SHARON M. CROOK
Curriculum Vitae

School of Mathematical and Statistical Sciences   phone: (480) 965-0403
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Tempe, Arizona 85287-1804   ORCID: 0000-0003-1659-0749

EDUCATION

Ph.D. Applied Mathematics, University of Maryland, College Park, MD, 1996
M.A. Applied Mathematics, University of Maryland, College Park, MD, 1991
B.S. Mathematics, University of Southern Mississippi, Hattiesburg, MS, 1987

PROFESSIONAL INTERESTS

Mathematical and Computational Neuroscience, Neuroinformatics, Neuroscience Data Analysis, Mathematical Physiology, Computational Biology, Differential Equations and Dynamical Systems

ACADEMIC EMPLOYMENT

2017-	Professor of Mathematics and Statistics and Life Sciences, Arizona State University, Tempe, Arizona
2010-2017	Associate Professor of Mathematics and Statistics and Life Sciences, Arizona State University, Tempe, Arizona
2004-2010	Assistant Professor of Mathematics and Statistics and Life Sciences, Arizona State University, Tempe, Arizona
2000-2004	Assistant Professor of Mathematics, Department of Mathematics and Statistics, University of Maine, Orono, Maine
1997-2000	Postdoctoral Researcher, Center for Computational Biology, Montana State University, Bozeman, Montana
1995-1997	Guest Research Assistant, Mathematical Research Branch, NIDDK, National Institutes of Health, Bethesda, Maryland
1989-1991	Teaching Assistant, University of Maryland, College Park, Maryland

FELLOWSHIPS AND AWARDS

2011	Scottish Informatics and Computer Science Alliance (SICSA) Distinguished Visiting Fellowship
2009	Doctoral Thesis Opponent, Eilen Nordlie, advisor: Hans Ekkehard Plesser, Norwegian University of Life Sciences, Aas, Norway
2009	Doctoral Thesis Opponent, Antti Pettinen, advisor: Marja-Leena Linne,

Tampere University of Technology, Finland

2002	Mathematical Association of America, Project NExT Fellow (New Experiences in Teaching)
1999	AWM Workshop Travel Award
1997-1999	NIH Postdoctoral Individual National Research Service Award
1992-1994	NASA Graduate Student Research Fellowship
1987-1989	University of Maryland Graduate School Fellowship
1987	University of Southern Mississippi Student Hall of Fame
1987	University of Southern Mississippi Mathematics Achievement Award

OTHER TRAINING AND AFFILIATIONS

2011	SICSA Distinguished Visiting Fellow, School of Informatics, University of Edinburgh
2011	Long-term Visitor, Computational Neurosciences Group, Norwegian University of Life Sciences
2008-	Member, Mathematical, Computational and Modeling Sciences Center, Arizona State University
2004-	Member, Center for Adaptive Neural Systems, Arizona State University
2003	Long-term Visitor, Mathematical Biosciences Institute, Ohio State University, Columbus, Ohio
1998	Visitor and Participant in Computational Neuroscience Workshop, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, Minnesota
1992	Student, Methods in Computational Neuroscience Course, Marine Biological Laboratory, Woods Hole, Massachusetts
1988-1991	Research and Development for Intelligent Data Management, NASA Goddard Space Flight Center, National Space Science Data Center, Greenbelt, Maryland
1987	Summer Intern, Laboratory for Atmospheres, NASA Goddard Space Flight Center, Greenbelt, Maryland
1985-1986	Summer Research Assistant and Computer Graphics Programmer, Medical University of South Carolina, Department of Anatomy, Charleston, South Carolina

PUBLICATIONS (*indicates mentored student or postdoc)

Peer-reviewed Journal Articles:

Neal, M, M Koenig, D Nickerson, G Misirli, R Kalbasi, A Drager, K Atalag, V Chelliah, M Cooling, D Cook, **S Crook**, M de Alba, S Friedman, A Garny, J Gennari, P Gleeson, M Golebiewski, M Hucka, N Juty, N Le Novere, C Myers, B Oivier, H Sauro, M Scharm, J Snoep, V Toure, A Wipat, O Wolkenhauer, D Waltemath (accepted) Harmonizing semantic annotations for computational models in biology. Briefings in Bioinformatics.

Gerkin, RC, *RJ Jarvis, **SM Crook** (2018) Towards systematic, data-driven validation of a collaborative, multi-scale model of *C. elegans*. Philosophical Transactions of the Royal Society B. doi:10.1098.rstb.2017.0381.

*Birgiolas, J, CM Jernigan, RC Gerkin, BH Smith, **SM Crook** (2017) SwarmSight: Real-time tracking of insect antenna movement and proboscis extension reflex using a

common preparation and conventional hardware. *Journal of Visualized Experiments* (130), e56803. doi:10.3791/56803.

*Birgiolas, J, CM Jernigen, B Smith, **S Crook** (2016) SwarmSight: Measuring the temporal progression of animal group activity levels from natural scene and laboratory videos. *Behavior Research Methods*, 1-12.

*Berger, S, **S Crook** (2015) Modeling the influence of ion channels on neuron dynamics in Drosophila. *Frontiers in Computational Neuroscience.* 9:139. DOI:10.3389/fncom/2015.00139.

Gardner, C, *JR Jones, SM Baer, **SM Crook** (2015) Drift-diffusion simulation of the ephaptic effect in the triad synapse of the retina. *Journal of Computational Neuroscience*. 38:129-142. DOI:10.1007/s10827-014-0531-7.

Cannon, RC, P Gleeson, **S Crook**, G Gnapathy, B Marin, E Piasini, RA Silver (2014) LEMS: A language for expressing complex biological models in concise and hierarchical form and its use in underpinning NeuroML 2. *Frontiers in Neuroinformatics*. 8:79. DOI:10.3389/fninf.2014.00079.

*Costela, FM, J Otero-Millan, MB McCamy, S Macknik, XG Troncoso, AN Jazi, **SM Crook**, S Martinez-Conde (2014) Fixational eye movement correction of blink-induced gaze position errors. *PLoS One*. 9(10): e110889.

Vella, M, RC Cannon, **S Crook**, AP Davison, G Ganapathy, HPC Robinson, RA Silver, P Gleeson (2014) libNeuroML and PyLEMS: using Python to combine procedural and declarative modeling approaches in computational neuroscience. *Frontiers in Neuroinformatics*. 8:38. DOI:10.3389/fninf.2014.00038

*Herrera-Valdez, M, EC McKiernan, *SD Berger, S Ryglewski, C Duch, **S Crook** (2013) Relating ion channel expression, bifurcation structure, and diverse firing patterns in a model of an identified motor neuron. *Journal of Computational Neuroscience*. 34(2):211-229. DOI:10.1007/s10827-012-0416-6

Crook, SM, JA Bednar, *SD Berger, RC Cannon, AP Davison, M Djurfeldt, J Eppler, B Kreiner, S Furber, B Graham, M Hull, HE Plesser, L Schwabe, L Smith, V Steuber, S van Albada (2012) Creating, documenting and sharing network models. *Network: Computation in Neural Systems.* 23(4):131-149.

