

Curriculum Vitae

Jean-Marc FELLOUS

Citizenship French and U.S. Citizen.
Address Neural Systems Memory and Aging
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Honors, Grants, Service

October 2007 – Present: **President** of the Society for Neuroscience local chapter.

September 2007 – December 2007:

Acting Director: Neural System Memory and Aging. Arizona Research Laboratory.
Faculty: Ellen F. McKnight Brain Institute.

September 1997:

NSF Grant #9708619: Trait Impressions Predicted from Connectionist Modeling of Facial Metric Information. Leslie Zebrowitz (PI), Jean-Marc Fellous (postdoctoral, Co-PI).

Sept 1989 – June 1990:

Bull Fellowship Awarded for Study for the Master's Degree in Computer Science (U.S.C).

1. Member elect executive committee of the graduate interdisciplinary program in Neuroscience (**2009-present**)
1. Panelist for the NSF Collaborative Research in Computational Neuroscience program (**2008-present**)
2. Panelist for the National Defense Science and Engineering Graduate Fellowship (**2006- present**)
3. Panelist for the National Science Foundation Graduate Fellowship program (**2007-present**)
4. Member Elect of the Board of Directors of the Computational Neuroscience Association (**2006- present**)
5. Interim organizer of the Neuroscience Datablitz meeting (twice/semester) (Fall 2007 – Spring 2008)
6. Reviewer for the following journals: Nature, Science, the Journal of Neuroscience, the Journal of Physiology, Neuroscience, Psychological Reviews, Cerebral Cortex, IEEE Spectrum, Vision Research, IEEE Transactions in Pattern Analysis and Machine Intelligence, IEEE Transactions on Evolutionary Computation, Network: computation in neural systems, Neural Computation, the Journal of Computational Neuroscience, Neurocomputing, Cognitive Neurodynamics, Learning and Memory, the Canadian Journal of Experimental Psychology and the Journal of Neurophysiology, Journal of Applied Physiology.
7. Reviewer for the following grant agencies: National Science Foundation, US-Israel Binational Science Foundation (Israel), Agence Nationale de la Recherche (France), Neurological Foundation of New Zealand (New Zealand), Nederlandse organisatie voor wetenschappelijk onderzoek (Dutch organization for scientific research).

Employment

- Sept 2006 – Present: **Associate Professor** in the Department of Psychology and Applied Mathematics Program. University of Arizona, Tucson, AZ.
- Sept 2004 – Aug 2006: **Assistant Professor** in the Departments of Biomedical Engineering and core member of the Center for Cognitive Neuroscience, Duke University, Durham, NC.
- Nov 1997 – Aug 2004: **Howard Hughes Medical Institute Research Associate**, the Salk Institute, La Jolla, CA.
- Oct 1999 – Oct 2002: **Lecturer in the Cognitive Science Department (U.C.S.D).**
Teaching of Cognitive Neuroscience (Cog.Sci. 17), lower-level undergraduate division.
- Sept 1990 – Jan 1996: **Research assistant** (Dr. C. von der Malsburg, U.S.C.): Neural network self-organization applied to human face recognition (implementation in a multi-processor environment). Software development, project management, lab management.
- Jan 1995 – May 1995: **Teaching assistant** in the Biology Department at U.S.C. for the undergraduate class Bio-306 (general human physiology). Dr. Allen Norton, lab director.
- Sept 1993 – Dec 1993: **Teaching assistant** in the Computer Science Department at U.S.C. for the undergraduate class CSCI-301 (formal language theory). Dr. S. Ginsburg, instructor.
- Sept 1993 – Dec 1993: **Teaching assistant** in the Biology Department at U.S.C. for the undergraduate class Bio-106 (introductory biology). Dr. Linda Bazillian, lab director.
- Sept 1992 – May 1993: **Teaching assistant** in the Biology Department at U.S.C. for the undergraduate classes Bio-307 and Bio-306 (general human physiology). Dr. Allen Norton, lab director.
- Fall 1992: **Design, organization and teaching** of graduate class CSCI-599 (Computer Science): "Computational and Neural Models of Emotion and Motivation". Dr. M. A. Arbib, co-instructor.

