

Curriculum Vitae

MICHAEL N. SHADLEN, M.D., Ph.D.

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web: <http://www.shadlen.org>

DATE OF BIRTH August 19, 1959
PLACE OF BIRTH New York City, New York
EDUCATION M.D., 1988, Brown University
Ph.D., 1985, University of California, Berkeley
B.A., 1981, Brown University

MAJOR FIELDS OF RESEARCH INTEREST

Neural basis of visual perception and decision-making
Neural basis of time perception
Electrophysiology in the awake behaving rhesus monkey
Computational aspects of visual perception and cerebral cortical function
Visual psychophysics of motion and depth perception

PROFESSIONAL EXPERIENCE

1988-1989 Internship in Internal Medicine, Kaiser Permanente Medical Center, Santa Clara, CA
1991-1992 Chief Resident, Neurology, Stanford University Medical Center
1992-1995 Howard Hughes Postdoctoral Research Fellow, Neurobiology, with William T. Newsome
1993-1995 Clinical Instructor, Neurology, Stanford University Medical Center
1995- Core staff scientist, University of Washington Regional Primate Research Center, Seattle, WA
1995-2001 Assistant Professor, Department of Physiology and Biophysics, University of Washington School of Medicine, Seattle, WA
1997-2001 Adjunct Assistant Professor, Department of Neurology University of Washington School of Medicine Seattle, WA
2000- Investigator, Howard Hughes Medical Institute, University of Washington School of Medicine, Seattle, WA.

- 2001- Associate Professor, Department of Physiology and Biophysics, University of Washington School of Medicine Seattle, WA
- 2001- Adjunct Associate Professor, Department of Neurology University of Washington School of Medicine,, Seattle, WA
- 2001- Co-director, Graduate Program in Neurobiology and Behavior, University of Washington, Seattle, WA
- 2005- Professor, University of Washington, Department of Physiology & Biophysics, University of Washington School of Medicine, Seattle, WA
- 2005- Adjunct Professor, Department of Neurology University of Washington School of Medicine,, Seattle, WA

AWARDS AND HONORS

- 1981-1982 President, Brown University chapter of American Medical Students Association
- 1985 Fight for Sight Citation for clinical research poster entitled: "Stereopsis with Amplitude Modulated Gratings: A Role for Form?" awarded by the Association for Research in Vision and Ophthalmology
- 1985-1986 Postdoctoral Trainee (NRSA) in physiological optics, University of California, Berkeley; psychophysics of motion perception and stereopsis
- 1990 Epilepsy MiniFellowship Participant, Bowman Gray School of Medicine
- 1992 The Sandoz Award for recognition in neurology and neuroscience
- 1992-1995 Dana Fellowship award for Basic Research in Neurological Sciences
- 1992-1995 Howard Hughes Medical Research Institute Physician/Scientist Award
- 1994 Teaching commendation, Basic Neuroscience course, Stanford Medical School
- 1995 Teaching commendation, Basic Neuroscience course, Stanford Medical School
- 1995-1998 McKnight Scholars Award for Research in Neuroscience
- 2000 Appointed to Howard Hughes Medical Research Institute
- 2001 New Investigator Science in Medicine Lecture, U of Washington
- 2006 Elected Associate of the Neuroscience Research Program
- 2007 Mind Brain Lecture, Schwarz Foundation and SUNY Stony Brook
- 2007 Visiting Fellow Commoner, Trinity College, Cambridge, UK
- 2008 Special Lecture, Society for Neuroscience Annual Meeting

GRANT SUPPORT

HOWARD HUGHES MEDICAL INSTITUTE, 2000-present

Supports all research and laboratory infrastructure. The HHMI does not identify specific aims. All aims of the awards below are supported by HHMI, and the budgets of these grants are small, thanks to HHMI support.

NEURAL MECHANISMS OF VISUAL PERCEPTION, NIH R01EY11378, 1996-present

The major goals of this project are to study the mechanisms that underlie formation of a decision about a visual stimulus. The experiments investigate response properties of single neurons during performance of a motion discrimination task near psychophysical threshold. Our current emphasis is on the extension of the mechanisms we have discovered in simple 2-choice tasks to more complex settings: more options, more complex inference.

NEURAL CODING OF VISION, NIH RR00166, 1997-2012

This is a P51 grant to the Washington National Primate Research Center. The major goal of this project is to record ensemble neural activity from multiple neurons in extrastriate area MT and the lateral intraparietal area during a motion discrimination task.

