

ANTHONY CRIDER

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EDUCATION

Rice University (Houston, TX)

1999 – Doctor of Philosophy - Space Physics and Astronomy

1998 – Master of Science - Space Physics and Astronomy

Bowling Green State University (Bowling Green, OH)

1993 – Bachelor of Science - Major in Physics, Minor in Mathematics

ACADEMIC AND RESEARCH APPOINTMENTS

Elon University

Associate Professor of Physics (2006-present) - Awarded multiple National Science Foundation grants for science education. Created and assessed both in-class and on-line games for education. Developed and taught courses for the Core Curriculum, Honors, Physics, and iMedia programs.

Chair, Department of Physics (2008-2012) - Spearheaded the five-year physics department plan, with emphasis on science outreach. Organized a new on-campus robotics initiative. Created a new minor in astronomy.

Assistant Professor of Physics (2002-2006) - Developed and tested classroom pedagogies in astronomy and physics courses. Continued research in gamma-ray astronomy. Guided student construction of a robotic observatory.

American University

Interim Coordinator of Multimedia Design & Development Program (2001-2002) - Coordinated the efforts of departments in the interdisciplinary multimedia degree program. Collected data and calculated projections for enrollments.

Assistant Professor (2000-2002) - Instructed physics courses, using on-line homework, Just-in-Time Teaching, and workshop physics. Designed first Mac-based SCALE-UP classroom.

Naval Research Laboratory

National Research Council Associate (1999-2000) - Simulated the limitations of a gamma-ray calorimeter for NASA's Gamma-ray Large Area Space Telescope. Discovered that planned data-suppression would unacceptably degrade energy resolution below NASA specifications.

Los Alamos National Laboratory (1992-1996)

Research Assistant (1992-1996) - Processed data from Pioneer Venus Orbiter spacecraft to create a gamma-ray burst catalog. Ran simulations of atmospheric radiation transfer to optimize design of a remote-sensing satellite. Tested image analysis methods for X-ray satellite data. Upgraded neutron-scattering analysis code to use new version of commercial maximum entropy package.

GRANTS AND AWARDS

Grant Funding

Carpenter, J. P., Crider, A. W., & Richardson, J. L. (2011-2016). *Elon University Noyce Scholars Program*. Grant from National Science Foundation for \$1,199,448 to recruit and support high school STEM teachers.

Henderson, D., E., Crider, A. W., & Daughtrey, H. T. (2009-2013). *Collaborative Research: Reacting to the Past Pedagogy for Science Education*. Grant from National Science Foundation for \$190,366 to create, assess, and disseminate educational STEM games.

Minor Grant Funding

Richardson, C. & Crider, A. (2016). *Theoretical Predictions for Emission Line Ratios Originating from the PDR and Molecular Cores of AGN Galaxy Clouds*. Grant for \$10,090 of computing time from Extreme Science and Engineering Discovery Environment (XSEDE), a National Science Foundation program.

Richardson, C. & Crider, A. (2014-2015). *Theoretical Modeling of Emission Line Regions in Star-Forming Galaxies*. Grant for \$14,500 of computing time from Extreme Science and Engineering Discovery Environment (XSEDE), a National Science Foundation program.

Internal Institutional Grants

Crider, A. (2015). *Teaching the History of Astronomy through Role-Play: The 1920 Curtis-Shapley Debate and the 1961 Creation of the Drake Equation*. Semester sabbatical from the Elon University Faculty Research and Development program.

Crider, A. (2006-2008). *Testing a "Quest-Points-Level" Game Structure in the Astronomy Classroom*. Center for the Advancement of Teaching and Learning (CATL) Scholar grant.

Crider, A. (2005). *Determining the Rate of Magnetar Flares in Nearby Galaxies*, Grant for \$6,573 summer stipend from Elon University Faculty Research and Development program.

Crider, A. (2004). *Simulating Maya Astronomy with Desktop Planetarium Software*. Grant for \$2,575 from the Elon University Technology Course Enhancement Grant program.