Education

- Nov 1997 – Aug 2004: **Howard Hughes Medical Institute Research Associate**, the Salk Institute, La Jolla, CA. Dr. Terrence Sejnowski's laboratory. Slice neurophysiology of the hippocampal and prefrontal cortices (patch-clamp, field and intracellular). Neuromodulation and information transmission within the hippocampus and prefrontal cortex. Computational modeling studies using NEURON. In vivo intracellular studies in the anaesthetized rat.
- Jan 1996 – Oct 1997: **Sloan Postdoctoral Fellow** in Biology, Brandeis University, Boston, MA. Dr. J. Lisman's Laboratory: Experimental and theoretical aspects of neuromodulation and multiple oscillatory circuits in the hippocampus in vitro. Training in field recording techniques on hippocampal slices.
Dr. L. Zebrowitz's Laboratory (Psychology): Use of facial metric information for personality trait perception. Computer models and subject assessments.
- Sept 1990 – Aug 1996: **Ph.D. Degree** in Computer Science, University of Southern California, Los Angeles, CA. Committee: Dr. M.A. Arbib (Chair), Dr. C. von der Malsburg and Dr. I. Biederman. Thesis: A Neural Code for Face Representation: from V1 Receptive Fields to IT 'Face Cells'.
- Sept 1989 – June 1990: **Master's Degree** in Computer Science, University of Southern California, Los Angeles, CA.
- Sept 1988 – Aug 1990: **D.E.A d'Intelligence Artificielle**, Paris VI University, France (M.S. in Artificial Intelligence) - with Honors. Title of the thesis: "PACTOL: an adaptive and introspective actor formalism." - Multi-agent systems (Dr. J. Ferber), Meta-knowledge (Dr. J. Pitrat). Thesis work was done in the Parlog (parallel logic programming) group at Imperial College (London, UK).
- Sept 1985 – July 1988: **Engineer Diploma**, ESIM, Ecole Supérieure d'Ingenieurs de Marseille, France (equivalent B.S.). Emphasis: Electronics, Artificial Intelligence and Logic Programming.

Publications

(note: * indicates work performed at the University of Arizona, + indicates work performed at Duke University)

