

Todd Keene Timberlake

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EDUCATION

The University of Texas at Austin	Austin, TX
Ph. D. in Physics	May, 2001
Dissertation: <i>Signatures of Chaos in Periodically Driven Quantum Systems</i>	
Advisor: Linda E. Reichl	
Vanderbilt University	Nashville, TN
B. S. in Physics/Astronomy & Mathematics	May, 1994

PRESENT POSITION

Berry College	Mount Berry, GA
Professor of Physics & Astronomy	2013-present
Assistant Director of the Honors Program	2019-present

PROFESSIONAL EXPERIENCE

Berry College	Mount Berry, GA
Associate Professor of Physics & Astronomy	2007-2013
Assistant Professor of Physics	2001-2007
Chair of the Department of Physics, Astronomy & Geology	2013-2019
Dual-degree Engineering Coordinator	2013-2019
Interim co-Director of the Honors Program	2017-2019
St. John's School	Houston, TX
Upper School Teacher: Department of Mathematics	1998-2001
The University of Texas at Austin	Austin, TX
Research Assistant: Center for Studies in Statistical Mechanics & Complex Systems	1997-2001
Assistant Instructor: Department of Physics	1996-1998
Teaching Assistant: Department of Physics	1994-1995
Cornell University	Ithaca, NY
Undergraduate Research Assistant: Department of Space Sciences	Summer 1993

PUBLICATIONS

Books

- Todd Timberlake and Paul Wallace, *Finding Our Place in the Solar System: The Scientific Story of the Copernican Revolution* (Cambridge University Press, Cambridge, UK, March 2019).
- Todd Timberlake and J. Wilson Mixon, *Classical Mechanics with Maxima* (Springer, New York, November 2015).

Refereed Journal Articles

- Todd K. Timberlake and Neilson Woodfield, “Band formation and defects in a finite periodic quantum system,” submitted to *American Journal of Physics* in August 2020.
- Todd Timberlake, “Seeing Earth’s Orbit in the Stars: Parallax and Aberration,” *The Physics Teacher* (2013) **51**: 478-481.
- Todd Timberlake, “Modeling the History of Astronomy: Ptolemy, Copernicus, and Tycho,” *Astronomy Education Review* (2013) **12**: 010201.
- Todd Timberlake, “Mapping the Milky Way: William Herschel’s Star-Gages,” *The Physics Teacher* (2013) **51**: 48-51.
- Todd K. Timberlake and Seth Camp, “Decay of wave packet revivals in the asymmetric infinite square well,” *American Journal of Physics* (2011) **79**: 607-614.
- Todd Timberlake, “The Statistical Interpretation of Entropy: An Activity,” *The Physics Teacher* (2010) **48**: 516-519.
- Todd K. Timberlake, “Comparing periodic-orbit theory to perturbation theory in the asymmetric infinite square well,” *Physical Review E* (2010) **81**: 046207.
- Todd K. Timberlake and Molly M. Nelson, “Quantum signatures of non-Newtonian orbits in the asymmetric infinite square well,” *Physical Review E* (2009) **79**: 036213.
- Todd Timberlake and Javier E. Hasbun, “Computation in classical mechanics,” *American Journal of Physics* (2008) **76**: 334-339.
- Ron Taylor and Todd Timberlake, “Tearing Plastic: A laboratory exercise on fractals and hyperbolic geometry,” *PRIMUS* (2007) **17**: 316-324.
- T. Timberlake, “Random numbers and random matrices: quantum chaos meets number theory,” *American Journal of Physics* (2006) **74**: 547-553.
- T. Timberlake, F. Petruzielo, and L. E. Reichl, “Localization of Floquet states along a continuous line of periodic orbits,” *Physical Review E* (2005) **72**: 016208.
- T. Timberlake, “A computational approach to teaching conservative chaos,” *American Journal of Physics* (2004) **72**: 1002-1007.
- T. Timberlake and J. V. Foreman, “Correlation of the photodetachment rate of a scarred resonance state with the classical Lyapunov exponent,” *Physical Review Letters* (2003) **90**: 103001.
- T. Timberlake and L. E. Reichl, “Phase-space picture of resonance creation and avoided crossings,” *Physical Review A* (2001) **64**: 033404.
- T. Timberlake and L. E. Reichl, “Changes in Floquet-state structure at avoided crossings: Delocalization and harmonic generation,” *Physical Review A* (1999) **59**: 2886-2893.
- W. Chism, T. Timberlake, and L. E. Reichl, “High harmonic generation in systems with bounded chaos,” *Physical Review E* (1998) **58**: 1713-1723.
- T. L. Hayward, J. W. Miles, J. R. Houck, and T. K. Timberlake, “Mid-infrared imaging of ultracompact H II regions,” *Experimental Astronomy* (1994) **3**: 159-160.

