

Curriculum Vitae

Name: Stuart A. Lipton

Academic Affiliations: Professor and Director, Neuroscience Translational Center
Hannah and Eugene Step Chair
Department of Molecular Medicine
The Scripps Research Institute, La Jolla;
Professor (adjunct), University of California, San Diego, School of
Medicine and Yale School of Medicine (Department of Neurology)
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Place of Birth: Connecticut, USA

Marital Status: Married to Elisabeth (Lisa), an attorney;
Two children, Jennifer Ann, born March 13, 1987; Jeffrey Harris,
born January 28, 1991

Education:

B.A./Honors Neurobiology and Immunology with distinction in all subjects
Cornell University, Ithaca, NY.

Graduate Schools: Cornell University, Ithaca, NY;
Harvard University, Cambridge, MA;
University of Pennsylvania, Philadelphia, PA.

Ph.D. Biophysics & Biochemistry
University of Pennsylvania School of Medicine, Philadelphia, PA.

M.D. University of Pennsylvania School of Medicine, Philadelphia, PA.

Postdoctoral Training:

Internships and Residencies

1977-1978 Intern in Medicine, Beth Israel Hospital, Harvard Medical School,
Boston, MA
1978-1980 Junior and Senior Assistant Resident, Longwood Area Neurology Program
Harvard Medical School, Boston, MA
1980-1981 Chief Resident in Neurology, Brigham & Women's Hospital, Beth Israel
Hospital, Children's Hospital, Harvard Medical School, Boston, MA

Research Fellowships

1974-1976 Research Fellow in Biology with Professor John E. Dowling,
Harvard University
1980-1983 Research Fellow in Neurobiology with Professor Torsten N. Wiesel

(Nobel laureate, 1981), Harvard Medical School

*Chronology of Scientific Discoveries (major finding indicated by *)*

- *1977 First description of the effect of **cyclic GMP** on phototransduction/adaptation in rod photoreceptors (published in *J. Gen. Physiol.*, *Nature*).
- 1979-1987 First isolation, culture, and characterization by patch-clamp recording of the voltage- and ligand-gated currents of rodent retinal ganglion cells (RGCs) identified by retrograde fluorescent labeling (published in *Science*, *J. Physiol. (London)*).
- 1983-1989 Characterization of **Thy-1** and FGF1 as a neurite-promoting factors in RGCs (published in *Science*, *PNAS*).
- 1985-1989 First characterization in the mammalian CNS of **neurotransmitters controlling neurite outgrowth** and dendritic remodeling, using rodent RGCs (published in *Science*, *J. Neurosci.*, *Trends Neurosci.*).
- *1987-1995 First description of **redox modulation of NMDA-type glutamate receptors, glycine receptors and GABA_A receptors** (published in *Neuron*, *J. Neurosci.*).
- *1987-1990 First description of **HIV coat protein gp120 causing neuronal damage** and contributing to HIV-associated dementia via excessive activation of Ca²⁺ channels and NMDA-activated channels (published in *Science*, *Neuron*, *Neurology*, *Ann. Neurol.*, *Trends Neurosci.*, *N. Engl. J. Med.*). Ran two successful clinical trials.
- *1988-1998 Characterized, developed and patented the first clinically-tolerated, FDA-approved NMDA-type glutamate receptor antagonist for dementia, **Memantine** (marketed as **Namenda®**, **NamendaXR®**, and **Namzaric®**). Showed that Memantine acts via a mechanism of action of low-affinity, open-channel block with a unique profile of Uncompetitive inhibition and Fast “Off-rate” (subsequently designated as **UFO drugs** that avoid side effects by relatively sparing normal synaptic activity while blocking excessive extrasynaptic NMDA receptor activity). Also ran clinical trials on Memantine, which was approved by the FDA for moderate-to-severe Alzheimer’s disease and made available to patients in 2004 (published in *J. Neurosci.*, *Neurology*, *Trends Neurosci.*, *N. Engl. J. Med.*, *J. Physiol. (London)*, *Neuroscience*, *Ann. Rev. Pharmacol. Toxicol.*, *Nature*, *Nature Rev. Drug Discov.*, *Nature Rev. Neurosci.*).
- 1988-present First characterization of **apoptotic cell death pathways** triggered by mild NMDA receptor overactivity and free radicals (as opposed to fulminant activation causing necrosis) in neurodegenerative conditions and in the penumbra of stroke (published in *Nature*, *Science*, *Cell*, *Neuron*, *Nature Medicine*, *PNAS*, *J. Neurosci.*).
- *1990-present Discovered, cloned and characterized the neurogenic, anti-apoptotic transcription factor **MEF2C** that drives human ES cells to differentiate into neurons and is involved in human Autism Spectrum Disorders (see also below; published in *PNAS*, *J. Neurosci.*, *Science*, *Cell*).
- *1992-present First description with J.S. Stamler of physiological **regulation of protein function by S-nitrosylation** (transfer of NO to a critical cysteine thiol group in a redox-dependent reaction); initially described for the NMDA receptor, and subsequently for caspases, matrix metalloproteinases, parkin, Drp1, Cdk5, XIAP, Shp2, MEF2, and other proteins (published in *Nature*, *Nature Neurosci.*, *Science*, *Neuron*, *PNAS*, *Cell*).
- 1993-present Devised, synthesized, and developed new drugs for targeted delivery of NO to the NMDA receptor using **NitroMemantine (NitroSynapsin®)** as a dual-agent clinical therapeutic to decrease excessive NMDA receptor activity for neuroprotection (issued US patents, published in *Nature Rev. Drug Discov.*, *PNAS*).
- 1995-1998 First description with the group of S. Strickland and S. Tsirka of tissue-plasminogen activator (**tPA**) contributing to neuronal damage in stroke rather than alleviating it

