

Brian S. Blais
Bryant University - Science and Technology
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EDUCATION:

May 1998 **Brown University**, Providence, RI
 PhD. in Physics
 Advisor: Professor Leon N Cooper

May 1995 **Sc.M.** in Physics

Spring 1990 **Universität Heidelberg**, Heidelberg, Germany

May 1992 **Wesleyan University**, Middletown, CT
 B.A. with Honors in Physics
 Advisor: Professor Dale Doering

RESEARCH INTERESTS:

Theoretical Neuroscience:

- learning and memory in neural systems
- vision
- spike-timing dependent plasticity

Bayesian Inference:

- frequentist versus Bayesian statistics
- Bayesian approaches to learning and memory
- Uncertainty in experimental science

Dynamical Systems:

- Dynamics of disease transmission
- Parameter estimation in dynamical systems

TEACHING EXPERIENCE:

August 2022–present **Biological and Biomedical Science (BBS) Department**, Bryant University
Professor:

- Taught courses in introductory physics, artificial intelligence and robotics, computational neuroscience, computer programming
- Created laboratory manuals to highlight the concepts in experimental science, for physics

- Designed courses in artificial intelligence and robotics as well as computational neuroscience, supervising undergraduate projects

August 2011–July 2022 **Science and Technology Department**, Bryant University

Professor:

- Taught courses in introductory physics, astronomy, meteorology, machine learning, artificial intelligence and robotics, computational neuroscience, computer programming
- Created laboratory manuals to highlight the concepts in experimental science, for physics, astronomy, and meteorology
- Designed courses in artificial intelligence and robotics as well as computational neuroscience, supervising undergraduate projects

August 2006–August 2011 **Science and Technology Department**, Bryant University

Associate Professor:

- Taught courses in introductory physics, astronomy, meteorology, machine learning, artificial intelligence and robotics, computational neuroscience
- Created laboratory manuals to highlight the concepts in experimental science, for physics, astronomy, and meteorology
- Designed courses in artificial intelligence and robotics as well as computational neuroscience, supervising undergraduate projects

Fall 2000–August 2006 **Science and Technology Department**, Bryant University

Assistant Professor:

- Taught courses in introductory physics, astronomy, meteorology, machine learning, artificial intelligence and robotics
- Created laboratory manuals to highlight the concepts in experimental science, for both physics and astronomy
- Created an introductory programming manual for Matlab/Octave, for Artificial Intelligence and Machine Learning

Spring 2000 **Science and Technology Department**, Bryant College

Adjunct Professor, Introductory Physics and Laboratory:

- Designed an introductory physics class and laboratory for business students
- Employed lectures and hands-on interaction to teach students
- Created a laboratory manual to highlight the concepts in experimental science

1995 **Physics Department**, Brown University

Teaching Assistant, Advanced Undergraduate Laboratory for Senior Majors:

- Led laboratory sections and help sessions.
- Prepared teaching supplements to enhance student learning.

1994 ***Teaching Assistant, Electricity and Magnetism for Sophomore Majors:***

- Employed lectures and hands-on interaction to teach students in a laboratory setting.
- Prepared topical teaching supplements to enrich the learning experience.

- Used the laboratory reports to assess student understanding and promote better learning.

1993–1994

Teaching Assistant, Introductory Physics for Non-Majors:

- Prepared lectures to motivate laboratory material.
- Used weekly teaching sessions to augment the in-class learning
- Crafted specific supplements geared toward the non-physics-major students

1997

Recipient of the Center for the Advancement of College Teaching Certificate:

- Participated in seminars on pedagogy
- Reviewed a video recording of my own teaching session
- Received feedback on my teaching from observers from the CACT and the physics department

1991

Physics Department, Wesleyan University

Undergraduate Teaching Assistant:

- Introductory physics for non-majors.
- Newtonian mechanics and special relativity for advanced majors.
- Led help sessions, made and graded both homework and test questions.

Fall 1990

Math Department, Wesleyan University

Undergraduate Teaching Assistant:

- Introduction to computers (Pascal) for non-science majors
- Prepared lectures for and implemented extra class sections
- Used examples, created specifically for non-majors, to highlight possibly difficult ideas
- Made and graded both homework and test questions.

Spring 1991

Physics Department, Wesleyan University

Short Course Instructor:

- Designed and taught a course in Pascal programming for physics undergraduates.