Invited Articles and Book Reviews

- Todd Timberlake, “The Big Four,” review of *Heaven on Earth* by L.S. Fauber, in the *Journal for the History of Astronomy* (2020) **51**: 373-374.

- Todd Timberlake, review of *Going Underground* by Martin Beech, *British Journal for the History of Science* (2020) **53**: 287-288.
- Todd Timberlake, "A Modern Scientist Considers Smith's History of Astronomy," on AdamSmith-Works @ www.adamsmithworks.org.
- Todd Timberlake, review of Johannes Kepler's *Nova stereometria doliorum vinariorum / New solid geometry of wine barrels* (edited and translated by Eberhard Knobloch), *Isis* (2019) **110**: 177-178.
- Todd Timberlake, "Johannes Kepler, The Man Who Merged Physics with Astronomy," review of *Kepler and the Universe* by David K. Love, *Science & Education* (2017) **26**: 185-189.
- Todd Timberlake, "Home, Sweet New Home - Astronomy for Students Under Alien Skies," *The Classroom Astronomer* (Summer 2014) **5** (4): 15-20.
- Todd Timberlake, review of *Astronomy Activity and Laboratory Manual* by Hirshfeld, in *Science & Education* (2011) **20**: 389-392. This review also appeared in the June 2010 Newsletter of the International History, Philosophy and Science Teaching Group, pp. 27-30.
- Todd Timberlake, "A Ticket to the World of *Chaos*," review of *Chaos: A Collection of Programs for the PC* by Korsch, Jodl, and Hartmann, in *Computing in Science & Engineering* (May/June 2010) **12**: 8-10.

Non-refereed Abstracts and Proceedings

- Todd Timberlake and Molly Nelson, "Eigenvalue Spacings in the Asymmetric Infinite Square Well," *Bulletin of the American Physical Society* (2008) **53**, No. 13: 27.
- Todd Timberlake and Jeffery Tucker, "Is there quantum chaos in the prime numbers?," *Bulletin of the American Physical Society* (2007) **52**: 35.
- J. Tucker and T. Timberlake, "Statistical analysis of the randomness of prime numbers," *Proceedings of the Harriett J. Walton Symposium on Undergraduate Mathematics Research* (2007) 5: 1519.
- T. Timberlake, "Choosing the Right Mixture of Techniques and Technologies," *Bulletin of the American Astronomical Society* (2007) **38**: 985.
- T. Timberlake, "Writing-intensive quantum mechanics," *AAPT Announcer* (Winter 2005) **35**: 72.
- Frank Petruzielo, Courtney Griffin, and Todd Timberlake, "Eigenvalue statistics of weakly driven one-dimensional quantum systems," *AAPT Announcer* (Winter 2005) **35**: 68.
- T. Timberlake, "Teaching chaos theory to undergraduate physics majors," *Georgia Journal of Science* (2004) **62**: 54.
- T. Timberlake and J. Foreman, "Correlation of photodetachment rate and Lyapunov exponent for a scarred resonance state," *APS Meeting Abstracts* (October 2002).
- T. Timberlake and L. E. Reichl, "Resonance creation and periodic orbits," *APS Meeting Abstracts* (October 2000).
- T. L. Hayward, J. W. Miles, J. R. Houck, and T. K. Timberlake, "Mid-infrared imaging of ultracompact H II regions," *ASSL Vol. 190: Astronomy with Arrays, The Next Generation* (1994).

Digital Resources : published in the Open Source Physics collection (www.opensourcephysics.org).