- (published in *Nature Med.*).
- 1995-present First description of molecular pathways of synergistic action of erythropoietin (**EPO**) and insulin-like growth factor-I **IGF-I** for neuroprotection in the CNS (published in *Nature, PNAS, N. Engl. J. Med.*).
- 1995-2004 First characterization of **mitochondrial involvement** in determining necrotic vs. apoptotic neuronal cell death due to excitotoxins and free radicals (published in *Neuron, PNAS*).
- 1995-1999 First description of possible involvement of **excitotoxicity (glutamate) in glaucoma**-induced retinal ganglion cell death (*JAMA, Arch. Ophthalmol.*); consulted to clinical trials of NMDA antagonist memantine to treat glaucoma.
- *1995-present Discovered, cloned, and characterized a new family of **NMDA receptor subunits, NR3A and NR3B** (now designated **GluN3A/B**). These subunits influence neuronal survival in Huntington's disease and possibly other conditions when incorporated into NMDA receptors composed of NR1/NR2/NR3 subunits. Surprisingly, NR1/NR3 receptors are pure excitatory glycine receptors (in the absence of NMDA or glutamate). Knockout of the NR3A subunit in mice results in increased dendritic spines (representing synaptic contacts), increased NMDA receptor-mediated currents, and a unique behavioral phenotype reflecting an increase in attentional systems (published in *Nature, J. Neurosci., J. Neurophysiol., J. Comp. Neurol., Nat. Med.*).
- *2002 First demonstration using Mass Spectroscopy showing that **S-nitrosylation** by reactive nitrogen species (RNS) **can lead to further oxidation** by reactive oxygen species (ROS) of a protein (forming sulfenic, sulfinic, or sulfonic acid derivatives) to regulate protein activity; first observed for matrix metalloproteinases (MMPs) and protein disulfide isomerase (PDI) (published in *Science* and *Nature*).
- *2004 First demonstration that **S-nitrosylation and further oxidation can mimic a rare genetic mutation to cause a neurodegenerative disease** with the discovery in Parkinson's disease that parkin can be S-nitrosylated to initially increase and subsequently decrease its E3 ubiquitin ligase activity (published in *PNAS* and *Science*). Others examples subsequently discovered include S-nitrosylation of protein disulfide isomerase (PDI) and dynamin related protein 1 (Drp1) – see below (published in *Nature* and *Science*).
- *2006 First characterization of **redox stress** directly disrupting the **protein folding** machinery of the ER (via S-nitrosylation of the enzyme protein-disulfide isomerase (PDI)), thus contributing to protein misfolding and aggregation in multiple neurodegenerative disorders, including Parkinson's disease, Alzheimer's disease, Huntington's disease, and amyotrophic lateral sclerosis (ALS) (published in *Nature*).
- 2006-present First chemical biology description of **neuroprotective pro-electrophiles**, including carnosic acid, the active ingredient in the herb Rosemary, activating the Keap1/Nrf2 endogenous anti-oxidant pathway for protection in Alzheimer's disease, Vascular dementia, and models of Age-related photoreceptor degeneration (published in *PNAS, Trends Neurosci., J. Neurochem., Nature Rev. Neurosci.*).
- *2008-2009 First description that knockout or haploinsufficiency of transcription factor **MEF2C in neural stem/progenitor cells** as a cause of **Autism-Spectrum Disorder** in mice (later found in humans as well) (published in *PNAS, Science*).
- *2009 First description that **synaptic damage in Alzheimer's disease** is due to β -amyloid protein-mediated **S-nitrosylation** and activation of the mitochondrial fission protein, **Drp1** (forming SNO-Drp1) (published in *Science*).
- *2009 First demonstration that the **balance between normal synaptic and excessive**

