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Born 9 August 1960 (Casablanca, Morocco), French national
Married (to Erin Schuman), 3 children

A. EDUCATION

1989 Summer Course in Computational Neuroscience, Woods Hole, MA, USA
1985 Ph.D. in Neuroethology, Université Paul Sabatier, Toulouse, France
1985 Doctorate in Veterinary Medicine, National School of Veterinary Medicine, Toulouse, France
1979 Admitted, National School of Veterinary Medicine
1978 Baccalaureat "C" (Math & Physics) (TB)
1975 - 78 Lycée Pierre de Fermat, Toulouse, France

B. ACADEMIC POSITIONS

2015 - "Cooptation Professor", Goethe Universität, Frankfurt, Germany
2009 - Director, Max-Planck-Institute for Brain Research, Frankfurt, Germany
2002 - 11 *Lawrence A. Hanson* Chair, Professor of Biology and CNS, Caltech, CA, USA (on leave from 2009 to 2011)
2000 - 02 Professor of Biology and CNS, Caltech, CA, USA
1996 - 00 Associate Professor of Biology and CNS, Caltech, CA, USA
1990 - 95 Assistant Professor of Biology and *Computation and Neural Systems*, Caltech, CA, USA
1987 - 90 Royal Society Locke Research Fellow, University of Cambridge, UK
1985 - 87 Postdoctoral Research Assistant, University of Cambridge, UK

C. RESEARCH EXPERIENCE

2009 - Director, MPI Brain Research
2008 Visiting Scholar, Ecole Normale Supérieure, Paris, France
2005 Visiting Scholar, Clark Center, Stanford University, CA, USA
1990 - 2011 Professor, Caltech, Pasadena, CA, USA
1985 - 90 Postdoctoral Research, University of Cambridge, UK
1983 Visitor, Technische Universität, München, Germany
1983 Visitor, MPI für Verhaltensphysiologie, Seewiesen, Germany
1982 - 85 Pre-doctoral Research, Université Paul Sabatier, Toulouse, France

1982 Visitor, Laboratory for Energy-related Health Research, U.C. Davis,
CA, USA

D. HONORS

2014 Member, EMBO
2002 Fellow Associate, Neurosciences Institute, La Jolla, CA, USA
2001 Fellow, American Association for the Advancement of Science
2000 - 03 McKnight Neuroscience Investigator Award
1993 - 98 National Science Foundation Presidential Faculty Fellow Award
1993 L.L. and A.W. Ferguson Award for Excellence in Teaching
1992 L.L. and A.W. Ferguson Award for Excellence in Teaching
1991 - 94 McKnight Neuroscience Young Investigator Award
1991 - 93 Alfred P. Sloan Research Fellow Award
1990 - 93 Searle Fellow Award
1987 International Society for Neuroethology Prize
1987 - 90 Royal Society Locke Research Fellow, UK
1987 - 90 Research Fellow, Downing College, Cambridge, UK
1985 Fyssen Foundation Fellowship, Paris, France (declined)
1985 S. & C. del Duca Foundation Fellowship, Paris, France (declined)
1985 1985 City of Toulouse Prize (Natural and Life Sciences), France

E. NAMED/SPECIAL LECTURES

EMBL Distinguished Lectures Series, Heidelberg, DE (2018)
Lampport Lecture, Univ. Washington, Seattle WA, USA (2017)
Keynote speaker, GDR Vision 2016, Toulouse, France (2016)
Keynote speaker, CRCNS Conference, Paris, France (2016)
Keynote Speaker, Intl. Conference on Systems Biology, Barcelona (2016)
Masakazu Konishi Lecture, Woods Hole, MA, USA (July 2016)
Norman Davidson Lecture, Caltech, Pasadena, CA, USA (2016)
Keynote Speaker, 4th European Zebrafish meeting, Lisbon (2016)
Director's Series Seminar, HHMI JFRC, Ashburn, VA, USA (2015)
Keynote Lecturer, FENS (European Neurosciences) meeting, Milano, Italy (2014)
R & H Record Neurosci Award Lecturer, Baylor Coll. Med., Houston, TX, USA (2014)
Ruth K. Broad and Shepard Broad Foundation International Lecturer on
 Neurobiology and Disease, Duke University, Durham, NC, USA (2013)
NIPS Keynote Lecture, Granada, Spain (2011)
Max Birnstiel Lecture, Vienna, Austria (2011)
ANS Overseas Lecturer, Sydney, Australia (2010)
Swammerdam Lecturer, Amsterdam, Holland (2009)
Masakazu Konishi Lecturer, Woods Hole MA, USA (2009)
Robert J. Terry Lecturer, Washington U. Med. School, St. Louis, MO, USA (2009)
Teuber, Lecturer, MIT, Cambridge, MA, USA (2008)
Special Lecture, Society for Neuroscience, San Diego, CA, USA (2007)
Ernst Florey Lecture, German Neuroscience Meeting, U Göttingen, Germany (2007)
Monell/Penn Lecture, University of Pennsylvania, Philadelphia, PA, USA (2006)
D-Biol Lecture, ETH Zürich, Switzerland (2006)
Heller Lecture, Hebrew University, Jerusalem, Israel (2006)
Ernest C. Watson Lecture, Caltech, CA, USA (2005)
David Bodian Lecture, Johns Hopkins University, Baltimore, MD, USA (2005)
Hertie Lecture, European Neurosci. Assoc. Meeting, Lisbon, Portugal (2004)

Perkins Lecture, University of Cambridge, UK (2002)

Dupont Lecture, Arizona Research Labs, U. Arizona, Tucson, AZ, USA (1997)

F. SERVICE

Journals

Reviewer: Cell, Current Biology, eLife, Eur. J. Neuroscience, Frontiers Journals, J. Comp. Neurol., J. Neuroscience, J. Neurophysiology, J. Comput. Neurosci., J. Exp. Biology, Nature, Nature Neuroscience, Neuron, Neural Computation, PLoS, Science

Editor: J Comput Neuro; J Physiol (Paris)

Guest Editor: Annual Rev. Neuroscience, Current Opinion Neurobiology

Grant

reviewer: NIH, NSF, Wellcome, HSFP, DFG, Fondation *Schlumberger*, ATIP, ANR, ERC, German-Israeli Foundation for Scientific Research

US committees:

2011 -2014 *Society for Neuroscience* Girard Prize Committee

2006 Planning Committee, Computational/Systems Neuroscience, NIH

2005 Organizing Committee, Gordon Conference on Circuits and Synapses

Recent Scientific Advisory Boards, Review Boards:

2017 HHMI Investigator Review Boards (2)

2016 Ten-year Cambridge University Neuroscience Review Board

2015 HHMI Janelia Ten-year Review Board

2014 HHMI Investigators Review

2014 - Chair, Review Board, AERES UNIC Gif-sur-Yvette, France

2014 - 2016 Graduate Program, Champalimaud Center for the Unknown, Portugal

2013 HHMI Investigators Review

2013 - Chair, SAB, Neuro-PSI Saclay, France

2014 Chair, Institute Neuroinformatics Review Board, ETH/UZ, Zurich

2013 Member, Hiring Committee, ETH Zürich, Switzerland

2012 - 2013 Member, Hiring Committee, Pasteur Institute, Paris, France

2009 - 2014 Member and Chair, École des Neurosciences de Paris, France

2009 - 2013 SAB member, Biozentrum Basel, Switzerland

2009 - 2013 SAB member, NeRF-VIB Leuven

Courses

2016 ISN-JNC Flagship School, Alpbach, Austria

2015 - 2017 Course co-Director, European (FENS) CAJAL Computational Neuroscience Course, Champalimaud Institute, Lisbon, Portugal

2012 Drosophila Neuroscience Course, MPI Chemical Ecology, Jena, Germany

2011 Neuroscience course, University of Copenhagen, Denmark

2005 Computational Neuroscience Course, Arcachon, France

1998 Cold Spring Harbor Labs NY, Neurobiology Course, NY, USA

1996 US-German School of Neuroethology, Munich, Germany

1996 Woods Hole, Scholar in Residence, Neural Systems and Behavior Course, Woods Hole, MA, USA

1996 Cold Spring Harbor NY, Neurobiology Course, NY, USA

1995 Cold Spring Harbor NY, Drosophila Neurobiology Course, NY, USA

Caltech Academic Affairs Committees:

2006 – 2007 Study-Abroad Committee
2005 – 2009 CNS Graduate Admissions Committee
2005 – 2006 Athletics Committee
2003 – 2009 Undergraduate Curriculum Committee
2001 – 2009 Biology Graduate Admissions Committee
2001 – 2002 Patents Committee
1998 - 2001 CNS Option Representative.
1992 - 2009 Faculty searches (co-chair: Systems Biology, Computational Neuro-
science, Cellular Neuroscience, Primate Neuroscience,
Psychophysics)
1992-1994 IACUC, special investigative committee, Caltech
1990 - 1998 CNS Graduate Admissions Committee

MPIBR and MPG academic affairs:

2016- Managing Director MPIBR (Aug 2016 - Jul 2017)
2016- IMPRS (graduate school) director
2015- Special Presidential Committee on MPG History
2010- IMPRS admissions committee
2009-2013 Managing Director MPIBR (Aug 2009 - Jul 2013)
2009- Various search and recruitment committees in the US and Europe

G. ALUMNI

Former postdocs (with current position and affiliation):

Mark Shein-Idelson: Assistant Prof., University of Tel Aviv, Israel
Robert Naumann: Assistant Prof., Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China.
Tracy Yamawaki: Research Scientist, Amgen, CA, USA
Janie Ondracek: postdoctoral fellow, TUM Munich, DE
Julien Fournier: postdoc, UCL, Carandini lab, London, UK
Michael Kuba: scientist, Okinawa Research Institute, JN
Ueli Rutishauser: Assoc. Prof., Cedars Medical Center, Los Angeles, CA, USA
Mala Murthy: Associate Professor, Molecular Biology, Princeton University, NJ, USA
Rachel Wilson: Professor, Neurobiology, Harvard Medical School, Boston, MA, USA
Glenn Turner: Group Leader, HHMI Janelia RC, Ashburn, VA, USA
Stephen Houston: Postdoc, HHMI Janelia RC, Ashburn, VA, USA
Ingmar Riedel-Kruse: Assistant Professor, Bioengineering Department, Stanford, CA
Fabrizio Gabbiani, Professor, Baylor Coll. Medicine & Rice University, Houston, TX
Rainer Friedrich: Group Leader, FMI, Basel, Switzerland
Holger Krapp, Professor, Bioengineering, Imperial College, London, UK
Nicho Hatsopoulos: Professor, Organismal Biology and Anatomy, U. Chicago, IL
Leslie Kay: Professor, Dept. Psychology, University of Chicago, IL, USA
Laurent Moreaux: Scientific Staff, Physics Department, Caltech, CA, USA
Mark Stopfer: Investigator, NIH, Bethesda, MD, USA
Mikko Vähäsöyrinki: CEO Sensapex Oy, Oulu, Finland

Former Ph.D. students (with current position and affiliation):

Sina Tootoonian: Postdoc, Gatsby Center Comput. Neuroscience, UCL, London, UK
Viola Priesemann: Max Planck Group leader, MPI Dynamics and Self Organization,
Goettingen, Germany
Ingmar Schneider: scientist, MSE Pharmazeutika, Bad Homburg, Germany
Kai Shen: Executive, McKinsey
Alex Bäcker: Entrepreneur
Bede Broome: MD-PhD, Entrepreneur
Stijn Cassenaer: Broad Fellow, Caltech. CA, USA
Vivek Jayaraman: Group Leader, HHMI Janelia RC, Ashburn, VA, USA
Kate MacLeod: Assistant Professor, University of Maryland, MD, USA
Ofer Mazor: MPS, Harvard Med School, Boston, MA, USA
Mohammed Naraghi: Executive Siemens
Maria Papadopoulou: Postdoc, Caltech, CA, USA
Javier Perez-Orive: Executive, Pharmaceutical Industry, Basel, Switzerland
Mike Wehr: Associate Professor, University of Oregon, Eugene, OR, USA

H. TEACHING

Caltech:

Bi-150 Introduction to Neuroscience; Senior undergrad. class; 1990-2005
Bi-250b Systems Neuroscience; Graduate class; 2003-2009
Bi252 Seminar presentation classes
Bi 162 co-taught with Erin Schuman; Electrophysiology Lab course
2004 - 2009

Phys-1, CNS-100 and other classes: Guest lecturer

MPIBR Frankfurt/IMPRS teaching:

2011 - IMPRS classes: Cellular, Synaptic, Systems Neuroscience, Ethics
2011 - Graduate Seminar Class: Systems Neuroscience, co-taught with
Prof. Jochen Triesch, FIAS and Physics

Courses: See section F.

I. GRANTS (since at MPI Brain Research)

DFG CRC 1080 "Homeostatic regulation of REM-SWS balance in sleep", project no. C04,
Jan 2017 – Dec 2020

ERC Advanced Investigator Grant "Function and computation in three-layer cortex",
project no. 322705, 01.02.2013 – 31.01.2018

LOEWE Neuronale Koordination Forschungsschwerpunkt Frankfurt (NeFF), "Dynamik
und Koordination in einem dreischichtigen Kortex", project no. A6, 01.01.2011 –
31.12.2013

J. EXPERTISE

Cellular, Systems and Computational Neuroscience
Neural Coding, Olfaction, Vision, Cortex evolution, Visual Texture Processing

K. PUBLICATIONS:

1. Research papers

Reiter S, Huelsdunk P, Woo T, Lauterbach M, Eberle J, Anne Akay L, Longo A, Meier-Credo J, Kretschmer F, Langer J, Kaschube M and Laurent G. Cuttlefish skin pattern control and development at single-chromatophore resolution. *Nature* (under review).