I have authored three packages of curricular materials: The Statistical Interpretation of Entropy, Stellar Parallax and Aberration, and Modeling the History of Astronomy: Ptolemy, Copernicus, and Tycho.

I have authored or co-authored 57 interactive computer simulations in the OSP collection.

PRESENTATIONS

International and National

Todd Timberlake, "Dynamically Generated Plots in LON-CAPA Online Assignments," *2020 Winter Meeting of the American Association of Physics Teachers*, Orlando, FL, January 2020.

- Todd Timberlake, "Communicating the History of Astronomy with Interactive Visualizations," *Fourteenth Biennial History of Astronomy Workshop*, South Bend, IN, June 2019.
- Todd Timberlake, "The confusing appearance of the naked-eye planets," *2019 Winter Meeting of the American Association of Physics Teachers*, Houston, TX, January 2019.
- Todd Timberlake, "The confusing appearance of the naked-eye planets," *Thirteenth Biennial History of Astronomy Workshop*, South Bend, IN, July 2017.
- Todd Timberlake, "From Ptolemy to Copernicus: Planetary Astronomy and Theory Choice," invited presentation at the Great Hearts Schools, Phoenix, AZ, March 2017.
- Todd Timberlake and Chamaree de Silva, "Teaching Physics at a Buddhist Monastery in India," *2017 Winter Meeting of the American Association of Physics Teachers*, Atlanta, GA, February 2017.
- Todd Timberlake, "Exploring the Chaotic Pendulum with the *Maxima* CAS," invited panel presentation at the *2017 Winter Meeting of the American Association of Physics Teachers*, Atlanta, GA, February 2017.
- Todd Timberlake, "Learning About Liouville's Theorem with ODE Solver Algorithms," *2016 Summer Meeting of the American Association of Physics Teachers*, Sacramento, CA, July 2016.
- Todd Timberlake, "The *Maxima* CAS as a Tool for Teaching Physics," *2016 Winter Meeting of the American Association of Physics Teachers*, New Orleans, LA, January 2016.
- Todd Timberlake and Adam Jarrell, "The Rotation of the Milky Way Galaxy," *2015 Summer Meeting of the American Association of Physics Teachers*, College Park, MD, July 2015.
- Todd Timberlake, "The Drake Equation and the Historical Extraterrestrial Life Debate," *2015 Winter Meeting of the American Association of Physics Teachers*, San Diego, CA, January 2015.
- Mario Belloni, Todd Timberlake, and Michael Gallis, "Astronomy and Physics Simulations for Computers and Tablets," workshop given at the *2015 Winter Meeting of the American Association of Physics Teachers*, San Diego, CA, January 2015.
- Todd Timberlake, "A body falling through the Earth: Newton, Hooke, and the History of Universal Gravitation," invited talk at Vanderbilt University, Nashville, TN, October 2014.
- Todd Timberlake, "The Spheres of Eudoxus," *2014 Summer Meeting of the American Association of Physics Teachers*, Minneapolis, MN, July 2014.
- Todd Timberlake, "Exploring Artificial Solar Systems with Ptolemy and Copernicus," *2014 Winter Meeting of the American Association of Physics Teachers*, Orlando, FL, January 2014.
- Todd Timberlake, "The *Open Source Physics* Astronomy Collection," invited presentation for the Crackerbarrel on Web Resources for Astronomy, *2013 Summer Meeting of the American Association of Physics Teachers*, Portland, OR, July 2013.
- Todd Timberlake, "Parallax and Aberration: Evaluating Robert Hooke's 1669 Parallax Measurement," *2013 Summer Meeting of the American Association of Physics Teachers*, Portland, OR, July 2013.
- Todd Timberlake, "Defusing the Diffusion of Incorrect Knowledge: Hooke's Parallax, van Maanen's Rotations, and the Resolution of Orion," invited talk at the *Eleventh Biennial History of Astronomy Workshop*, South Bend, IN, June 2013.
- T. Timberlake, "Modeling the History of Astronomy: Ptolemy, Copernicus, and Tycho," *2013 Winter Meeting of the American Association of Physics Teachers*, New Orleans, LA, January 2013.
- Todd Timberlake, Ron D. Taylor, and Ken L. Martin, "Transfer of Innovative Teaching Methods Between STEM Disciplines," workshop at the AAC&U Network for Academic Renewal Conference on *Next Generation STEM Learning: Investigate, Innovate, Inspire*, Kansas City, MO, November 2012.
- T. Timberlake, "A Body Falling Through the Earth: Newton versus Hooke," *2012 Summer Meeting of the American Association of Physics Teachers*, Philadelphia, PA, July 2012.

