

CURRICULUM VITAE: Carson C. Chow

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EDUCATION

University of Toronto, Ontario, Canada
Bachelor of Applied Science in Engineering Science (Physics Option), 1985

Massachusetts Institute of Technology, Cambridge, Massachusetts
Doctor of Philosophy in Physics, 1992

ACADEMIC APPOINTMENTS

- 2010 to present: Senior Investigator
Laboratory of Biological Modeling, NIDDK, NIH
- 2004 to 2010: Investigator
Laboratory of Biological Modeling, NIDDK, NIH
- 2005 to present: Adjunct Professor
Department of Mathematics, University of Pittsburgh
- 2003 to 2005: Associate Professor
Department of Neurobiology, University of Pittsburgh
- 2001 to 2005: Associate Professor (tenured)
Department of Mathematics, University of Pittsburgh
- 1998 to 2001: Assistant Professor
Department of Mathematics, University of Pittsburgh
- Nov/Dec 1997: Visiting Faculty
Federal Institute of Technology (EPFL), Lausanne, Switzerland
- 1996/1997: Research Assistant Professor
Department of Mathematics, Boston University
- 1995/1996: Research Assistant Professor
NeuroMuscular Research Center, Boston University
- 1994/1995: Senior Research Associate,
NeuroMuscular Research Center, Boston University
- 1992 to 1994: Research Associate,
Department of Astrophysical, Planetary and Atmospheric Sciences,
University of Colorado, Boulder

AWARDS

- Alfred P. Sloan Research Fellowship, 1999-2001.
- NIH Mentored Research Scientist Development Award (K01), 1998-2003.
- Who's Who Among America's Teachers, 2002 (Nominated by a student)

ACTIVITIES

- Organizing committee, Conference on Applied Dynamical Systems, 2011.
- Associate editor of SIAM Journal of Applied Dynamical Systems, 2010 - present.
- Organizing committee for Mathematical Modeling of Human Metabolism and Body Weight Regulation Workshop, Bethesda, MD, Sep 27-28, 2008.
- Moderator for the Quantitative Biology section (q-bio) of the arXiv.org preprint archive, 2003 - present.
- Associate editor of SIAM Journal of Applied Mathematics, 2004 - present.
- Action editor for the Journal of Computational Neuroscience, 1998 - present.
- Co-chair for the SIAM Life Sciences Conference, Portland OR, Jul 11-14, 2004.
- Program Director for the Society for Industrial and Applied Mathematics (SIAM) Activity Group on Life Sciences, 2003-2005
- Organizing committee of the Les Houches Summer School Program on 'Methods in Neurophysics', Aug, 2003
- Organizing committee for the inaugural SIAM Life Sciences Conference, Boston, MA, Mar 6-8, 2002.
- Co-creator and organizer of the Rat Whisker System Workshop, Boston, MA, June 3-5, 2001.
- Scientific committee of the Nonlinear Analysis 2000 meeting at the Courant Institute, New York University, May 28 - Jun 2, 2000.
- Director of the Professional Science Master's Program in Mathematics, University of Pittsburgh, 2001-2003
- Academic council on computing, University of Pittsburgh, 2001-2003
- Faculty of Arts and Sciences Council, University of Pittsburgh, 2001-2003
- Faculty of Arts and Sciences Planning and Budget Committee, University of Pittsburgh, 2001-2003
- Information Technology Steering Committee, University of Pittsburgh, 2001-2003
- Originator of the annual Pitt Integration Bee
- Member of Sigma Xi, Society for Neuroscience, American Mathematical Society, Society for Industrial and Applied Mathematics, American Physical Society