McCamy*, MB, J Otero-Millan, SL Macknik, Y Yang, XG Troncoso, SM Baer, **SM Crook**, S Martinez-Conde (2012) Microsaccadic efficacy and contribution to foveal and peripheral vision. *Journal of Neuroscience.* 32(27):9194-9204. DOI:10.1523/JNEUROSCI.0515-12.2012.

Venugopal, S, TM Hamm, **SM Crook,** R Jung (2011) Modulation of inhibitory strength and kinetics facilitates regulation of persistent inward currents and motoneuron excitability following spinal cord injury. *Journal of Neurophysiology*. 106(5):2167-2179.

*Kurian, M, **SM Crook** and R Jung (2011) Motoneuron models of self-sustained firing after spinal cord injury. *Journal of Computational Neuroscience.* 31(3):625-645.

Gleeson, P, **S Crook**, R Cannon, M Hines, G Billings, M Farinella, TM Morse, A Davison, S Ray, U Bhalla, SR Barnes, YD Dimitrova and RA Silver (2010) NeuroML: a simulator-independent language for describing data-driven models of neurons and networks with a high degree of biological realism. *PLoS Computational Biology*. 6(6): e1000815. DOI:10.1371/journal.pcbi.1000815.

Baer, SM, **S Crook**, *M Dur-e-Ahmad and Z Jackiewicz (2009) Numerical solution of calcium-mediated dendritic branch model. *Journal of Computational and Applied Mathematics.* 229:416-424.

*Dur-e-Ahmad, M, Z Jackiewicz, B Zubik-Kowal and **S Crook** (2007) A variant of pseudospectral method for activity-dependent dendritic branch model. *Journal of Neuroscience Methods.* 165:306-319.

Crook, S, *M Dur-e-Ahmad and SM Baer (2007) A model of activity-dependent changes in dendritic spine density and spine structure. *Mathematical Biosciences and Engineering.* 4:617-631.

Crook, S, P Gleeson, F Howell, J Svitak and RA Silver (2007) MorphML: Level 1 of the NeuroML standards for neuronal morphology data and model specification. *Neuroinformatics.* 5(2):96-104.

*Qi, W and **S Crook** (2004) Tools for neuroinformatic data exchange: An XML application for neuronal morphology data. *Neurocomputing.* 58-60C:1091-1095.

*Eaton, CD, **S Crook**, G Cummins and GA Jacobs (2004) Modeling ion channels from the cricket cercal sensory system. *Neurocomputing.* 58-60C:409-415.

Cummins, GI, **SM Crook**, AG Dimitrov, T Ganje, GA Jacobs and JP Miller (2003) Structural and biophysical mechanisms underlying dynamic sensitivity of primary sensory interneurons in the cricket cercal sensory system. *Neurocomputing.* 52:45-52.

Crook, S, J Miller and G Jacobs (2002) Modeling frequency encoding in the cricket cercal sensory system. *Neurocomputing* 44:769-773.

Crook, SM, GB Ermentrout and JM Bower. (1998) Spike frequency adaptation affects the synchronization properties of cortical networks. *Neural Computation* 10:837-854.

Crook, SM, GB Ermentrout and JM Bower (1998) Dendritic and synaptic effects in systems of coupled cortical oscillators. *Journal of Computational Neuroscience* 5:315-329.

Crook, SM, GB Ermentrout, MC Vanier and JM Bower (1997) The role of axonal delay in the synchronization of networks of coupled cortical oscillators. *Journal of Computational Neuroscience* 4:161-172.

Cromp, RF and **S Crook** (1989) An intelligent user interface for browsing satellite data catalogs. *Telematics and Informatics* 6:299-312.

Peer-reviewed Conference Proceedings:

Faucon, P, P Balachandran, **S Crook** (2017) SNaReSim: Synthetic Nanopore Read Simulator. *Proceedings of the 2017 IEEE International Conference on Healthcare Informatics,* DOI:10.1109/ICHI.2017.98.

*Samavat, M, *D Luli, **SM Crook** (2016) Neuronal network models for sensory discrimination. *Proceedings of 2016 50th Asilomar Conference on Signals, Systems and Computers*, 1066-1073. DOI:10.1109/ACSSC.2016.7869533.

*Birgiolas, J, S Dietrich, **S Crook**, A Rajadesingan, C Zhang, S Velugoti Penchala, V Addepalli (2015) Ontology-assisted keyword search for NeuroML models. In Amarnath Gupta and Susan Rathbun, Eds, *Proceedings of the 27th International Conference on Scientific and Statistical Database Management*, ACM, New York, NY. Article 37. DOI:10.1145/2791347.2791360.

Dietrich, SW, D Goelman, CM Borror, **SM Crook** (2015) An animated introduction to relational databases for many majors. *IEEE Transactions on Education.* 58(2):81-89. DOI:10.1109/TE.2014.2326834.

Crook, S, D Beeman, P Gleeson and F Howell (2005) XML for model specification in neuroscience: An introduction and workshop summary. *Brains, Minds, and Media.* 1:bmm228 (urn:nbn:de:0009-3-2282).

Jacobs, GA, K Hodge, **S Crook**, J Roddey and S Paydar (1998) Spatio-temporal activity patterns encode direction and dynamics in the cricket cercal system, *Proceedings of the 5th International Congress of Neuroethology*.

Crook, SM and GB Ermentrout (1997) An analysis of the adaptive behavior of piriform cortex pyramidal cells. In *Computational Neuroscience Trends in Research 1996*, JM Bower (Ed.), Plenum Publishers, 170-175.

Ermentrout, GB, **S Crook** and JM Bower (1996) Connectivity, axonal delay, and synchrony in cortical oscillators. In *Computational Neuroscience Trends in Research 1995*, JM Bower (Ed.), Academic Press, 167-172.

Cromp, RF and SM Crook (1991) Automated extraction of metadata from remotely sensed satellite imagery. *ACSM-ASPRS Annual Convention* 3:111-120.

Published Abstracts:

*Haynes, V, **SM Crook** (2018) Interlaminar contributions to auditory feature processing. *BMC Neuroscience, to appear.*

*Birgiolas, J, R Gerkin, **SM Crook** (2018) Rapid selection of NeuroML models via NeuroML-DB.org. *BMC Neuroscience, to appear.*

Gerkin, R, *RJ Jarvis, **SM Crook** (2018) Multiscale model validation with SciUnit. *BMC Neuroscience, to appear.*

*Jarvis, R, **SM Crook**, RC Gerkin (2017) Parallel model optimization against experimental neuron physiology data with DEAP and NeuronUnit. *Frontiers in Neuroinformatics Conference Abstract: 10th INCF Congress of Neuroinformatics.*

*Birgiolas, J, CM Jernigan, RC Gerkin, BH Smith, **SM Crook** (2016) SwarmSight: Real-time insect antenna and proboscis tracking. Society for Neuroscience Abstracts, 97.05.

*Haynes, R, *M Samavat, *D Luli, **S Crook** (2016) The role of connectivity patterns in a computational model of Drosophila Antennal Lobe. Society for Neuroscience Abstracts, 430.13.