- M. Belloni, W. Christian, and T. Timberlake, "From Ptolemy to Einstein: Using Computer Simulations in Astronomy," workshop at the *2012 Summer Meeting of the American Association of Physics Teachers*, Philadelphia, PA, July 2012.
- T. Timberlake, "Engaging with the History of Astronomy," invited talk at the *2012 Gordon Research Conference on Physics Research and Education*, Waterville, ME, June 2012.
- T. Timberlake, "Turning Quantum Mechanics Course Notes into Tutorials," invited talk at the *2011 Summer Meeting of the American Association of Physics Teachers*, Omaha, NE, August 2011.
- T. Timberlake, "Astronomy, History, and Computer Simulations: An Approach to Teaching the Nature of Science," *2011 Summer Meeting of the American Association of Physics Teachers*, Omaha, NE, August 2011.
- M. Belloni, W. Christian, and T. Timberlake, "EJS and Open Source Physics: Teaching with Interactive Materials Across the Curriculum," *2011 Summer Meeting of the American Association of Physics Teachers*, Omaha, NE, August 2011.
- T. Timberlake, "Astronomy, History, and Computer Simulations: An Approach to Teaching the Nature of Science," *Tenth Biennial History of Astronomy Workshop*, South Bend, IN July 2011.
- Mario Belloni, Wolfgang Christian, Anne Cox, and Todd Timberlake, "The Evolution of the OSP ComPADRE Collection," *2011 Winter Meeting of the American Association of Physics Teachers*, Jacksonville, FL, January 2011.
- T. Timberlake and M. Belloni, "Using Computer Simulations in Introductory Astronomy," invited talk at the *2010 Summer Meeting of the American Association of Physics Teachers*, Portland, OR, July 2010.
- T. Timberlake and M. Belloni, "A Flexible Platform for Teaching Astronomy and Astrophysics," *2010 Winter Meeting of the American Association of Physics Teachers*, Washington, DC, February 2010.
- T. Timberlake, "Using Computer Simulations to Explore the History of Astronomy," workshop at the *2009 European Science Education Research Conference*, Istanbul, Turkey, September 2009.
- T. Timberlake, "An Active Introduction to Entropy and Irreversibility for Liberal Arts Students," *2009 Summer Meeting of the American Association of Physics Teachers*, Ann Arbor, MI July 2009.
- T. Timberlake, "Exploring the Copernican Revolution Through Computer Simulations," *2009 Summer Meeting of the American Association of Physics Teachers*, Ann Arbor, MI July 2009.
- T. Timberlake, "Exploring the Copernican Revolution Through Computer Simulations," *International History, Philosophy and Science Teaching Group Biennial Conference*, South Bend, IN, June 2009.
- R. Taylor, T. Timberlake, and C. Lane, "Active learning at Berry," *Eleventh Annual Legacy of R. L. Moore Conference*, Austin, TX, July 2008.
- T. Timberlake, "Incorporating Philosophy of Science in Physics for Nonscience Majors," *2007 Summer Meeting of the American Association of Physics Teachers*, Greensboro, NC, July 2007.
- T. Timberlake, "Computational Physics at Berry College, In and Out of the Classroom," *Computational Physics for Upper-Level Physics Programs*, Davidson, NC, July 2007.
- T. Timberlake, "Choosing the Right Mixture of Techniques and Technologies," *2007 Winter Meeting of the American Association of Physics Teachers*, Seattle, WA, January 2007.
- T. Timberlake, "Inquiry-based physics for non-science students," *Ninth Annual Legacy of R. L. Moore Conference*, Austin, TX, May 2006.
- T. Timberlake, "Writing-intensive quantum mechanics," *2006 Winter Meeting of the American Association of Physics Teachers*, Anchorage, AK, January 2006.
- T. Timberlake, "A computational approach to teaching conservative chaos," *Gordon Research Conference on Physics Research and Education*, Mount Holyoke College, MA, June 2004.