GRANTS

- NSF, 6/1/03-8/31/03, PI
Title: Thematic workshops for the 2003 Les Houches Summer School on Theoretical Methods in Neuroscience
Total direct: \$12,000
- NIH (DMS/NIGMS joint program in mathematical biology), 7/01/02-6/30/05, PI
Title: Modeling the acute inflammatory response
Total amount: \$1,278,750
- NIH Mentored Research Scientist Development Award (K01), 1998-2003.
Title: Synchrony in Neuronal Networks
Total amount: \$570,835
- NIH, Co-PI on project in IBSC center grant, 6/1/02-5/31/06
Title: Toward a neurobiologically constrained framework for modeling human cognition
Total amount to Pitt math department: \$462,466 (subaward under Carnegie Mellon University)
- NSF, 9/15/01-8/31/03, Co-PI
Title: Scientific Computing Research Environments for the Mathematical Sciences Total amount: \$69,207
- NIH, 9/01/01-8/31/03, Co-PI
Title: Developing computational and theoretical models in drug abuse and addiction
Total amount to Pitt math department: \$61,462 (subaward under Oregon Health Sciences Institute)
- Scaife Family Foundation, 9/1/00-9/1/01, PI
Title: Assessing postural rigidity from quiet stance in patients with Parkinson's disease
Total amount: \$25,000
- Launchcyte LLC, 6/01/01-2/28/02, Co-PI
Title: An algorithm for estimating the outcome of inflammation following injury or infection
Total amount to Pitt math department: \$11,974
- Alfred P. Sloan Research Fellowship, 1999-2001.
Total amount: \$35,000
- Central Research Development Fund, University of Pittsburgh, 7/1/98-6/30/00, PI
Total amount: \$8,360

INVITED TALKS

1. Invited colloquium speaker, Department of Physics, University of Alabama, Birmingham, Jan 13, 2012.
2. Invited colloquium speaker, Department of Physics, George Mason University, Dec 9, 2011.
3. Invited seminar speaker, Department of Biology, Georgia State University, Dec 2, 2011.
4. Invited speaker, Workshop on Learning and Plasticity, CIRM, Marseille France, Nov 7-11, 2011.
5. Invited speaker, Workshop on Mean-field methods and multiscale analysis of neuronal populations, CIRM, Marseille France, Oct 3-7, 2011.
6. Invited seminar speaker, Department of Mathematics, George Mason University, Sep 23, 2011.
7. Invited colloquium speaker, Department of Mathematics, Montclair State University, Apr 6, 2011.
8. Invited colloquium speaker, Neurosciences Program, St. Mary's College of Maryland, Mar 4, 2011.

9. invited speaker, New York University, Dec 1, 2010.
10. Invited speaker, Workshop on computational analysis in systems biology, hosted by Norbert Wiener Center, NSF and NIH, Sep 23, 2010.
11. Invited colloquium speaker, Department of Mathematics, University of Pittsburgh, Sep 10, 2010.
12. Invited joint plenary speaker, Society of Industrial and Applied Mathematics (SIAM) 2010 Annual Meeting and Life Sciences meeting , Jul 12-16, 2010.
13. Invited colloquium speaker, Department of Mathematics, University of Iowa, Apr 26 2010.
14. Invited colloquium speaker, School of Engineering Sciences and Applied Mathematics, Northwestern University, Mar 8, 2010.
15. Invited colloquium speaker, Two talks at the Department of Physics, University of Toronto and Fields Institute for Research in Mathematical Science, Dec 2-3, 2009.
16. Invited speaker, 'Bayesian approaches for parameter estimation and model evaluation of dynamical systems', Computational challenges in integrative biological modeling workshop, Mathematical Biosciences Institute, The Ohio State University, Oct 7, 2009.
17. Invited speaker, 'Effective theories for neural networks', Frontiers in Applied and Computational Methods '09, NJIT, June 2, 2009.
18. Seminar, 'Generalized activity equations for neural networks', Dept. of Math, U. Utah, April 23, 2009
19. Seminar, 'Kinetic theory of coupled oscillators', Dept. of Math, U. Utah, April 22, 2009
20. Invited speaker, 'Generalized activity equations for neural networks', Mathematical Neuroscience 2009, Edinburgh, Mar 23-25, 2009.
21. Invited speaker, 'Path Integral methods for stochastic systems', Mathematical Neuroscience 2009, Training Workshop, Edinburgh, Mar 22, 2009.
22. Colloquium, 'The landscape of cell-state transitions', Dept. of Math, U. Nottingham, Mar 18, 2009
23. Dept of Math, "Kinetic theory of coupled oscillators", Seminar, U. Nottingham, Mar 16, 2009
24. Colloquium, 'Kinetic theory of coupled oscillators', Dept. of Math, U. Maryland Baltimore County, Feb 29, 2009
25. Colloquium, 'Kinetic theory of coupled oscillators', Department of Physics, The Catholic University of America, Washington DC, Jan 14, 2009.
26. Seminar, 'Cortical dynamics of visual competition', Janelia Farm Research Campus, Dec 8, 2008.
27. Invited speaker, 'Dynamics of human body weight change', Mathematical Modeling of Human Metabolism and Body Weight Regulation Workshop, Bethesda, MD, Sep 27-28, 2008.
28. Invited speaker, 'Dynamics of human body weight change', Mathematical Biosciences Institute, The Ohio State University, Sep 4, 2008.
29. Minisymposium speaker, SIAM Life Sciences, Aug 2008.
30. Invited speaker, 'Inflammation: when bottom up meets top down', 6th International Conference on Complexity in Acute Illness, Long Beach, CA, Oct 5-7, 2007.
31. Colloquium, 'Kinetic theory of coupled oscillators', Department of Mathematical Sciences, New Jersey Institute of Technology, Sep 7, 2007.