*Birgiolas, J, R Gerkin, **SM Crook** (2016) Is the model any good? Objective criteria for computational neuroscience model selection. *BMC Neuroscience 17 (Suppl 1), O10.*

Crook, SM, S Dietrich (2014) Model exchange with the NeuroML model database. *BMC Neuroscience* 15(Suppl 1): P171.

Cannon, R, P Gleeson, **S Crook**, A Silver (2013) Reducing duplication and redundancy in declarative model specifications. *Frontiers in Neuroinformatics. Conference Abstract: 5th INCF Congress of Neuroinformatics.* DOI: 10.3389/conf.fninf.2013.08.00008

*Berger, SD, SM Baer, **SM Crook** (2013) A continuum approach to model neurites/dendrites with emerging subtrees. *BMC Neuroscience*. 14(Suppl 1):P73.

*Berger, S, S Baer, **S Crook** (2012) Estimation of electrical properties of dendrites with branches using a continuum modeling formulation. *Society for Neuroscience Abstracts,* 340.01.

Gleeson P, E Piasini, **S Crook**, R Cannon, V Steuber, D Jaeger, S Solinas, E D'Angelo, RA Silver (2012) The Open Source Brain Initiative: enabling collaborative modelling in computational neuroscience. *BMC Neuroscience*. 13(Suppl 1):O7.

Cannon, R, P Gleeson, **S Crook**, RA Silver (2012) A declarative model specification system allowing NeuroML to be extended with user-defined component types. *BMC Neuroscience.* 13(Suppl 1): P42.

Smith A, M Cruz-Aponte, EC McKiernan, **S Crook**, M Herrera-Valdez (2011) Differential contribution of A-type potassium currents in shaping neuronal responses to synaptic input. *BMC Neuroscience*.12:P147.

Gleeson P, **S Crook**, A Silver, R Cannon (2011) Development of NeuroML version 2.0: Greater extensibility, support for abstract neuronal models and interaction with Systems Biology languages. *BMC Neuroscience*. 12:P29.

*Herrera-Valdez MA, *SD Berger, C Duch, **S Crook** (2010) Differential contribution of voltage-dependent potassium currents to neuronal excitability, *BMC Neuroscience*, 11:P159.

*Chang, S, SM Baer, **SM Crook**, CL Gardner, C Ringhofer (2009) Computational study

of cat retinal cone-horizontal cell interaction, *Society for Neuroscience Abstracts*, 557.13.

Venugopal, S, **S Crook**, T Hamm, R Jung (2009) A computational study of the interaction between persistent inward currents and recurrent inhibition in alpha motoneurons before and after spinal cord injury, *Society for Neuroscience Abstracts*, 657.10.

Crook, S, P Gleeson, RA Silver (2009) Describing and exchanging models of neurons and neuronal networks with NeuroML, *BMC Neuroscience*, 10:L1.

*Berger, SD, *MA Herrera-Valdez, C Duch and **S Crook** (2009) Passive current transfer in wildtype and genetically modified *Drosophila* motoneuron dendrites, *BMC Neuroscience*, 10:P346.

Venugopal, S, *M Kurian, **S Crook** and R Jung (2009) Role of inhibition in the suppression of alpha-motoneuron hyper-excitability following chronic spinal cord injury, *BMC Neuroscience*, 10:P343.

Dacher, M, **SM Crook** and BH Smith (2008) Spatio-temporal activity of neurons in the insect antennal lobe: A data driven computational model, *Chemical Senses*, 33(8):S66

*Kurian, MP, **S Crook** and R Jung (2008) Modeling changes in motoneuron morphology after spinal cord injury, *Society for Neuroscience Abstracts* (#469.12)

Gleeson, P, **S Crook**, S Barnes, RA Silver (2008) Interoperable model components for biologically realistic single neuron and network models implemented in NeuroML. *Frontiers in Neuroscience*. Conference abstract: Neuroinformatics 2008. DOI: 10.3389/conf.neuro.11.2008.01.135

*McCamy, M, S Baer and **S Crook** (2008) A stage-structred population approach for modeling activity-dependent plasticity of dendritic spines. *BMC Neuroscience*. 9(1):P104.

*Chang, S, S Baer, **S Crook**, C Gardner and C Ringhofer (2008) Modeling the GABA and ephaptic feedback mechanisms in cat outer retina, *BMC Neuroscience.* 9:P110.

*Kurian, MP and **SM Crook** (2007) Modeling motoneuron excitability following spinal cord injury, *Society for Neuroscience Abstracts* (#76.6).

Crook, S, P Gleeson and RA Silver (2007) NetworkML: Level 3 of the NeuroML standards for multiscale model specification and exchange, *Society for Neuroscience Abstracts* (#102.28)

*Jennings, AB, **S Crook**, C Duch and S Ryglewski (2007) Mathematical models of octopaminergic dorsal unpaired median neurons, *Society for Neuroscience Abstracts* (#536.20).

*Dur-e-Ahmad, M, **S Crook** and S Baer (2007) A model of activity-dependent changes in dendritic spine density and spine structure, *BMC Neuroscience.* 8:P91.

Gleeson, P, **S Crook**, V Steuber and RA Silver (2007) Using NeuroML and neuroConstruct to build neuronal network models for multiple simulators, *BMC Neuroscience*. 8:P1.

*Kurian, MP and **S Crook** (2007) Two-compartment models of spasticity in spinal motor neurons following spinal cord injury, *BMC Neuroscience.* 8:P101.

Crook, SM, *M Dur-e-Ahmad, SM Baer and Z Jackiewicz (2006) A model of activity-dependent changes in dendritic spine density and spine structure, *Society for Neuroscience Abstracts* (#135.8).

Mahaffy, MD, **SM Crook**, GA Jacobs and JP Miller (2000) Frequency tuning properties of primary sensory interneurons in the cricket cercal sensory system, *Society for Neuroscience Abstracts* (#55.5).

Book Chapters:

Birgiolas, J**,** R Gerkin, **SM Crook** (2018) Software and resources for computational neuroscience. In Cutsuridis, Graham, Cobb, Vida (eds.) Hippocampal Microcircuits: A Computational Modeler's Resource Book, Springer.

Crook, SM, HE Plesser, AP Davison (2013) Learning from the past: approaches for reproducibility in computational neuroscience. In JM Bower, ed. *20 Years of Computational Neuroscience*, Springer.

Gleeson, P, V Steuber, RA Silver and **S Crook** (2012) NeuroML. In Le Novere, ed. *Computational Systems Biology*, Springer.

Venugopal, S, **S Crook**, M Srivatsan and R Jung (2011) Principles of computational neuroscience. In Jung, ed. *Biomimetic and Biohybrid Living-Hardware Systems*, Wiley.

Günay, C, TG Smolinski, WW Lytton, TM Morse, P Gleeson, **S Crook**, V Steuber, A Silver, H Voicu, P Andrews, H Bokil, H Maniar, C Loader, S Mehta, D Kleinfeld, D Thomson, PP Mitra, G Aaron and J-M Fellous (2008) Computational intelligence in electrophysiology: Trends and open problems. In Smolinski, Milanova and Hassanien, eds. *Applications of Computational Intelligence in Biology*, Springer, Berlin/Heidelberg.

Crook, S and F Howell (2007) XML for data representation and model specification. in Crasto, ed. *Methods in Molecular Biology Book Series: Neuroinformatics*, Humana Press.