Crider, A., Harris, F., & Caruso, C. (2003). *Desktop Planetarium Software for the Astronomy Classroom*. Grant for \$702 from the Elon University Technology Course Enhancement Grant.

Medsker, L., Larkin-Hein, T., & Crider, A. (2001). *Science Education in a Studio Environment: Phase I*. University Curriculum Development Support Award for \$4,896 from American University.

Crider, A. (2001). *Filming and Editing "Street Physics" Films*. General Education Faculty Assistant Program Award for \$810 from American University.

Crider, A. (2000). *Gauging Student Utilization of Digitally Delivered Lectures*, College of Arts & Sciences Mellon Award for \$1,568 from American University.

PUBLICATIONS

Educational/Pedagogical Journal Articles

Crider, A., & Weston, A. (2012). Experiential Education on the Edge: SETI Activities for the College Classroom. *Astronomy Education Review*, 11(1), 010202. DOI: 10.3847/AER2012033

Crider, A. (2004). “Hot Seat” Questioning: A Technique to Promote and Evaluate Student Dialogue. *Astronomy Education Review*, 3(2), 137-147. DOI: 10.3847/AER2004020

Book Chapters

Crider, A. (2015). Teaching Visual Literacy in Astronomy. In Little, D., Felten, P., & Berry, C (Eds.) *New Directions for Teaching and Learning* (Vol. 141, pp. 7-18). Wiley: New York

Topical or Special Interest Journal Articles

Crider, T. (2011), Debating Pluto: Searching for the Classroom of the Future and Ending up in the Past. *Astronomy Beat*, 74, 1-4.

Papers Published in Proceedings or Collections

Crider, A. (2007). Space Science and Astronomy Destinations within Second Life. In A. Fraknoi (Ed.), *Cosmos in the Classroom 2007 Handouts and Papers Volume* (pp. 151-152). Astronomical Society of the Pacific.

Crider, A. (2006). A Magnetar in the *BATSE* Catalog? In *Gamma-Ray Bursts in the Swift Era: Sixteenth Maryland Astrophysics Conference* (Vol. 836, pp. 64-67). AIP Publishing.

Crider, A., (2004). Model Fitting for a Non-Majors Astronomy Class Using Starry Night and Excel. In A. Fraknoi (ed.), *Cosmos in the Classroom 2004 Handouts and Papers Volume*. Astronomical Society of the Pacific.

Crider, A., (2004). Astronomy in the “Hot Seat”. In A. Fraknoi & W. Waller (Eds.), *Cosmos in the Classroom 2004: Meeting Summary, Papers, and Handouts*, Astronomical Society of the Pacific.

Crider, A. (2000). Evaluating spectral functions used to test the synchrotron shock model. In *Gamma-Ray Bursts: 5th Huntsville Symposium* (Vol. 526, No. 1, pp. 475-479). AIP Publishing.

Liang, E., Crider, A., Böttcher, M., & Smith, I. (2000). Time profiles and spectral evolution of GRB pulses. In *Gamma-Ray Bursts: 5th Huntsville Symposium* (Vol. 526, No. 1, pp. 446-449). AIP Publishing.

Crider, A., Liang, E. P., & Preece, R. D. (1998) Confronting Synchrotron Shock and Inverse Comptonization Models with GRB Spectral Evolution. In *Gamma-Ray Bursts: 4th Huntsville Symposium* (Vol. 428, No. 2., pp. 359-363). AIP Publishing.

Crider, A., Liang, E. P., & Preece, R. D. (1998). Testing the Invariance of Cooling Rate in Gamma-Ray Burst Pulses. In *Gamma-Ray Bursts: 4th Huntsville Symposium* (Vol. 428, No. 1, pp. 63-66). AIP Publishing.