- extrasynaptic NMDA receptor activity controls protein misfolding in neurodegenerative disorders** via discrete molecular pathways (published in *Nature Medicine*).
- *2010 First quantitative demonstration of **transnitrosylation** (in this example, from caspase to XIAP) using a modification of the Nernst Redox Equation (published in *Molecular Cell*).
 - *2011 First direct conversion of human adult fibroblasts to neurons without an intervening pluripotent stage using a **microRNA** protocol (published in *Cell Stem Cell*).
 - *2013, 2017 Description of potentially disease-modifying **NitroMemantine drugs (lead candidate called NitroSynapsin) for Alzheimer’s disease (AD) and Autism Spectrum Disorder/Intellectual Disability (ASD/ID)** (MEF2C haploinsufficiency). This drug corrected Excitatory/Inhibitory (E/I) imbalance and protects synapses in AD and ASD mouse models and in hiPSC-derived neurons (published in *PNAS*, *Nature Commun.*)
 - *2013-2014 Discovery that **S-nitrosylation of MEF2** (forming SNO-MEF2) in patient hiPSC-derived neurons increases pesticide susceptibility, causing mitochondrial dysfunction, synaptic damage, neuronal death, and decreased neurogenesis in Parkinson’s disease, Alzheimer’s disease, Stroke, and Autism (published in *Cell* and *Cell Reports*).
 - *2016 Discovery of a similar **altered redox state/S-nitrosylated proteins in Alzheimer’s disease and type 2 diabetes mellitus (T2DM)/metabolic syndrome (MetS)** resulting in aberrant S-nitrosylation reactions in common between these diseases. This finding may explain, at least in part, the linked epidemiological risk for these disorders and points to a new pathway for therapeutic intervention (published in *Nature Commun.*).
 - 2016 Discovery of a novel chemical reaction of N-phosphorylation-mediated denitrosylation by the enzyme sulfiredoxin that removes NO from peroxiredoxin (Prx). This new finding is at the center of redox control of the cell, explaining reactivation by sulfiredoxin of both Prx-SO₂H and SNO-Prx, and thus describes a new master regulator of redox reactions that combat nitrosative and oxidative stress (published in *PNAS*).
 - 2017 Discovery of “**PINK-SNO**” – S-Nitrosylation of PINK1 disrupts PINK1/Parkin mediated mitophagy in Parkinson’s disease and possibly in Alzheimer’s disease, contributing to synaptic damage and neuronal loss (published in *Cell Reports*).
 - *2019 Discovery of ‘**ghost**’ **enzymatic networks** that contribute to aging and neurodegenerative diseases. These hidden or ‘dark’ networks are comprised of a series of enzymes from disparate chemical pathways that subserve a second type of catalytic activity involving **aberrant transnitrosylation reactions** (transferring NO from one enzyme to another) to disrupt normal physiological activity as we age, such as metabolism and synaptic function.