NEURAL BASIS OF BAYESIAN INFERENCE AND DECISION MAKING, JAMES S. McDONNELL FOUNDATION, 2006-2012. Alex Pouget (co-PI)

The major goal of this project is to develop theoretical tools to study probabilistic population codes in a variety of contexts.

CRCNS: BAYESIAN DECISION MAKING WITH PROBABILISTIC POPULATION CODES, NIH R01DA022780, 2007-2012, Alex Pouget (co-PI)

Collaborative Research in Computational Neuroscience (CRCNS). The project examines the role of probabilistic population encoding by neurons in the parietal cortex.

TEMPORAL INTEGRATION AND WORKING MEMORY, THE McKNIGHT ENDOWMENT FUND FOR NEUROSCIENCE, 1996-1999

Inactive. This project established a connection between frontal lobe mechanisms supporting working (short-term) memory and decision making.

OTHER PROFESSIONAL ACTIVITIES

CLINICAL NEUROLOGY

Practice and Teaching: Attending Physician, Neurology, VA Medical Center, Seattle, WA (one month per year) , 1997 – present

Board Certification: Diplomate of the National Board of Medical Examiners, July 1, 1989. Certificate No. 301271

Current Medical Licensure: Washington State: issued June 18, 1996; expires August 19, 2008. License No. 33820

EDITORIAL BOARD

Journal of Neurophysiology, 1999-
Neuron, 2000 -
Neuroscience Research, 2001-
Current Biology, 2001-
Journal of Vision 2003-
Trends in Neuroscience 2003-
Member, Faculty of 1000, 2003-
Journal of Neuroscience, 2004-
Cerebral Cortex, 2005-

MANUSCRIPT REVIEW

Cerebral Cortex, Journal of Neuroscience, Journal of Neurophysiology, Journal of the Optical Society of America, Nature, Nature Neuroscience, Neural Computation, Neuron, Science, Vision Research, Visual Neuroscience

GRANT REVIEW

National Science Foundation (Ad Hoc), 1999
NINDS Study Section, Neurological Sciences and Disorders Special Emphasis, NIH (Ad Hoc), 1999
NIMH Intramural Laboratory Review, May 2001
Sloan and Schwartz Foundation
NEI Study Section, Central Visual Processing (ad hoc), 2003
NEI Advisory Panel, Develop 5 year plan for “Strabismus, Amblyopia and Visual Processing,” 2003
McKnight Foundation, Technological Innovations in Neuroscience Awards Selection Committee, 2004-
HHMI, Clinical Investigator Competition, 2007
HHMI, Investigator competition, 2008

PROFESSIONAL ORGANIZATIONS

American Academy of Neurology
Society for Neuroscience
Association for Research in Vision and Ophthalmology
Committee for Animals in Research, Society for Neuroscience, 2004-2007
American Association for the Advancement of Science
Neural Control of Movement Society
Vision Sciences Society
Northwest Association for Biomedical Research
American Physiological Society
Organizing committee, Computational and Systems Neuroscience (CoSyNe)
McKnight Foundation, Technology Board, 2004-2009
Washington University IGERT advisory board, 2006-

John Merck Scholars Program, Biol. Develop. Disabilities in Children, 2007-
 The Neuroscience Research Program, 2007-
 National Association for Biomedical Research
 Neuroethics Society, 2008-

TEACHING EXPERIENCE

- 1984-1987 Teaching Assistant: Neuroanatomy, Introductory Physics,
 Neuroscience, University of California, Berkeley
- 1987-1988 Affinity Group Fellow for undergraduates in the Program in Medicine,
 Brown University
- 1991-1992 Neurology review course for junior residents, Stanford University
 Medical School
- 1991-1995 Lecturer, Basic and Clinical Neuroscience Courses, Stanford University
 Medical School
- 1994-1995 Lecturer in Ethics and Human Neurobiology (undergraduate seminar),
 Stanford University
- 1995 Course instructor, Neuroanatomy (Conjoint 511), University of
 Washington School of Medicine
 Lecturer, Neurophysiology (PBIO 506), University of Washington
 School of Medicine
- 1996 Course leader, Computational Neuroscience: Vision, Cold Spring
 Harbor Laboratories, NY
- 1997 Course instructor, Vision Module (NEUBEH 502), University of
 Washington School of Medicine
 Course leader, Higher Function Module (NEUBEH 503), University of
 Washington School of Medicine
 Course instructor, Higher Function Module (NEUBEH 503),
 University of Washington School of Medicine
- 1998 Course leader, Higher Function Module (NEUBEH 503), University of
 Washington School of Medicine
 Course instructor, Neurobiology & Behavior proseminar (NEUBEH
 565), University of Washington School of Medicine
 Course leader, Computational Neuroscience: Vision, Cold Spring
 Harbor Laboratories, NY
- 1999 Visiting Lecturer, Neurobiology of Vision: Structure, Function and
 Development of the Visual System, Cold Spring Harbor Laboratories,
 NY
 Neurology Clinic and Wards, Resident/Student bedside teaching, Puget
 Sound Veterans Hospital.
- 2000 Visiting Lecturer, Computational Neuroscience of Vision, Cold Spring
 Harbor Laboratories