Peer Reviewed

1. **Wiskott L, Fellous JM, Kruger N and von der Malsburg C.** Face Recognition by Elastic Bunch Graph Matching. *IEEE spectrum* 19: 775-779, 1997.
2. **Fellous JM.** Gender discrimination and prediction on the basis of facial metric information. *Vision Research* 37: 1961-1973, 1997.
3. **Lisman JE, Fellous JM and Wang X-J.** A role for NMDA-receptor channels in working memory. *Nature Neuroscience* 1: 273-275, 1998.
4. **Fellous JM and Linster C.** Computational models of neuromodulation. *Neural computation* 10: 771-805, 1998.
5. **Fellous JM.** The neuromodulatory basis of emotion. *The Neuroscientist* 5: 283-294, 1999.
6. **Fellous JM and Sejnowski TJ.** Cholinergic induction of oscillations in the hippocampal slice in the slow (0.5-2 Hz), theta (5-12 Hz), and gamma (35-70 Hz) bands. *Hippocampus* 10: 187-197, 2000.
7. **Houweling AR, Modi RH, Ganter P, Fellous JM and Sejnowski TJ.** Models of frequency preferences of cortical pyramidal cells and interneurons. *Neurocomputing*, Vol 38-40, pp 231-238, 2001.
8. **Scheler G and Fellous JM.** Dopamine modulation of prefrontal delay activity- Reverberatory activity and sharpness of tuning curves. *Neurocomputing*, 38-40: 1549-1556, 2001.
9. **Tiesinga PHE, Fellous JM, Jose JV and Sejnowski TJ.** Optimal information transfer in synchronized neocortical neurons. *Neurocomputing*, 38-40: 397-402, 2001.
10. **Tiesinga PHE, Fellous JM, Jose JV and Sejnowski TJ.** Computational model of carbachol-induced delta, theta and gamma oscillations in the hippocampus. *Hippocampus* 11: 251-274, 2001.
11. **Fellous JM, Houweling AR, Modi RH, Rao RPN, Tiesinga PHE and Sejnowski TJ.** The frequency dependence of spike timing reliability in cortical pyramidal cells and interneurons. *J Neurophysiology* 85:1782-1787, 2001.
12. **Blanchard C, Blanchard R, Fellous JM, Guimaraes FS, Irwin W, LeDoux JE, McGaugh JL, Rosen, JB, Schenberg LC, Volchan E and Da Cunha C.** The brain decade in debate: III. Neurobiology of emotion. *Brazilian journal of medical and biological research*, 34:283-293, 2001.
13. **Destexhe A, Rudolph M, Fellous JM and Sejnowski TJ.** Fluctuating synaptic conductances recreate in-vivo-like activity in neocortical neurons. *Neuroscience*, 107(1):13-24, 2001.
14. **Tiesinga PHE, Fellous JM, Jose JV and Sejnowski TJ.** Information transfer in entrained cortical neurons. *Network: Computation in Neural System*, 13:41-61, 2002.
15. **Tiesinga PHE, Fellous JM and Sejnowski TJ.** Attractor reliability reveals deterministic structure in neuronal spike trains, *Neural Computation*, 14:1629-1650, 2002.
16. **Tiesinga PHE, Fellous JM, Sejnowski TJ.** Spike-time reliability of periodically driven integrate and fire neurons. *Neurocomputing*, 44-46: 195-200, 2002.
17. **Schreiber S, Whitmer D, Fellous JM, Tiesinga PHE, Sejnowski TJ.** A new correlation-based measure of spike timing reliability. *Neurocomputing*, 52-54: 925- 931, 2003.
18. **Thomas PJ, Tiesinga PHE, Fellous JM, Sejnowski TJ.** Reliability and Bifurcation in Neurons Driven by Multiple Sinusoids. *Neurocomputing*, 52-54: 955- 961, 2003.
19. **Zebrowitz LA, Fellous JM, Mignault A and Andreoletti C.** Trait Impressions as Overgeneralized Responses to Adaptively Significant Facial Qualities: Evidence from Connectionist Modeling. *Journal of Personality and Social Psychology*, 7(3):194-215, 2003.
20. **Fellous JM and Sejnowski TJ.** Regulation of persistent activity by background inhibition in an *in vitro* model of a cortical microcircuit. *Cerebral Cortex*, 13:1232-1241, 2003.
21. **Fellous JM, Rudolph M, Destexhe A and Sejnowski TJ.** Variance detection and gain modulation in an *in vitro* model of *in vivo* activity. *Neuroscience*, 122:811-829, 2003.
22. **Schreiber S, Fellous JM, Tiesinga PHE and Sejnowski TJ.** Influence of ionic conductances on spike timing reliability of cortical neurons for suprathreshold rhythmic inputs. *J Neurophysiology*, 91:194-205, 2004