- T. Timberlake and J. V. Foreman, “Correlation of photodetachment rate and Lyapunov exponent for a scarred resonance state,” *International Conference on Dynamical Chaos in Classical and Quantum Physics*, Novosibirsk, Russia, August 2003.
- T. Timberlake and L. E. Reichl, “Resonance creation and periodic orbits,” *International Conference on Quantum Chaos*, Cocoyoc, Mexico, July 2001.
- T. Timberlake and L. E. Reichl, “Delocalization and superscars in the driven square well,” *International Conference on Quantum Chaos*, Cocoyoc, Mexico, July 2001.
- T. Timberlake, W. Chism, and L. E. Reichl, “Delocalization and harmonic generation in the driven square well,” *American Physical Society Centennial Meeting*, Atlanta, GA, March 1999.

Regional and Local

- T. Timberlake, “What Can ‘Quantum Chaos’ Possibly Mean?,” physics seminar lecture, Roanoke College, Salem, VA, March 11, 2020.
- T. Timberlake, “From Ptolemy to Copernicus: Planetary Astronomy and Theory Choice,” Copenhaver Scholar-in-Residence lecture, Roanoke College, Salem, VA, March 10, 2020.
- T. Timberlake, “STEM Sims: Computer Simulations for Teaching STEM topics,” *STEM Teach* workshop for Floyd County science teachers, Berry College, Mount Berry, GA, February 26, 2020.
- T. Timberlake, “The LON-CAPA Online Homework System,” Center for Teaching Excellence panel on Online Tools for Teaching, Berry College, Mount Berry, GA, February 18, 2020.
- T. Timberlake, “Mercury Transits: Past and (Very Near) Future,” lecture at Berry College, Mount Berry, GA, October 29, 2019.
- T. Timberlake, “What causes the seasons?” interactive presentation at Sarah Hightower Library in Rome, GA for the Universe of Stories summer reading program, June 2019.
- T. Timberlake, “Analyzing *Arrival* Through the Lens of Physics” discussion following a viewing of the film *Arrival* at Berry College, April 2019.
- T. Timberlake, “Why Should You Use Computer Simulations to Teach Science and Math?: Effective Use of Computers to Enhance Student Learning,” presentation at Berry College’s *STEM Teach* Mentor Day, April 2019.
- T. Timberlake, “Ptolemy to Copernicus: Planetary Astronomy and Theory Choice,” Berry College Physics & Astronomy Seminar, February 2019.
- T. Timberlake, “The Harvard Computers” brief lecture and discussion following a performance of the play *Silent Sky* at Berry College, November 2018.
- T. Timberlake, “The Prospects for Discovering Extraterrestrial Life,” science cafe talk in Rome, GA, October 2017.
- T. Timberlake, “The Confusing Appearance of the Naked-Eye Planets,” talk given at Berry College, Mount Berry, GA, September 2017.
- T. Timberlake, “Understanding and safely observing the Great American Solar Eclipse of 2017,” talks given at Berry College (August 7, 10, 15, and 20) and at the Sara Hightower Regional Library (August 8) in 2017.
- T. Timberlake, “What can ‘Quantum Chaos’ possibly mean?” invited talk at the University of the South, Sewanee, TN, February 2016.
- T. Timberlake, “Dislocating Heaven and Demoralizing the Universe,” talk given at Berry College, Mount Berry, GA, October 2015.
- T. Timberlake, “Moon Phases and Eclipses,” talk given at Berry College, Mount Berry, GA, September 2015.
- D. McConkey, T. Knowlton, C. Hersey, J. Huggins, J. Lidke, and T. Timberlake, “The End Time in Religion, Science and Film,” presentation and panel discussion at Berry College, Mount Berry, GA, March 2014.