Licensure and Certification:

- 1978 National Board of Medical Examiners, Diplomate
- 1981 Massachusetts Medical License Registration No. 47771
- 1982 American Board of Psychiatry and Neurology, Certification in Neurology
- 1988 Fellow of the American Neurological Association (FANA)
- 1999 California Medical License No. G85439
- 2000 Fellow of the American Academy of Neurology (FAAN)

Academic Appointments:

1981-1983	Instructor in Neurology, Harvard Medical School
1983-1987	Assistant Professor of Neurology (Neuroscience), Harvard Medical School
1987-1997	Associate Professor of Neurology (Neuroscience), Harvard Medical School
1997-2001	Associate Professor of Neuroscience (Neurosurgery), Harvard Medical School (on leave of absence 10/1/99-9/30/01)
1999-2015	Professor and Founding Scientific Director, Center for Neuroscience, Aging, and Stem Cell Research, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, California (Founding Director of Center with >300 workers)
2000-	Professor (adjunct), Department of Neurosciences/Neurology, University of California, San Diego (UCSD), School of Medicine
2000-2017	Professor (adjunct), Department of Molecular Medicine, The Scripps Research Institute, La Jolla, California
2002-2013	Professor (adjunct), Molecular Neurobiology Laboratory (headed by the Late Stephen F. Heinemann), Salk Institute for Biological Studies
2015-2017	Distinguished Professor and Hannah and Eugene Step Chair, Neurodegenerative Disease Center, Scintillon Institute, San Diego
2016-	Professor (adjunct), Department of Neurology, Yale School of Medicine, New Haven, Connecticut
2017-	Professor of Molecular Medicine and Neuroscience, and Director of the Neuroscience Translational Center, The Scripps Research Institute; Hannah and Eugene Step Chair in Neurodegenerative Diseases, Calibr, La Jolla, California

Hospital Appointments:

1981-1988	Assistant in Neurology, Children's Hospital, Boston
1981-1986	Assistant in Neurology, Beth Israel Hospital, Boston
1986-1993	Associate in Neurology, Beth Israel Hospital, Boston
1987-1997	Director, Laboratory of Cellular & Molecular Neuroscience, Children's Hospital, Boston
1988-1994	Director, NIH Developmental Neurology Training Program, Children's Hospital, Boston
1988-1997	Associate in Neurology, Brigham and Women's Hospital, Boston
1989-1997	Associate in Neurology, Children's Hospital, Boston
1991-1992	Clinical Assistant in Neurology, Massachusetts General Hospital, Boston
1991-1992	Co-Director, Outpatient Adult Neurology Clinic, Beth Israel Hospital, Boston
1992-1997	Clinical Associate in Neurology, Massachusetts General Hospital, Boston
1993-1999	Senior Associate in Neurology, Beth Israel Deaconess Medical Center, Boston
1997-1999	Chief, CNS Research Institute, Brigham and Women's Hospital, Boston
2000-	Attending Neurologist, UC San Diego Medical Center

Other Professional Positions and Fellowships:

1968-1972	National Merit Finalist/Ford Foundation Scholar, Cornell University Six-year Ph.D. Program
1971	Ford Foundation Summer Scholarship in Europe
1972-1977	National Institutes of Health M.D.-Ph.D. Fellowship (Medical Scientist Training Program, MSTP)

1976	National Eye Institute, National Institutes of Health, Lecture Fellowship for Association for Research in Vision and Ophthalmology Meeting
1976	National Retinitis Pigmentosa Foundation Meeting Fellowship
1981-1984	John A. and George L. Hartford Foundation Fellow
1984-1989	Teacher-Investigator Development Award from NIH (sponsor T.N. Wiesel)
1988-1993	Established Investigator of the American Heart Association
1994-1998	Consultant, Veterans Administration Neuronal Regeneration Programs
1997-2000	Consultant, <i>Science</i> (magazine), NIH-funded grant for scientific collaboration on the Web to promote NeuroAIDS research
1990-	Consultant to multiple pharmaceutical companies
2000-2015	Scientific Founder, ADAMAS Pharmaceuticals, Inc.; contributed to development of four FDA-approved drugs for Alzheimer's disease or Parkinson's disease: Namenda®, NamendaXR®, Namzaric®, Gocovri®
2015-	Eli Lilly & Co., Scientific Advisory Board for Neuroscience

Awards and Honors:

1968/1969	National Merit Finalist/Ford Foundation Scholarship
1971	Phi Beta Kappa
1973	Mary Ellis Bell Prize for Research, University of Pennsylvania School of Medicine
1974	Alpha Omega Alpha (Medical Honor Society)
1976	Baluin-Lucke Memorial Prize for Research, University of Pennsylvania School of Medicine
1979	Von L. Meyer Research Award, Children's Hospital/Harvard Medical School, Boston, MA
1989	Pattison Award in Neuroscience Research
1994	Nobel Foundation Lecture, Karolinska Institute, Stockholm
1995	Science Citation by <i>The Scientist</i> (based on data from <i>Science Citation Index</i> of the Institute for Scientific Information, Philadelphia) for publishing the hottest (most cited) paper of the preceding two-year period in the field of Biochemistry (Lipton <i>et al.</i> , <i>Nature</i> 1993;364:626-632)
1995	Nobel Foundation Lecture, Nobel Symposium on HIV Infection in the Brain, Nobel Forum, Karolinska Institute, Stockholm, Sweden
1997	Science Citation by <i>The Scientist</i> (based on data from <i>Science Citation Index</i> of the Institute for Scientific Information, Philadelphia) for publishing the hottest (most cited) paper of the preceding two-year period in the field of Neuroscience (Ankarcrona <i>et al.</i> , <i>Neuron</i> 1995;15:961-973)
2001	Invited Speaker, Nobel Symposium on Apoptosis, Stockholm, Sweden
2001	The Ellison Medical Foundation Senior Scholar Award
2002	San Diego Health Hero Award (American Parkinson's Disease Association)
2004	Ernst Jung Prize in Medicine (for drug development, characterization of mechanism of action, and therapeutic consequences of Memantine, the first potentially neuroprotective drug approved by the European Medicines Agency and FDA for moderate-to-severe Alzheimer's disease)
2005	MRC Lectureship in Neurotoxicology
2005	NINDS/NIH Neurodegenerative Disease Annual Invited Lectureship

2010	Nobel Foundation Lecture, Nobel Symposium on the Cell Cycle and Cell Death, Nobel Forum, Stockholm, Sweden
2011	Elected AAAS Fellow, Neuroscience Section
2012	Outstanding Student Research Mentorship Award, University of California San Diego Health Sciences Clinical and Translational Research Institute
2012	John F. Anderson Memorial Lecture, University of Virginia, Charlottesville, VA
2013	Annual Distinguished Biomedical Scholar Lecture Series, University of Iowa, Carver College of Medicine, Iowa City, Iowa
2013	Courage and Hope Award for Scientific Research, Alzheimer's Disease Association
2013	Redox Pioneer (one of ten awards made world-wide to that date) from the journal <i>Antioxidants & Redox Signaling</i>
2013	<i>The Economist</i> , Featured Scientist studying Alzheimer's disease http://www.economist.com/news/science-and-technology/21579792-search-treatment-dementia-continues-beta-testing
2014	Brain & Behavior Research Foundation Distinguished Investigator Award
2015	<i>The Lancet</i> , Featured Profile (Neurology) http://www.thelancet.com/pb/assets/raw/Lancet/pdfs/S1474442215000113.pdf
2015	Dean's Distinguished Lecture Series, Weil Cornell Medical College, NYC
2016	NIH Director's Grant Award (Avant Garde) (DP1 DA041722)

Major Committee Assignments:

National/International

1982	Grant Referee, National Science Foundation, Section on Sensory Physiology and Perception
1985, 1995-1997	Study Section Member, American Heart Association, Mass. Affil. Section
1986-1988	Grant Referee, National Science Foundation Section on Developmental Neurobiology and Regeneration
1987-1988	Grant Referee, National Institutes of Health (NIH), National Eye Institute (NEI), Special Study Section VISB
1988	Grant Referee, Veterans Administration Career Development Program
1988	Grant Referee, Spinal Cord Research Foundation
1990	Grant Referee, NIH, Special Review Committee NCDDG
1990	Grant Referee, NIMH, MHAZ2 (Mental Health AIDS Research Review Committee; Neurosciences Subcommittee)
1991, 1994	Grant Referee, NIH, National Institute of Child Health and Human Development (NICHD), Mental Retardation Study Section, Site Visit Team
1991-	Advisory Committee, Society for Neuroscience, Neurobiology of Disease Workshops; Director of Annual Course, 1994, 2000
1992	Grant Referee, NIH, National Institute of Neurological Disorders and Stroke (NINDS), Neurological Sciences Program Projects Committee B (NSPB), Site Visit Team for Neuro-AIDS Grants
1992	Chairman of Study Section SRC-AIDSP-92-16, NIH, National Institute of Allergy and Infectious Diseases (NIAID), Program Projects on Neuro-AIDS Research