Smith, I. A., Liang, E. P., Crider, A., Lin, D., & Kusunose, M. (1998). Saturated Compton Scattering Models for the Soft Gamma-Ray Repeater Bursts. In *Proceedings of the Fourth Compton Symposium* (Vol 410, No. 2, pp. 1512-1515). AIP Publishing.

Crider, A., Liang, E. P., Smith, I. A., Lin, D., & Kusunose, M. (1998). A Thermal-Nonthermal Inverse Compton Model for Cyg X-1. In *Proceedings of the Fourth Compton Symposium* (Vol. 410, No. 2, pp. 868-872). AIP Publishing

Smith, I. A., Crider, A., Liang, E. P., Dunne, B. C., Fenimore, E. E., & Li, H. (1996). Hardness ratio versus duration for PVO compared to BATSE and PHEBUS. In *Gamma-ray bursts: 3rd Huntsville symposium* (Vol. 384, No. 1, pp. 101-105). AIP Publishing.

Crider, A., & Fenimore, E. E. (1996). A search for March 5th-like bursts in the PVO database. In *Gamma-ray Bursts: 3rd Huntsville Symposium* (Vol. 384, No. 1, pp. 926-930). AIP Publishing.

Mainline Journal Articles

Richardson, C. T., Allen, J. T., Baldwin, J. A., Hewett, P. A., Ferland, G. J., Crider, A., and Meskhidze, H. (2015, *submitted*). Interpreting the Ionization Sequence in Star-Forming Galaxy Emission-Line Spectra. *Monthly Notices of the Royal Astronomical Society*.

do Couto e Silva, E. et al. (2001). Results from the Beam Test of the Engineering Model of GLAST Large Area Telescope. *Nuclear Instruments and Methods in Physics Research, Section A*, 474(1), 19-37.

Crider, A., & Liang, E. P. (1999). Testing for synchrotron self-absorption in GRB 970111. *Astronomy and Astrophysics Supplement Series*, 138(3), 405-406.

Liang, E. P., Crider, A., Böttcher, M., & Smith, I. A. (1999). GRB 990123: The case for saturated Comptonization. *The Astrophysical Journal Letters*, 519(1), L21.

Crider, A., Liang, E. P., Preece, R. D., Briggs, M. S., Pendleton, G. N., Paciesas, W. S., Band, D. L., & Matteson, J. L. (1999). The hardness evolution of gamma-ray burst pulses. *Astronomy and Astrophysics Supplement Series*, 138 (3), 401-402.

Smith, I. A., Liang, E. P., Lin, D., Moss, M., Crider, A., Fender, R. P., Durochoux, Ph., Corbel, S., & Sood, R. (1999). Multiwavelength Observations of GX 339-4 in 1996. I. Daily Light Curves and X-ray and Gamma-Ray Spectroscopy. *The Astrophysical Journal*, 519 (2), 762.

Crider, A., Liang, E. P., Preece, R. D., Briggs, M. S., Pendleton, G. N., Paciesas, W. S., Band, D. L., & Matteson, J. L. (1999). Spectral hardness decay with respect to fluence in BATSE gamma-ray bursts. *The Astrophysical Journal*, 519 (1), 206.

Böttcher, M., Saxena, R., Crider, A. W., Liang, E. P., Smith, I. A., & Kusunose, M. (2001). An Analytic Function Fit to Monte Carlo X-Ray and γ -Ray Spectra from Thomson Thick Thermal/Nonthermal Hybrid Plasmas. *The Astrophysical Journal Supplement Series*, 135(1), 1.

Crider, A., & Liang, E. P. (2000). Testing the Gamma-Ray Burst Blast-Wave Model: A Primer. *The Astrophysical Journal Supplement Series*, 127(2), 283.

Böttcher, M., Dermer, C. D., Crider, A. W., & Liang, E. P. (1999). Time-dependent photoelectric absorption, photoionization and fluorescence line emission in gamma-ray burst environments. *Astronomy & Astrophysics*, 343, 111-119.