RESEARCH EXPERIENCE:

August 2022–present **Biological and Biomedical Science (BBS) Department, Bryant University**

Professor:

- Analysis and simulations of neural sensory systems
- Statistics of paleoclimate data
- Bayesian data analysis
- Molecular thermodynamics

2011–Aug 2022 **Department of Science and Technology, Bryant University**

Professor:

- Analysis and simulations of neural sensory systems
- Statistics of paleoclimate data
- Bayesian data analysis

- Molecular thermodynamics
- 2011–2021 **Institute for Brain and Neural Systems**, Brown University
Research Professor:
- Analysis and simulations of neural sensory systems
 - Synaptic modification in spiking neurons
 - Molecular thermodynamics
- 2006–2011 **Department of Science and Technology**, Bryant University
Associate Professor:
Institute for Brain and Neural Systems, Brown University
Adjunct Professor:
- Analysis and simulations of neural sensory systems
 - Synaptic modification in spiking neurons
 - Bayesian data analysis
 - Dynamics of global resources and economics
- 2000–2006 **Department of Science and Technology**, Bryant University
Assistant Professor:
Institute for Brain and Neural Systems, Brown University
Adjunct Professor:
- Analysis and simulations of neural sensory systems
 - Spike-timing dependent plasticity
 - Dynamics of global resources and economics
 - Building hardware computer interfaces for automated data collecting and analysis
- 1998–2000 **Institute for Brain and Neural Systems**, Brown University
Post-doctoral Research Associate:
- Performed analysis and simulations of neural systems.
 - Studied feature extraction in high dimensional data and the statistics of natural images.
 - Explored scaling in neural systems, forest fires, and percolation systems
- Supervisors:* Professor Leon N Cooper and Professor Nathan Intrator
- 1998–1999 **Institute for Brain and Neural Systems**, Brown University
Research Supervisor:
- Taught and supervised an undergraduate honors thesis.
 - Thesis received the 1999 Richard E. Whalen Award for Undergraduate Research Excellence in Neuroscience and Behavioral Biology.
- 1994–1998 **Physics Department and Institute for Brain and Neural Systems**, Brown University
Research Assistant:
- Carried out analytical and computational work on models of systems of neurons
 - Studied the statistics of natural images and its effect on the function of visual neurons

- Examined bias/variance balancing in optimization problems using noise sensitivity

Advisor: Professor Leon N Cooper

1990–1992 **Physics Department**, Wesleyan University
Research Assistant:

- Studied excess electron distributions on insulators in an Ultra-High Vacuum System.
- Implemented computer models of electron emission from insulators
- Honors thesis completed.

Advisor: Professor Dale Doering

Summer 1990 **Chemistry Department**, Brookhaven National Laboratory
Research Assistant:

- Studied two-dimensional phase transitions of noble gases on graphite.

Advisor: Dr. John Larese

COMPUTATIONAL EXPERIENCE:

2022–present **Biological and Biomedical Science (BBS) Department**, Bryant University
System Administrator/Programmer:

- Automated administrative tasks in Python for the department
- Wrote neural simulators in Python/Cython for research in synaptic plasticity.

2002–2022 **Science and Technology Department**, Bryant University
System Administrator/Programmer:

- Programmed a graphical user interface, in Matlab and C, for complex neural network simulations.
- System administration of a computational neuroscience cluster
- Programmed a multi-platform neural simulator, in Python, for use with rate- and spike-based neurons

1994–2000 **Institute for Brain and Neural Systems**, Brown University
System Administrator/Programmer:

- Programmed a graphical user interface, in Matlab and C, for neural network simulations.
- System administration of a network of Sun workstations, PCs, and Macintosh computers.

1992–1993 **Macro International Inc.**, Burlington, VT.
Computer Programmer:

- Completed an interactive multi-media preschool activities project.

1990–1992 **Physics Department**, Wesleyan University
Research Assistant/Programmer:

- Implemented computer models of electron distributions in Pascal.

Summer 1990 **Chemistry Department**, Brookhaven National Laboratory
Research Assistant/Programmer:

- Interfaced a Macintosh computer with IEEE equipment to remotely run experiments.
- Programmed in Fortran and Basic

Programming languages: Python, C, C++, Matlab (GUI development), Octave, Scilab, Fortran, LISP, Pascal, HTML, S-lang.