32. Monday Seminar, 'Competitive dynamics in cortical responses to conflicting stimuli' Krasnow Institute for Advanced Study, George Mason University, Sep 12, 2005.
33. Invited speaker, 'Dynamics of localized pulses in a discrete network of spiking neurons,' *Mathematical Neuroscience Workshop*, Edinburgh, Mar 21-23, 2005.
34. Invited speaker, 'Existence and stability of localized pulse solutions,' *Frontiers in applied and computational mathematics conference*, New Jersey Institute of Technology, May 21-22, 2004.
35. Invited speaker, 'Existence and stability of localized pulses', *Immunology Models: Cell Signaling and Immune Dynamics.*, Mathematical Biosciences Institute, The Ohio State University, May 10-14, 2004.
36. Colloquium, 'Modeling the acute inflammatory system,' Weill Graduate School of Medical Sciences of Cornell University, April 26, 2004.
37. Invited Speaker, 'Insights from a mathematical model of inflammation,' 6th World Congress on Trauma, Shock, Inflammation and Sepsis, Munich, Germany, March 2-6, 2004.
38. Invited Speaker, 'Synchrony, synaptic depression, and signal transfer,' Neuroday workshop, Institute for Advanced Study, Princeton, May 13, 2003.
39. Seminar, 'A spiking neuron model of binocular rivalry', New York University, April 3, 2003.
40. Seminar, 'Modeling the acute inflammatory system,' National Institute for Diabetes and Digestive and Kidney Diseases, Mar 17, 2003.
41. Invited speaker, 'Existence and stability of localized pulses', *Nonlocal Integro-Differential Equations in Mathematics and Biology*, Mathematical Biosciences Institute, The Ohio State University, Mar 6-8, 2003.
42. Invited speaker, 'Synchrony, synaptic depression, and information transfer,' The 2003 LATSIS symposium on neural coding and modeling, EPFL, Lausanne, Switzerland, Feb 17-19, 2003.
43. Invited speaker, 'A model of binocular rivalry', *System Level Modeling Workshop*, Mathematical Biosciences Institute, The Ohio State University, Nov 18-22, 2002.
44. Invited speaker, 'A biophysical model of spike-timing dependent plasticity', *Neuronal Dynamics Workshop*, Mathematical Biosciences Institute, The Ohio State University, Oct 7-18, 2002.
45. Invited speaker, 'Modeling the acute inflammatory response', *DIMACS Workshop on Pathogenesis of Infectious Diseases: Host-Pathogen Dynamics*, Rutgers University, Sep, 23-25, 2002.
46. Neuroscience Seminar, 'A spiking neuron model of binocular rivalry', Princeton University, May 9, 2002.
47. Seminar, 'Modeling binocular rivalry', Dept. of Neurobiology, U. Pitt. April 16, 2002.
48. Colloquium, 'Modeling the acute inflammatory response', Dept of Biomathematics, UCLA, Apr. 24, 2002.
49. Seminar, 'Models of binocular rivalry', Dept of Brain and Cognitive Science, MIT, March 5, 2002.
50. Colloquium, 'Neuroscience for physicists', Dept of Physics, McMaster University, Feb. 6, 2002.
51. Three Colloquia, 'Neuroscience for physicists', Dept of Physics, University of Victoria, University of British Columbia, and Simon Fraser University, Oct 31, Nov 1, and Nov 2, 2001.
52. Invited speaker, 'Stationary pulses in neural networks', Conference in honor of J.B. McLeod, Oxford, July 19, 2001.