Liang, E., Kusunose, M., Smith, I. A., & Crider, A. (1997). Physical model of gamma-ray burst spectral evolution. *The Astrophysical Journal Letters*, 479(1), L35.

Crider, A., Liang, E. P., Smith, I. A., Preece, R. D., Briggs, M. S., Pendleton, G. N., Paciesas, W. S., Band, D. L., & Matteson, J. L. (1997). Evolution of the low-energy photon spectra in gamma-ray bursts. *The Astrophysical Journal Letters*, 479(1), L39.

PRESENTATIONS

Invited Presentations, Keynote Addresses and Plenary Sessions

Crider, A. (2014, December). *Innovative Education with Reacting to the Past Games and Epic Final Exams*. Keynote address at the 1re Congreso Internacional de Innovación Educativa. Mexico City, Mexico.

Crider, A. (2014, August). *Experiential Education on the Edge: Searching for the Classroom of the Future and Ending Up in the Past*. Plenary session at the 11th Annual Teaching and Learning Conference. Elon, NC.

Crider, A., Evans, E. A., Christopherson, L., & Jagoda, P. (2012, April). *Exploring Games for Learning*. Invited presentation at the Duke Center for Instructional Technology (CIT) Showcase. Durham, NC.

Crider, A. (2011, February). *Reacting to the Past and General Studies Classes*. Keynote address for the Reacting to the Past Regional Conference at Newman University. Wichita, KS.

Higbee, M., Lightcap, T., McKay, G., Squire, M., & Crider, A. (2008, June). *Report on the Assessment of the "Reacting" Pedagogy*. Plenary session at the Annual Summer Institute at Barnard College. New York, NY.

Teich, A. H., Bly, A., Kirshenbaum, S. R., and Crider, A. (2008, May). *Science and the New Media*. Plenary session at the American Association for the Advancement of Science (AAAS) Forum on Science and Technology Policy. Washington, DC.

Contributed Workshop Presentations (High Quality, Peer-Reviewed)

Crider, A. & Cleary, D. (2015, March). *The Trial of Galileo*. Campus Workshop at Elizabeth City State University, Elizabeth City, NC.

Crider, A. (2013, October). *Assessment of Reacting to the Past Role-Playing*. Workshop presented at the annual meeting of the International Society for the Scholarship of Teaching and Learning. Raleigh, NC.

Crider, A. (2013, July). *Teaching the Nature of Science with 'The Pluto Debate' Role-Playing game*. Workshop presented at the summer meeting of the American Association of Physics Teachers. Portland, OR.

Crider, A. (2013, January). *Learning Astronomy through Role-playing and Debate*. Workshop presented at the 221st Meeting of the American Astronomical Society. Los Angeles, CA.

Crider, A. (2012, November). *Role-playing The Pluto Debate in your Science Classroom*. Workshop presented at the 18th Fall Meeting of the North Carolina Section of the American Association of Physics Teachers. High Point, NC.

Crider, T. (2012, August). *Experiential Learning in the Classroom: Reacting to the Past Games*. Workshop presented at 9th Annual Teaching and Learning Conference. Elon, NC.

Crider, T., & Henderson, D. (2012, June). *The NSF-CCLI Initiative: The Pluto Debate & Climate Change in Copenhagen*. Workshop at the 12th Annual Summer Institute at Barnard College. New York, NY.

Crider, A. (2011, August). *The Pluto Debate: Learning Astronomy Content and Process through Role-playing*. Workshop presented at the 123rd Annual Meeting of the Astronomical Society of the Pacific. Baltimore, MD.

Crider, A. & Squire, M. (2011, March). *Reacting to the Past: The Pluto Debate*. Workshop presented at *Engaged STEM Learning: From Promising to Pervasive Practices* for the American Association of University Professors and Project Kaleidoscope. Miami, FL.

Crider, T. & Mitschler, R. (2010, June). *The NSF-CCLI Initiative: Acid Rain in Europe, 1984 and The Pluto Debate*. Workshop presented at the 10th Annual Summer Institute at Barnard College. New York, NY.