Crook, S and A Cohen (1995) Central pattern generators. In Bower and Beeman, eds. *The Book of GENESIS: A workbook of tutorials for the GEneral NEural SImulation System*, Chapter 6. TELOS Publishers.

Encyclopedia Articles: WORKING ON SECOND EDITION NOW

Crook, S (2015) NeuroML. In Jaeger D, Jung R (Eds.) Encyclopedia of Computational Neuroscience, Vol. 1. Springer New York Heidelberg Dordrecht London

Crook, S (2015) Model Reproducibility: Overview. In Jaeger D, Jung R (Eds.) Encyclopedia of Computational Neuroscience, Vol. 1. Springer New York Heidelberg Dordrecht London

Gerkin, R, SJ Tripathy, **S Crook**, J Kotaleski (2015) Databases and Data Repositories in Computational Neuroscience: Overview. In Jaeger D, Jung R (Eds.) Encyclopedia of Computational Neuroscience, Vol. 1. Springer New York Heidelberg Dordrecht London

Edited Special Editions:

Reproducibility and Rigour in Computational Neuroscience, *Frontiers in Neuroinformatics*, Topic Editors: **S Crook**, AP Davison, RA McDougal, HE Plesser, 20-17-2018 (3,500 views as of December 2017)

Producing and Analyzing Macro-Connectomes: Current State and Challenges, *Frontiers in Neuroinformatics*, Topic Editors: M Bota, **S Crook**, M Kaiser. 2014-2015 (9 articles with over 56,000 Views on Frontiers as of December 2017)

Websites:

NeuroML Website: http://www.neuroml.org, design and maintain website for international, collaborative project

NeuroML Multiscale Model Database and Web Interface: http://neuroml-db.org, populate and maintain database created in my group

Database Educational Resources: http://databasesmanymajors.faculty.asu.edu, see Introduction to Databases and Introduction to Querying for customized animations for

bioinformatics students

Other:
Crook, Sharon Marie (1996) The role of delay in oscillatory models of olfactory cortex. *PhD Dissertation*, University of Maryland, College Park, Maryland.

Crook, S (1987) Remarks on the convergence of pi. *Journal of Undergraduate Mathematics*, 19(1):15-22.

Crook, S (1986) Algorithms for computer generation of surfaces. *Journal of Undergraduate Mathematics*, 18(2):51-54.

SPONSORED RESEARCH

Funded Grants:

07/01/18-06/30/23	NIH R25NS107188, PI: Neisewander, *Workforce Inclusion in Neuroscience through Undergraduate Research Experience* (WINURE), $1,270,790, Role: Mentor
02/01/18-01/31/20	NIH F31DC016811, PI: Birgiolas, *Integrated Understanding of Tufted and Mitral Pathways in the Olfactory Bulb*, $120,651, Role: Internal PI/Research Advisor (50%)
09/05/15-06/30/19	NIH R01MH106674, PI: Crook, *Tools for Model Discovery, Validation and Selection in Neuroscience with NeuroML*, $1,505,557 (45%)
09/30/15-07/31/18	NIH R01EB021711, PI: Gerkin, *CRCNS Data Sharing: Exchange and Evaluation of Reduced Neuron Models*, $393,020, Role: Co-I (40%)
09/01/14-08/31/15	NSF CISE-IIS, PI: Smith, *2014 CRCNS PI Conference*, $29,813, Role: Co-I (50%)
09/01/14-08/31/17	NSF DUE 1431848, PI: Dietrich, *Collaborative Research: Databases for Many Majors: Customized Visualizations to Improve STEM Learning*, $222,982, Role: Senior Personnel (5%)
09/01/11-08/31/15	NIH R01 EB014640, National Institute of Biomedical Imaging and Bioengineering, PI: Crook, *CRCNS Data Sharing: NeuroML Database for Multiscale Models in Neuroscience*, $315,064 (50%)
06/01/11-08/31/11	Norway Research Council Travel Grant, 119,000 NOK (~$21,444) through Norwegian University of Life Sciences
07/01/09-06/30/15	NIH R01 MH081905, National Institute of Mental Health, PI: Crook *NeuroML: Standards and Tools for Multiscale Model Specification and Exchange*, $894,282 (80%)
01/01/10-12/31/12	NSF DUE-0941584, PI: Dietrich, *Collaborative Research: Databases for Many Majors: A Student-Centered Approach,* $49,884, Role: Senior Personnel (5%)
03/01/09-02/28/10	NSF IIS-0912814 (International Travel Award), PI: Crook, *NeuroML Development Workshop: Biophysical Single Cell Modeling,* $10,050 (100%)
2/01/09	International Neuroinformatics Coordinating Facility Workshop Proposal, Organizers: Silver, Gleeson, and Crook, *NeuroML Development Workshop: Biophysical Single Cell Modeling*, ~$9,000 (Through UCL)
09/03/07-09/03/12	NSF DMS, PI: Kostelich, *CSUMS: Undergraduate Research Experience for Computational Math Science Majors at ASU,*

<table>
<tr><td></td><td>$1,029,404 Role: Co-PI (8%)</td></tr>
<tr><td>09/01/07-08/31/10</td><td>NSF DMS 0718308, PI: Baer, Multiscale Modeling of the Neural Subcircuits in the Outer-Plexiform Layer of the Retina, $642,671 Role: Co-PI (20%)</td></tr>
<tr><td>10/01/06-09/30/09</td><td>NSF IIS-0613404 PI: Crook, CRCNS: Behaviorally Relevant Neuronal Modification during Postembryonic Development, $457,654 (50%)</td></tr>
<tr><td>08/15/05-07/31/08</td><td>NSF SBE, PI: Jung, CATALYST Center of Excellence in Adaptive Neuro-Biomechatronic Systems (CEANS), $110,944 Role: core faculty (8%)</td></tr>
<tr><td>08/15/01-07/31/05</td><td>NSF I0S-0091117, PI: Crook, Collaborative Research: A Dynamic Atlas of the Cricket Cercal Sensory System, $240,798 (100%)</td></tr>
<tr><td>12/15/02-11/30/07</td><td>NSF IGERT, PI: Knowles, Predoctoral Training in Functional Genomics of Model Organisms, Role: core faculty</td></tr>
<tr><td>09/01/97-08/30/99</td><td>NIH NS010545, Individual National Research Service Award F32, Postdoctoral Research Grant, A Mechanistic Basis for Neural Encoding, $49,712</td></tr>
</table>

RECENT PRESENTATIONS (*indicates mentored student or postdoc)

Invited Conference Presentations:

2018   Reproducibiity and Rigour: Testing the Data Driven Model, (plenary speaker), Neuroinformatics Congress of the INCF, Montreal, Canada

2018   Reproducibility and Rigour: Testing the Data Driven Model in *C. elegans*, Royal Society Meeting: Connectome to behaviour: modelling *C. elegans* at cellular resolution, London, UK

2017   Reproducibility and Rigour: Testing the Data Driven Model, Biofest, University of Maryland, College Park, Maryland

2016   Rigor and reproducibility in computational neuroscience: Model development, exchange and evaluation, BARCCSYN 2016, Barcelona, Spain