- Neurology Clinic and Wards, Resident/Student bedside teaching, Puget Sound Veterans Hospital.
- Course leader, Higher Function Module (NEUBEH 503), University of Washington School of Medicine
- Lecturer, Physiology Seminar (PBIO 511), 2 lectures
- Lecturer, Making Connections, Summer Institute for Middle School Teachers, University of Washington, School of Medicine
- 2001 Course leader, Higher Function Module (NEUBEH 503), University of Washington School of Medicine
- Neurobiology of Disease (NBIO 402), lecture on brain disorders affecting visual perception
- Lecturer, Physiology Seminar (PBIO 511), 2 lectures
- Visiting Lecturer, Neurobiology of Vision: Structure, Function and Development of the Visual System, Cold Spring Harbor Laboratories, NY
- Neurology Clinic and Wards, Resident/Student bedside teaching, Puget Sound Veterans Hospital.
- 2002 Course leader, Higher Function Module (NEUBEH 503), University of Washington School of Medicine
- Neurology Clinic and Wards, Resident/Student bedside teaching, Puget Sound Veterans Hospital.
- Guest lecture, Basic Neuroscience for Neurology Residents, Harborview Medical Center.
- Guest lecture, Computational Neuroscience (CSE 590RR), University of Washington
- Visiting Lecturer, Computational Neuroscience of Vision, Cold Spring Harbor Laboratories
- 2003 Visiting Lecturer, Neurobiology of Vision: Structure, Function and Development of the Visual System, Cold Spring Harbor Laboratories, NY
- Course leader (with Fred Rieke), Quantitative Methods in Neuroscience (PBIO 545), University of Washington School of Medicine
- Course leader, Cognitive and Integrative Neuroscience (NEUBEH 503), University of Washington School of Medicine
- 2004 Neurology Clinic and Wards, Resident/Student bedside teaching, Puget Sound Veterans Hospital, January 2004
- Course leader, Cognitive and Integrative Neuroscience (NEUBEH 503), University of Washington School of Medicine
- Visiting Lecturer, Computational Neuroscience of Vision, Cold Spring Harbor Laboratories

- 2005 Visiting Lecturer, Okinawa Computational Neuroscience Course, Okinawa, Japan
 Neurology Clinic and Wards, Resident/Student bedside teaching, Puget Sound Veterans Hospital, February 2005
 Course leader, Cognitive and Integrative Neuroscience (NEUBEH 503), University of Washington School of Medicine
- 2006 Visiting Lecturer, Neurobiology of Decision-Making, Cold Spring Harbor Laboratories, NY
 Neurology Clinic and Wards, Resident/Student bedside teaching. Puget Sound Veterans Hospital, February 2006
 Course leader, Cognitive and Integrative Neuroscience (NEUBEH 503), University of Washington School of Medicine
 European Diploma in Cognitive and Brain Sciences, Hanse-Wissenschaftskolleg, Delmenhorst, Germany
- 2007 Neurology Clinic and Wards, Resident/Student bedside teaching, Puget Sound Veterans Hospital
 Course leader, Cognitive and Integrative Neuroscience (NEUBEH 503), University of Washington School of Medicine
- 2009 Course leader, Quantitative Methods in Neuroscience (PBIO 545), University of Washington School of Medicine