Crider, T. & Squire, M. (2010, June). *The Trial of Galileo*. Workshop presented at the 10th Annual Summer Institute at Barnard College. New York, NY.

McConaghy, T., Djorgovski, G., Scott, J., Gauthier, A., & Crider, T. (2009, January). *Stepping Into Science*. An online workshop for the Alliance Library System and Learning Times.

Conklin, M. S. & Crider, T. (2008, August). *Using "Reacting to the Past" as Role-Playing Pedagogy*. A workshop presented at 5th annual Innovations in Instruction conference. Elon, NC.

Crider, A., Conklin, M. S., & Anderson, J. Q. (2007, August). *Educational Opportunities in the Virtual World of Second Life*. Workshop presented at 4th annual Innovations in Instruction conference. Elon, NC.

Crider, A. & Conklin, M. (2006, August). *Games as a Medium for Learning*. Workshop presented at 3rd annual Innovations in Instruction conference. Elon, NC.

Border, P., Crider, A., Linden, P. & Joseph, B. (2006, June). *Living and Learning in Second Life: A Firsthand Exploration & Tour of a User-Created Virtual World*. Workshop presented at the 2nd annual Games+Learning+Society conference, Madison, WI.

Crider, A. (2003). *The Pedagogy of Blackboard On-Line Assessments*. Workshop at the Instructional Design and Development Technology Showcase. Elon, NC.

Crider, A. (2002). *Science Education in a Studio Environment*. Workshop presented at the 13th Anne Ferren Teaching Conference. Washington, DC.

Oral Presentations (Peer-Reviewed Scholarship)

WINNER OF BEST PEDAGOGY PAPER AWARD - Crider, A. (2015, March) *Experiential Education Activities for Teaching SETI*. Talk presented at the 20th Annual Spring Meeting of the North Carolina Section of the American Association of Physics Teachers. Winston-Salem, NC.

Crider, A. & Swanson, K. (2014, June) *Teaching Your First Reacting Class*. Panel discussion at the 14th Annual Summer Institute at Barnard College. New York, NY.

Crider, T., Proctor, N., McKay, G., and Araujo, J. (2013, June). *Community Forum: RTTP's Digital Face*. Panel discussion at the 13th Annual Summer Institute at Barnard College. New York, NY.

Proctor, N. & Crider, T. (2012, June). *Game Design and Development*. Panel discussion at the 12th Annual Summer Institute at Barnard College. New York, NY.

Crider, T. & Henderson, D. (2012, June). *The Case for Chapter-Length Reacting Games*. Panel discussion at the 12th Annual Summer Institute at Barnard College. New York, NY.

Crider, T. & Neville, D. (2011, August). *Creating 3-D Virtual Environments for Education*. Talk presented at the 8th Annual Teaching and Learning Conference. Elon, NC.

Crider, A., Proctor, N., & Gill, N. (2011, June). *The Future of Active Learning: RTTP, Simulations, Gaming, and More*. Panel discussion at the 11th Annual Summer Institute at Barnard College. New York, NY.

Crider, A. (2011, June). *General Introduction to the NSF-CCLI Initiative: Game Development and Assessment Goals*. Talk presented at the 11th Annual Summer Institute at Barnard College. New York, NY.

Hyson, J. Crider, T., Coby, J. P., & Hughes, A. (2010, June). *"Reacting" and the Craft of*
Crider, A. (2010, June). *Including Science Labs in The Trial of Galileo*. Talk at the 10th Annual Summer Institute at Barnard College. New York, NY.

Crider, A. (2010, October). *Reacting to the Past: Role-playing in the Science Classroom*. Talk presented at the 15th Annual Fall Meeting of the North Carolina Section of the American Association of Physics Teachers. Davidson, NC.

Crider, A., Squire, M., Lazrus, P., & Higbee, M. (2009, June). *A Debate on the Requirement of Great Texts in the RTTP Curriculum*. Panel discussion at the 9th Annual Summer Institute at Barnard College. New York, NY.