53. Seminar, 'Sustained activity and oscillations in cortical circuits', Gatsby Unit, University College London, July 17, 2001.
54. Seminar, 'Information processing in spiking neuronal networks', Dept of Bioengineering, University of Pennsylvania, April 26, 2001.
55. Seminar, 'Collective dynamics of neuronal networks', Northwestern University, Feb 16, 2001.
56. Colloquium, 'Collective dynamics of neuronal networks', Dept of Physics, University of Toronto, Feb 1, 2001.
57. Seminar, 'Collective dynamics of neuronal networks', Dept of Physics, Pennsylvania State University, Sep 26, 2000.
58. Seminar, 'Models of working memory and binocular rivalry', Max Planck Institute for Biological Cybernetics, Tübingen, Germany, July 24, 2000.
59. Seminar, 'Self-sustained activity in neural networks', EPFL, Lausanne, Switzerland, July 10, 2000.
60. Seminar, 'Dynamics of coupled neurons', Ecole Normale Supérieure, Paris, July 7, 2000.
61. Seminar, 'Statistical mechanics of posture control', Université René Descartes (Paris V), July 6, 2000.
62. Seminar, 'Dynamics of coupled neurons', Agricultural University of Norway, June 30, 2000.
63. Seminar, 'Dynamics of coupled neurons', Dept of Physics, University of California, San Diego, May 17, 2000.
64. Seminar, 'Noise shaping in population rate coding', Salk Institute, La Jolla, CA, May 16, 2000.
65. Seminar, 'Noise shaping in population rate coding', California Institute of Technology, May 14, 2000.
66. Seminar 'Dynamics of coupled neurons', Dept of Physics, University of Pennsylvania, Apr 13, 2000.
67. Seminar 'Dynamics of coupled neurons', Dept of Mathematics, New Jersey Institute of Technology, Apr 12, 2000.
68. Seminar, 'Self-sustaining activity in spiking neuronal networks', Washington University, St. Louis, Mar 14, 2000..
69. Invited panel speaker, 'Noise enhanced signal transmission in single and coupled neurons', Winter Conference on Brain Research, Breckenridge, CO, Jan. 22-29, 2000.
70. Seminar, 'Synchronization in neuronal networks', University of Colorado, Jan 20, 2000.
71. Invited mini-symposium speaker, 'Population coding and noise shaping in spiking neurons', SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 23-27, 1999.
72. Seminar, 'Dynamics of spiking neurons with electrical coupling', Applied math seminar, Ohio State University, May 4, 1999.
73. Seminar, 'Dynamics of spiking neurons with electrical coupling', Center for neural science, New York University, Feb. 25, 1999.
74. Invited Talk, 'Stationary pulses in spiking neuronal networks', Conference on Waves in Biology', University of Pittsburgh, Sept. 28, 1998.
75. Seminar, 'Effective hydrodynamic theory for spatiotemporal chaos', Department of Physics, University of Freiburg, Germany, Dec. 16, 1997.