ADVISING ACTIVITIES

POST DOCTORAL FELLOWS

Jong-Nam Kim, DVM, Ph.D., 1996-1998
 Matthew Leon, Ph.D., 1996-2001
 Bhavin Sheth, Ph.D., 1997
 Joshua Gold, Ph.D., 1997-2002
 Jochen Ditterich, Ph.D., 2000-2003
 Alex Huk, Ph.D., 2001-2004
 Peter Janssen, M.D., Ph.D. 2001-2004
 Steven Rude, Ph.D., 2001-2003
 Tianming Yang Ph.D., 2003-2008
 Anne Churchland, Ph.D., 2004-
 Victor de Lafuente, Ph.D., 2007-
 Mehrdad Jazayeri, Ph.D., 2007-

GRADUATE STUDENTS

Jamie Roitman, 1996-2002 (Ph.D. March,2002)
 Mark Mazurek, 1997-2004
 Tim Hanks, 2003 –
 Roozbeh Kiani, 2005 –
 Peter Meilstrup, 2006 –

UNDERGRADUATE STUDENTS

Rebecca Hendrickson, 2000-2001
 Ruchi Kapoor, 2002-2004
 Marcel Tam, 2003-2004

LAB ROTATIONS

Jamie Roitman, Mark Mazurek, Matthew Valenta, Tom Knight, Kristina Tarczy-Hornoch, MD, PhD, Noah Stuart, Kai Miller, Alexandre Dieudonne, Sarah Allred, Tim Hanks, James Bullis, Marina Kuznetsova, Marc Morris, Roozbeh Kiani, Michael Lee, Peter Meilstrup, Erick Chastain, Elisabeth Hopp, Shinichiro Kira

DOCTORAL THESIS COMMITTEES

Department of Physiology and Biophysics, University of Washington: Kerry Kim, 1998-2002; Jo Hopp, 1999-2004; Greg Field, 2001-2004; Deborah Dlugosch, 1998.

Program in Neurobiology and Behavior, University of Washington: Tom Knight, 1998-2005; Mitch Roitman, 1998-2001; Mark Ruffo, 1998-2007; Jamie Theobald, 2000-2004; Kimberly Craven, 2001-2006; Scott Votaw, 1998-2001; Francisco Perez, 2001-2005; Sarah Allred, 2001-2005; Abigail Person, 2003-2007; Felice Dunn, 2004-2007; Andrew Hart, 2007- ; Charlie Hass 2008- ; Philip Harding 2008- ;Erick Chastain 2008-

Department of Engineering and Biostructure, University of Washington: David Bailey, 1998-2001

Department of Neurobiology, Baylor College of Medicine (external): James Cotton, 2008-

INVITED PRESENTATIONS

- | | |
|------|---|
| 1992 | Woods Hole Symposium on Computational Neuroscience |
| 1993 | Santa Fe Institute Workshop on Object Recognition |
| | The Neuroscience Institute: Atelier on theoretical neuroscience |
| | The Princeton Lectures on Biophysics |
| 1994 | Hebb Symposium on Neurons and Biological Dynamics, the Fields Institute for Research in Mathematical Sciences |
| 1995 | Fourth IBRO World Congress of Neuroscience, Kyoto, Japan |
| | Cortical Dynamics in Jerusalem, Hebrew University |
| 1996 | Fourth International Workshop on Neural Networks: From Biology to High Energy Physics, Chia, Italy |
| | KOGNET Workshop: "Neural Coding," Bochum, Germany |

- Ninth Biennial McKnight Conference on Neuroscience, San Diego, California
- Symposium on Random Processes in Cells, Cambridge University, Cambridge, England
- Jackson Hole Workshop on Information and Coding, Jackson Hole, Wyoming
- 1997 Woods Hole Symposium on Computational Neuroscience
- Scientist to Scientist Dialogue, Seattle
- Neurology Grand Rounds, University of Washington Medical School
- Seminar speaker, Section of Neurobiology, Yale University School of Medicine
- 1998 Workshop on Computational Neuroscience, organized by T. Sejnowski, Woods Hole
- Winterskool, Technical University and Humbolt University, Berlin, Germany
- Neuroscience Seminar Series, University of California at San Francisco
- 1999 William Rushton lecture in Neuroscience. Florida State University, Tallahassee, Florida
- Colloquium, Smith-Kettlewell Institute, San Francisco, CA
- Grand Rounds, Dept. of Neurosurgery, July 1999, Harborview Medical Center, Seattle
- Research Symposium of the Physiological Society, Newcastle Upon Tyne, UK
- Laboratory of Sensorimotor Research, National Eye Institute
- RIKEN Institute Guest Lecture, Tokyo, Japan
- Japanese Neuroscience Society Satellite Summer Workshop, Nagano, Japan
- Department Seminar, New York University, New York, NY
- Department Seminar, University of Rochester, Rochester, NY
- Department Seminar, Brandeis University, Waltham, MA
- Workshop on neuronal variability, Neural Information Processing Systems (NIPS), Satellite Meeting, Aspen, CO
- Workshop on visual selection mechanisms, Neural Information Processing Systems, Satellite Meeting Aspen, CO
- 2000 Keynote lecture, Annual Neuroscience Day: Dartmouth University
- Neural Control of Movement Society, Symposium on Higher Control of Movement: "How the brain decides what to do next" Key West, FL
- Grand Rounds, Dept. of Neurosurgery. Harborview Medical Center, Seattle