23. **Tiesinga PHE, Fellous JM, Salinas E, Jose JV, Sejnowski TJ.** Synchronization as a mechanism for attentional gain modulation. *Neurocomputing*, 58-60: 641-646, 2004.
24. **Fellous JM, Tiesinga PHE, Thomas PJ and Sejnowski TJ.** Discovering spike time patterns in neural responses. *Journal of Neuroscience*, 24(12):2989-3001 2004.
25. **Arbib MA and Fellous JM.** Emotions: From Brain to Robot. *Trends in Cognitive Science*, 8(12):554-561, 2004.
26. **Tiesinga PHE, Fellous JM, Salinas E, Jose JV and Sejnowski TJ.** Inhibitory Synchrony as a mechanism for attentional gain modulation, *The Journal of Physiology (Paris)*, 98:296-314, 2004.
27. **Bazhenov M, Rulkov NF, Fellous JM, Timofeev I.** Role of network dynamics in shaping timing reliability. *Physical Review E*. 72,041903, 2005.
- +28. **Fellous JM.** A Mechanistic View of the Expression and Experience of Emotion in the Arts. *American Journal of Psychology*. 119(4): 668-674, 2006.
- +29. **Mishra J, Fellous JM, Sejnowski TJ.** Selective Attention through Phase Relationship of Excitatory and Inhibitory Input Synchrony in a Model Cortical Neuron. *Neural Network*. 19:1329-1346, 2006.
- +30. **Polikov VS, Block ML, Fellous JM, Hong JS and Reichert WM.** In vitro model of glial scarring around neuroelectrodes chronically implanted in the CNS. *Biomaterials*, 27:5368–5376, 2006.
- *31. **Zebrowitz LA, Kikuchi M and Fellous JM.** Are effects of emotion expression on trait impression mediated by babyfacedness? Evidence from connectionist modeling. *Personality and Social Psychology Bulletin*. 33:648-662, 2007.
- *32. **Tiesinga PHE, Fellous JM, Sejnowski TJ.** Regulation of spike timing in visual cortical circuits. *Nature Reviews Neuroscience*, 9:97-109, 2008.
- *33. **Paulk AC, Phillips-Portillo J, Dacks AM, Fellous JM and Gronenberg W.** The processing of color, motion, and stimulus timing are anatomically segregated in the bumblebee brain. *The Journal of Neuroscience*, 28(25):6319-32, 2008.
- *34. **Tatsuno M, Fellous JM and Amari S.** Information geometric measures as robust estimators of connection strengths and external inputs, *Neural Computation*, 21(8):2309-2335, 2009.
- *35. **Paulk AC, Dacks AM, Phillips-Portillo J, Fellous JM and Gronenberg W.** Visual processing in the central bee brain, *The journal of Neuroscience, in Press, 2009.*
- *36. **Stiefel K, Thomas PJ, Fellous JM and Sejnowski TJ.** Intrinsic Sub-threshold Oscillations Extend the Influence of Inhibitory Synaptic Inputs on Cortical Pyramidal Neurons, *The European journal of Neuroscience, in Press, 2009.*
- *37. **Zebrowitz LA, Kikuchi M and Fellous JM.** Facial Resemblance to Emotions: Group Differences, Impression Effects, and Race Stereotypes. *Journal of Personality and Social Psychology, In Press, 2009.*

Submitted

- *1. **Corral-Frias N, Fellous JM.** Encoding of spatial contextual information using stochastic synapses. *Submitted 2009.*
 - *2. **Wang HP, Spencer D, Fellous JM, and Sejnowski TJ.** Optimizing Cortical Response Reliability through Synchronous Thalamic Inputs. *Submitted 2009.*
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Conferences