Crider, A. & Squire, M. (2008, October). *Science Education within the Virtual World of Second Life*. Talk presented at the 2008 International Society for the Scholarship of Teaching and Learning Conference. Edmonton, Alberta, Canada.

Squire, M., Crider, A., & Felten, P. (2008, October). *Assessment of Student Learning in Reacting to the Past Role-Playing Games*. Talk presented at the 2008 International Society for the Scholarship of Teaching and Learning Conference. Edmonton, Alberta, Canada.

Conklin, M. S. & Crider, A. (2008, February). *Reacting to the Past: Role-play and Learning in the College Classroom*. Talk presented at the Lilly Conference on College and University Teaching. Greensboro, NC.

Knop, R. & Crider, A. (2007, October). *Physics and Astronomy Projects in Second Life*. Talk presented at the annual fall meeting of the North Carolina Section of the American Association of Physics Teachers. High Point, NC.

Crider, A., (2005, November) *Hypothesis Testing in Astrophysics*. Talk presented at the Collegiate Academy North Carolina Academy of Science (CANCAS) Undergraduate Research Workshop. Elon, NC (2005)

WINNER OF BEST PEDAGOGY PAPER AWARD - Crider, A. (2004, October) *Astronomy in the "Hot Seat."* Talk presented at the 9th Annual Spring Meeting of the North Carolina Section of the American Association of Physics Teachers. Davidson, NC.

Phillips, M., Crider, A., Becker, N., & Jones, D. (2003, November). *Elon University Robotic Observatory: A fairly inexpensive multi-student astronomy research project*. A talk presented at a joint meeting of the North Carolina Section of the AAPT, the Southeast Section of the American Physics Society, and the Society of Physics Students. Wilmington, NC.

Crider, A., Liang, E. P., Preece, R. D., Briggs, M. S., Pendleton, G. N., Paciesas, W. S., Band, D. L., & Matteson, J. L. (1998). The spectral evolution of gamma-ray bursts. In *Bulletin of the American Astronomical Society* (Vol. 30, No. 4, p. 1380). AIP Publishing.

Contributed Poster Presentations (Peer-Reviewed Scholarship)

Crider, A., Richardson, C. T., & Kaiser, B. (2015, August). *Detecting H II Regions in "Pure" Starburst Galaxies with SDSS Data*. Astronomy in Focus, Volume 1. Proceedings of the XXIXth IAU General Assembly. Honolulu, HI.

Crider, A., Carpenter, J., & Richardson, J. (2014, June). *Elon University Noyce Scholars Program*. Poster presented at the 9th Annual NSF Robert Noyce Teaching Scholarship Program Conference. Washington, DC.

Henderson, D. E., Henderson, S. K., & Crider, A. (2013, September). *Reacting to the Past: A New Simulation Game-Playing Pedagogy for Science Education*. Poster presented at the Fall Case Study Teaching in Science Conference. Buffalo, NY.

Crider, A. (2007, January). Space Science Outreach in the Virtual World of Second Life. *2006 Bulletin of the American Astronomical Society* (Vol. 38, No. 4, p. 1032). AIP Publishing.

Crider, A. (2003, September). *The Evolution of Synchrotron Self-Absorption Parameters in Prompt GRB Spectra*. A poster presented at the *Gamma-Ray Bursts: 30 Years of Discovery* conference, Santa Fe, NM.

Crider, A. (2002, January). Is There a Correlation Between FCI and MCAT Normalized Gains? *Winter 2001 American Association of Physics Teachers Announcer* (Vol. 31, No. 4, p. 95). AAPT: College Park.

Crider, A., Liang, E., & Smith, I., (1998, March) Evidence for Saturated Inverse Compton Scattering in Gamma-Ray Bursts. *Revista Mexicana de Astronomia y Astrofisica*, 7, 218.