- Invited lecture, Cold Spring Harbor Symposium on Persistent Neural Activity, David Tank and Sebastian Seung organizers
- Neuroscience Seminar Series, University of California, San Diego
- Symposium speaker, Society for Neuroscience Annual Meeting. “Temporal patterns of spike activity in visual cortex: Is there a signal in the noise?” New Orleans, LA
- Department Seminar, Department of Brain and Cognitive Sciences and the McGovern Center, MIT, Cambridge, MA
- Department Seminar, University of Washington, Seattle
- Department Seminar, Duke University, December 2000. Durham, NC
- 2001 Department Seminar, Vanderbilt University, Nashville, TN
- Department Seminar, Princeton University, Princeton, NJ
- Invited workshop, “The Time it Takes to Think and Do: Accounting for Reaction Time”, Annual Meeting of the Neural Control of Motion Society, Seville, Spain
- Neuroscience Department Seminar, Brown University, Providence, RI
- Laboratory Seminar, Laboratory of Sensorimotor Research, National Eye Institute, Bethesda, MD
- Department Seminar, Queens University. Kingston, Ontario
- Invited lecturer, Cold Spring Harbor Laboratory course: “Structure, Function, and Development of the Visual System.” Cold Spring Harbor, NY
- 2002 Invited speaker, Neural Information and Coding Workshop, Centre de Physique, Les Houches, France
- Laboratory Seminar, CNRS, Toulouse, France
- Plenary speaker, “Toward A Science of Consciousness.” Tucson, AZ
- Invited lecturer, Cold Spring Harbor Laboratory course: “Computational Neuroscience: Vision.” Cold Spring Harbor, NY
- Department Seminar (student organized), Washington University, St. Louis
- Department Seminar, Harvard University, Cambridge, MA
- Invited lecture, Stanford University Neurobiology Student Retreat
- Department Seminar, Northwestern University, Evanston, IL
- Department Seminar, Osaka University, Osaka, Japan
- Invited Speaker, Meeting on “Cognitive Influence on Motor Function”, Okazaki Japan
- UCSF Formal Neuroscience Seminar. University of California, San Francisco

- 2003
- Invited Speaker, Rank Prize Foundation Meeting: “The Probabilistic Brain” in honor of Professor Horace Barlow. Trinity College, Cambridge University, UK
 - Invited Seminar, Cold Spring Harbor Laboratories. Cold Spring Harbor, NY
 - Neuroscience Department Seminar, UCLA
 - Department Seminar, University of California, Davis, CA
 - Mind and Brain Institute, Columbia University. Two lectures: “Banburismus and brain. A neural mechanism for making decisions” and “Neither what nor where, but how and when: It’s about time” New York
 - Invited Speaker, McDonnell Summer Institute, Lake Tahoe, CA
 - 23rd International Summer School of Brain Research, Amsterdam, Netherlands
 - Invited Speaker, Laboratory of Sensorimotor Research, 25th Anniversary Celebration
 - Department Seminar, Molecular and Cell Biology, University of California, Berkeley
 - McGovern Symposium, MIT, Boston, MA
 - Cognitive Science Department Seminar, University of California, Irvine
 - Neurobiology and Behavior Department Seminar, University of California, Irvine
- 2004
- Invited speaker, Interdisciplinary Conference on Vision and Memory, Jackson Hole, WY
 - Science Forum Lecture, University of Washington, Seattle, WA
 - Neurobiology of Decisions, CoSyNe Satellite workshop, Cold Spring Harbor, NY
 - NIH/NINDS Neuroscience Seminar, Bethesda, May 2004
 - Invited speaker, Neurobiology Symposium, 61st Annual Meeting for Korean Biochemistry Society, Seoul Korea
 - Invited speaker, Center for Visual Science 24th Symposium, University of Rochester, NY
 - Department Seminar, Physiology, University of Wisconsin, Madison WI
 - Invited lecturer, Okinawa Computational Neuroscience Course, Okinawa, Japan
 - Lecture in honor of 25th Anniversary of the Institute of Cellular Physiology, Universidad Nacional Autonoma Mexico (UNAM), Mexico City
 - Invited speaker, The Parietal Lobe, Leuven, Belgium