1. **Shams L, Fellous JM and von der Malsburg C.** A Comparative Study of Gabor and Pixel Representations in Original and PC Spaces. *World Congress on Neural Networks*, Washington DC, 1995.
2. **Fellous JM.** A M.I.M.D. Implementation for Multi-Level Neural Modeling. *World Congress in Neural Networks*, Washington, D.C., 1995.
3. **Fellous JM and Hudlicka E.** Using the World-Wide-Web as a tool for an interdisciplinary approach to the scientific study of emotion. *Society for Neuroscience*, Washington D.C., 1996, p. 246.
4. **Fellous JM and Lisman JE.** Working memory mediated by NMDA channels: Implications for Schizophrenia. *Society for Neuroscience*, New Orleans, 1997, p. 776.
5. **Fellous JM and Sejnowski TJ.** The involvement of CA1 and CA3 in Carbachol-induced oscillations in the hippocampal slice. *Society for Neuroscience*, Los Angeles, CA, 1998.
6. **Fellous JM, Houweling AR, Modi RH, Rao RPN and Sejnowski TJ.** Spike timing reliability in the prefrontal cortex depends on the frequency content of its synaptic inputs. *Society for Neuroscience*, Miami, 1999, p. 885.
7. **Fellous JM, Destexhe A and Sejnowski TJ.** Dynamic clamp of cortical neurons in vitro simulates in vivo activity patterns. *Society for Neuroscience*, New Orleans, 2000, p. 1623.
8. **Tiesinga PHE, Fellous JM, Jose JV and Sejnowski TJ.** Computational model of carbachol-induced delta, theta and gamma oscillations in the hippocampus. *Society for Neuroscience*, New Orleans, 2000.
9. **Jose JV, Tiesinga PHE, Fellous JM and Sejnowski TJ.** Entrainment by synchronized inhibition boosts information transfer in neocortical neurons. *Society for Neuroscience*, New Orleans, 2000.
10. **Scheler, G and Fellous, JM.** Impairment of decision-making in prefrontal cortex by a low dopaminergic tone: A computational model. *Journal of Cognitive Neuroscience*. P30E, 2000.
11. **Zebrowitz LA and Fellous, JM.** Trait Impressions of Neutral Expression Faces Predicted from Connectionist Modeling of Facial Metric Information from Angry and Happy Faces. *Feelings and Emotions: The Amsterdam Symposium*, the Netherlands June 13-16, 2001.
12. **Fellous JM and Sejnowski TJ.** Dopamine facilitates the sustained firing of rat layer V prefrontal pyramidal cells in vitro. *Society for Neuroscience*, San Diego, 2001.
13. **Tiesinga PHE, Thomas P, Fellous JM, Sejnowski TJ.** Reliability, precision and the neuronal code. *Society for Neuroscience*, San Diego, 2001.
14. **Jose JV, Tiesinga PHE, Fellous JM, Salinas E, Sejnowski TJ.** Synchronization as a mechanism for attentional modulation. *Society for Neuroscience*, San Diego, 2001.
15. **Jose JV, Tiesinga PHE, Fellous JM, Salinas E, Sejnowski TJ.** Is attentional gain modulation optimal at gamma frequencies? *Society for Neuroscience* 55.6, Orlando, FL, 2002.
16. **Fellous JM, Schreiber S, Tiesinga PHE, Sejnowski TJ.** Modulation of the Frequency Preference and Attractor Structure of Prefrontal Cortical Neurons. *Society for Neuroscience* 445.19, Orlando, FL, 2002.
17. **Fellous JM, Spencer D, Wang HP, Junek S, Eagleman DM, Sejnowski TJ.** Firing reliably with unreliable synapses. *Society for Neuroscience*, New Orleans, 2003.
18. **Stiefel KM, Fellous JM, Sejnowski TJ.** Interaction of sub-threshold Oscillations with Synaptic Inputs in the Cortex. *Society for Neuroscience*, New Orleans, 2003.
19. **Thomas PJ, Fellous JM, Tiesinga PHE, Sejnowski TJ.** Experimental characterization of single neuron spike-time patterns. *Society for Neuroscience*, New Orleans, 2003.
20. **Mishra J, Fellous JM, Sejnowski TJ.** A Biophysical Neuronal Model Exploring Attention Mechanisms in Visual Cortex. *Society for Neuroscience*, San Diego, 2004.
21. **Toups JV, Fellous JM and Tiesinga PH.** Statistical validation of spike patterns revealed by fuzzy clustering algorithms. *Society for Neuroscience*, San Diego, 2004.
22. **Wang HP, Fellous JM, Spencer DJ, and Sejnowski TJ.** Reliability of V1 Cell Responses to Thalamic Natural Stimulus Inputs. *Society for Neuroscience*, Washington DC, 2005.
- +23. **Buntaine A, Hoang V, Bhanpuri N and Fellous JM.** Stochastic synaptic transmission in Hippocampus and Cortex. *Society for Neuroscience*, Atlanta, 2006.
- +24. **Lipa P, Tatsuno M, Amari S, McNaughton BL and Fellous JM.** A Novel Analysis Framework for Characterizing Ensemble Spike Patterns Using Spike Train Clustering and Information Geometry. *Society for Neuroscience*, Atlanta, 2006.

