

Tanya L. Leise

Department of Mathematics & Statistics
Amherst College
Amherst, MA 01002

tleise@amherst.edu
<http://www.amherst.edu/~tleise/>
(413)542-5411

Education

Ph.D. Texas A&M University, in Mathematics, December 1998.
M.S. Texas A&M University, in Mathematics, May 1995.
B.S. Stanford University, in Mathematics with Honors, June 1993.

Current Position: Brian Boyle Professor of Mathematics and Computer Science.

Research Interests: Mathematical modeling (particularly biomathematics); applied time-frequency analysis including wavelet transforms; coupled nonlinear biological oscillators.

Refereed Research Publications

- C. Nave, L. Roberts, P. Hwu, J.D. Estrella, T.C. Vo, T.H. Nguyen, T.T. Bui, D.J. Rindner, N. Pervolarakis, P.J. Shaw, T. Leise, T.C. Holmes (2021). *Weekend Light Shifts Evoke Persistent Drosophila Circadian Neural Network Desynchrony*, Journal of Neuroscience. 41(24):5173-5189.
- J. Ware, K. Rode, C. Robbins, T. Leise, R. Weil, and H. Jansen (2020). *The clock keeps ticking: Circadian rhythms of free-ranging polar bears*, Journal of Biological Rhythms 35:180-194.
- L. Cenek[†], L. Klindziuk[†], C. Lopez[†], E. McCartney, B. Martin Burgos, S. Tir, M. Harrington, and T. Leise (2020). *CIRCADA: Shiny apps for exploration of experimental and synthetic circadian time series with an educational emphasis*, Journal of Biological Rhythms 35:214-222.
- T. Leise, A. Goldberg[†], J. Michael[†], G. Montoya[†], S. Solow[†], P. Molyneux, R. Vetrivelan, M. Harrington (2020; epub 2018). *Recurring circadian disruption alters circadian clock sensitivity to resetting*, European Journal of Neuroscience 51:2343-2354.
- D. Liu, A. Stowie, N. de Zavalia, T. Leise, S. Pathak, L. Drewes, A. Davidson, S. Amir, N. Sonenberg, and R. Cao (2018). *mTOR signaling in VIP neurons regulates circadian clock synchrony and olfaction*, PNAS 115(14): E3296-E3304.
- E. Winnebeck, D. Fischer, T. Leise, and T. Roenneberg (2018). *Dynamics and ultradian structure of human sleep in real life*, Current Biology 28:49-59.
- A. Cohen, T. Leise, and N. Kang[†] (2017). *Multi-attribute, multi-alternative models of choice: Choice, reaction time, and process tracing*, Cognitive Psychology 98:45-72.
- T. Noguchi, T. Leise, N. Kingsbury, T. Diemer, L. Wang, M. Henson, and D. Welsh (2017). *Calcium Circadian Rhythmicity in the Suprachiasmatic Nucleus: Cell Autonomy and Network Modulation*, eNeuro 4: ENEURO.0160-17.2017.
- T. Leise (2017). *Analysis of nonstationary time series for biological rhythms research*, Journal of Biological Rhythms 32:187-194.
- A. Azzi, J. Evans, T. Leise, J. Myung, T. Takumi, A. Davidson, and S.A. Brown (2017). *Network dynamics mediate circadian clock plasticity*, Neuron 93:441-450.

[†] Amherst College undergraduate co-author.