2015   Collaborative development of neural models with NeuroML, 2015 COMBINE (Computational Modeling in Biolgy Network) Meeting, Salt Lake City, Utah

2014   A continuum approach for exploring the role of neuronal structure, Nonlinear Dynamics and Stochastic Methods: From Neuroscience to Other Biological Applications, Conference in Honor of Bard Ermentrout's 60th Birthday, Pittsburgh, Pennsylvania

2012   Approaches for model reproducibility in computational science, Conference on Multiscale Modelling in Medicine and Biology, University of Nottingham, Nottingham, UK

2010   Lessons from the past: Approaches for reproducibility in computational neuroscience, Symposium: 20 Years of Computational Neuroscience, CNS 2010, San Antonio, Texas

2009   Models of self-sustained motoneuron firing following spinal cord injury, Conference on Neural Dynamics and Computation in honor of John Rinzel, Courant Institute, New York, New York

2008   Modeling activity-dependent changes in dendritic spine structure, Frontiers in Applied and Computational Mathematics, New Jersey Institute of Technology, Newark, New Jersey

Invited Seminar Presentations:

2018 Data driven modeling in neuroscience: a mathematical success story, Dartmouth College, Mathematical Colloquium

2017 Reproducibility and rigor in compuational science, University of Arizona Modeling and Computation Seminar Series

2015 Predicting network behavior based on the behavior of individual elements, Faculty Panel: Organismal, Integrative and Systems Biology, School of Life Sciences, Life Sciences Cafe

2015 How I use mathematics to understand the brain, Virginia Commonwealth University, Department of Mathematics Colloquium Series

2015 How I use mathematics to understand the brain, University of Southern Mississippi, Department of Mathematical Sciences Colloquium Series

2011 Describing and exchanging models of neurons and neuronal networks with NeuroML, SICSA Distinguished Visitor Seminar, University of the West of Scotland, Paisley, UK

2011 Approaches for reproducibility in computational neuroscience, SICSA Distinguished Visitor Seminar, University of Stirling, Stirling, UK

2011 Approaches for reproducibility in computational neuroscience, Neuroinformatics and Computational Neuroscience Doctoral Training Center Day, School of Informatics, University of Edinburgh, Edinburgh, UK

2011 A continuum model for structural plasticity of dendritic spines, SICSA Distinguished Visitor Seminar, University of Edinburgh, Edinburgh, UK

2011 Cell physiology models: the role of calcium in excitability and cell signaling, Mini-workshop, Norwegian University of Life Sciences, Aas, Norway

2011 Challenges in multi-scale modeling: Connecting biophysical mechanisms to behavior, Computational Neuroscience Seminar, Norwegian University of Life Sciences, Aas, Norway

2010 NeuroML: Model description language for multiscale neuroscience models, Brain Corporation, San Diego, California

2009 Modeling activity-dependent structural plasticity in dendritic spines, Computational Neuroscience Seminar, Department of Mathematical Sciences and Technology, Norwegian University of Life Sciences, Aas, Norway

2008 Modeling activity-dependent changes in dendritic spine structure, Applied Mathematics Seminar, University of Arizona, Tucson, Arizona

2008 Modeling activity-dependent changes in dendritic spine structure, Mathematical Biology Seminar, Department of Mathematics, University of Utah, Salt Lake City, Utah

Contributed Conference Presentations:

2009 Describing and exchanging models of neurons and neuronal networks with NeuroML, (with R. Angus Silver and Padriag Gleeson), Featured Presentation, Computational Neuroscience Meeting, Berlin Germany

2008 A stage population model for dendritic spines, SIAM Life Sciences Meeting, Montreal, Canada

Research Workshops and Symposia:

2018 OpenWorm Open House and Hackaton, University College London, London, UK (participant)

2017 NICT-NSF Collaborative Workshop on Computational Neuroscience, Osaka, Japan (speaker, policy)

2016 Workshop on Data Driven Models (speaker, moderator), HHMI Janelia Campus

2015 Joint NeuroML and Open Source Brain Workshop (moderator), Alghero, Sardinia, Italy

2014 Joint NeuroML and Open Source Brain Workshop (moderator, speaker), Alghero, Sardinia, Italy

2014 Collaborative Research in Computational Neuroscience PI Meeting, Workshop on Open Science and Resources for Computational Neuroscience, ASU (organizer, speaker, moderator), Tempe, Arizona

2013 Joint NeuroML and Open Source Brain Workshop (organizing committee and speaker), Alghero, Sardinia, Italy

2013 Diverse Mathematical Approaches for Understanding Information Processing in Neuronal Networks (organizer and moderator), Minisympoium, Society for Mathematical Biology Meeting 2013, Tempe, Arizona

2012 4th Annual NeuroML Development Meeting (organizer and moderator), University of Edinburgh, Edinburgh, UK

2011 Creating, Documenting, and Sharing Network Models (organizer and speaker), University of Edinburgh, Edinburgh, UK

2011 INCF sponsored neuroinformatics workshop on Emerging standards for network models (Speaker), NeuroML: Status and Future Directions, CNS 2011, Stockholm, Sweden

2010 INCF sponsored neuroinformatics workshop (Speaker), NeuroML modules for multiscale model descriptions in neuroscience, CNS 2010, San Antonio, Texas

2010 NeuroML development workshop (Co-organizer with P Gleeson, A Silver and R Cannon), Arizona State University, Tempe, Arizona

2009 NeuroML development workshop (Co-organizer with P Gleeson, A Silver and R Cannon), University College London, London, United Kingdom

2008 Interoperability of software for computational and experimental neuroscience (Co-organizer with P Gleeson), Computational Neuroscience Meeting Workshops, Portland, Oregon

2008 Neural plasticity session (Organizer), Second Annual Arizona State University and Barrow Neurological Institute Neuroscience Symposium, Phoenix, Arizona

Poster and Demo Presentations:

2018 *Birgiolas, J, R Gerkin, S Crook, Rapid selection of NeuroML models via NeuroML-DB.org, 2018 Computational Neuroscience Meeting, Seattle, Washington

2017 *Jarvis, RJ, SM Crook, RC Gerkin, Optimization of Reduced Models against Diverse Experimental Neuron Physiology Datasets with NeuronUnit, CRCNS PI Meeting, Providence, Rhode Island (by Rick Gerkin)

2017 *Jarvis, R, SM Crook, RC Gerkin, Parallel model optimization against experimental neuron physiology data with DEAP and NeuronUnit. 2017 INCF Congress, Kuala Lumpur, Malaysia

2016 *Birgiolas, J, R Gerkin, SM Crook, Is the model any good? Objective criteria for computational neuroscience model selection. 2016 Compuational Neuroscience Meeting, South Korea

2016 Crook, S, R Gerkin, *K Dai, Creating better reduced neuron models. International Conference on Mathematical Neuroscience. Juan-les-Pins, France

2014 Crook, S, S Dietrich, NeuroML: Model Exchange for Computational Neuroscience, 2014 Collaborative Research in Computational Neuroscience (CRCNS) PI Meeting, Tempe, Arizona