Tosches, MA, Yamawaki TM, Naumann RK, Jacobi A, Tushev G and Laurent G. Single-cell profiling of the reptilian telencephalon and evolution of cortical neuronal diversity. *Science* (under review).

Fournier J, Mueller CM, Schneider I, Laurent G (2018). Spatial information in a non-retinotopic visual cortex. *Neuron* **97**(1): 164-180.e7.

Shein-Idelson M, Pammer L, Hemberger M, Laurent G (2017). Large-scale mapping of cortical synaptic projections with extracellular electrode arrays. *Nature Methods* **14**(9): 882-890.

Fournier J, Mueller CM, Shein-Idelson M, Hemberger M, Laurent G (2016). Consensus-Based Sorting of Neuronal Spike Waveforms. *PLoS ONE* **11** (8): e0160494.
doi.org/10.1371/journal.pone.0160494

Shein-Idelson M, Ondracek JM, Liaw H-P, Reiter S and Laurent G (2016). Slow waves, sharp waves, ripples and REM in sleeping dragons. *Science* **352**: 590-595.

Huston S, Stopfer M, Cassenaer S, Aldworth Z and Laurent G (2015). Neural encoding of odors during active sampling and in turbulent plumes. *Neuron* **88**: 1-16.
<http://dx.doi.org/10.1016/j.neuron.2015.09.007>

Laan A, Gutnick T, Kuba M and Laurent G (2014). Behavioral analysis of cuttlefish traveling waves and its implications for neural control. *Current Biol.* **24**: 1-6.

Shen K, Tootoonian S and Laurent G (2013). Encoding of mixtures in a simple olfactory system. *Neuron* **80**: 1246-1262.

Rutishauser U, Kotowicz A and Laurent G (2013). A method for closed-loop presentation of sensory stimuli conditional on the internal brain-state of awake animals. *J. Neurosci. Methods* **215**:139-155

Cassenaer S and Laurent G (2012) "Conditional modulation of spike-timing-dependent plasticity for olfactory learning." *Nature* **482**: 47-52.

Narayan A, Laurent G and Sternberg PW (2011). Transfer characteristics of a thermosensory synapse in *Caenorhabditis elegans*. *Proc Natl Acad Sci USA* **108**: 9667-72.

Papadopoulou M, Cassenaer S, Nowotny T and Laurent G (2011). Normalization for sparse encoding of odors by a wide-field interneuron. *Science* **332**: 721-5.

Tootoonian S and Laurent G (2010). Electric times in olfaction. *Neuron* **67**: 903-5.

Geffen MN, Broome BM, Laurent G and Meister M (2009). Neural encoding of rapidly fluctuating odors. *Neuron* **61**: 570-86.

Du J, Riedel-Kruse IH, Nawroth JC, Roukes ML, Laurent G and Masmanidis SC (2009). High-resolution three-dimensional extracellular recording of neuronal activity with microfabricated electrode arrays. *J Neurophysiol* **101**: 1671-8.

Murthy M, Fiete IR and Laurent G (2008). Testing odor response stereotypy in the *Drosophila* mushroom body. *Neuron* **59**: 1009-23.

Rabinovich M, Huerta R and Laurent G (2008). Neuroscience. Transient dynamics for neural processing. *Science* **321**: 48-50.

Turner GC, Bazhenov M, and Laurent G (2008). Olfactory representations by *Drosophila* mushroom body neurons. *J Neurophysiol* **99**: 734-46.

Moreaux L and Laurent G (2007). Estimating firing rates from calcium signals in locust projection neurons in vivo. *Front Neural Circuits* **1**:2: 1-13.

Jayaraman V and Laurent G (2007). Evaluating a genetically encoded optical sensor of neural activity using electrophysiology in intact adult fruit flies. *Front Neural Circuits* **1**:3: 1-9.

Cassenaer S and Laurent G (2007). Hebbian STDP in mushroom bodies facilitates the synchronous flow of olfactory information in locusts. *Nature* **448**: 709-13.

Assisi C, Stopfer M, Laurent G and Bazhenov M (2007). Adaptive regulation of sparseness by feedforward inhibition. *Nat Neurosci* **10**: 1176-84.

Jortner RA, Farivar SS and Laurent G (2007). A simple connectivity scheme for sparse coding in an olfactory system. *J Neurosci* **27**: 1659-69.

Broome BM, Jayaraman V and Laurent G (2006). Encoding and decoding of overlapping odor sequences. *Neuron* **51**: 467-82.

Gabbiani F, Cohen I and Laurent G (2005). Time-dependent activation of feed-forward inhibition in a looming-sensitive neuron. *J Neurophysiol* **94**: 2150-61.

Mazor O and Laurent G (2005). Transient dynamics versus fixed points in odor representations by locust antennal lobe projection neurons. *Neuron* **48**: 661-73.

Wilson RI and Laurent G (2005). Role of GABAergic inhibition in shaping odor-evoked spatiotemporal patterns in the *Drosophila* antennal lobe. *J Neurosci* **25**: 9069-79.

Bazhenov M, Stopfer M, Sejnowski TJ and Laurent G (2005) "Fast odor learning improves reliability of odor responses in the locust antennal lobe." *Neuron* **46**: 483-92.

Wilson RI, Turner GC and Laurent G (2004). Transformation of olfactory representations in the *Drosophila* antennal lobe. *Science* **303**: 366-70.

Friedrich RW, Habermann CJ and Laurent G (2004). Multiplexing using synchrony in the zebrafish olfactory bulb. *Nat Neurosci* **7**: 862-71.

Gabbiani F, Krapp HG, Hatsopoulos N, Mo CH, Koch C and Laurent G (2004). Multiplication and stimulus invariance in a looming-sensitive neuron. *J Physiol Paris* **98**: 19-34.

Perez-Orive J, Bazhenov M and Laurent G (2004). Intrinsic and circuit properties favor coincidence detection for decoding oscillatory input. *J Neurosci* **24**: 6037-47.

Friedrich RW and Laurent G (2004). Dynamics of olfactory bulb input and output activity during odor stimulation in zebrafish. *J Neurophysiol* **91**: 2658-69.

Stopfer M, Jayaraman V and Laurent G (2003). Intensity versus identity coding in an olfactory system. *Neuron* **39**: 991-1004.

Tracey WD, Wilson RI, Laurent G, and Benzer S (2003). *painless*, a *Drosophila* gene essential for nociception. *Cell* **113**: 261-73.

Gabbiani F, Krapp HG, Koch C and Laurent G (2002). Multiplicative computation in a visual neuron sensitive to looming. *Nature* **420**: 320-4.

Pouzat C, Mazor O and Laurent G (2002). Using noise signatures to optimize spike-sorting and to assess neuronal classification quality. *J Neurosci Methods* **122**: 43-57.