- 2005
- Session Chair, Computational & Systems Neuroscience, CoSyNe Meeting, Salt Lake City and Park City, UT
 - Invited speaker, Cognitive Neuroscience Seminars, Institute for Studies in Theoretical Physics and Mathematics (School of Cognitive Sciences), Tehran, Iran
 - Speaker & Session Chair, Banbury meeting on the Neurobiology of Decision-Making, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
 - Invited speaker, Symposium on Biological and Computational Perspectives on Intelligent Systems, Friday Harbor Laboratories, San Juan Island, WA
 - Invited speaker, Banbury vision course on “Structure, Function. And Development of the Visual System”, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
 - Invited speaker, Neural Circuits & Plasticity Gordon Research Conference, Salve Regina University, Newport, RI
 - Invited speaker, Max-Planck Institute for Biological Cybernetics, Tuebingen, Germany
 - Department seminar, The Sloan-Swartz Center for Theoretical Neurobiology, California Institute of Technology, Pasadena, CA
 - University lecturer, Department of Neurobiology & Behavior, Cornell University, Ithaca, NY
 - Invited Speaker, Society for Neuroscience Satellite Symposium: Computational and Cognitive Neuroscience, Washington, DC
- 2006
- Invited speaker, Bayesian Cognition Workshop, Paris, France
 - Invited seminar, CNRS, Gif-sur-Yvette, France
 - Invited instructor, European Diploma in Cognitive and Brain Sciences, Hanse-Wissenschaftskolleg, Delmenhorst, Germany
 - Invited speaker, Neuroscience Department Seminar, Baylor University, Houston, TX
 - Invited speaker, Department of Neuroscience, University of Minnesota, Minneapolis, MN
 - Invited speaker, XXVIIIth International Symposium “Computational Neuroscience: From theory to neurons and back again”, Université de Montreal, Montreal, Quebec, Canada
 - Invited speaker, AREADNE Conference, Santorini, Greece
 - Invited speaker, Society for Mathematical Psychology Annual Meeting, Vancouver, B.C. August 2006
 - Invited speaker, Neuroscience Graduate Group Retreat, University of California-Davis, Pt. Reyes, CA. September 2006
 - Oxyopia, University of California, Berkeley, CA. September 2006

- Invited Speaker, Dept. of Psychology Colloquium talk, Villanova University, Villanova, PA, October 2006
- Invited speaker, Perception Program in the Department of Psychology, University of Chicago, Chicago, IL, November 2006
- Invited speaker, Neurons, Brains and Models Program, University of Michigan, Ann Arbor, MI. November 2006
- Invited speaker, Merck Neurosciences Seminar Series, University of California, San Diego, CA. December 2006
- 2007
- Invited speaker, Thirty-Second Annual Interdisciplinary Conference, Jackson Hole, WY. February 2007
- Invited speaker, Computational and Systems Neuroscience, CoSyNe Meeting, Salt Lake City and Park City, UT. February 2007
- Invited lecturer, 11th Annual Swartz Foundation Mind Brain Lecture, Stony Brook University, Stony Brook, NY. March 2007
- Invited speaker, New Frontiers in Study of Nonconscious Processing, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. April 2007
- Invited speaker, Helmholtz Lecture Series, Utrecht University, Utrecht, Netherlands. April 2007
- Invited speaker, College de France, Paris, France. April 2007
- Invited speaker, Unsolved Questions in Neurobiology, Howard Hughes Medical Institute, Janelia Farm Research Campus, Ashburn, VA. May 2007
- Invited speaker, Neurology Grand Rounds, Johns Hopkins University School of Medicine, Baltimore, MD. May 2007
- FIAS Strüngmann Forum, Frankfurt, Germany, June 2007
- Invited speaker, Structure, Function and Development of the Visual System, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. July 2007
- Plenary lecture. Cambridge Neuroscience Launch, Cambridge, UK. September 2007
- Plenary lecture. Neural Circuits Meeting, Ascona, Switzerland. September 2007
- 2008
- Invited speaker, Oxford University, Oxford, UK. January 2008
- Invited speaker, CNS Colloquium, New York University, New York, NY. February 2008
- Invited speaker, Wellcome Imaging Center, London, UK
- Invited speaker, Probability and time: a neural mechanism for reasoning and decision-making, 10th International Neuroscience Winter Conference, Sölden, Austria. April 2008
- Invited speaker, Information, Control and Communication Workshop, Berlin, Germany. April 2008