- H. Jansen, T. Leise, G. Stenhouse, K. Pigeon, W. Kasworm, J. Teisberg, T. Radandt, R. Dallmann, S. Brown, and C.T. Robbins (2016). *The bear circadian clock doesn't 'sleep' during winter dormancy*, *Frontiers in Zoology* 13:42.
- L. Roberts, T. Leise, and T. Holmes (2016). *Functional contributions of strong and weak oscillators to synchrony and light-shifted phase dynamics*, *Journal of Biological Rhythms* 31:337-51.
- J. Evans, T. Leise, O. Castanon-Cervantes, A. Davidson (2015). *Neural correlates of individual differences in circadian behaviour*, *Proc. R. Soc. B* 282:20150769.
- J. Evans, T-C. Suen, B. Callif, A. Mitchell, O. Castanon-Cervantes, K. Baker, I. Kloehn, K. Baba, B. Teubner, J.Ehlen, K. Paul, T. Bartness, G. Tosini, T. Leise, and A. Davidson (2015). *Shell neurons of the master circadian clock coordinate the phase of tissue clocks throughout the brain and body*, *BMC Biology* 13:43.
- L. Roberts, T. Leise, T. Noguchi, A. Galschiodt, J. Houl, D. Welsh, and T. Holmes (2015). *Light evokes rapid circadian network oscillator desynchrony followed by gradual phase retuning of synchrony*, *Current Biology* 25:858-67.
- E. Manoogian, T. Leise, and E. Bittman (2015). *Phase resetting in duper hamsters: Specificity to photic zeitgebers and circadian phase*, *Journal of Biological Rhythms* 30:129-143.
- C.J. Guenther, M.E. Luitje, L.A. Pyle, P.C. Molyneux, J.K. Yu[†], A.S. Li[†], T.L. Leise, and M. Harrington (2014). *Circadian rhythms of PER2::*LUC* in individual primary mouse hepatocytes and cultures*, *PLoS ONE* 9:e87573.
- J. Evans, T. Leise, O. Castanon-Cervantes, A. Davidson (2013). *Dynamic interactions mediated by non-redundant signaling mechanisms couple circadian clock neurons*, *Neuron* 80:973-83.
- T. Leise (2013). *Wavelet analysis of circadian and ultradian behavioral rhythms*, *Journal of Circadian Rhythms* 11:Article 5.
- T. Leise, M. Harrington, P. Molyneux, I. Song, H. Queenan, E. Zimmerman, G. Lall, and S. Biello (2013). *Voluntary exercise can strengthen the circadian system in aged mice*, *AGE* 35:2137-52.
- T. Leise, P. Indic, M.J. Paul, and W.J. Schwartz (2013). *Wavelet meets actogram*, *Journal of Biological Rhythms* 28:62-68.
- A. Cohen, T. Leise, and D. K. Welsh (2012). *Bayesian statistical analysis of circadian time series*, *Journal of Theoretical Biology* 314:182-191.
- M. Sellix, J. Evans, T. Leise, O. Castanon-Cervantes, D. Hill, P. DeLisser, G. Block, M. Menaker, and A. Davidson (2012). *Aging differentially affects the re-entrainment response of central and peripheral circadian oscillators*, *Journal of Neuroscience* 32:16193-16202.
- T. Leise, C. Wang, P. Gitis, and D. K. Welsh (2012). *Persistent cell-autonomous circadian oscillations in fibroblasts revealed by six-week single-cell imaging of PER2::*LUC* bioluminescence*, *PLoS ONE* 7(3): e33334.
- T. Leise and M.E. Harrington (2011). *Wavelet-based time series analysis of circadian rhythms*, *Journal of Biological Rhythms* 26:454-463.
- J. A. Evans, T. Leise, O. Castanon-Cervantes, A. Davidson (2011). *Intrinsic regulation of spatiotemporal organization within the suprachiasmatic nucleus*, *PLoS ONE* 6:e15869.