Crider, A., Liang, E., Preece, R., Briggs, M., Pendleton, G., & Band, D. (1998, April). Evaluation of Proposed Gamma-Ray Burst Spectral Evolution Trends. In *Bulletin of the American Physical Society* (Vol. 43, No. 2, p. 1086). AIP Publishing.

PUBLIC SCIENCE LECTURES

Crider, A. & Weston, A. (2014). *Are We Alone?* A talk presented to retirees as part of the LIFE@ELON continuing education series. Elon, NC.

Crider, A. (2012). *2012: Exploitation of the Maya Calendar*. A talk presented to the general public as part of the Tectonic Plates: Alamance County's Science Café. Elon, NC.

Gammon, D., Uno, J., Chunco, A. & Crider, A. (2012). *Science that Matters: A Nonpartisan Look at the Science Relevant to the 2012 Presidential Election*. A panel presentation hosted by Elon University for students and the general public. Elon, NC.

Crider, A. (2010). *2012: Exploitation of the Maya Long Count*. A talk hosted by Guilford Technical Community College for the general public as part of the annual Triad StarFest. Greensboro, NC (2010)

Crider, A. (2003). *It's the End of the World as We Know It*. A talk hosted by Guilford Technical Community College for the general public as part of the annual Triad StarFest. Greensboro, NC (2010)

COURSES TAUGHT AT ELON UNIVERSITY

- COR 364 Technology and Society (2011-2015)
- PHY 313 Modern Astrophysics (2003-2015)
- PHY 102L Astronomy Lab (2002-2015)
- PHY 173 Planetary Science (2014)
- GST 110 The Global Experience (2014)
- SCI 179 STEM Teaching and Learning (2013-2014)
- HNR 237 Life in the Universe (2012-2014)
- PHY 205 Galactic Astronomy (2013)
- COM 563 Virtual Environments (2010-2012)
- PHY 102 Introduction to Astronomy (2002-2009)
- PHY 251 Numerical and Mathematical Methods in Physics (2004-2007)
- GST 201 Astronomy in Mexico: Maya to Modern (2005-2006)
- PHY 112 General Physics II (2003-2006)
- PHY 111 General Physics (2002-2005)
- PHY 113 General Physics with Calculus (2004)

PROFESSIONAL ORGANIZATIONS

- Reacting Consortium, *Board Member (2011-2017)*
- North Carolina Section of the American Association of Physics Teachers, *Vice-President (2006-2007), President-Elect (2007-2008), President (2008-2009, and Past President (2009-2010), Four-Year College Representative (2015-2018), Member (2003-present)*
- American Astronomical Society, *Member*
- Astronomical Society of the Pacific, *Member*
- American Association of Physics Teachers, *Member*
- Sigma Pi Sigma Physics Honors Society, *Member*

SERVICE TO ELON UNIVERSITY COMMITTEES AND TASK FORCES

- Graduate Council (2013-2016); *Chair (2014-2015)*
- Committee to Explore Continuing Education (2015)
- Residential Learning Communities Committee (2014-2015)
- Downtown Innovation Group (2014)
- North Carolina Science Festival Planning Group (2012-2014)
- Master of Arts in Teaching Curriculum Development Group (2010-2012)
- NBC Learn Evaluation Group (2011-2012)
- Curriculum Committee (2010)
- Visual Culture working group (2008-2013); *Co-Chair (2009-2010)*
- Subcommittee on Reassigned Time (2010-2012)
- SCALE-UP Planning Group (2009)
- University and College Union Presidential Task Force (2007)
- On-line Student Evaluation of Teaching Evaluation Committee (2007-2008)
- CATL Advisory Board (2006-2010)
- Lumen Prize Committee (2007-2009)
- Academic Council (2005-2008)
- Family Work Policy Committee (2005-2006)
- Workload and Teaching Load Subcommittee (2002-2005); *Chair (2003-2005)*
- Goldwater Scholarship Search Committee (2002-2003)