76. Colloquium, 'Synchronization in neuronal networks', Department of Physics, New York University, Apr. 10, 1997.
77. Seminar, 'Phase-locking in coupled neuronal oscillators', Department of Mathematics, University of Pittsburgh, Mar. 22, 1997.
78. Invited Talk, 'Dynamics of heterogeneous inhibitory fast-spiking neurons'. *American Mathematical Society Meeting*, San Diego, Jan 8-11, 1997.
79. Seminar, 'Synchrony in the hippocampus', Center for Interdisciplinary Research on Complex Systems, Northeastern University, Oct. 29, 1996.
80. Seminar, 'Effective hydrodynamic theory for spatiotemporal chaos', Center for Nonlinear Science, Los Alamos National Laboratories, Oct. 4, 1996.
81. Seminar, 'Stochastic action potentials due to channel fluctuations', Mathematical Research Branch, National Institutes of Health, Aug 23, 1996.
82. Invited Talk, 'Pinned polymer model of posture control', *Biomedical Engineering Society Meeting*, Boston, Oct. 6-8, 1995.
83. Invited Talk, 'Theory of aperiodic stochastic resonance', *Northeast Dynamics Meeting*, held at University of Hartford, CT, Apr. 21-23, 1995.
84. Seminar, 'Integrable nonlinear accelerator lattices', Accelerator Theory, Lawrence Berkeley Laboratories, 1993.
85. Seminar, 'Spatiotemporal chaos in three wave interactions', Theory Group, Fermi National Accelerator laboratory, 1993.

SPECIAL WORKSHOPS AND PROGRAMS

1. Faculty and lecturer, Special Topics Course: Methods in Computational Neuroscience, MBL Woods Hole, MA Aug 2004 and 2005.
2. Invited participant and speaker, *Mathematical Neuroscience*, Mathematical Sciences Research Institute, Berkeley, CA Mar 15-19, 2004.
3. Invited participant and speaker, program on *Neuralphysics*, Institute for Theoretical Physics, Santa Barbara , Oct 1 - Dec 14, 2001.
4. Invited participant, program on *Statistical Mechanics and Biological Information*, Institute for Theoretical Physics, Santa Barbara , Mar 26 - Apr 21, 2001.
5. Invited participant and speaker, conference on *Persistent Neural Activity*, Banbury Center, Cold Spring Harbor Laboratory, Oct 1-4, 2000.
6. Invited participant, *Computational Neuroscience Workshop*, the Institute for Mathematics and its Applications, University of Minnesota, Jan 14-23, 1998.
7. Invited participant, *Methods in Computational Neuroscience Course* at the Marine Biological Laboratory, Wood's Hole, MA, Aug, 1995.
8. Invited participant and speaker, *Waves in The Ocean Workshop*, Mathematical Sciences Research Institute, Berkeley, CA Feb 7-11, 1994.