Perez-Orive J, Mazor O, Turner GC, Cassenaer S, Wilson RI and Laurent G (2002). Oscillations and sparsening of odor representations in the mushroom body. *Science* **297**: 359-65.

Nusser Z, Kay LM, Laurent G, Homanics GE and Mody I (2001). Disruption of GABA(A) receptors on GABAergic interneurons leads to increased oscillatory power in the olfactory bulb network. *J Neurophysiol* **86**: 2823-33.

Friedrich RW and Laurent G (2001). Dynamic optimization of odor representations by slow temporal patterning of mitral cell activity. *Science* **291**: 889-94.

Rabinovich M, Volkovskii A, Lecanda P, Huerta R, Abarbanel HD and Laurent G (2001). Dynamical encoding by networks of competing neuron groups: winnerless competition. *Phys Rev Lett* **87**: 068102.

Bazhenov M, Stopfer M, Rabinovich M, Huerta R, Abarbanel HD, Sejnowski TJ and Laurent G (2001). Model of transient oscillatory synchronization in the locust antennal lobe. *Neuron* **30**: 553-67.

Bazhenov M, Stopfer M, Rabinovich M, Abarbanel HD, Sejnowski TJ and Laurent G (2001). Model of cellular and network mechanisms for odor-evoked temporal patterning in the locust antennal lobe. *Neuron* **30**: 569-81.

Gabbiani F, Mo C and Laurent G (2001). Invariance of angular threshold computation in a wide-field looming-sensitive neuron. *J Neurosci* **21**: 314-29.

Rabinovich MI, Huerta R, Volkovskii A, Abarbanel HD, Stopfer M and Laurent G (2000). Dynamical coding of sensory information with competitive networks. *J Physiol Paris* **94**: 465-71.

Stopfer M and Laurent G (1999). Short-term memory in olfactory network dynamics. *Nature* **402**: 664-8.

Kay LM and Laurent G (1999). Odor- and context-dependent modulation of mitral cell activity in behaving rats. *Nat Neurosci* **2**: 1003-9.

Gabbiani F, Krapp HG and Laurent G (1999). Computation of object approach by a wide-field, motion-sensitive neuron. *J Neurosci* **19**: 1122-41.

Wehr M and Laurent G (1999). Relationship between afferent and central temporal patterns in the locust olfactory system. *J Neurosci* **19**: 381-90.

MacLeod K, Bäcker A and Laurent G (1998). Who reads temporal information contained across synchronized and oscillatory spike trains? *Nature* **395**: 693-8.

Stopfer M, Bhagavan S, Smith BH and Laurent G (1997). Impaired odour discrimination on desynchronization of odour-encoding neural assemblies. *Nature* **390**: 70-4.

Wehr M and Laurent G (1996). Odour encoding by temporal sequences of firing in oscillating neural assemblies. *Nature* **384**: 162-6.

MacLeod K and Laurent G (1996). Distinct mechanisms for synchronization and temporal patterning of odor-encoding neural assemblies. *Science* **274**: 976-9.

Berkowitz A and Laurent G (1996). Central generation of grooming motor patterns and interlimb coordination in locusts. *J Neurosci* **16**: 8079-91.

Berkowitz A and Laurent G (1996). Local control of leg movements and motor patterns during grooming in locusts. *J Neurosci* **16**: 8067-78.

Laurent G, Wehr M and Davidowitz H (1996). Temporal representations of odors in an olfactory network. *J Neurosci* **16**: 3837-47.

Leitch B and Laurent G (1996). GABAergic synapses in the antennal lobe and mushroom body of the locust olfactory system. *J Comp Neurol* **372**: 487-514.

Hatsopoulos N, Gabbiani F and Laurent G (1995). Elementary computation of object approach by a wide-field visual neuron. *Science* **270**: 1000-3.

Sivaramakrishnan S and Laurent G (1995). Pharmacological characterization of presynaptic calcium currents underlying glutamatergic transmission in the avian auditory brainstem. *J Neurosci* **15**: 6576-85.

Leitch B, Shepherd D and Laurent G (1995). Morphogenesis of the branching pattern of a group of spiking local interneurons in relation to the organization of embryonic sensory neuropils in locust. *Philos T Roy Soc B* **349**: 433-47.

Hatsopoulos NG, Burrows M and Laurent G (1995). Hysteresis reduction in proprioception using presynaptic shunting inhibition. *J Neurophysiol* **73**: 1031-42.

Ryckebusch S, Wehr M and Laurent G (1994). Distinct rhythmic locomotor patterns can be generated by a simple adaptive neural circuit: biology, simulation and VLSI implementation. *J Comput Neurosci* **1**: 339-58.

Ryckebusch S and Laurent G (1994). Interactions between segmental leg central pattern generators during fictive rhythms in the locust. *J Neurophysiol* **72**: 2771-85.

Laurent G and Davidowitz H (1994). Encoding of olfactory information with oscillating neural assemblies. *Science* **265**: 1872-5.

Laurent G and Naraghi M (1994). Odorant-induced oscillations in the mushroom bodies of the locust. *J Neurosci* **14**: 2993-3004.

Wolf H and Laurent G (1994). Rhythmic modulation of the responsiveness of locust sensory local interneurons by walking pattern generating networks. *J Neurophysiol* **71**: 111-8.

Laurent G (1993). A dendritic gain control mechanism in axonless neurons of the locust, *Schistocerca americana*. *J Physiol* **470**: 45-54.

Leitch B and Laurent G (1993). Distribution of GABAergic synaptic terminals on the dendrites of locust spiking local interneurons. *J Comp Neurol* **337**: 461-70.

Ryckebusch S and Laurent G (1993). Rhythmic patterns evoked in locust leg motor neurons by the muscarinic agonist pilocarpine. *J Neurophysiol* **69**: 1583-95.

Laurent G, Seymour-Laurent KJ and Johnson K (1993). Dendritic excitability and a voltage-gated calcium current in locust nonspiking local interneurons. *J Neurophysiol* **69**: 1484-98.

Burrows M and Laurent G (1993). Synaptic potentials in the central terminals of locust proprioceptive afferents generated by other afferents from the same sense organ. *J Neurosci* **13**: 808-19.

Leitch B, Laurent G and Shepherd D (1992). Embryonic development of synapses on spiking local interneurons in locust. *J Comp Neurol* **324**: 213-36.

Shepherd D and Laurent G (1992). Embryonic development of a population of spiking local interneurons in the locust (*Schistocerca gregaria*). *J Comp Neurol* **319**: 438-53.

Laurent G and Sivaramakrishnan A (1992). Single local interneurons in the locust make central synapses with different properties of transmitter release on distinct postsynaptic neurons. *J Neurosci* **12**: 2370-80.

Laurent G (1991). Evidence for voltage-activated outward currents in the neuropilar membrane of locust nonspiking local interneurons. *J Neurosci* **11**: 1713-26.