Platforms: Linux, OS-X, UNIX on Sun and IBM SP2, MS-DOS, Windows and Macintosh.

Applications: Matlab/Octave, Maple, L^AT_EX, Emacs, Word, Excel, and others.

ADMINISTRATIVE EXPERIENCE:

2015–2017 **Science and Technology Department**, Bryant University
Department Chair:

- Responsible for all scheduling and adjunct hiring for the department
- Organized the department through self-study and external review
- Coordinated curriculum revisions for Biology and Environmental Science
- Implemented University policy and rules within the department, for faculty and students

REFEREED PUBLICATIONS:

Gregor, K. and **Blais, B.S.**. Is Name Popularity a Good Test of Historicity? A Statistical Evaluation of Richard Bauckham's Onomastic Argument. *Journal for the Study of the Historical Jesus* (in press) (2023)

Squadrani, L., Curti, N. , Giampieri, E., Remondini, D., **Blais, B.S.**, Castellani, G. Effectiveness of biological inspired neural network models in learning and patterns memorization. *Entropy* Vol 24 p 682 (2022)

Castellani, G., Cooper, L. N, **Blais, B.S.**. Energy consumption and entropy production in a stochastic formulation of BCM learning. *Journal of Computational Biology* (2021): 28 no 0. p 1-12

Blais, B.S. Model Comparison in the Introductory Physics Laboratory. *The Physics Teacher* 58.3 (2020): 209-213.

Caitlyn R. Witkowski, Marcel T.J. van der Meer, **Brian Blais**, Jaap S. Sinninghe Damsté[©]ad, Stefan Schouten. Algal biomarkers as a proxy for pCO₂: Constraints from late Quaternary sapropels in the eastern Mediterranean. *Organic Geochemistry*. Volume 150, December 2020.

Witkowski, C. R., Weijers, J. W. H. , **Blais, B.S.**, Schouten, S., and Damsté[©], J. S. S. Molecular fossils from phytoplankton reveal secular pCO₂ trend over the Phanerozoic. *Science Advances*. Vol. 4, no. 11, (2018) DOI: 10.1126/sciadv.aat4556.

J. Skaza and **B. S. Blais**, 2017. Modeling the Infectiousness of Twitter Hashtags. *Physica A: Statistical Mechanics and its Applications*. Volume 465. pp. 289-296.

B. S. Blais, 2014. Receptive Field modeling. in *Encyclopedia of Computational Neuroscience*, edited by D. Jaeger and R. Jung (Springer New York, 2014) pp. 1-6.