Invited speaker, KU Leuven, Leuven, Belgium. April 2008
 Invited lecturer (2 seminars), Group for Neural Theory, College de France, Paris, France. May 2008
 Invited speaker, International Neuropsychology Symposium, Puerto de la Cruz, Tenerife (Canary Islands), Spain. June 2008
 Keynote, Young Physiologists Symposium, Cambridge University, UK
 Keynote, Neuroscience Annual Retreat, University of Colorado, Denver, CO. September 2008
 Invited speaker, Neural Mechanisms of Oculomotor and Vestibular Function, Medford, OR., October 2008
 Invited speaker, Exciting Biologies: Biology of Cognition, 2008 Massachusetts General Hospital, Fondation ISPEN and Cell Press Workshop, Chantilly, France. October 2008
 Invited panelist, Neuroethics Society Meeting, November 2008
 Special Lecture, Society for Neuroscience, November 2008.
 Tutorial, Neural Information Processing Systems Annual Meeting (NIPS), Vancouver BC, Canada, Dec 2008.

DEPARTMENTAL AND UNIVERSITY SERVICE COMMITTEES

1997	Search Committee, Associate Director, University of Washington Regional Primate Research Center
1998-1999	Search Committee, Neuroscience Systems Appointment University of Washington, Department of Physiology and Biophysics
1997-2001	Faculty Lecture Series Committee, University of Washington, Department of Physiology and Biophysics
1999	Search Committee, Chairman, University of Washington, Department of Physiology and Biophysics
2001-	Chair, Committee for Joint Appointments, Department of Physiology
2001-2007	Co-Director, Graduate Program in Neurobiology and Behavior
2002	Chair, Search Committee, Computational Neuroscience, Department of Physiology and Biophysics
2002-	Lamport Lecture Selection Committee, Hille Lecturer Selection Committee
2003	Search Committee, Systems Neuroscience, Molecular Physiology/Biophysics
2004	Search Committee, Primate Neuroscience, Departments of Physiology & Biophysics, Biological Structure and Washington National Primate Research Center

- 2005-2007 Chair, Graduate and Joint/Affiliate Faculty Nominations Committee, department of Physiology & Biophysics
- 2008- Selection Committee, Next Generation Award, Society for Neuroscience

EDUCATION OUTREACH AND COMMUNITY SERVICE

- 1983 Volunteer medical work, United Nations camps for Refugees from the war in El Salvador, La Virtud and Mesa Grande, Honduras
- 1993- Numerous hands-on neuroscience demonstrations in local elementary schools
- 1997 Volunteer medical work, Hospital for the Dying (run by the Sisters of Charity), Jacmel, Haiti
- 1999 Co-organizer and keynote speaker, Mind & Brain day, for gifted middle school children and their parents. Sponsored by Johns Hopkins University
- 2000 Lecturer, summer outreach program for community college teachers, University of Washington
- 2001 Middle & High School brain demonstrations, Lakeside High, Eckstein Middle School
- 2004-2007 Committee for Animals in Research, Society for Neuroscience
- 2004-present McKnight Technology Board
- 2006 Volunteer lecturer on probability theory and statistics in neuroscience, Roosevelt High School, AP Statistics class.
- 2006-present External Advisory Panel, IGERT, Cognitive and Computational Neuroscience, Washington University, St. Louis
- 2007-present Neuroscience Educator Award, selection committee, Society for Neuroscience
- 2006 Workshop Panelist, Grand Challenges of Mind and Brain, NSF
- 2008 Visting lecturer, École Normale Supérieure, DEC and Computational Neuroscience units, May 2008

PUBLICATIONS (*available at <http://www.shadlen.org/Science/Papers>*)