Watson AH and Laurent G (1990). GABA-like immunoreactivity in a population of locust intersegmental interneurons and their inputs. *J Comp Neurol* **302**: 761-7.

Laurent G (1990). Voltage-dependent nonlinearities in the membrane of locust nonspiking local interneurons, and their significance for synaptic integration. *J Neurosci* **10**: 2268-80.

Laurent G and Burrows M (1989). Intersegmental interneurons can control the gain of reflexes in adjacent segments of the locust by their action on nonspiking local interneurons. *J Neurosci* **9**: 3030-9.

Laurent G and Burrows M (1989). Distribution of intersegmental inputs to nonspiking local interneurons and motor neurons in the locust. *J Neurosci* **9**: 3019-29.

Laurent G and Hustert R (1988). Motor neuronal receptive fields delimit patterns of motor activity during locomotion of the locust. *J Neurosci* **8**: 4349-66.

Laurent G and Burrows M (1988). A population of ascending intersegmental interneurons in the locust with mechanosensory inputs from a hind leg. *J Comp Neurol* **275**: 1-12.

Burrows M, Laurent GJ and Field LH (1988). Proprioceptive inputs to nonspiking local interneurons contribute to local reflexes of a locust hindleg. *J Neurosci* **8**: 3085-93.

Laurent G and Burrows M (1988). Direct excitation of nonspiking local interneurons by exteroceptors underlies tactile reflexes in the locust. *J Comp Physiol A* **162**: 563-72.

Laurent G (1988). Local circuits underlying excitation and inhibition of intersegmental interneurons in the locust. *J Comp Physiol A* **162**: 145-57.

Laurent, G (1987). The role of spiking local interneurons in shaping the receptive fields of intersegmental interneurons in the locust. *J Neurosci* **7**: 2977-89.

Laurent G (1987). Parallel effects of joint receptors on motor neurons and intersegmental interneurons in the locust. *J Comp Physiol A* **160**: 341-53.

Laurent G (1987). The morphology of a population of thoracic intersegmental interneurons in the locust. *J Comp Neurol* **256**: 412-29.

Laurent G (1986). Thoracic intersegmental interneurons in the locust with mechanoreceptive inputs from a leg. *J Comp Physiol A* **159**: 171-86.

Laurent G and Richard D (1986). The organization and role during locomotion of the proximal musculature of the cricket foreleg. II Electromyographic activity during stepping patterns. *J Exp Biol* **123**: 285-306.

Laurent G and Richard D (1986). The organization and role during locomotion of the proximal musculature of the cricket foreleg. I Anatomy and innervation. *J Exp Biol* **123**: 255-83.

2. Reviews

Laurent G (2016). Connectomics: a need for comparative studies. *e-Neuroforum*: **7**: 54-55.

Hemberger M, Pammer L and Laurent G (2016). Comparative approaches to cortical microcircuits. *Current Opinion Neurobiol.* **41**:24-30.

Naumann RK, Ondracek JM, Reiter S, Shein-Idelson M, Tosches MA, Yamawaki T and Laurent G (2015). The reptilian brain. *Current Biol.* **25**: R301-R327.

Frégnac Y and Laurent G (2014). Where is the brain in the Human Brain Project? *Nature* **513**: 27-29.

Fournier J, Müller CM and Laurent G (2014). Looking for the roots of cortical sensory computation in three-layered cortices. *Current Opinion Neurobiol.* **31**: 119-126.

Moreaux L and Laurent G (2009). A simple method to reconstruct firing rates from

dendritic calcium signals. *Front Neurosci* **2**: 176-185.

Laurent G (2002). Olfactory network dynamics and the coding of multidimensional signals. *Nat Rev Neurosci* **3**: 884-95.

Laurent G, Stopfer M, Friedrich RW, Rabinovich MI, Volkovskii A and Abarbanel HD (2001). Odor encoding as an active, dynamical process: Experiments, computation and theory. *Annu Rev Neurosci* **24**: 263-97.

Laurent G (1999). A systems perspective on early olfactory coding. *Science* **286**: 723-8.

Koch C and Laurent G (1999). Complexity and the nervous system. *Science* **284**: 96-8.

Laurent G and Gabbiani F (1998). Collision-avoidance: Nature's many solutions. *Nat Neurosci* **1**: 261-3.

Laurent G, MacLeod K, Stopfer M and Wehr M (1998). Spatiotemporal structure of olfactory inputs to the mushroom bodies. *Learn Mem* **5**: 124-32.

Laurent G (1997). Olfactory processing: maps, time and codes. *Curr Opin Neurobiol* **7**: 547-53.

Laurent G (1996). Dynamical representation of odors by oscillating and evolving neural assemblies. *Trends Neurosci* **19**: 489-96.

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3. Book Chapters

Naumann, RK, Laurent G (2017). Function and Evolution of the Reptilian Cerebral Cortex. In: *Evolution of Nervous Systems* (Ed. Kaas JH), 2nd Edition, Vol. 1, Oxford, Elsevier: pp. 491-518.

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Laurent G, Borst A (2008). Dendritic short stories from invertebrates: linking biophysics and computation. In: *Dendrites* (Eds. Stuart G, Spruston N, Hausser M) 2nd Edition, Oxford University Press.

Laurent G (2006). Olfactory microcircuits: dynamics and computation beyond the receptor neurons. In: *Microcircuits* (Eds. Grillner S and Graybiel A) MIT Press: pp. 191-215.

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Laurent G, MacLeod K, Stopfer M, Wehr M (1999). Dynamic representation of odors by oscillating neural assemblies. In: *Advances in synaptic plasticity* (Eds. Baudry M, Davis JL and Thompson RF) Cambridge, MIT Press: pp. 221-38.

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Laurent G (1993). Integration by spiking and nonspiking local interneurons in locust central nervous system. In: *Biological Neural Networks in Invertebrate Neuroethology and Robots* (Eds. Beer RD, Ritzmann RE et al.) Academic Press: pp. 69-85.

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Burrows M and Laurent G (1989). Reflex circuits and the control of leg movement. In: *The Computing Neuron* (Eds. Durbin R, Miall C) Addison Wesley: pp. 244-61.

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Richard D, Preteur V, Laurent G and Campan R (1984). Support neurophysiologique de l'orientation a point de depart visuel chez le grillon. In: *Vision chez les invertébrés*. (Eds. Clement P and Ramousse R) CNRS Editions: pp. 209-215.