- T. Leise, J. R. Walton, and Y. Gorb (2010). *A boundary integral method for a dynamic, transient mode I crack problem with viscoelastic cohesive zone*, Int. J. Fracture 162:69-76.
- A.J. Davidson, O. Castanon-Cervantes, T. Leise, P. Molyneux, and M. Harrington (2009; Epub 2008). *Visualizing jet lag in the mouse suprachiasmatic nucleus and peripheral circadian timing system*, European Journal of Neuroscience 29(1):171-180.
- T. Leise, J. R. Walton, and Y. Gorb (2008). *Reconsidering the boundary conditions for a dynamic, transient mode I crack problem*, Journal of Mechanics of Materials and Structures 3(9):1797-1807.
- T. Leise and E. Moin[†] (2007). *A mathematical model of the Drosophila circadian clock with emphasis on post-translational mechanisms*, Journal of Theoretical Biology 28:48-63.
- T. Leise and Hava Siegelmann (2006). *Dynamics of a multistage circadian system*, Journal of Biological Rhythms 21(4):314-323.
- T. Leise (2005). *A general solution method for an anti-plane shear crack dynamically accelerating along a bimaterial interface*, J. Mech. Phys. Solids 53(3):639-653.
- T. Leise and Jay R. Walton (2004). *An analytical and numerical study of a dynamically accelerating semi-infinite crack in a viscoelastic material*, Int. J. Fracture 127(2):101-117.
- T. Leise and J. R. Walton (2003). *A method for solving dynamically accelerating crack problems in linear viscoelasticity*, SIAM J. Applied Math 64(1):94-107.
- T. Leise and J. R. Walton (2001). *Dynamically accelerating cracks part 2: A finite length mode III crack in elastic material*, Quart. Appl. Math. 59(4):601-614.
- T. Leise and J. R. Walton (2001). *A general method for solving dynamically accelerating multiple co-linear cracks*, Int. J. Fracture 111(1):1-16.
- Robert Finn and T. Leise (1994). *On the canonical proboscis*, Zeit. Anal. Anwend 13(3):443-462.

Other Refereed Publications

- S. Bunnell, M. Lyster, K. Greenland, G. Mayer, K. Gardner, T. Leise, T. Kristensen, E. Ryan, R. Ampiah-Bonney, and S. Jaswal (2021). *From protest to progress through partnership with students: Being human in STEM (HSTEM)*. International Journal for Students as Partners 5(1): 26-56.
- K. Bryan and T. Leise (2013). *Making do with less: An introduction to compressed sensing*, SIAM Review 55(3):547-566.
- K. Bryan and T. Leise (2010). *Impedance imaging, inverse problems, and Harry Potter's cloak*, SIAM Review 52(2):359-377.
- M. Catalano, T. Leise, and T. Pfaff (2009). *Measuring energy inequity: Integration and the Gini coefficient*, Numeracy 2(2):Article 4.
- T. Leise and Andrew L. Cohen (2007). *Nonlinear oscillators at our fingertips*, American Mathematical Monthly 114(1):14-28.
- T. Leise (2007). *As the planimeter's wheel rolls*, The College Mathematics Journal 38(1):24-31.
- K. Bryan and T. Leise (2006). *The \$25,000,000,000 eigenvector: the linear algebra behind Google*, SIAM Review 48(3):569-581.

Chapters and other Invited Contributions

- T. Leise (2021). *Computational analysis of PER2::LUC imaging data*. In: Brown, S.A. (editor), Circadian Clocks: Methods in Molecular Biology Vol 2130, Humana, NY.

- T. Leise (2015). *Wavelet-based analysis of circadian behavioral rhythms*. In: Seghal, Amita (editor), *Circadian Rhythms and Biological Clocks: Methods in Enzymology Vol 551*, Academic Press.
- K. Bryan and T. Leise (2015). *Cloaking*. In: Higham, Nick (editor), *The Princeton Companion to Applied Mathematics*, Princeton University Press.
- E. Bittman and T. Leise (2009). *Multi-oscillatory circadian systems*. In: Binder, M.D., Hirokawa, N., Windhorst, U. (eds), *Encyclopedia of Neuroscience*, Springer, Berlin.

Grants

- Co-PI with Sheila Jaswal and Amy Wagaman (for Amherst College) on NSF award DBI-1129152; UBM-Institutional-Collaborative Research: Four-College Biomathematics Consortium, 2011-17.
- Director of Clare Booth Luce grant to support research by undergraduate women at Amherst College in the physical sciences, computer science, and mathematical sciences, 2014-18.