REFEREED PUBLICATIONS

1. SJ Gotts, CC Chow, and A Martin. Repetition priming and repetition suppression: A case for enhanced efficiency through neural synchronization. *Cognitive Neuroscience* (in press)
2. S Vattikuti, J Guo, CC Chow. Heritability and genetic correlations explained by common SNPs for metabolic syndrome traits. *PLoS Genetics* 8:e1002637 (2012).
3. WJ Heuett, BV Miller, SB Racette, JO Holloszy, CC Chow, V Perival. Bayesian functional integral method for inferring continuous data from discrete measurements. *Biophysical Journal*, 102:399-406 (2012).
4. Dougherty EJ, Guo C, Simons SS Jr, Chow CC (2012) Deducing the Temporal Order of Cofactor Function in Ligand-Regulated Gene Transcription: Theory and Experimental Verification. *PLoS ONE* 7(1): e30225. doi:10.1371/journal.pone.0030225
5. SS Simons and CC Chow, The road less traveled: New views of steroid receptor action from the path of doseresponse curves. *Molecular and Cellular Endocrinology* 348:373-382 (2012).
6. SN Fatakia, S Costanzi, CC Chow, Molecular Evolution of the Transmembrane Domains of G Protein-Coupled Receptors. *PLoS ONE* 6: e27813 (2011).
7. MA Buice and CC Chow, Effective stochastic behavior in dynamical systems with incomplete information. *Phys Rev E* 84:051120 (2011).
8. KD Hall, G Sacks, D Chandramohan, CC Chow, C. Wang; S Gortmaker; B Swinburn, Quantification the effect of energy imbalance on body weight change. *The Lancet* 378:826-37 (2011).
9. J Seely and CC Chow. Role of mutual inhibition in binocular rivalry. *J Neurophysiol* 106:2136-2150 (2011).
10. CC Chow, V Perival, G Csako, M Ricks, AB Courville, BV Miller III, GL Vega, and AE Sumner, Higher Acute Insulin Response to Glucose May Determine Greater Free Fatty Acid Clearance in African-American Women. *J Clin Endocrinol Metab* 96:2455-63 (2011).
11. KD Hall and CC Chow, Estimating changes of free-living energy intake and its confidence interval, *Am J Clin Nutr* 94:66-74 (2011).
12. CC Chow, KM Ong, EJ Dougherty, SS Simons, Inferring mechanisms from dose-response curves. *Methods Enzymo* 487:465-283 (2011)
13. A Milac, A Anishkin, SN Fatakia, CC Chow, HR Guy and S Sukharev, Structural models of TREK channels and their gating mechanism. *Channels* 5:1, 23-33 (2011).
14. K.M. Ong, J.A. Blackford, B.L. Kagan, S.S. Simons, and C.C. Chow, "A theoretical framework for gene induction and experimental comparisons", *Proc. Natl. Acad. Sci. USA*, 0911095107 (2010).
15. S. Vattikuti and C.C. Chow, "A biophysical cortical mechanism of Autism Spectrum Disorders", *Biological Psychiatry* 67:672-678 (2010).
16. K.D. Hall, C.C. Chow, "Estimating the quantitative relation between food energy intake and changes in body weight", *Am J Clin Nutr* 91:816; author reply 817 (2010).
17. M.A. Buice, J.D. Cowan, and C.C. Chow, 'Systematic fluctuation expansion for neural network activity equations', *Neural Comp.* 22:377-426 (2010).
18. K.D. Hall, M. Dore, J. Guo, and C.C. Chow, "The progressive increase of food waste in America", *PLoS ONE* 4(11): e7940. (2009) doi:10.1371/journal.pone.0007940