L. INVITED TALKS (1): MEETINGS, WORKSHOPS AND SYMPOSIA

- 2017 Weizmann Institute of Science, Rehovot, Israel
- 2017 15th Meeting of the Austrian Neuroscience Association, Vienna, Austria
- 2017 Kavli Salon, Budapest, Hungary
- 2017 BSCB/BSDB Genetics Society Joint Meeting 2017, Warwick University, UK
- 2016 Keynote speaker, GDR Vision 2016, Toulouse, France
- 2016 Keynote speaker, CRCNS Conference, Paris, France
- 2016 Keynote Speaker, Intl. Conference on Systems Biology, Barcelona, Spain
- 2016 Masakazu Konishi Lecturer, Woods Hole, MA, USA
- 2016 113th International Titisee Conference, Building tools for quantifying brain and behavior, Titisee, Germany
- 2016 Norman Davidson Lecturer, Caltech, Pasadena, CA, USA
- 2016 Keynote Speaker, 4th European Zebrafish meeting, Lisbon, Portugal
- 2016 Bernstein Center Freiburg, Brain Manifesto 2.0, Beuggen, Germany
- 2015 Director's Series Seminar, HHMI JFRC, Chevy Chase, MD, USA

- 2015 Max Planck International Neuroscience Symposium, Synapses and Circuits, Buenos Aeres, Argentina
- 2015 NYU Canonical Neural Computation Conference, Florence, Italy
- 2015 Gordon Conference, Circuit Modulation, Hong-Kong, Hong-Kong
- 2015 IPSEN Meeting "Circuit Dynamics", Paris, France
- 2015 "Sunposium", Max Planck Florida Institute, Jupiter, FL, USA
- 2014 Keynote Lecturer, FENS (European Neurosciences) meeting, Milano, Italy
- 2014 AREADNE Meeting on Systems Neuroscience, Santorini, Greece
- 2013 Ascona Circuits Meeting, Ascona, Switzerland
- 2013 Cognitive Neuromorphic Engineering Workshop, Capo Caccia, Italy
- 2013 Kavli Ceremony, Berlin, Germany
- 2012 FLiACT Workshop on Electrophysiology, Jena, Germany
- 2012 Sensory Coding Meeting, University of Göttingen, Germany
- 2012 Students Conference, University of Würzburg, Graduate School of Life Sciences, Würzburg, Germany
- 2012 Sensory Coding and Natural Environment 2012 Meeting, IST Austria, Klosterneuburg, Austria
- 2012 University of Tokyo, Neural Circuits Symposium, Tokyo, Japan
- 2012 International Neuroscience Winter Conference, Sölden, Austria
- 2012 Computational Neuroscience Meeting, Leysin, Switzerland
- 2012 Biophysical Chemistry, Molecular Biology and Cybernetics of Cell Function, Klosters, Switzerland
- 2011 Neural Circuit Function and Development, Ascona, Switzerland
- 2011 CEA-LETI, Grenoble, France
- 2011 NIPS, Keynote lecture, Granada, Spain
- 2011 Computational Neuroscience, Barcelona, Spain
- 2011 Annual Meeting Max Planck Society, Berlin, Germany
- 2010 FACETS/College de France, Paris, France
- 2010 Meeting at Hungary Academy of Science, Peccs, Hungary
- 2010 First Francis Crick Symposium, CSH Asia, Suhhou, China
- 2010 Meeting at Neuroscience Institute, La Jolla, CA, USA
- 2010 Seminar at Bernstein Center, LMU, Munich, Germany
- 2010 AREADNE Meeting, Santorini, Greece
- 2010 Francis Crick Cold Spring Harbor Symposium, Shuzhou, China
- 2010 Neuroscience Institute Meeting, La Jolla, CA, USA
- 2010 ANS Meeting, Sydney, Australia
- 2009 Biozentrum Symposium, Basel, Switzerland
- 2009 Strüngmann Forum, FIAS, Frankfurt, Germany
- 2009 Bernstein Centers Meeting, Frankfurt, Germany
- 2008 Hippocampus Meeting, Svalbard, Spitsbergen, Norway
- 2008 AREADNE Meeting, Santorini, Greece
- 2008 Genes and Brain Meeting, Paris, France
- 2008 European Systems Consortium, Gif-sur-Yvette, France
- 2007 Ladislav Tauc Conference in Neurobiology, Gif-sur-Yvette, France
- 2007 Integrative Approaches to Brain Complexity, Wellcome Trust, Hinxton, UK
- 2007 Special Lecture, 2007 Soc. For Neuroscience Meeting, San Diego, CA, USA
- 2007 Circuits and Plasticity Gordon Conference, Newport, RI, USA
- 2007 Learning and Memory Meeting, UCLA, Los Angeles CA, USA
- 2007 Santa Fe/Los Alamos Center for Computational Neuroscience, Santa Fe, NM, USA
- 2007 NRP Meeting, Neuroscience Institute, La Jolla, CA, USA
- 2007 NSF-NIH Neuroscience Meeting, University of Maryland, MD, USA
- 2007 Florey Lecture, Goettingen Neurobiology Meeting, Göttingen, Germany
- 2006 Monell/ARO Meeting, Monell Institute, University of Pennsylvania, Philadelphia,

- PA, USA
- 2006 AREADNE Meeting, Santorini, Greece
- 2005 Neurons and Sensory Systems, *Neuron Symposium*, Washington, DC, USA
- 2005 The Assembly and Function of Neuronal Circuits, Ascona, Switzerland
- 2005 Synaptic Communication in Neuronal Networks (Monod Conf.), Roscoff, France
- 2005 UCLA, Computational Neuroscience Meeting, Los Angeles, CA, USA
- 2005 UCLA, Learning & Memory Meeting, Los Angeles, CA, USA
- 2005 CoSyNe Meeting, Utah, UT, USA
- 2005 Seventy-second Stated Meeting of NRP Associates, The Neurosciences Institute, La Jolla, CA, USA
- 2004 McGovern Institute, MIT, Cambridge, MA, USA
- 2004 Aspen Physics Institute, Aspen, CO, USA
- 2004 Hertie Lecturer, European Neuroscience Meeting, Lisbon, Portugal
- 2004 Dahlem Conference, Berlin, Germany
- 2004 CoSyNe Meeting, Cold Spring Harbor Labs, CSH, NY, USA
- 2003 National Academies, *Keck Futures Initiative*, NAS, Irvine, CA, USA
- 2003 "Monte Veritas" Neuroscience Meeting, Ascona, Switzerland
- 2003 Computational Neuroscience Workshop, Santa Fe, NM, USA
- 2003 NRP Meeting, Neuroscience Institute, La Jolla, CA, USA
- 2002 European Neuroscience Meeting, Paris, France
- 2002 NEC Lectures in Biophysics, NEC & Princeton University, Princeton, NJ, USA
- 2002 Bioforum "Deciphering the Brain" Public Lecture, Caltech, Pasadena, CA, USA
- 2002 Learning and Memory Meeting, UCLA, Los Angeles, CA, USA
- 2002 Institut Henri Poincaré, Paris, France
- 2001 Independent Component Analysis Meeting, Del Mar, CA, USA
- 2001 Society For Neuroscience 2001 Meeting, San Diego, CA, USA
- 2001 Gordon Conference (Chemical Senses), Newport, RI, USA
- 2001 Keystone Symposium (Synapses), Taos, NM, USA
- 2001 Winter Brain Research Conferences, Antigua, West Indies
- 2000 Stimulus Statistics Meeting, Cold Spring Harbor Labs, NY, USA
- 2000 Gordon Conference (Synaptic Function), NH, USA
- 2000 McKnight Foundation Meeting, Aspen, CO, USA
- 2000 Keck Foundation Symposium, Caltech, Pasadena, CA, USA
- 2000 Biophysics Society Meeting Symposium, New Orleans, LA, USA
- 1999 Ascona (Monte Verità) Meeting on Neurons and Circuits, Ascona, Switzerland
- 1999 IBRO, Jerusalem, Israel (sent postdoctoral fellow Dr. Mark Stopfer)
- 1999 Sloan Centers for Theoretical Neuroscience Meeting, La Jolla CA, USA
- 1999 Salk Institute-Caltech Joint Meeting, La Jolla, CA, USA
- 1999 Learning and Memory Gordon Conference, Newport RI, USA
- 1999 French Neuroscience Society Meeting, Marseille, France
- 1999 Temporal Coding Workshop, Bremen, Germany
- 1998 European Olfaction Meeting, Siena, Italy
- 1998 Jacques Monod Conference, Roscoff, France
- 1998 Olfaction and Ecology Meeting, Oxford, UK
- 1998 Olfaction Meeting, CNRS, Paris, France
- 1998 AChems Meeting, Sarasota, FL, USA
- 1998 Role of Time in Neural Processing, Titisee, Germany
- 1997 Neurobiology Meeting, CNRS, Arcachon, France
- 1997 ESITO Meeting, Sardinia, Italy
- 1997 Learning and Memory Meeting, Angers, France
- 1997 Time in Neuroethology Meeting, Charlottesville, VA, USA
- 1997 Santa Fe Institute, Sloan Ctrs. for Theoretical Neuro. Workshop, NM, USA