Honors and Awards

- Lazerowitz Lecturer, Amherst College (2011-2012).
- Trustee-Faculty Fellowship, Amherst College (2010-11).
- Lester R. Ford Award (2008), given by the Mathematical Association of America for a noteworthy expository paper in the *American Mathematical Monthly*, *Nonlinear oscillators at our fingertips*.
- ExxonMobil Project NExT Fellow (Mathematical Association of America, 2000-01).
- Guseman Prize in Mathematics, for achievement in research and academics (Texas A&M, 1998).
- Firestone Medal for Excellence in Research (Stanford University, 1993).
- Deans' Award for Excellence in Academic Achievement (Stanford University, 1993).

Senior Thesis Students

- Amaya Smole `22: Modeling an epidemic on a social network.
- Emily Minus `21: Modeling the coronavirus using systems of differential equations.
- Katherine Cyr `19E: Topic modeling of adolescent social networks using texts.
- Obinna Ukogu `18: Applications of queueing to biological systems.
- Jack Ziqing Zhao `17 (Hampshire College): Topological changes of global autonomous systems.
- Rebecca Danning `16: Social network analysis of friend networks (co-winner of Breusch Prize).
- Namyi Kang `15: Modeling of a decision-making process.
- Shanghai Li `14: Analysis and modeling of the circadian clock network in the SCN.
- David Ressler `13E: Heuristic algorithms for combinatorial auctions.
- Risalat Khan `13: Agent-based modeling in environmental studies.
- Dang Trinh `12: Analysis of financial time series.
- Sam Schiavone `10: Mathematics of electromagnetic cloaking.
- Andrey Tagarev `10: Neural networks and speech recognition.
- Liana Medina-Rios `09 (Mount Holyoke College): Modeling of hepatitis C treatment.

Research with Undergraduates

- Cassandra Jin `24 and Xinyu Ni `23: Exploring circadian analysis methods and visualizations, summer 2021.
- Amaya Smole `22, Stephanie Masotti `22, and Catherine Sarosi `22: Extended Shiny app with user data upload and additional functionality, summer 2020.
- Lisa Cenek `21, Yuuna Klindziuk `21, and Cindy Lopez `20: Shiny app for visualization and analysis of circadian rhythms in activity, body temperature, and PER2::LUC recordings, summer 2019.
- Ariella Goldberg `19, John Michael `19, Grace Montoya `20, and Sabrina Solow `19: Effect of 20-hour days and high fat chow on the circadian rhythms of mice, summer 2017.
- Alex Santos `19 and Julia Vann `19: Dual analysis of PER2 and Ca²⁺ recordings, summer 2016.
- Sarah Teichman `18: Analysis of eye-tracking data for a decision-making process, summer 2015.
- Jennifer Cain `18 and Jia Liang `17: Network model of the *Drosophila* circadian clock, summer 2015.
- Yen Nhi Truong Vu `17: Image processing of circadian data, fall 2014.
- Shelly Tang `17, Melody Owen `17, Jeanne Lee `16, and Ilya Kiselev `16: Analysis and modeling of the circadian clock, summer 2014.
- Sharon Santana (Smith `14): Biomath Fellow, user interface for imaging analysis, 2013-14.
- Alex Li `14 and Jimmy Yu `15: Analysis of circadian data (funded by Biomath grant), summer 2013.
- Winthrop Harvey `13: Analysis of circadian data (funded by Biomath grant), spring 2012.
- Tak Cynthia Chio `12: Circadian modeling and phase response curves, summer 2012.
- Yordanka Kovacheva `12 and Rose Weisshaar `11: Wavelet analysis of circadian rhythms, joint project with Mary Harrington (Psychology, Smith) and her students, summer 2010.
- Eunjung Park `10 and Yordanka Kovacheva `12: Modeling circadian aftereffects, summer 2009.
- Stephen Oloo `09: Vehicle routing problem with pickups and deliveries, summer 2008.
- Elisabeth Baseman `11: Aftereffects in the circadian period of cockroaches, interterm 2008.
- Simon Townsend `09: Modeling the molecular clock mechanism of *Drosophila*, summer 2007.
- Emily Moin `09: Modeling the molecular clock mechanism of *Drosophila*, summer 2006.
- Qingsi Zhu `08: Coupled nonlinear oscillators and mammalian circadian rhythms, summer 2006.