19. J. Day, J. Rubin, and C.C. Chow, 'Competition between transients in the rate of approach to a fixed point', *SIAM Journal of Applied Dynamical Systems* **8**, 1523 (2009).
20. L.A. Furchgott, C.C. Chow, and V. Periwal, 'A model of liver regeneration', *Biophysical Journal*, **96**, 3926-3935 (2009).
21. S. Fatakia, S. Costanzi, and C.C. Chow, 'Identification of a common binding cavity for G protein-coupled receptors using mutual information and graph theory', *PloS One*, 4(3): e4681 (2009).
22. G.M. Constantine, J. Bartels, C.C. Chow, G. Clermont, Y. Vodovotz, 'A linear code parameter search algorithm with applications to immunology', *Computational Optimization and Applications*, **42**, 155-171 (2009).
23. V. Periwal, C.C. Chow, R.N. Bergman, M. Ricks, G. Vega, and A.E. Sumner, 'Evaluation of Quantitative Models of the Effect of Insulin on Lipolysis and Glucose Disposal', *AJP - Reg Int Comp Physio* **295**, R1089-R1096 (2008).
24. C.C. Chow and K.D. Hall, 'The dynamics of human body weight change', *PLoS Computational Biology* **4**, e1000045 (2008).
25. R. Kumar, C.C. Chow, J.D. Bartels, G. Clermont, Y. Vodovotz, 'A Mathematical Simulation of the Inflammatory Response to Anthrax Infection'. *Shock* **29**, 104-111 (2008).
26. M.A. Buice and C.C. Chow, 'Correlations, fluctuations and stability of a finite-size network of coupled oscillators', *Phys Rev E* **76**, 031118 (2007).
27. Carson C. Chow (2007) 'Multiple scale analysis', *Scholarpedia*, 2(10):1617 (2007).
28. H. Soula and C.C. Chow, 'Stochastic dynamics of a finite-size spiking neural network', *Neural Comp.*, **19**, 3262-92, (2007).
29. K.D. Hall, H.L. Bain, and C.C. Chow, 'How adaptations of substrate utilization regulate body composition', *International Journal of Obesity*, **31**, 1378-83 (2007).
30. M. Shafi, Y. Zhou, J. Quintana, C. Chow, J. Fuster, and M. Bodner, 'Variability in neuronal activity in primate cortex during working memory tasks', *Neuroscience*, **146**, 1082-1108 (2007).
31. E. Hildebrande, M.A. Buice, and C.C. Chow, 'A kinetic theory of coupled oscillators', *Phys. Rev. Lett.*, **98**, 054101 (2007).
32. C.C. Chow and S. Coombes, 'Existence and wandering of bumps in a spiking neural network model', *SIAM Journal of Applied Dynamical Systems*, **5**, 552-574 (2006).
33. V. Periwal and C.C. Chow, 'Patterns in food intake correlate with body mass index', *American Journal of Physiology: Endocrinology and Metabolism*, **291**, E929-E936 (2006).
34. J. Day, J. Rubin, Y. Vodovotz, PhD; C.C. Chow, A.M. Reynolds, G. Clermont, 'A reduced mathematical model of the acute inflammatory response: Capturing scenarios of repeated endotoxin administration', *Journal of Theoretical Biology* **242**, 237-256 (2006).
35. Y. Vodovotz, C.C. Chow, J. Bartels, C. Lagoa, J.M. Prince, R.M. Levy, R. Kumar, J. Day, J. Rubin, G. Constantine, T.R. Billiar, M.P. Fink, G. Clermont, 'In silico models of acute inflammation in animals'. *Shock* **26**, 235-44 (2006).
36. Y. Kim, Y. Sun, C.C. Chow, Y.G. Pommier, and S.S. Simons, 'Effects of Acetylation, Polymerase Phosphorylation, and DNA Unwinding on Glucocorticoid Receptor Transactivation,' *Journal of Steroid Biochemistry and Molecular Biology* **100**, 3-17 (2006).