- 1997 Snowbird Computational Neuroscience Workshop, UT, USA
- 1996 Development and Evolution of Brain Centers for Learning Meeting, IL, USA
- 1996 Olfaction meeting, Max Planck Society, Frankfurt, Germany
- 1996 Gordon Conference, Chemical Senses, Newport, RI, USA
- 1995 Vincent Dethier Memorial Symposium, Amherst, MA, USA
- 1995 Neuroethology Congress, Olfaction Symposium, Cambridge, UK
- 1995 Olfaction Meeting, Lund, Sweden
- 1995 Santa Fe Institute, Sloan Ctrs. for Theoretical Neuro. Workshop, NM, USA
- 1995 Neural Coding Meeting, Prague, Czechoslovakia
- 1995 N.A.S.-Humboldt Fdtn. "Frontiers in Science" Meeting, Dresden, Germany
- 1994 Computational Neuroscience Workshop, Woods Hole, MA, USA
- 1994 Hebb Symposium on Neurons and Biological Dynamics, Toronto, Canada
- 1993 Computations and Neural Systems '93 Meeting, Washington DC, USA
- 1993 Santa Fe Institute Workshop on Dynamical Systems, Santa Fe, NM, USA
- 1993 ONR Single Neuron Computation Meeting, Baltimore, MD, USA
- 1993 Single Neuron Computation Meeting, Tübingen, Germany
- 1992 Integrative Neuroscience Meeting, MPI Biol. Cybernetics, Tübingen, Germany
- 1992 Neurobiology Meeting, Göttingen, Germany
- 1991 ONR Neuroethology and Robotics Meeting, Woods Hole, MA, USA
- 1989 UK Association of Physiologists Meeting, Bristol, UK
- 1989 CNRS Meeting on Sensory-motor Integration, Arcachon, France
- 1989 Snowbird Meeting on Neural Networks, Snowbird, UT, USA
- 1988 Neuroethology Congress, Satellite Meeting, Tutzing, Germany

M. INVITED TALKS (2): SEMINARS and LECTURES

- 2018 Neural Dynamics Symposium, Stanford University, CA, USA
- 2018 Genomics & Systems Biology Conference, NYU in Abu Dhabi, UAE
- 2018 EMBL Distinguished Lectures Series, Heidelberg, DE
- 2017 Lamport Lecture, University of Washington, Seattle WA, USA
- 2017 NIH Neuroscience Seminar Series, Bethesda, Maryland, USA
- 2015 Students Invited Speakers Series, LMU Munich, Germany
- 2015 Seminar, University of Alicante, Spain
- 2015 Seminar, Directors' Series, JFRC, VA, USA
- 2015 Seminar, UCL, London, UK
- 2014 École Normale Supérieure, IBENS, Paris, France
- 2014 Centre for Brain and Behavior, Oxford University, UK
- 2014 Brain Research Institute, University of Zürich, Switzerland
- 2014 Erasmus Medical Center, University of Rotterdam, Holland
- 2014 New York University, Dept. Neuroscience, New York, NY, USA
- 2014 Baylor College of Medicine, Houston TX, USA
- 2014 Hanse Lecture, Bremen, Germany
- 2013 Duke University, Neuroscience, Durham NC, USA
- 2012 MPI Chemical Ecology, Jena, Germany
- 2012 École Polytechnique, Paris, France
- 2012 RIKEN Brain Science Institute Summer School, Tokyo, Japan
- 2012 Max Planck Institute for Dynamics and Self-Organization, Göttingen, Germany
- 2012 University of Edinburgh, Dept. Neuroscience, Scotland, UK
- 2012 Newcastle University, Dept. Neuroscience, Newcastle, UK
- 2012 Weizmann Institute of Science, Rehovot, Israel
- 2012 Harvard University, Cambridge MA, USA
- 2012 Janelia Farms, HHMI, VA, USA
- 2011 University of Copenhagen, Denmark