- Yang, H, **Blais, B.S.**, Leng, Qin. 2011. Stable isotope variations from cultivated Metasequoia trees in the United States: A statistical approach to assess isotope signatures as climate signals. *Jpn. J. Histor. Bot.* 19 (1-2) pp 75-88.
- Blais, B.S.** 2011. Automatic Flushing Toilets: An Entertaining Platform for Exploring Scientific Thinking. *Physics Teacher.* 49 (3): 162.
- Blais, B.S.** 2010. Using Python to Program LEGO MINDSTORMS™ Robots: The PyNXC Project. *Python Papers* 5 (2).
- Blais, B.S.**, Cooper, L.N , and Shouval H.Z. 2009. Effect of correlated lateral geniculate nucleus firing rates on predictions for monocular eye closure versus monocular retinal inactivation *Physical Review E* 80 (6): 061915.
- Blais, B.S.**, Frenkel M. , Kuindersma S., Muhammad R., Shouval H.Z, Cooper, L.N , and Bear M. F. 2008 Recovery from monocular deprivation using binocular deprivation: Experimental observations and theoretical analysis. *Journal of Neurophysiology.* 100:2217-2224.
- Blais, B.S.** and Cooper, L.N 2008. BCM Theory. *Scholarpedia* 3(3):1570.
- Kuindersma, S.R., **Blais, B.S.** 2007. Teaching Bayesian Model Comparison With the Three-sided Coin. *American Statistician.* **61**(3): 239-244.
- Yeung, L.C., Shouval, H.Z, **Blais, B.S.**, Cooper, L. N. 2004. Synaptic Homeostasis and Input Selectivity Follow From a Calcium-Dependent Plasticity Model. *Proceedings of the National Academy of Science.* **101**(41): 14943-14948.
- Brian S. Blais.** 2003. Teaching Energy Balance using Round Numbers: A Quantitative Approach to the Greenhouse Effect and Global Warming. *Physics Education.* **38**(6): 519-525.
- David F. Betsch and **Brian S. Blais.** 2003. A Programmable \$25 Thermal Cycler for PCR. *Biochemistry and Molecular Biology Education.* **31**(2): 113-114.
- Yeung L. C., **Blais, B.S.**, Cooper L. N, Shouval H. Z. 2003. Calcium as the associative signal for a model of Hebbian plasticity: application to multi-input environments. *Neurocomputing* 52-54:437-440.
- Shouval, H. Z., Castellani, G. C., **Blais, B.S.**, Yeung, L. C., and Cooper L. N. 2002. Converging evidence for a simplified biophysical model of synaptic plasticity. *Biological Cybernetics: Special Issue "Hebb in Perspective".* **87**(5-6) 383-391.
- Lee A. B., **Blais B.S.**, Shouval H.Z. , and Cooper L. N, Statistics of lateral geniculate nucleus (LGN) activity determine the segregation of ON/OFF subfields for simple cells in visual cortex. 2000. *Proceedings of the National Academy of Science.* **97**(23):12875-12879.
- Blais B.S.**, Cooper L. N. and Shouval H. Formation of Direction Selectivity in Natural Scene Environments. 2000. *Neural Computation.* **12**(5): 1057:1066.
- Blais B.S.**, Shouval H., and Cooper L. N. 1999. The Role of Presynaptic Activity in Monocular Deprivation: Comparison of Homosynaptic and Heterosynaptic Mechanisms. *Proceedings of the National Academy of Science.* **96**: 1083-1087.
- Blais B.S.**, Intrator N., Shouval H., and Cooper L. N. 1998. Receptive field formation in natural scene environments: comparison of single cell learning rules. *Neural Computation.* **10** (7):1797–1813.

Carroll, D.L., Doering, D.L., and **Blais, B.S.**. 1992. Thermally- and Optically-Stimulated Exoelectron Emission from an Electron Beam Irradiated Glass-Ceramic Material. *Journal of Vacuum Science Technology*. **10** (7):2863.

CONFERENCE PROCEEDINGS AND ABSTRACTS:

Blais, B.S., Gaier, E., Xiao, S. Modeling amblyopia treatment responses through principles of synaptic plasticity. *Association for Research in Vision and Ophthalmology (ARVO)* May 2022.

Witkowski, C. , Weijers, J.W.H. , **Blais, B.S.**, Schouten S. , Damsté, J.S., Isotopic fractionation of phytoplankton reveals Phanerozoic pCO₂ trend. August 2018. Goldschmidt Geochemistry Conference.

Blais, B.S., Beginning with Bayes or Statistical Inference for Everyone. May 2016. Electronic Conference On Teaching Statistics (eCOTS) 2016.

Blais, B.S., Conservation ADHD. Mar 2016. Land and Water Conservation Summit.

Hartl T. and **Blais, B.S.**, Unbiased Reserve Estimates Based On Triangle GLMs: Bootstrapping vs Bayesian Analysis. *Actuarial Research Conference*. August 2015

Skaza, J. and **Blais, B. S.**. The Relationship between Economic Growth and Environmental Degradation: Exploring Models and Questioning the Existence of an Environmental Kuznets Curve. *21st Annual Conference Issues in Political Economy, Undergraduate Student Research in Economics*. May, 2014. papers.ssrn.com/sol3/papers.cfm?abstract_id=2346173

Blais, B.S. Mar 2013. Science and Analytics . *Analytics Symposium*, Bryant University.

Blais, B. S., Gannon, C., Leng, Q, Patalano, R., and Yang, H. Bayesian Parameter Estimation in a 1D Model of Precipitation and Evaporation: Comparison of Middle Miocene and Modern Climates Using Plant Lipid Deuterium δD Measurements. *Geological Society of America (GSA) Annual Meeting*. October 2013.

Gannon, C., **Blais, B. S.**, Leng, Q, Patalano, R., and Yang, H. Understanding The Middle Miocene Climatic Optimum: Evaluation Of Deuterium Values (δD) Related To Precipitation And Temperature. *2012 GSA Annual Meeting*. November 2012.

Blais, B. S. Modeling Ecosystems and Climates: A Teaching Simulator for Systems Dynamics. *Rhode Island Space Grant Consortium Annual Symposium*, November 2009.