- T. Knowlton and T. Timberlake, "Astronomical Manuscripts of the Ancient Maya," talk given at Berry College, Mount Berry, GA, March 2014.
- Todd Timberlake, "Exploring the Nature of Science with Computer Simulations," *Berry Faculty Retreat*, Mount Berry, GA, August 2012.
- Todd Timberlake, Aaron Titus, Mark Montazer, and Mario Belloni, "A Flexible Platform for Teaching Astronomy and Astrophysics," *North Carolina Astronomer's Meeting*, Raleigh, NC, October 2010.
- S. Camp and T. Timberlake, "Wave Packet Revivals in the Asymmetric Infinite Square Well," *2009 Meeting of the Southeastern Section of the American Physical Society*, Atlanta, GA, November 2009.
- M. Belloni and T. Timberlake, "A Flexible Platform for Teaching Astronomy," *Fall Meeting of the North Carolina Section of the American Association of Physics Teachers*, Pembroke, NC, October 2009.
- T. Timberlake, "Religion and the Copernican Revolution," invited talk at St. Peter's Episcopal Church, Rome, GA, May 2009.
- T. Timberlake, "Religion and the Copernican Revolution," invited talk at Berry College, Mount Berry, GA, March 2009.
- Todd Timberlake and Molly Nelson, "Eigenvalue Spacings in the Asymmetric Infinite Square Well," *Annual Meeting of the Southeastern Section of the American Physical Society*, Raleigh, NC, October 2008.
- T. Timberlake and J. Tucker, "Is there quantum chaos in the prime numbers?," *Annual Meeting of the Southeastern Section of the American Physical Society*, Nashville, TN, November 2007.
- T. Timberlake, "What Can Quantum Chaos Possibly Mean?," invited talk at Davidson College, Davidson, NC, February 2007.
- T. Timberlake, *Berry Innovators Series* panel presentation at Berry College, Mount Berry, GA, February 2007.
- T. Timberlake, "Quantum Chaos and Prime Numbers," talk given at Berry College, Mount Berry, GA, October 2006.
- T. Timberlake, "The Prime Numbers: a Graphical Tour," talk given at Berry College, Mount Berry, GA, September 2006.
- Ron Taylor and Todd Timberlake, "How big is the Cantor set?," invited talk at Lee University, Cleveland, TN, March 2006.
- T. Timberlake, "Schrödinger's cat and quantum reality," talk given for the Berry College Religion and Philosophy Club, April 2004.
- T. Timberlake, "Teaching chaos theory to undergraduate physics majors," *Annual Meeting of the Georgia Academy of Science*, Mount Berry, GA, March 2004.
- T. Timberlake, "Quantum-classical correspondence in driven open quantum systems," invited talk at Vanderbilt University, Nashville, TN, January 2004.
- T. Timberlake and J. V. Foreman, "Correlation of photodetachment rate and Lyapunov exponent for a scarred resonance state," *Meeting of the Southeastern Section of the American Physical Society*, Auburn, AL, November 2002.
- T. Timberlake and L. E. Reichl, "Resonance creation and periodic orbits," *Meeting of the Texas Section of the American Physical Society*, Houston, TX, October 2000.

PROFESSIONAL DEVELOPMENT

A workshop (Improving Assessment in Your Courses Using Tools from the PER User's Guide) at the *2014 Summer Meeting of the American Association of Physics Teachers*, Minneapolis, MN, July 2014.