Amherst College Committee Membership and Other Service

- Committee of Six, July 2020-May 2021.
- Committee on Priorities and Resources, 2015-19 (chair in spring 2019).
- Intensive Advising Network, 2016-18.
- Science Faculty Steering Committee, 2015-18.
- Technology Committee, 2013-14.
- Committee on Discipline, 2010-13.
- Orientation Committee, 2009-10.
- Environmental Studies Steering Committee, 2009-10.
- CCE Faculty Advisory Committee, 2007-08.
- Co-organizer of Workshop on Teaching, Career, & Life for New Faculty, 2014-2016.

Departmental Duties, Amherst College Department of Mathematics

- Department chair, July 2015-June 2018.
- Math colloquia organizer, 2008-10 and 2011-12 academic years.
- Math comprehensive exam director, 2009-10 and 2013-4.
- Math graders organizer, 2010-16.
- Advisor of math majors and undeclared students (regularly participate in orientation advising).

Fellowships

- 8/01-11/01 Sloan Foundation Pre-Tenure Leave Fellowship,
Department of Mathematics, Rose-Hulman Institute of Technology.
- 9/94-8/98 National Science Foundation Graduate Research Fellowship,
Department of Mathematics, Texas A&M University.
- 9/93-8/94 Lechner Merit Fellowship, Department of Mathematics, Texas A&M University.

Appointments

- 7/18-present Department of Mathematics and Statistics, **Amherst College**.
Full Professor: Teach 4 courses per year, including calculus, vector calculus, linear algebra, Fourier and wavelet analysis, differential equations (emphasis on nonlinear dynamics), and mathematical modeling.
- 7/13-6/18 Department of Mathematics and Statistics, **Amherst College**.
Associate Professor: Taught 4 courses per year.
- 7/07-6/13 Department of Mathematics, **Amherst College**.
Assistant Professor: Taught 4 courses per year.
- 7/04-6/07 Department of Mathematics and Computer Science, **Amherst College**.
Visiting Assistant Professor: Taught 4 courses per year.
- 9/99-6/04 Department of Mathematics, **Rose-Hulman Institute of Technology**.
Assistant Professor: Taught eight courses per year.
- 9/98-5/99 Department of Mathematics, **Indiana University**.
Visiting Lecturer: Taught three sections of finite mathematics (fall semester) and one section of calculus (spring semester), 85 students per section.
- 6/97-7/97 Department of Mathematics, **Texas A&M University**.
Lecturer: Taught business calculus, class size 40.

Other Affiliations

- Associate member of the Neuroscience and Behavior Program at UMass-Amherst.

Professional Service

- Member of Editorial Board for the *College Mathematics Journal*.
- Member of AWM Committee on Committees (2/1/2014-17; chair starting 2/1/16).
- Member of MAA Committee on Halmos-Ford Awards (7/1/2014-18; chair starting 7/1/15).
- Co-chair of the AMS-ASA-AWM-IMS-MAA-NCTM-SIAM Joint Committee on Women in the Mathematical Sciences (2/1/2011-14).
- Co-editor of the *Media Highlights* column in the *College Mathematics Journal* since 2010.
- Reviewer for PNAS, the *College Mathematics Journal*, the *Journal of Theoretical Biology*, *PLoS One*, and the *Journal of Biological Rhythms*, among others.

Courses Taught at Amherst College

New courses that I introduced to the curriculum are marked with an asterisk.