- +25. **Toups JV, Fellous JM, Thomas PJ, Tiesinga PHE and Sejnowski TJ.** Stability of in vitro spike patterns under variation of stimulus amplitude. *Society for Neuroscience*, Atlanta, 2006.
- *26. **Buntaine A, Corral-Frias N and Fellous JM.** Emergence of reliable spike patterns in models of CA1 cells contacted by unreliable synapses. *Computational Neuroscience*, Toronto, CA, 2007, and *BMC Neuroscience* 2007, 8(Suppl 2):P71.
- *27. **Tatsuno M; Lipa P; McNaughton BL; Fellous JM.** Dynamics of Neural Assemblies Involved in Memory-Trace Replay. *Society for Neuroscience*, San Diego, 2007.
- *28. **Navratilova Z and JM Fellous JM.** A Biophysical Model of Cortical Up and Down States: Roles of Excitatory and Inhibitory Balance and H Current. *Society for Neuroscience*, San Diego, 2007.
- *29. **Jones B, McClung A, Hupbach A, Hardt O, Gomez R, Nadel L, Fellous JM.** Dynamics of sequence learning in rats: The influence of reminders and training by blocks. *Society for Neuroscience*, San Diego, 2007.
- *30. **N. Corral-Frias, A. Buntaine and JM Fellous.** ¿Teléfono descompuesto en el cerebro?: Patrones precisos de actividad neural en CA1 a partir de sinapsis no confiables. Modelando una explicación. XV Congreso Mexicano de Psicología, Hermosillo, MX, 2007.
- *31. **H.P. Wang, D J. Spencer, JM Fellous and T.J. Sejnowski.** Synchronous Thalamic Inputs Drive Cortical Neurons Reliably with Balanced Excitatory and Inhibitory Inputs. *Society for Neuroscience*, San Diego, 2007.
- *32. **Navratilova Z, Fellous JM, McNaughton BL.** Intrinsic current generated, omnidirectional phase precession and grid field scaling in toroidal attractor model of medial entorhinal path integration. *Computational Neuroscience*, Portland OR, 2008.
- *33. **Hoang LT, Fellous JM, Barnes CA.** Expression of the immediate-early gene Arc in rat ventral tegmental neurons during aging. *Society for Neuroscience*, Washington DC, 2008.
- *34. **Valdes JL, McNaughton BL and Fellous JM.** Reactivation of populations of ventral tegmental area neurons in the rat. *Society for Neuroscience*, Washington DC, 2008.
- *35. **Corral-Frias NS, Valdes JL, Fellous JM, French ED.** Latent effects of inescapable footshock on Ventral Tegmental Area dopamine cell excitability. *Society for Neuroscience*, Washington DC, 2008.
- *36. **Zimmerman P, Alves C, Fellous JM, Gibboni R, Laine C, Mosher C, Wood K, Gothard K.** Visual exploration of conspecifics faces during sex discrimination. *Society for Neuroscience*, Washington DC, 2008.
- *37. **Navratilova Z, Fellous JM, McNaughton BL.** Intrinsic current based phase precession in a toroidal attractor model of path integration in medial entorhinal cortex (MEC) grid cells: effects of speed input and intrinsic current time constants. *Society for Neuroscience*, Washington DC, 2008.
- *38. **McNaughton BL, Hoang LT, Valdes JL, Maurer AP, Burke SN, Fellous JM.** Distinct characteristics of CA1 place cells correlated with medial or lateral entorhinal cortex layer III input. *Society for Neuroscience*, Washington DC, 2008.
- *39. **Toups JV, Fellous JM, Sejnowski TJ and Tiesinga PH.** Heuristics for revealing the event structure of neuronal spike trains. *Society for Neuroscience*, Washington DC, 2008.
- *40. **Sarah J. Cook, Nadia Corral-Frias, Julia Cremer, Jose L. Valdes, Jean-Marc Fellous.** Learning to give up! The contribution of the rodent dopaminergic system to extinction. *Society for Neuroscience*, Chicago IL, 2009.
- *41. **Gregory L. Powell, Jason Q. Pilarski, Ralph F. Fregosi, Jean-Marc Fellous.** Development of a network model to predict alterations in PreBöttinger Complex neurons caused by prenatal nicotine exposure. *Society for Neuroscience*, Chicago IL, 2009.
- *42. **Corral-Frias NS, Cremer JK, Valdes JM, French ED, Fellous JM.** Role of the ventral tegmental area in anxiety disorders: electrophysiological and reversible inactivation studies in a rodent model of posttraumatic stress disorder.. *Society for Neuroscience*, Chicago IL, 2009.
- *43. **Bethany Jones, Lynn Nadel and Jean-Marc Fellous.** Re-making memories: A novel paradigm to study memory reconsolidation in rats. *Society for Neuroscience*, Chicago IL, 2009.
- *44. **H.P. Wang , D.J. Spencer, J.M. Fellous, T.J. Sejnowski.** Reliable Transmission of Visual Inputs into Cortex Depends on Thalamic Synchrony. *Society for Neuroscience*, Chicago IL, 2009.
- *45. **L.Watkins, G. M. Martin, JM Fellous** The Traveling Salesrat: Insights into optimal spatial navigation and the role of the dopaminergic system. *Society for Neuroscience*, Chicago IL, 2009.