- Two workshops (Research-based Tools for Teaching Quantum Mechanics and Modeling Applied to Problem Solving with Associated Free Online Course) at the *2013 Summer Meeting of the American Association of Physics Teachers*, Portland, OR, July 2013.
- Two workshops (Computational Physics Examples to Include in Physics Courses and Teaching Astronomy with Ranking Tasks) at the *2011 Summer Meeting of the American Association of Physics Teachers*, Omaha, NE, July 2011.
- Workshop (Enhancing Your Course with Activities Arising from Physics Educational Research) at the *2010 Summer Meeting of the American Association of Physics Teachers*, Portland, OR, July 2010.
- Two workshops (Falsification Labs and Teacher & Researcher: Designing Research Studies) at the *2009 Summer Meeting of the American Association of Physics Teachers*, Ann Arbor, MI, July 2009.
- Two workshops (Learning the “Game” of Science and Ways to Use PhET’s Web-based Interactive Simulations) at the *2007 Summer Meeting of the American Association of Physics Teachers*, Greensboro, NC, July 2007.
- Workshop on Easy Java Simulations at the *AAPT Special Topics Conference on Computation in Upper-Level Physics Programs*, Davidson, NC, July 2007.
- Three workshops (Intuitive Quantum Mechanics for Non-science Majors, Designing a Diagnostic Environment in the Pre-college Classroom, and Intermediate Mechanics Tutorials) at the *2007 Winter Meeting of the American Association of Physics Teachers*, Seattle, WA, January 2007.
- Four workshops (Visualizing Time-dependent phenomena, Tasks Inspired by Physics Education Research, Using Case Studies to Teach Physics, and A Den of Inquiry: Real Data Analysis) at the *2006 Winter Meeting of the American Association of Physics Teachers*, Anchorage, AK, January 2006.
- Wye Faculty Seminar*, Queenstown, MD, July 2005.
- 2004 Gordon Research Conference on Physics Research and Education*, Mount Holyoke College, MA, June 2004.
- 2002 Workshop for New Physics & Astronomy Faculty*, American Center for Physics, College Park, MD, November 2002.

GRANTS

- National Science Foundation Noyce Teacher Scholarship Program grant, \$1.2 million (2018). I was one of the senior personnel for the grant.
- One semester sabbatical leave from Berry College to write a history of astronomy book (Spring 2017).
- School of Mathematical and Natural Sciences Development of Undergraduate Research Grant (with Brandon Sanders), \$550 (2014).
- Berry College Summer Course Development Grant, \$1000 (2011).
- One year sabbatical leave from Berry College to write a textbook for a new astronomy course (2009-2010).
- Travel grant from the Educational Advancement Foundation to present at the *Eleventh Legacy of R. L. Moore Conference*, Austin, TX (2008).
- Berry College Faculty Development Grant, “Epistemological Beliefs of Undergraduate Science Majors,” \$360 (January 2008).
- Sigma Xi Development of Undergraduate Research Grant (with George Gallagher), awarded by the Berry College chapter of Sigma Xi, \$715 (January 2008).
- Sigma Xi Development of Undergraduate Research Grant (with Jeff Tucker), awarded by the Berry College chapter of Sigma Xi, \$365 (2007).

Travel grant from the Educational Advancement Foundation to present at the *Ninth Legacy of R. L. Moore Conference*, Austin, TX (2006).

Educational Advancement Foundation (with 5 other Berry College faculty), \$27,280 (2006).

Berry College Summer Course Development Grant, \$1000 (2005).

National Science Foundation Grant to support the 2005 Spring Topology and Dynamics Conference at Berry College (co-PI with 2 other Berry Faculty), \$40,000 (2004).

National Science Foundation Travel Grant to present at the *International Conference on Dynamical Chaos in Classical and Quantum Physics* in Novosibirsk, Russia, \$1,500 (2003).

National Science Foundation grant to support attendance at the *2002 Workshop for New Physics and Astronomy Faculty* in College Park, MD (2002).

SERVICE

Copenhaver Scholar-in-Residence (consulted with Physic and Honors Program faculty, gave two public lectures), Roanoke College, Salem, VA, March 9-12, 2020.

Commentary and telescope viewing to accompany the Rome Symphony Orchestra's performance of Holst's *The Planets*, Rome, GA, December 2, 2019.

Hosted a special viewing event for the Mercury transit on November 11, 2019 at Berry College, Mount Berry, GA.

Gave five lectures (two for public, two for teachers, one for Berry community) on the August 2017 solar eclipse. Distributed eclipse viewing cards to city and county school systems and some private schools, as well as the local public library. Organized and held an eclipse observing event at Berry's football stadium attended by more than 1000 people.

Taught physics to Tibetan Buddhist monks at the Drepung Loseling monastery near Mundgod, India as part of the Emory-Tibet Science Initiative (Summer 2016).

Served as an external reviewer for the Department of Physics at Hampden-Sydney College in Fall 2015.

Committee on History and Philosophy of Physics, American Association of Physics Teachers (2013-2015, vice chair 2014, chair 2015).