2014 Crook, S, NeuroML: Model Exchange in Computational Neuroscience, 2014 COMBINE Meeting, UCLA, California

2014   Crook, S, S Dietrich, NeuroML Model Database, 2014 Computational Neuroscience Meeting, Quebec City, Canada

2013   Crook, S, NeuroML 2.0 and Open Source Brain, 2013 Society for Neuroscience Annual Meeting, San Diego, California

2013   *Luli, D, S Crook, A neuronal network model of Drosophila antennal lobe, Southeast Biomedical Engineering Conference 2013, Miami, Florida

2013   *Berger, S, S Baer, S Crook, A continuum approach to model neurites/dendrites with emerging subtrees, 2013 Computational Neuroscience Meeting, Paris, France

2012   *Berger, S, S Baer, S Crook, Estimation of electrical properties of dendrites with branches using a continuum modeling formulation, 2012 Society for Neuroscience Meeting, New Orleans, Louisiana

2012   Crook, S, S Dietrich, *C Zhang, CRCNS DataSharing: NeuroML database for multiscale models in neuroscience, 2012 CRCNS PI Meeting, St. Louis, Missouri

2012   Cannon, R, P Gleeson, S Crook, A Silver, Reducing duplication and redundancy in declarative model specifications, 2012 Neuroinformatics Congress, Munich, Germany

2012   Gleeson P, E Piasini, S Crook, R Cannon, V Steuber, D Jaeger, S Solinas, E D'Angelo, RA Silver, The Open Source Brain Initiative: enabling collaborative modelling in computational neuroscience, Computational Neuroscience 2012, Atlanta, Georgia

2012   Cannon, R, P Gleeson, S Crook, RA Silver, A declarative model specification system allowing NeuroML to be extended with user-defined component types, Computational Neuroscience 2012, Atlanta, Georgia

2011   Gleeson P, S Crook, A Silver, R Cannon, Development of NeuroML version 2.0: Greater extensibility, support for abstract neuronal models and interaction with Systems Biology languages, Computational Neuroscience 2011, Stockholm, Sweden

2011   Smith A, M Cruz-Aponte, EC McKiernan, S Crook, M Herrera-Valdez, Differential contribution of A-type potassium currents in shaping neuronal responses to synaptic input, Computational Neuroscience 2011, Stockholm, Sweden

2010   Herrera-Valdez MA, SD Berger, C Duch, S Crook, Differential contribution of voltage-dependent potassium currents to neuronal excitability, Computational Neuroscience 2010, San Antonio, Texas

2009   Chang, S, SM Baer, SM Crook, CL Gardner, C Ringhofer, Computational study of cat retinal cone-horizontal cell interaction, Society for Neuroscience Annual Meeting, Chicago

2009   Venugopal, S, S Crook, T Hamm, R Jung, A computational study of the interaction between persistent inward currents and recurrent inhibition in alpha motoneurons before and after spinal cord injury, Society for Neuroscience Annual Meeting, Chicago

2009   Crook, S, P Gleeson, RA Silver, Describing and exchanging models of neurons and neuronal networks with NeuroML, Computational Neuroscience Meeting, Berlin, Germany

2009   *Herrera-Valdez, MA, *SD Berger, C Duch and SM Crook, Predicting changes in neuronal excitability type in response to genetic manipulations of K+-channels, Computational Neuroscience Meeting, Berlin, Germany

2009   *Berger, SD, *MA Herrera-Valdez, C Duch and S Crook, Passive current transfer in wildtype and genetically modified Drosophila motoneuron dendrites, Computational Neuroscience Meeting, Berlin, Germany

2009   Venugopal, S, *M Kurian, S Crook and R Jung, Role of inhibition in the

suppression of alpha-motoneuron hyper-excitability following chronic spinal cord injury, Computational Neuroscience Meeting, Berlin, Germany

2008 *M Kurian, S Crook and R Jung, Modeling changes in motoneuron morphology following spinal cord injury, Society for Neuroscience, Washington DC

2008 P Gleeson, S Crook, S Barnes, RA Silver, Interoperable model components for biologically realistic single neuron and network models implemented in NeuroML, Neuroinformatics 2008, Stockholm, Sweden

2008 *M McCamy, S Baer and S Crook, A stage-structred population approach for modeling activity-dependent plasticity of dendritic spines, Computational Neuroscience Meeting, Portland, Oregon

2008 *S Chang, S Baer, S Crook, C Gardner and C Ringhofer, Modeling the GABA and ephaptic feedback mechanisms in cat outer retina, Computational Neuroscience Meeting, Portland Oregon

2008 M Dacher, SM Crook and BH Smith, Spatiotemporal activity of neurons in the insect antennal lobe: A data driven computational model, Annual PI Meeting for the CRCNS Program, Los Angeles, California

2008 S Crook, C Duch, *A Jennings and JF Evers, Behaviorally relevant neuronal modification during postembryonic development, Annual PI Meeting for the CRCNS Program, Los Angeles, California

EDUCATIONAL ACTIVITIES

Teaching and Curriculum Development:
Arizona State University: Calculus for the Life Sciences (MAT 251), Discrete Mathematical Structures (MAT 243), Introduction to Computational Molecular Biology (BIO/MBB/MAT 355), Mathematical Modeling (MAT 451), Mathematical Cell Physiology (MAT 503 or APM 530), Mathematical Neuroscience II (APM 532)
University of Maine: Calculus, Differential Equations, Dynamical Systems, Computational Methods in Genomics, Capstone Experience in Applied Mathematics, Complex Biological Systems

Postdoctoral Fellow Mentoring:
2014-2015 Sungwoo Ahn, Currently: Asst. Professor, East Carolina University
2013-2014 Richard Gerkin (with Brian Smith), Currently: Asst. Research Professor, Arizona State University
2008-2010 Marco Herrera-Valdez (with Carlos Castillo-Chavez), Currently: Professor, School of Science, National Autonomous University of Mexico

PhD Students Advised:
Current Russell Jarvis, PhD Interdisciplinary Neuroscience, with Rick Gerkin
Current Justas Birgiolas, PhD Interdisciplinary Neuroscience
Current Vergil Haynes, PhD Applied Mathematics
Current Morteza Ruhani, PhD Applied Mathematics
2014 Francisco Costela, PhD Interdisciplinary Neuroscience, with Susana Martinez-Conde at Barrow Neurological Institute, *The Significance of Microsaccades for Perception and Oculomotor Control,* Currently: Postdoctoral Fellow, Schepens Eye Research Institute, Harvard Medical School
2014 Sandra Berger, PhD Interdisciplinary Neuroscience, *Analysis of Signal Processing and Excitability in Computational Models of an Identified*

Drosophila Motoneuron, Currently: not seeking employment

2013   Dori Luli, PhD Applied Mathematics for Life and Social Sciences, *A Neuronal Network Model of Drosophila Antennal Lobe,* Currently: Senior Associate - Modeling, Discover Financial Services

2012   David Tello, PhD Applied Mathematics for the Life and Social Sciences, *Modeling the Turnover Process for Dopaminergic Neurons,* Currently: Senior Analyst, Raza Development Fund

2010   Mini Kurian, PhD Mathematics, *Mathematical Models of Motoneurons after Spinal Cord Injury,* Currently: not seeking employment

