruss, V. Bychkova, N. Pylypiuk, M. Koesdjojo, V. T. Remcho, O. Ostroverkhova, and D. H. McIntyre), **13th Annual Meeting of the Northwest Section of the American Physical Society**, Oregon State University, Corvallis, Oregon, October 20-22, 2011, D1.00006.
61. Acoustic cavitation of individual ultrasound contrast agent microbubbles confined in capillaries (A. Almaqwashi, D. McIntyre, and A. Ammi), **13th Annual Meeting of the Northwest Section of the American Physical Society**, Oregon State University, Corvallis, Oregon, October 20-22, 2011, H3.00005.
62. Representations for a Spins-First Approach to Quantum Mechanics (C. Manogue, E. Gire, D. McIntyre and J. Tate), AIP Conf. Proc. **1413**, 55-58 (2012).
63. Laboratories in the Paradigms in Physics Curriculum (D. H. McIntyre, J. Tate, C. A. Manogue, and D. Roundy), **Conference on Lab Instruction Beyond the 1st Year of College**, Philadelphia, Pennsylvania, July 25-27, 2012, D8.
64. Optimization of holographic optical tweezers for multiplexed fluorescence spectroscopy (M. Cibula and D. McIntyre), **14th Annual Meeting of the Northwest Section of the American Physical Society**, Simon Fraser University, Vancouver, British Columbia, Canada, October 18-20, 2012, D13.
65. General Algorithm For Optimization Of The Diffraction Efficiency Of A Spatial Light Modulator (M. A. Cibula and D. H. McIntyre), **2013 OSA Optics & Photonics Congress: Optical Trapping Applications**, Waikoloa Beach, Hawaii, April 14-18, 2013, JT2A.27.
66. Modern Quantum Mechanics in the Paradigms in Physics Curriculum (D. H. McIntyre), **2013 American Association of Physics Teachers Summer Meeting**, Portland, Oregon, July 13-17, 2013, FE04.
67. Multiplexed Fluorescence Spectroscopy with Holographic Optical Tweezers (M. Cibula and D. McIntyre), **15th Annual Meeting of the Northwest Section of the American Physical Society**, University of Washington, Seattle, Washington, May 1-3, 2014, D1.00010.
68. Micromechanics of cellularized collagen I networks (C. Jones, M. Cibula, D. McIntyre, and B. Sun), **2015 March Meeting of the American Physical Society**, San Antonio, Texas, March 2-6, 2015, T47.00003.
69. Frequency-dependent micromechanics of cellularized biopolymer networks (C. Jones, J. Kim, D. McIntyre, and B. Sun), **2016 March Meeting of the American Physical Society**, Baltimore, Maryland, March 14-18, 2016, Y41.00006.