37. S. Moldakarimov, J.E. Rollenhagen, C.R. Olson, and C.C. Chow, 'Competitive dynamics in cortical responses to visual stimuli', *Journal of Neurophysiology* **94**, 3388-3396 (2005)
38. C.C. Chow, G. Clermont, R. Kumar, Z. Tawadrous, D. Gallo, B. Betten, G. Constantine, M.P. Fink, T.R. Billiar, and Y. Vodovotz, 'The Acute Inflammatory Response in Diverse Shock States,' *Shock* **24**, 74-84 (2005).
39. Y. Guo and C.C. Chow, 'Existence and stability of standing pulses in neural networks: I. Existence', *SIAM Journal on Applied Dynamical Systems* **4**, 217-248 (2005) .
40. Y. Guo and C.C. Chow, 'Existence and stability of standing pulses in neural networks: II. Stability', *SIAM Journal on Applied Dynamical Systems* **4**, 249-281 (2005) .
41. J.E. Rubin, R.C. Gerkin, G.-Q. Bi, and C.C. Chow, 'Calcium time course as a signal for spike-timing dependent plasticity,' *Journal of Neurophysiology* **93**, 2600-2613 (2005).
42. Y. Vodovotz, P.K. Kim, E.Z. Bagci, G.B. Ermentrout, C.C. Chow, I. Bahar, T.R. Billiar, 'Inflammatory modulation of hepatocyte apoptosis by nitric oxide: in vivo, in vitro, and in silico studies'. *Curr Mol Med* **32**, 753-62, (2004).
43. Y. Vodovotz, G. Clermont, C. Chow, and G. An, 'Mathematical models of the acute inflammatory response', *Current Opinions in Critical Care* **10**, 383-390 (2004).
44. G. Clermont, J. Bartels, R. Kumar, G. Constantine, Y. Vodovotz, and C. Chow, 'In Silico design of clinical trials: a method coming of age,' *Critical Care Medicine* **32**, 2061-2070 (2004).
45. R. Kumar, G. Clermont, Y. Vodovotz, and C.C. Chow, 'The dynamics of acute inflammation,' *Journal of Theoretical Biology* **230**, 145-155 (2004)
46. G.M. Constantine, N.I Bohnen, and C.C. Chow, 'Electronic platform measures of balance impairment in Parkinsonians and first degree relatives,' *International Journal of Pure and Applied Mathematics* **13**, 259-273 (2004).
47. G.B. Ermentrout and C.C. Chow, 'Modeling neural oscillations', *Physiology and Behavior*, **77**, 629-633 (2002).
48. C.C. Chow, D.Z. Jin, and A. Treves, 'Is the world full of circles?' *J. of Vision*, **2**, 571-576, 2002. <http://journalofvision.org/2/8/4>.
49. C.R. Laing and C.C. Chow, 'A spiking neuron model for binocular rivalry', *J. Comp. Neurosci.* **12**, 39-53, 2002.
50. V. Alvarez-Maubecin, C.C. Chow, E.J. Van Bockstaele and J.T. Williams, 'Frequency-dependent synchrony in locus coeruleus: role of electrotonic coupling', *Proc. Natl. Acad. Sci. USA* **99**, 4032-4403, 2002.
51. B.S. Gutkin, C.R. Laing, C.L. Colby, C.C. Chow, and G.B. Ermentrout, 'Turning on and off with excitation: the role of spike-timing asynchrony and synchrony in sustained neural activity', *J. Comp. Neurosci.* **11**, 121-134 (2001).
52. J. Rubin, D. Terman, and C.C. Chow, 'Localized bumps of activity sustained by inhibition in a two-layer thalamic network', *J. Comp. Neurosci.* **10**, 313-331 (2001).
53. C.R. Laing and C.C. Chow, 'Stationary bumps in networks of spiking neurons', *Neural Comp.* **13**, 1473-1494 (2001).
54. C.C. Chow and N. Kopell, 'Dynamics of spiking neurons with electrical coupling', *Neural Comp.* **12**, 1643-1678 (2000).

55. B.M. Boghosian, C.C. Chow, and T. Hwa, 'Hydrodynamics of the Kuramoto-Sivashinsky equation in two dimensions', *Phys. Rev. Lett.* **83**, 5262-5265 (1999).
56. D.J. Mar, C.C. Chow, W. Gerstner, R.W. Adams, and J.J. Collins, 'Noise-shaping in populations of coupled model neurons', *Proc. Natl. Acad. Sci. (US)* **96**, 10450-10455 (1999).
57. C.C. Chow, M. Lauk, and J.J. Collins, 'The dynamics of quasistatic postural control', *Human Movement Science* **18**, 725-740 (1999).
58. M. Lauk, C.C. Chow, L.A. Lipsitz, S.L. Mitchell, and J.J. Collins, 'Assessing Muscle Stiffness from Quiet Stance in Parkinson's Disease', *Muscle and Nerve* **22**, 635-639 (1999).
59. C.C. Chow, J.A. White, J. Ritt, and N. Kopell, 'Frequency control in synchronized networks of inhibitory neurons', *J. Comp. Neurosci.* **5**, 407-420 (1998).
60. J.J. Collins and C.C. Chow, 'It's a small world', (News and Views) *Nature* **393**, 409-410 (1998).
61. C.C. Chow. 'Phase-locking in weakly heterogeneous neuronal networks', *Physica D* **118**, 343-370 (1998).
62. J.A. White, C.C. Chow, J. Ritt, C. Soto-Trevino, and N. Kopell, 'Synchronization and oscillatory behavior in heterogeneous, mutually inhibited neurons', *J. Comp. Neurosci.* **5**, 5-16 (1998).
63. C.C. Chow, T.T. Imhoff, and J.J. Collins, 'Enhancing aperiodic stochastic resonance in a model neuron', *Chaos* **8**, 616-620 (1998).
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