2007   Muhammad Dur-e-Ahmad, PhD Mathematics, with Zdzislaw Jackiewicz, *Structural Plasticity of Dendritic Spines: A Computational Study,* Currently: Visiting Professor, University of Waterloo

Master's Students Advised:

2009   Pradeep Thiyyagura, MS Computational Biosciences, *Network Models of Insect Olfaction*, Currently: Computer Systems Specialist, Banner Good Samaritan PET Center, Banner Alzheimer's Institute

2007   Todd Huffman, MS Computational Biosciences, *Knife Edge Scanning Microscope: Development and Designs,* Currently: CEO 3Scan

2004   Carrie Diaz Eaton, MA Mathematics, University of Maine, *The Mathematical Properties and Underlying Structure of Fast Spiking Cell and Networked Cell Models,* Currently: Associate Pofessor of Mathematics, Center for Biodiversity, Unity College

2003   Weihong Qi, MS in Computer Science, University of Maine, *Tools for Neuroinformatic Data Exchange and Neuronal Simulation: An XML Application for Neuronal Morphology Data,* Currently: Researcher, Swiss Tropical Institute of the World Health Organization

PhD Graduate Student Committies:

Current   Lynette Bustos, PhD Interdisciplinary Neuroscience
Current   Ruofan Wu, PhD Electrical Engineering
Current   Wendy Caldwell, PhD Applied Mathematics
Current   Subash Padmanaban, PhD Biomedical Engineering
2017   Javier Baez, PhD Applied Mathematics
2017   Christophe Faucon, PhD Computer Science
2015   Rebecca Everett, PhD Applied Mathematics
2014   Thomas Holeva, PhD Mathematics
2013   Jerimiah Jones, PhD Applied Mathematics
2012   Lydia Bilinsky, PhD Mathematics
2012   Fernando Vonhoff, PhD Interdisciplinary Neuroscience
2012   Shaojie Wang, PhD Mathematics
2010   Michael McCamy, PhD Mathematics
2009   Sarah Hewes, PhD Mathematics
2008   Joe Graham, PhD Bioengineering
2007   Tufail Malik, PhD Mathematics
2007   Hao Wang, PhD Mathematics

Master's Graduate Student Committies:

2016   Ruofan Wu, MS Electrical Engineering
2015   Aashish Masih, MS Biomedical Engineering
2010   Eric Nabity, MS Computational Biosciences

2008	Yi-Wen Sun, MS Computational Biosciences
2008	Genevieve Toutain, MA Mathematics
2007	Danielle Robbins, MA Mathematics

Undergraduate Student Research Advised:
2018-2019	David Ackerman, Computational Mathematics
2018-2019	Charly, McGown, Computational Mathematics
2017-2018	Xavier Henes, Computational Mathematics
2016-2017	Sarah Brotman, Honors Thesis Committee
2016-2017	Lidia Csernak, Honors Thesis Advisor
2015-2016	James Kyeh, Honors Thesis Committee
2014-2015	Catalina Flores, Honors Thesis Committee
2014-2015	Kara Schaffer, Honors Thesis Committee
2013-2014	Giresse Tchegho, Chemical Engineering
2012-2014	Jason Young, Mathematics
2010-2011	April Chiu, Honors Thesis Advisor
2010	Miles Manning and April Chiu, CSUMS Summer Project
2010-2011	Sara Selitsky, Biology
2006-2008	Nicholas Tatonetti, UBM and SOLUR Programs
2007	Pamela Reitsma, Odalys Colon, Irina Kareva, MTBI Summer Program
2006-2007	Adriana Kuiper, UBM Program
2005-2006	Gina Ngo, UBM Program (with Ron Rutowski), Biology
2003-2004	Jason Sewell, Honors Thesis, University of Maine
2002-2003	Carrie Diaz Eaton, Honors Thesis, University of Maine

Awards Presented to Advised Students (Based in Part on Research):
2018	Justas Birgiolas, Student Poster Award, CNS*2018, Seattle, Washington
2018	Justas Birgiolas, ASU College of Liberal Arts and Sciences Graduate Excellence Award
2017	Justas Birgiolas, ASU College of Liberal Arts and Sciences Graduate Excellence Award
2016	Vergil Haynes, MBL Summer Course on Computational Neuroscience
2015	Justas Birgiolas, Google Summer of Code
2014	Genevieve Toutain, Baltic-Nordic Summer School on Neuroinformatics
2010	Dori Luli, IMA Workshop on Mathematical Modeling in Industry
2009	Dori Luli, Ottawa Summer School in Computational Neuroscience
2009	Sandra Berger, Advanced Course in Computational Neuroscience
2007	Nicholas Tatonetti, Beckman Scholar
2007	Nicholas Tatonetti, Goldwater Scholar Honorable Mention
2007	Genevieve Toutaine, Best Math Presentation, SACNAS Annual Meeting
2007	Muhammad Dur-e-Ahmad, Outstanding Graduate Student Research Award
2006	Nicholas Tatonetti, SOLUR Research Award
2006	Nicholas Tatonetti, MBB Outstanding Student Award
2006	Mini Kurian, Okinawa Computational Neuroscience Course
2006	Mini Kurian, MBL Methods in Computational Neuroscience Course

SERVICE

Editorial Service:
Editorial Board: Neuroinformatics, Journal of Biological Systems

Associate Editor: Mathematical Biosciences and Engineering, Frontiers in Neuroinformatics

Section Editor, Springer Encyclopedia of Computational Neuroscience

Ad hoc Reviews: Journal of Computational Neuroscience, Journal of Neuroscience, Network, Neurocomputing, Journal of Theoretical Biology, Journal of Neurophysiology, BioSystems, Cognitive Neurodynamics, IEEE Transactions on Biomedical Engineering, Neuroinformatics, Physical Review E, Neural Computation, Biophysical Journal, SIAM Applied Dynamical Systems, PLoS Computational Biology, Mathematical Medicine and Biology

Grant Reviews:

Interagency (NIH, ARO, DOE, FDA, NASA, NSF, ONR) Predictive Multiscale Modeling for Biomedical, Biological, Behavioral, Environmental and Clinical Research Review 2017

NIH Study Section Member: Neuro-, Opthalmic and Imaging Technology July 1, 2012-June 30, 2015

NIH Study Sections (Ad hoc Member): Sensorimotor Integration 2005, 2006; Neurotechnology 2007, 2008, 2010; MABS 2018

NIH Challenge Grants 2009

Joint NSF/NIH Review Panel for Collaborative Research in Computational Neuroscience (CRCNS) 2002, 2004, 2008, 2009

NSF Panel and Ad Hoc Reviewer: Computational Neuroscience, Applied Mathematics, Computational Mathematics, Bioengineering, Mathematical Biology, Joint DMS/NIGMS

UK Medical Research Council (MRC) Ad Hoc Reviewer

AWM-NSF Mentoring Travel Grants 2011-2013

Research Corporation Grants Ad Hoc Reviewer

Other Regional, National, and International Service:

2016-2019	Vice President, Organization for Computational Neuroscience (Elected International)
2017	Advisory Role, NICT-NSF Collaborative Workshop on Computational Neuroscience, Osaka, Japan
2016-2017	Program Committee, 2017 International Neuroinformatics Coordinating Facility (INCF) Annual Meeting, Kuala Lumpur
2016-2017	Scientific Advisory Committee, 2017 Society for Mathematical Biology Meeting in Salt Lake City
2014-2016	Editorial Board (elected), NeuroML Project
2013-2015	Board of Directors, Organization for Computational Neuroscience
2015	Organizer (with Brian Smith), Large-scale Modeling of the Olfactory System, NIMBioS Funded Workshop, University of Tennessee, Knoxville, Tennessee
2014	Organizer (with Brian Smith), 2014 Collaborative Research in Computational Neuroscience PI Meeting, Tempe, Arizona
2013	Program Committee Member, 29th Annual Southern Biomedical Engineering Conference, Miami, Florida
2011-2013	Association for Women in Mathematics Mentoring Grant Review Committee (2013 Chair)
2008-2011	Member, Oversight Committee for Description Standards in Neural Network Modeling, International Neuroinformatics Coordinating Facility
March 2007	Invited Participant, NSF and Santa Fe Institute Workshop, Brain Science

at the Interface of Biological, Physical and Mathematical Sciences, Computer Science and Engineering: Analysis of New Opportunities

2005-2008 Program Committee, Organization for Computational Neuroscience (Annual Computational Neuroscience International Meeting)

2003-2005 Board of Directors, Organization for Computational Neuroscience

Professional Society Membership:

Organization for Computational Neuroscience, Society for Neuroscience, Society for Mathematical Biology, Society for Industrial and Applied Mathematics, Association for Women in Mathematics

Service to the University, College and Units:

Arizona State University:

2018-2019 Adjct Faculty Committee, School of Life Sciences

2018 Dean of Natural Sciences Division of CLAS Search Committee, ASU

2017-2019 Graduate Education Committee, School of Mathematical and Statistical Sciences

2017-2019 Personnel Committee (elected), School of Mathematical and Statistical Sciences

2006-2017 Executive Committee and Mathematics Liaison, Joint Arizona State University and Barrow Neurological Institute PhD Program in Interdisciplinary Neuroscience

2016-2017 Executive Committee (elected), School of Mathematical and Statistical Sciences

2015-2016 Statistics Hiring Committee, School of Mathematical and Statistical Sciences

2015-2016 Colloquium Committee, School of Mathematical and Statistical Sciences

2014-2016 Research Advisory Committee, College of Liberal Arts and Sciences

2014-2015 Ad hoc Committee on Biocomputing, Office of Knowledge Enterprise and Development

2012-2013 Applied and Computational Mathematics Hiring Committee Chair, School of Mathematical and Statistical Sciences

2012-2014 Personnel and Budget Committee (elected), School of Mathematical and Statistical Sciences

2012 Organizer, Session on Computational Neuroscience and Neuroinformatics, 4th Annual ASU and BNI Neuroscience Research Symposium

2010 Organizer, Center for Adaptive Neural Systems Symposium on Multiscale Approaches to Neural Plasticity

2010 Bylaws Revision Committee, School of Mathematical and Statistical Sciences

2009 Organizing Committee, Symposium on Co-adaptive Learning: Adaptive Technology for the Aging, Center for Adaptive Neural Systems

2008 Organizing Committee, Symposium on Promoting Neural Plasticity, Center for Adaptive Neural Systems

2007-2014 Informatics Certificate Committee

2007 Organizing Committee, Symposium on Adaptation and Learning in Neuro-Biomechatronic Systems, Center for Adaptive Neural Systems

2006-2011 Information Technology Resources Committee, School of Life Sciences

2006-2007 Co-organizer Mathematical Biology Seminar, Department of Mathematics and Statistics

2005-2006	Graduate Mentoring Committee, Department of Mathematics and Statistics
2005-2006	Search Committee for Computational Biomathematics Position, Department of Mathematics and Statistics
2004-2005	Search Committee for Computational Biomathematics Position, Department of Mathematics and Statistics

Contributions to Education and Professional Development:

2016	ASU Math Club Speaker, Using Mathematics to Understand the Brain
2016	Panelist on STEM Career Paths in Mathematics, Association for Women in Science, JumpStarting STEM Careers Symposium (also poster judge)
2015	Panelist on Teaching for New Faculty, Arizona State University
2014	Mathematics Awareness Day Event: Math, Magic and Mystery, High School Student Workshop on Pattern Formation in Nature, School of Mathematical and Statistical Sciences, Arizona State University
2011	Arizona Women in Science Girls Tour Interview, Arizona State University
2011	Science Fair Judge, Desert Garden Montessori School, Tempe, Arizona
2010	Preparing Future Mathematics Faculty, Arizona State University School of Mathematical and Statistical Sciences, Panel Discussion on Work-Life Balance
2009	Doctoral thesis opponent, Eilen Nordlie, advisor: Hans Ekkehard Plesser, Norwegian University of Life Sciences, Aas, Norway
2009	Doctoral thesis pre-examination, Antti Pettinen, advisor: Marja-Leena Linne, Tampere University of Technology, Finland
2008	Computational Training for Undergraduates in the Mathematical Sciences (CSUMS), ASU Department of Mathematics and Statistics, Presentation: Advice, Gender Issues, and Work-Life Balance
2008	Co-organizer (with Glenn Hurlbert), Southwestern Undergraduate Mathematics Research Conference, Tempe, Arizona
2007	Society for Graduate Women in Mathematics, Arizona State University Department of Mathematics and Statistics, Discussion on Gender in Academia: My Experiences
2007	Preparing Future Mathematics Faculty, Arizona State University Department of Mathematics and Statistics, Panel Discussion, An Introduction to Grant Writing
2007	Student Research Advisor, Mathematical and Theoretical Biology Institute Summer Program, ASU, Tempe, Arizona
2006	Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) Annual Meeting, Invited Speaker and Mentor, Modeling Neural Activity, Tampa, Florida
2006	Preparing Future Mathematics Faculty, ASU Department of Mathematics and Statistics, Invited Seminar, Mathematical Models of Neural Activity: An Introduction
2005	Faculty Orientation Panel Discussion Member: What I wish I had known during my first year, Organizer: Marjorie Zatz, Vice Provost, Arizona State University
2005	Curriculum Development for NIH Minority Access to Research Careers (MARC) Program in School of Life Sciences, Arizona State University
2005	Preparing Future Faculty and Professionals Program, Arizona State University Department of Mathematics and Statistics, Panel Discussion Member: Hiring and the Interview Process
2005	Attended Arizona 5th Annual Faculty Doctoral Mentoring Institute sponsored by MGE@MSA
2004	Preparing Future Faculty and Professionals Program, Arizona State University

Department of Mathematics and Statistics, Panel Discussion Member: Hiring and the Interview Process

2002   MAA Mathfest, Workshop Panelist, Capstone Courses for Mathematics Majors

2002   Joint Meeting of the AMS and MAA, Session Organizer, Supervising Undergraduate Research

2001   University of Maine Women in the Curriculum and Women Studies Program, Spring Lunch Series, Panel Discussion: Calculating Women

1996   GENESIS (General Neural Simulation System), Developed educational GENESIS software and accompanying book chapter