Books and Book Chapters

Books

1. **Fellous JM and Arbib MAA** (Editors). *Who Needs Emotions? The brain meets the Robot*. Oxford University Press, 2005.

Book chapters

1. **LeDoux JE and Fellous JM**. Emotion and Computational Neuroscience. In: *The Handbook of Brain Theory and Neural Networks*, edited by Arbib MA: M.I.T. Press, p. p356-359, 1995.
2. **Fellous JM, Johnston T, Segal M and Lisman JE**. Carbachol-Induced rhythms in the hippocampal slice: Slow (.5-2Hz), Theta (4-10Hz) and Gamma (80-100Hz) Oscillations. In: *Computational Neuroscience: Trends in Research*, edited by Bower JM. New York: Plenum, p. 367-372, 1998.
3. **Fellous JM, Armony J and LeDoux JE**. Emotion and Computational Neuroscience. In: *The Handbook of Brain Theory and Neural Networks*, second edition, edited by Arbib MA: M.I.T. Press, in press, 2003.
4. **Fellous JM and Suri R**. The Roles of Dopamine. In: *The Handbook of Brain Theory and Neural Networks*, second edition, edited by Arbib MA: M.I.T. Press, in press, 2003.
5. **Fellous JM and LeDoux JE**. Towards basic principles for emotional processing: What the fearful brain tells the robot. In *Who Needs Emotions? The brain meets the Robot*. Fellous JM and Arbib MAA (Editors), Oxford University Press, Fall 2003.
- *6. **Gunay C, Smolinski TG, Lytton WW, Morse TM, Gleeson P, Crook S, Steuber V, Silver A, Voicu H, Andrews P, Bokil H, Maniar H, Loader C, Mehta S, Kleinfeld D, Thomson D, Mitra PP, Aaron G, Fellous J-M**. A method for discovering spatio-temporal spike patterns in multi-unit recordings. In computational Intelligence in Electrophysiology: Trends and Open Problems. In: Smolinski TG, Milanova MG, Hassanien A-E (eds), *Applications of Computational Intelligence in Biology: Current Trends and Open Problems*, Chapter XIV, Springer, pp. 325—359, (2008)
- *7. **Navratilova, Z. and Fellous JM**. A Biophysical Model of Cortical Up and Down States: Excitatory and Inhibitory Balance and H-Current. *Lecture Notes in Computer Science*, Springer, 2008.
- *8. **Fellous JM, Sejnowski TJ, Navratilova Z**. Intrinsic and Network Contributions to Reverberatory activity: Reactive Clamp and Modeling Studies. In *The Dynamic-clamp: from principles to applications*. Destexhe A. and Bal T (eds), Springer, 2009.
- *9. **Fellous JM**. Emotion: Computational Modeling. Vol 3, pp909-913. In the *Encyclopedia of Neuroscience*. L.R. Squire (ed.) Oxford Academic Press, 2009.