Fall 2020	Math 150 Voting and Elections (2 sections)	Spring 2021	Math 140 Mathematical Modeling (course release for C6)
Fall 2018	Math 150 Voting and Elections Stat 360 Probability	Spring 2019	Math 211 Multivariable Calculus Math 140 Mathematical Modeling
Fall 2017	Math 140 Mathematical Modeling Math 211 Multivariable Calculus	Spring 2018	Math 365 Stochastic Processes (course release for chairing dept)
Fall 2016	Math 150* Voting and Elections Math 284* Numerical Analysis	Spring 2017	Math 211 Multivariable Calculus Math 294* Optimization
Fall 2015	Math 211 Multivariable Calculus Math 320 Wavelets and Fourier Analysis	Spring 2016	Math 140 Mathematical Modeling Math 365 Stochastic Processes
Fall 2014	Math 140 Mathematical Modeling Math 211 Multivariable Calculus Math 390 Partial Differential Eqs	Spring 2015	<i>Sabbatical leave</i>
Fall 2013	FYS 102* Voting and Elections Math 320 Wavelets and Fourier Analysis Math 390 Partial Differential Eqs	Spring 2014	Math 272 Linear Algebra with Applications Math 365* Stochastic Processes
Fall 2012	Math 140 Mathematical Modeling Math 211 Multivariable Calculus Math 490 Flux Balance Analysis	Spring 2013	Math 260 Differential Equations Math 272 Linear Algebra with Applications Math 390 Geological Modeling with PDEs
Fall 2011	Math 211 Multivariable Calculus Math 320 Wavelets and Fourier Analysis Math 390 Applied DEs for Finance	Spring 2012	Math 272 Linear Algebra with Applications Math 450 Functions of a Real Variable

Fall 2009	Math 13 Multivariable Calculus Math 19 Wavelets and Fourier Analysis	Spring 2010	Math 22 Linear Algebra with Applications Math 42 Functions of a Real Variable
Fall 2008	Math 13 Multivariable Calculus Math 14* Mathematical Modeling	Spring 2009	Math 20 Differential Equations Math 22 Linear Algebra with Applications Math 98 Topics in Modeling
Fall 2007	Math 5 Calculus with Algebra Math 19 Wavelets and Fourier Analysis	Spring 2008	Math 6 Calculus with Elementary Functions Math 22 Linear Algebra with Applications Math 98 Topics in ODEs and PDEs
Fall 2006	Math 5 Calculus with Algebra Math 13 Multivariable Calculus	Spring 2007	Math 20 Differential Equations Math 22 Linear Algebra with Applications
Fall 2005	Math 13 Multivariable Calculus Math 19* Wavelets and Fourier Analysis	Spring 2006	Math 13 Multivariable Calculus Math 22* Linear Algebra with Applications
Fall 2004	Math 13 Multivariable Calculus Math 25 Linear Algebra	Spring 2005	Math 13 Multivariable Calculus Math 16 Chaotic Dynamical Systems Math 98 Data Mining

Invited Presentations

Developing Apps for Circadian Analysis with Undergraduates, Physics of Life: Periodic patterns in environmental light, physiology, and behavior, November 19, 2021.

Analysis of the Circadian Rhythms of Brown Bears During Winter Dormancy, Mini-symposium on Hibernation and Circadian Rhythms at the Society for Mathematical Biology Virtual Annual Meeting, June 14, 2021.

Bayesian Parameter Estimation Applied to Circadian Rhythms, Mini-symposium on the Dynamics of Circadian Oscillators at the SIAM Conferences on Applications of Dynamical Systems, May 26, 2021.

Analysis of Bioluminescence Time Series, Institute of Medical Psychology in the University of Munich, Germany (via Zoom), July 15, 2021.

Data Analysis for Chronobiology, 2020 International Chronobiology School (via Zoom), August 6 and 13, 2020 (<https://sophia.smith.edu/chronoschool2020/july-6-13-data-analysis/>).

Rhythms of Life: Data Science and the Circadian Clock, Women in Data Science, Worcester Polytechnic Institute, March 4, 2019.

Clocks in Mice and Flies and Bears, Oh My!, Rose-Hulman Undergraduate Math Conference, April 20, 2018; invited faculty speaker.