- 2011 Champalimaud Institute for the Unknown, Lisbon, Portugal
- 2011 University of Heidelberg, Germany
- 2011 University of Tübingen, Germany
- 2011 Max Birnstiel Lecture, Vienna, Austria
- 2010 J.W. Goethe University, Biology Department, Frankfurt, Germany
- 2010 J.W. Goethe University, Mathematics Department, Frankfurt, Germany
- 2010 FMI, Basel, Switzerland
- 2010 Munich University, Bernstein Computational Center, Munich, Germany
- 2009 Woods Hole, Konishi Lecturer, Woods Hole, MA, USA
- 2009 Swammerdam Lecture, Amsterdam, Holland
- 2009 UCSF, San Francisco CA, USA
- 2008 MIT, Biology Department, Teuber Lecture, Cambridge, MA, USA
- 2008 CNRS, Neurobiology, Marseille, France
- 2008 CNRS/Université Paris V, Neuroscience, Rue des Saints-Pères, Paris, France
- 2008 CRG, Barcelona, Spain
- 2008 University of Cambridge, Zoology and Physiology Departments, Cambridge, UK
- 2008 Max Planck Institute of Neurobiology, Martinsried, Germany
- 2008 Max Planck Institute of Biophysics, Frankfurt, Germany
- 2008 École Normale Supérieure, Physics Department (parts i-iii), Paris, France
- 2007 JFRC Seminar, JFRC/HHMI, VA, USA
- 2007 Neuroscience Program, Harvard Medical School, Boston, MA, USA
- 2007 Neuroscience Department, Yale University, New Haven, CT, USA
- 2007 Neuroscience Lecture, UT South Western Medical Center, UTSWU, Dallas, TX, USA
- 2007 Center for Studies in Physics and Biology Seminar, Rockefeller University, NYC, USA
- 2007 Biology Department, Caltech, Pasadena, CA, USA
- 2006 Neuroscience Graduate Seminars Series, UC San Diego, La Jolla, CA, USA
- 2006 Department of Neurobiology, University of Chicago, Chicago, IL, USA
- 2006 Pasteur Institute, Paris, France
- 2006 Department of Neuroscience, NYU, New York, NY, USA
- 2006 Penn/Monell Joint Lecture, Monell Institute, University of Pennsylvania, Philadelphia, PA, USA
- 2006 Heller Lecture, Hebrew University, Jerusalem, Israel
- 2006 Janelia Farms Research Center, HHMI, VA, USA
- 2006 D-Biol Special Lecture, ETH Biology Department, Zürich, Switzerland
- 2006 CNBC Retreat Speaker, Carnegie Mellon University, Pittsburgh, PA, USA
- 2006 Harvard Bauer Center, Cambridge, MA, USA
- 2005 Clark Center and Dept of Biology, Stanford University, Palo Alto, CA, USA
- 2005 Department of Neuroscience, UCLA, CA, USA
- 2005 HWNI Student Seminar Series, UC Berkeley, CA, USA
- 2005 Computational Neuroscience, Arcachon, France
- 2005 Ernest C. Watson Lecture, Caltech, Pasadena, CA, USA
- 2005 The David Bodian Seminar in Neuroscience, Johns Hopkins University, MD, USA
- 2005 University of Maryland, Baltimore MD, USA
- 2005 Neuroscience Colloquium Series, Rutgers University, NJ, USA
- 2004 MIT McGovern Institute Retreat, MA, USA
- 2004 UC Davis, CA, USA
- 2004 UC Riverside, CA, USA
- 2003 Vollum Institute, Portland, OR, USA
- 2003 Caltech Physics Colloquium, Pasadena, CA, USA
- 2002 Harvard University, Bio Labs, Cambridge, MA, USA

- 2002 École Supérieure de Physique et Chimie (ESPCI), Paris, France
- 2002 Perkins Lecturer, Cambridge University, UK
- 2002 UCSF, Department of Anatomy, San Francisco, CA, USA
- 2002 Washington University, St Louis, MO, USA
- 2002 UC Irvine, Neurobiology Department, Irvine, CA, USA
- 2001 UCSD, Department of Biology, La Jolla, CA, USA
- 2001 Duke University Medical School, Durham, NC, USA
- 2001 Brandeis University, Waltham, MA, USA
- 2000 USC, Neuroscience Department, Los Angeles, CA, USA
- 2000 Naples Zoological Station, Naples, Italy
- 2000 Stanford University, Neuroscience Department, Palo Alto, CA, USA
- 2000 City of Hope Medical Center, Duarte, CA, USA
- 1999 National Institutes of Health, Bethesda, MD, USA
- 1999 University of California at San Diego, La Jolla, CA, USA
- 1999 University of California at Berkeley, Berkeley CA, USA
- 1999 Mount Sinai Medical Center, New York, NY, USA
- 1999 University of Pennsylvania, Dept. of Neuroscience, Philadelphia, PA, USA
- 1999 Rutgers University, Newark NJ, USA
- 1999 Southwestern University Medical Ctr., Mol. Cell Biol. Dept., Dallas, TX, USA
- 1998 University of California, Physiol Department, Los Angeles, CA, USA
- 1998 University of California, Mol. Cell Biol. Dept., Berkeley, CA, USA
- 1998 University of Iowa, Dept. of Biology, Iowa City, IA, USA
- 1998 Institute for Nonlinear Science, Physics Dept., UCSD, La Jolla, CA, USA
- 1998 Max Planck Institutes for Biol. Cybernetics and Devel. Biology, Tübingen, Germany
- 1998 Max Planck Institute for Brain Research, Frankfurt, Germany
- 1998 Caltech, Theory Seminar Series, Pasadena, CA, USA
- 1997 Harvard Medical School, Boston, MA, USA
- 1997 UC Davis, CA, USA
- 1997 Helmholtz Club, Irvine, CA, USA
- 1997 Dupont Lecturer, ARL, Tucson, AZ, USA
- 1997 Columbia University Medical School, New York, NY, USA
- 1997 UC Irvine, Department of Psychobiology, Irvine, CA, USA
- 1996 Yale University, Dept. Cell and Molecular Physiology, New Haven, CT, USA
- 1996 UCSF, Sloan Center for Theoretical Neuroscience, San Francisco, CA, USA
- 1995 Cornell University, Neuroscience Department, Ithaca, NY, USA
- 1995 UCSD, Institute for Computational Neuroscience, San Diego, CA, USA
- 1995 University of Washington, Pharmacology Dept., Seattle, WA, USA
- 1995 Brandeis University, Biology Dept., Waltham, MA, USA
- 1994 University of Wuerzburg, Genetics Department, Würzburg, Germany
- 1994 Freie Universität Berlin, Neurobiology Department, Berlin, Germany
- 1994 California Institute of Technology, CNS Program, Pasadena, CA, USA
- 1994 Helmholtz Club, Irvine, CA, USA
- 1994 UCB, Dept. Cell and Mol. Biology, Berkeley, CA, USA
- 1993 California Institute of Technology, CNS Seminar, Pasadena, CA, USA
- 1992 ARL, University of Arizona, Neurobiology Division, Tucson, AZ, USA
- 1992 University of Southern California, Neuroscience Dept., Los Angeles, CA, USA
- 1992 University of Oregon, Neuroscience Department, Eugene, OR, USA
- 1991 UCR, Entomolgy Department, Riverside, CA, USA
- 1990 UCSD, Biology Department, San Diego, CA, USA
- 1990 Brandeis University, Biology Department, Waltham, MA, USA
- 1990 University of Massachussetts, Neuro. and Behavior Dept., Amherst, MA, USA
- 1989 University of Konstanz, Biology Department, Germany
- 1989 Max-Planck Institut for Behavioral Physiology, Seewiesen, Germany

- 1989 University of Tübingen, Department of Biocybernetics, Tübingen, Germany
- 1989 CNRS, Neuroscience Division, Marseille, France
- 1989 University of Cambridge, Zoology Department, Cambridge, UK
- 1988 University of Newcastle, Neurobiology Department, Newcastle, UK