Blais, B. S., Kuindersma, S. R. A Hierarchical Spatiotemporal Model of Neocortex With Probabilistic Feedback. In *Twelfth International Conference on Cognitive and Neural Systems (ICCNs)*, May 2008

Shouval, H.Z, Gavornik, J. P., Shuler, M., Bear, M. F., and **Blais, B.S.** 2007. Learning Reward Timing using Reinforced Expression of Synaptic Plasticity In *Collaborative Research in Computational Neuroscience (CRCNS) Conference*.

Yang, H., **Blais, B. S.**, Perez, G. F., Colvin, S. , Pagani, M. 2006. Climatic signals registered as C isotopic values in Metasequoia leaf tissues: A statistical analysis. In *Abstracts of 2006 American Geophysical Union (AGU) Fall Meeting*

Shouval, H.Z, Bear, M.F., and **Blais, B.S.**. 2006. The cellular basis of receptive field plasticity in visual cortex, an integrative experimental and theoretical approach In *Collaborative*

- Blais, B.S.** and Kuindersma, S. 2005. Synaptic Modification in Spiking-Rate Models: A Comparison between Learning in Spiking Neurons and Rate-Based Neuron Models In *Society For Neuroscience Conference Abstracts*.
- Blais, B.S.**, Frenkel, M.Y., Kuindersma, S., Bear, M.F. 2005. The Role of Structure and Noise in the Plasticity of the Mouse Visual System. In *Proceedings of the Ninth International Conference on Cognitive and Neural Systems*.
- Yeung, L.C., **Blais, B.S.**, Cooper, L. N, and Shouval, H. Z. 2003. Metaplasticity and the Unified Calcium Model Lead to Input Selectivity in Spiking Neurons. *Computational Neuroscience: Trends in Research 2003*. Amsterdam: Elsevier Science.
- Yeung, L.C., **Blais, B.S.**, Cooper, L. N, and Shouval, H.Z. 2003. Selectivity and Metaplasticity in a Unified Calcium-Dependent Model. *Advances in Neural Information Processing Systems 15*. Becker, S. Thrun, and K. Obermayer, editors. MIT Press.
- Yeung, L.C., **Blais, B.S.**, and Shouval, H.Z, Cooper, L. N. 2003. Homeostatic Metaplasticity Accounts for Synaptic Scaling. In *Society For Neuroscience Conference Abstracts*.
- Blais, B.S.** 2002. Plasticity: A Synaptic Modification Simulation Environment. Demonstration in *Neural Information Processing Systems: Natural and Synthetic*.
- Yeung, L.C., **Blais, B.S.**, Cooper, L. N, and Shouval, H. Z. 2002. Calcium as the associative biochemical signal for a model of Hebbian plasticity. *Computational Neuroscience: Trends in Research 2002*. Amsterdam: Elsevier Science.
- Blais, B.S.**, Shouval, H. and Cooper, L. N. 2001. The Formation of Orientation and Direction Selectivity Maps: Comparing Rules of Synaptic Modification. In *Proceedings of the Fifth International Conference on Cognitive and Neural Systems*.
- Lee, A. B, **Blais, B.S.**, Shouval, H. and Cooper, L. N. 1999. Statistics of LGN activity determine the segregation of ON/OFF subfields for simple cells in cortex. In *The Neurobiology of Computation: Proceedings of the seventh CNS conference* .
- Blais, B.S.**, Shouval, H. and Cooper, L. N. 1998. Formation of Direction Selectivity in Natural Scene Environments. *Computational Neuroscience Meeting*.
- Blais, B.S.**, Intrator, N., Shouval, H. and Cooper, L. N. 1997. Receptive field formation in natural scene environments: comparison of kurtosis, skewness, and the quadratic form of BCM. In *Proceedings of Neural Information Processing Systems*.
- Blais, B.S.**, Shouval, H. and Cooper, L. N. 1997. Role of Noise in Visual Deprivation: a comparison between models and experimental results in visual cortex. In *Society For Neuroscience Conference Abstracts*.
- Blais, B.S.**, Shouval, H. and Cooper, L. N. 1997. How Sparse is Sparse? What is required in the natural scene environment for orientation selectivity. *Natural Scene Statistics Meeting*.
- Blais, B.S.**, Shouval H., and Cooper L. N. 1997. Dynamics of synaptic plasticity: A comparison between models and experimental results in visual cortex. In *The Neurobiology of Computation: Proceedings of the fifth CNS conference* .
- Perrone, M.P., and **Blais, B.S.**. 1995. Regression NSS: An Alternative to Cross Validation. In *Proceedings of the Eighth Annual Conference on Computational Learning Theory*. 385-391.