Organized sessions for AAPT meetings: Using History to Teach Physics & Astronomy (Winter 2014), Development of Perception of Extraterrestrial Life (Winter 2015), History of Physics & Astronomy (Winter 2016), Searching for Extraterrestrial Intelligence (Summer 2016).

Presider for numerous sessions of talks at AAPT meetings.

Organized and chaired a panel session on "Teaching the History of Astronomy: Using the Past to Inform Present Pedagogy" at the *Eleventh Biennial History of Astronomy Workshop*, South Bend, IN, July 2013.

Served on a panel entitled "Using Historical Materials in Teaching Astronomy" at the *Tenth Biennial History of Astronomy Workshop*, South Bend, IN, July 2011.

Served on a panel entitled "New User Perspectives on Inquiry-Based Learning" at the *Eleventh Annual Legacy of R. L. Moore Conference*, Austin, TX, July 2008.

Grant reviewer for the Professional Staff Congress of the City University of New York Research Award Program (2005).

Reviewer for the *American Journal of Physics*, *The Physics Teacher*, and *Science & Education*.

Reviewed book proposals for Oxford University Press and Cambridge University Press (one each).

Chair of Faculty Assembly (2010-2011).

Vice-chair of Faculty Assembly (2007-2008).

General Education Review Task Force (2010-2012).

Ad Hoc Committee on Faculty Compensation (chair 2013-2014)

Ad Hoc Committee on the Honors Program (2017-2019)
 Search committees: physics (2006, 2008, 2012, 2014[2], 2015, 2016, 2018), mathematics (2013), SMNS
 Dean (2014), Noyce program coordinator (2018)
 College Advisory Committee on Promotion and Tenure (2014-2018).
 Honors Program Committee (2012-2014, 2017-2020).
 Budget Advisory Committee (2010-2012).
 Academic Council (2008-2009, 2012-2014).
 Ad Hoc Committee on Course Credit Models (2010-2011).
 Faculty/Staff Benefits Committee (2012-2014).
 Interfaith Council (2008-2009, 2012-2014, 2015-2017, chair 2015-2016).
 Faculty Development Committee (2007-2008).
 Quality Enhancement Plan Steering Committee (2007).
 Council on Student Scholarship (2006-2008, 2017-2020).
 Center for Instructional Technology Advisory Committee (2006-2009).
 Center for Teaching Excellence Advisory Committee (2006-2009, chair 2007-2008).
 Writing-Across-the-Curriculum Committee (2005-2007).
 Planning Council (2004-2006, 2010-2012).
 Local Arrangements Committee for the Spring Topology & Dynamics Conference (2004-2005).
 Information Technology Committee (2003-2005, chair 2004-2005).
 Local Arrangements Committee for the Georgia Academy of Science Meeting (2003-2004).
 Freshmen Seminar Book Selection Committee (2002-2003).
 Conson C. Wilson Lectureship Committee (2002-2005, chair 2003-2004).

AWARDS AND RECOGNITIONS

American Physical Society Excellence in Physics Education Award (2020) - I was a member of the
 18-person Open Source Physics team that received this award.
 Berry College Martindale Award of Distinction (2019).
 Berry College Carden Award (2019).
 Berry College Writing-Across-the-Curriculum Faculty Award (2014).
 Berry College Teaching Excellence Award (2009).
 Voice of Berry Faculty Award (2008).
 Wye Faculty Fellow (2005).
 Award for Outstanding Student Paper, American Physical Society Texas Section (2000).
 National Science Foundation Graduate Research Fellowship Honorable Mention (1994).
 Underwood Memorial Award, Vanderbilt University (1994).
 Larry Ross Cathey Award, Vanderbilt University (1994).
 Dean's Select Scholar, Vanderbilt University (1990-1994).
 National Merit Scholar, Hoechst Celanese Corporation (1990-1994).

MEMBERSHIPS

Member of the American Physical Society
 Member of the American Association of Physics Teachers
 Former Member of the History of Science Society
 Former Member of the International History, Philosophy and Science Teaching Group
 Former Member of Sigma Xi: The Scientific Research Society