Invited Talks

1. University of Texas, Southwestern Medical Center, Dallas, TX, January 2002. Psychiatry Department. *Computational roles of noise and neuromodulation*.
2. University of Louisville, KY, March 2002. Psychology Department. *Neural computing with noise*.
3. University of Texas, Houston, TX, May 2002. Department of Neurobiology and Anatomy. *Gain and signal-to-noise modulation*.
4. University of Utah, Salt Lake City, UT, July 2002. Pain Management Department. Pain and Negative Emotion: Towards an Interdisciplinary Synthesis (official Satellite Meeting for the 10th International Association for the Study of Pain (IASP) World Congress on Pain). *The neural bases of emotion*.
5. University of California, Riverside, October 2002. Department of Biomedical Sciences. *Make them talk!: The mysteries of synaptic transmission*.
6. Duke University, February 2003. Biomedical Engineering Department. *Spikes: Get real! Understanding neural processing in vivo using computational and in vitro preparations*.
7. Rutgers University, Newark, NJ. March 2003. *Regulation of persistent activity in an in vitro model of a prefrontal cortical microcircuit: Synergistic roles of dopamine modulation and inhibition*.
8. Duke University, September 2003. Center for Cognitive Neuroscience. *Spikes: It's (also) about time!*

9. University of California, Irvine, Dec 2003. *Spike patterns: One step beyond spike rates and spike timing.*
10. Stanford University, March 2004. American Association for Artificial Intelligence, Spring Symposium. Keynote speaker. Architectures for modeling emotion: cross-disciplinary foundations. *From Human Emotions to Robot Emotions.*
11. University of Hawaii, Manoa. *Discovering spike patterns*, August 2005.
- *12. Arizona State University, Tempe, AZ. *Is it time for spikes?* April 2008.

Advising, Teaching and Outreach

Current advising:

Main advisor: Nadia Corral-Frias (Neuroscience, PhD program), Bethany Jones (Neuroscience, PhD program), Minryung Yung (Neuroscience, PhD program).

Thesis committee member: Beth Salvagio (Psychology, MS), Shikhar Kumar (Psychology, MS), Erin McKiernan (Physiology, PhD), Thabelo Khoboko (Neuroscience, PhD), Lise Johnson (Biomedical Engineering, PhD), Christopher Laine (Physiology, PhD), Ann Revill (Physiology, PhD).

Past advising:

Main advisor: Jose Valdes (Postdoctoral fellow. Left the lab to take a faculty position at the University of Chile)

Thesis committee member: Drew Maurer (Neuroscience, PhD), Marco Herrera (Physiology, PhD), Angelique Paulk (Insect Science, PhD)

Undergraduate independent studies to date: University of Arizona (13), Duke University (6)

Teaching

Psych 302: Introduction to Biopsychology (once a year).

Psych 4/596L: Introduction to Neural Data Analyses (once every other year).

Psych 4/503c: Introduction to Computational Neuroscience (once every other year).

Psych 506A: Neural encoding and memory (once a year)

co-teaching (A. Lewis and I. Fasel): ECE 596c: Cognitive Robotics (10%, once a year).

co-organizing (A. Lewis and K. Lin): Theoretical Neuroscience Journal Club (3 times a year).

Outreach

Organizer: Brain awareness week 2008, 2009. Halloween event 2008.

Organizer: Student poster awards chair at the Computational Neuroscience meeting (2007, 2008, 2009)

Organizer and Director: Senior Neuroscience Research Fellowship program (involving elders in neuroscience research). Funded by the Tucson Chapter of the Society for Neuroscience.

Other

Committee work:

Member of the curriculum committee of the Department of Neuroscience (2009-present)

Applied Mathematics academic program review committee member (2009-2010)

Executive committee member, Neuroscience graduate interdisciplinary program (2009-present)

Psychology faculty recruiting committee (2009),

Undergraduate in Biology Research Program admission committee (2009).

School of Neuroscience reorganization committee (2008),