Carroll, D.L., Doering, D.L., and **Blais, B.S.**. 1992. Dynamic Redistribution of Excess Charge During Photoemission in an Electron Bombarded Glass-Ceramic. In *Proceedings of the Materials Research Society*. 235:395.

THESES, BOOKS, AND UNREFEREED PUBLICATIONS:

Blais, B.S. 2022. Explorations of Nature: Experiments in Physics.

Blais, B.S., 2018. A Measure of Faith - Probability in Religious Thought. Available from <https://bblais.github.io/posts/2019/Jul/15/a-measure-of-faith-probability-in-religious-thought/>.

Blais, B.S., 2015. Statistical Inference for Everyone. Available from <https://bblais.github.io/posts/2019/for-everyone/>.

Skaza, J. and **Blais, B.S.** 2013. The Relationship between Economic Growth and Environmental Degradation: Exploring Models and Questioning the Existence of an Environmental Kuznets Curve. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2346173.

Witkowski, C. and **Blais, B.S.**. Bayesian analysis of epidemics - zombies, influenza, and other diseases. 2013. Available from: <http://arxiv.org/abs/1311.6376>, arXiv:1311.6376.

Cooper, L. N, Intrator, N., **Blais, B.S.**, Shouval, H. Z. 2004. *Theory of Cortical Plasticity*. World Scientific Publishing.

Blais, B.S.. 1998. The Role of the Environment in Synaptic Plasticity: Towards an Understanding of Learning and Memory. *PhD Dissertation, Brown University*.

Blais, B.S. 1997. The Brain. Pure and Simple. How Physicists Model the Mind. *The Catalyst*.

Blais, B.S.. 1992. Electron Trapping Centers In Insulators: Experiment and Model. *Honors Thesis, Wesleyan University*.

MANUSCRIPTS IN PROGRESS:

NON-CONFERENCE PRESENTATIONS:

Blais, B.S. , “The Power of Retrospectives to Make Mid-Course Corrections”. October 2021. Fall 2021 Teaching Forum, Bryant University.

Blais, B.S. , “Imagine a World With No Grades”. May 2018. Summit on Teaching and Learning, Bryant University.

Blais, B.S. , “Your lack of imagination can kill you...but you can be saved by math.”. Feb 2018. TEDxBryant.

Blais, B.S. and Skaza, J., “Modeling the Infectiousness of Twitter Hashtags”. Sep 2016. Bryant University Science Seminar.

Blais, B.S., “Statistical Inference for Everyone: One Scientist’s Attempt to Set the Record Straight on Rational Thought”. Mar 2015. The Department of Science and Technology Seminar Series at Bryant University.

Skaza, J. and Blais, B.S., “Mathematical Modeling of Trending Topics on Twitter”. Apr 14, 2015. Honors Capstone Presentation.

Blais, B.S., “Science, Probability, and Models of the World”. Aug 2015. Presentation to China University of Geosciences Summer Exchange Trip.

Brian Blais, Apr 2014. “Climate Modeling - A Brief Exploration”. Presentation to Issues in Biological Science.

Blais, B.S., “What is Science?”. July 2014. Presentation to China University of Geosciences Summer Exchange Trip.

Blais, B.S., “Statistical Heresies: Teaching Statistical Inference in the Bayesian Revolution”. May 2014. Faculty Development Seminar at Bryant University.

Blais, B.S. Feb 2013. “From Theory to Experiment and Back Again: A Physicists Journey Through Neuroscience”. University of Rhode Island Neuroscience Colloquium.

Blais, B.S. Mar 2013. “Science and Analytics”. Analytics Symposium, Bryant University.

Witkowski, C. and Blais, B.S. Apr 2013. “Zombie Apocalypse: An Epidemic Model”. Research and Engagement Day (REDay), Bryant University

Blais, B.S. Apr 2013. “Science and Faith: Friends or Foes.” Research and Engagement Day (REDay), Bryant University.