Circadian Clocks in Multiple Species, AWM Research Symposium 2017, UCLA, April 8, 2017; talk was part of a double-session of 8 speakers on Biological Oscillations Across Time Scales organized by TL and Stephanie Taylor.

- Agent-Based Modeling in the Classroom*, International Congress on Agent Computing, George Mason University, November 30, 2016.
- Assessing the Coherence of Coupled Oscillations*, 6th Annual Center for Circadian Biology Symposium, UC San Diego, February 26, 2015.
- Wavelet-Based Analysis of Circadian Oscillators*, Frontiers in Applied and Computational Mathematics, New Jersey Institute of Technology, May 22, 2014.
- The Mathematics Behind Circadian Rhythms*, Mathematics Department, Smith College, September 13, 2012.
- Analyzing Our Internal Circadian Clocks*, Lazerowitz Lecture, Amherst College, April 19, 2012.
- Introduction to Compressed Sensing*, Mathematics Department, Colby College, March 5, 2012.
- Analysis of Stochastic Variability in PER2::LUC Fibroblast Oscillations*, Division of Sleep Medicine at the Harvard Medical School, January 11, 2012.
- Coupled oscillators: Joggers, fireflies, and finger coordination*, MOSAIC M-cast (broadcast via web: http://www.causeweb.org/wiki/mosaic/index.php/Main_Page), December 2, 2011.
- Applying Wavelet Transforms to Circadian Data*, Third World Congress of Chronobiology, Puebla, Mexico, May 9, 2011.
- Wavelet Analysis of Circadian Oscillations*, Workshop on Circadian Clocks in Plants and Fungi, Mathematical Biosciences Institute at Ohio State, October 28, 2010.
- Wavelet Analysis of Circadian Rhythms and Jet Lag*, SUM Series, North Carolina State University, September 29, 2010.
- Dirichlet-to-Neumann Maps and Dynamic Fracture Mechanics*, UMass-Amherst Applied Analysis and Computation Seminar, April 21, 2009.
- Mathematical Modeling of the Quabbin Reservoir (2 one-hour presentations)*, Climate Change Conference at The Williston Northampton School, March 31, 2009.

Workshops and Short Courses Attended

- MAA Minicourse on POGIL in Math Courses, 2018 Joint Math Meetings, San Diego.
- Women Achieving through Community Hubs in the U.S. (WATCH US) Stakeholders meeting, University of Nebraska- Lincoln, June 8-10, 2017.
- AMS Chairs Workshop, 2017 Joint Math Meetings, Atlanta, GA.
- Amherst College Faculty Writing Seminar, Fall Semester 2014.
- MAA Minicourse on a Dynamical Systems Approach to the DE course, 2012 Joint Math Meetings, Boston, MA.
- AMS Short Course on Markov Chains and Mixing Times, 2010 Joint Math Meetings, San Francisco.
- MAA Minicourse on Game Theory, 2009 Joint Math Meetings, Washington, DC.
- MAA Minicourse on Mathematics of Voting, August 2008, MAA MathFest, Madison, WI.

Mathematics of Social Justice Workshop, Middlebury College, Middlebury, VT, June 20-23, 2007, organized by Priscilla Bremser.

NSF Chautauqua Course “Circadian Biology: From Clock Genes and Cellular Rhythms to Sleep Regulation,” May 11-13, 2005, Harvard University, organized by J.W. Hastings, Charles A. Czeisler, and Steven W. Lockley.

AMS Short Course on Computerized Tomography and MAA Minicourse on Financial Mathematics, 2005 Joint Math Meetings, Atlanta.

MAA Short Course on the History of Mathematical Technologies, 2004 Joint Math Meetings, Phoenix.

MAA Minicourse on Visual Linear Algebra, 2003 Joint Math Meetings, Baltimore.

Project NExT Workshops and MAA Minicourse on Teaching Statistics with Active Learning, 2001 Joint Math Meetings, New Orleans.