(i) refereed papers in primary journals

1. Kiani R, Hanks TD, Shadlen MN (2008) Bounded integration in parietal cortex underlies decisions even when viewing duration is dictated by the environment. *J Neurosci* 28:3017-3029.
2. Ganguli S, Bisley JW, Roitman JD, Shadlen MN, Goldberg ME, Miller KD (2008) One-

- dimensional dynamics of attention and decision making in LIP. *Neuron* 58:15-25.
3. Churchland AK, Kiani R, Shadlen MN (2008) Decision-making with multiple alternatives. *Nat Neurosci* 11:693-702.
 4. Beck JM, Ma WJ, Kiani R, Hanks T, Churchland AK, Roitman J, Shadlen MN, Latham PE, Pouget A (2008) Probabilistic population codes for Bayesian decision making. *Neuron* 60:1142-1152.
 5. Yang T, Shadlen MN (2007) Probabilistic reasoning by neurons. *Nature* 447:1075-1080.
 6. Wong KF, Huk AC, Shadlen MN, Wang XJ (2007) Neural circuit dynamics underlying accumulation of time-varying evidence during decision-making. *Frontiers in Computational Neurosci* 1:1-11.
 7. Hanks TD, Ditterich J, Shadlen MN (2006) Microstimulation of macaque area LIP affects decision-making in a motion discrimination task. *Nat Neurosci* 9:682 - 689.
 8. Palmer J, Huk AC, Shadlen MN (2005) The effect of stimulus strength on the speed and accuracy of a perceptual decision. *Journal of Vision* 5:376-404.
 9. Janssen P, Shadlen MN (2005) A representation of the hazard rate of elapsed time in macaque area LIP. *Nat Neurosci* 8:234-241.
 10. Huk AC, Shadlen MN (2005) Neural activity in macaque parietal cortex reflects temporal integration of visual motion signals during perceptual decision making. *J Neurosci* 25:10420-10436.
 11. Mazurek ME, Roitman JD, Ditterich J, Shadlen MN (2003) A role for neural integrators in perceptual decision making. *Cereb Cortex* 13:1257-1269.
 12. Leon MI, Shadlen MN (2003) Representation of time by neurons in the posterior parietal cortex of the macaque. *Neuron* 38:317-327.
 13. Gold JI, Shadlen MN (2003) The influence of behavioral context on the representation of a perceptual decision in developing oculomotor commands. *J Neurosci* 23:632-651.
 14. Ditterich J, Mazurek M, Shadlen MN (2003) Microstimulation of visual cortex affects the speed of perceptual decisions. *Nat Neurosci* 6:891-898.
 15. Roitman JD, Shadlen MN (2002) Response of neurons in the lateral intraparietal area during a combined visual discrimination reaction time task. *J Neurosci* 22:9475-9489.
 16. Mazurek ME, Shadlen MN (2002) Limits to the temporal fidelity of cortical spike rate signals. *Nat Neurosci* 5:463-471.
 17. Gold JI, Shadlen MN (2002) Banburismus and the brain: decoding the relationship between sensory stimuli, decisions, and reward. *Neuron* 36:299-308.
 18. Shadlen MN, Newsome WT (2001) Neural basis of a perceptual decision in the parietal cortex (area LIP) of the rhesus monkey. *J Neurophysiol* 86:1916-1936.
 19. Gold JI, Shadlen MN (2001) Neural computations that underlie decisions about sensory stimuli. *Trends Cogn Sci* 5:10-16.
 20. Gold JI, Shadlen MN (2000) Representation of a perceptual decision in developing oculomotor commands. *Nature* 404:390-394.
 21. Leon MI, Shadlen MN (1999) Effect of expected reward magnitude on the response of neurons in the dorsolateral prefrontal cortex of the macaque. *Neuron* 24:415-425.
 22. Kim JN, Shadlen MN (1999) Neural correlates of a decision in the dorsolateral prefrontal cortex of the macaque. *Nat Neurosci* 2:176-185.
 23. Shadlen MN, Newsome WT (1998) The variable discharge of cortical neurons: implications for connectivity, computation and information coding. *J Neurosci* 18:3870-

3896.

24. Shadlen MN, Newsome WT (1996) Motion perception: seeing and deciding. *Proc Natl Acad Sci (USA)* 93:628-633.
25. Shadlen MN, Britten KH, Newsome WT, Movshon JA (1996) A computational analysis of the relationship between neuronal and behavioral responses to visual motion. *J Neurosci* 16:1486-1510.
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