“Climate Modeling and Function Fitting” (Bryant Research Seminar, Oct 2011)

“Collaboration Tools Notes” (Technology Sandbox, Feb 2011)

“A Nobel Night with Bryant Science Technology Professors”, October 2010.

“Cython: Optimization in Python.”, Bryant Finance and Science Joint Research Meeting, April 2008.

“Inhibition and BCM.” IBNS Research Meeting, April 2008.

“Statistics and Environmental Resources: Projects for Collaboration.” Bryant-China University of Geosciences (CUG) Joint Research Event, December 2007

“TTX and BCM” , MIT Lab Presentation, August 2007.

“Numerical Computing in Python: A Guide for Matlab Users.”, Bryant University, Faculty Development Seminar, May 2007.

“Teaching Bayesian Model Comparison with the Three-sided Coin”. with Scott Kuindersma (UMass Amherst). Bryant University Faculty Research Day, January 2007.

“Plasticity in the Brain: A Physicist’s Perspective on Learning and Memory”, Brown University, Frontiers in the Interaction Between Physics and Biology, November 2005.

“Learning and Teaching Statistical Inference: An Open Discussion”, Bryant University, Faculty Development Seminar, November 2005.

“BCM and Deprivation: How does it work?”, MIT Lab Presentation, July 2005.

“The Challenges of Robotics”, at the follow-up ‘Meet the Professionals’ day for the Math Accelerating Professionals (MAP) Program, February 2005.

“Simulations of Visual Deprivation in Mice”, invited MIT research seminar. August, 2004.

“Space Exploration”, F.A.S.T. (Faculty and Students Together) seminar, April, 2004.

“Hot Topics in Global Warming: The Science of Global Warming”, at International Week Bryant College, November 2002.

“Robot War Demonstration”, at the ‘Meet the Professionals’ day for the Math Accelerating Professionals (MAP) Program, June 2002.

“The Physics of the Brain: Towards an Understanding of Learning and Memory”, Bryant College Science Seminar, February 2002.

“Teaching a Spherical Chicken to Read: Feature Extraction in Neural Networks”, Bryant College Interdisciplinary Research Seminar, October 2001.

“An exploration of models of learning using a graphical interface for single cell and network simulations”, Institute for Brain and Neural Systems Seminar, September 1999.

“Strobe Rearing Prevents the Convergence of Inputs With Different Response Timings Onto Simple Cells: Exploring a Model of Direction Selectivity” Institute for Brain and Neural Systems Seminar, May 1999.

“Physicists Studying the Brain”, Providence Rotary Club, March 1998.

“Physicists Studying the Brain”, East Providence High School, May 1997.

“How to Read the Mind of a Spherical Chicken”, Department Undergraduate Group meeting, Brown University Physics Department, April 1996.

“PVM and Parallel Programming”, Institute for Brain and Neural Systems Journal Club, March 1996.

AWARDS AND SOCIETIES:

2022	Received a Certificate in Effective College Instruction from the Association of College and University Educators (ACUE).
2022	Received a Merit Award for exemplary performance as a faculty member at Bryant University.
2015	Received a Merit Award for exemplary performance as a faculty member at Bryant University.
2014	Received Bryant University Advanced Applied Analytics Center research Grant: “Bayesian Analysis of Climate Oscillations”
2013	Supervised student, Jon Skaza, received a Summer Undergraduate Research Grant with the Center for Global and Regional Economic Studies, with a project on Environmental Kuznet Curves.
2006	Received a 3-year NSF Collaborative Research in Computational Neuroscience (CRCNS) grant: “The synaptic and cellular basis of receptive field plasticity in visual cortex, an integrative experimental and theoretical approach”
2005	Received a Service Award for exemplary service as a faculty member at Bryant College.
2002	Received a Merit Award for exemplary performance as a faculty member at Bryant College.
2001	Received Biomedical Research Infrastructure Network (BRIN) grant, as part of a cooperative effort with URI and other Rhode Island Universities.
1998–1999	Postdoctoral Associate, Institute for Brain and Neural Systems, Brown University
1997	Center for the Advancement of College Teaching (CACT) Teaching Certificate
1997–present	American Association of Physics Teachers (AAPT)
2015–present	American Statistical Association (ASA)

1994–1998 Research Assistantship, Brown University.

LANGUAGES:

Reading and basic speaking competence in German

PROFESSIONAL REFERENCES:

Available upon request.