1994	Invited Reviewer of Intramural Research Programs, NICHD/NIH.
1995-2007	Scientific Advisory Board Member, University of Calabria School of Pharmacy and Pharmacology, Calabria, Italy
1995-2000	Scientific Advisory Board Member, HIV Neurobehavioral Research Center, University of California, San Diego, School of Medicine
1996	Grant Referee, NIH, National Institute of Child Health and Human Development (NICHD), Mental Retardation Study Section
1997	Study Section Member, NIH, National Institute of Neurological Disorders and Stroke (NINDS), Special Emphasis Panel ZNS1-SRB-L-(1)
1997-2005	Scientific Advisory Board Member, AIDS Research Center, The Scripps Research Institute, La Jolla, CA
1997-	Scientific Advisory Board Member, Center for Neurovirology and Neurodegenerative Disorders, University of Nebraska & Creighton University
1998	Grant Referee, NIH, National Eye Institute Visual Sciences A Study Section Special Emphasis Panel
1998-2004	Chair, Neurobiology of Disease Workshops, Society for Neuroscience
1998-2004	Chair, Education Committee, Society for Neuroscience
1999	National Institute of Neurological Disorders and Stroke/NIH, Board of Scientific Counselors
2000-2004	Member, Mental Retardation Executive Review Committee, National Institute of Child Health and Human Development/NIH
2001, 2006	Ad Hoc Member MRC Programme Review Board for the United Kingdom MRC Unit in Toxicology/Apoptosis
2001-2010	Elected to Board of Trustees, The Riverview School (for children with Learning Disabilities), Cape Cod, MA
2004	Advisor on new Scientific Programs to the Max Planck Society, Germany
2004-	Scientific Advisory Board Member, Neuroscience Center, Louisiana State University Medical Center, New Orleans
2006	Advisor to NIH Neuroscience Blueprint Initiative among 16 NIH Institutes, Bethesda, MD
2007	Reviewer, Tri-Institutional (Rockefeller, Cornell, Memorial Sloan Kettering) Start Foundation Stem Cell Grants.
2008	Member, NIH Director's Pioneer Award (DP1) Final Selection Committee
2009	Scientific Advisory Board Member, Consiglio Nazionale Delle Ricerche, Rome, Italy, in honor of the 100 th birthday of Rita Levi-Montalcini, Nobel laureate 1986 for the discovery of nerve growth factor.
2010-	Scientific Advisory Board Member, Rose Stein Institute for Research on Aging, University of California San Diego School of Medicine
2011, 2015	Invited Reviewer, NIH Director's Pioneer Awards (DP1)
2015-	Scientific Advisory Board, San Diego Brain Consortium
2016	Neurological consultant to the physician for the King of Bhutan
2017	Member, NIH Director's Innovator Award (DP2) Final Selection Committee
2017	Member, NIH/NIDA Director's Avante-Garde Award (DP1) Final Selection Committee

Harvard College

1980-1983	Chairman, Pre-Medical Advisory Committee, Quincy House
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Harvard Medical School

1980-1999	Affiliate, Medical Scientist Training (M.D.-Ph.D.) Program
1984-1990	Working Committee, Program in Neuroscience
1985-1992	Admissions Committee, Program in Neuroscience
1986-1999	Admissions Committee, Medical Scientist Training (M.D.-Ph.D.) Program
1986-1991	Selection Committee, Longwood Neurology Residency Training Program
1989-1999	Executive Committee, Medical Scientist Training (M.D.-Ph.D.) Program
1991-1999	Member of Main Committee on Admissions, Harvard Medical School

Children's Hospital, Boston

1985-1988	Administrative Committee, NIH Developmental Neurology Training Grant
1985-1990	Executive Committee, Mental Retardation Research Center
1988-1994	Program Director, NIH Developmental Neurology Training Grant
1988-1994	Steering Committee for Neurology Research

Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA

1999-2015	Scientific Director, Center for Neuroscience, Aging, and Stem Cell Research
2004-2012	Member, Board of Trustees

University of California, San Diego

2002-	Member, Graduate School Thesis Committees
2004	Member, Cancer Center Outstanding Investigator Search Committee
2013-2014	Co-Chair, La Jolla Translational Neuroscience Institute for Alzheimer's Disease and Related Dementias

The Scripps Research Institute

2003	Member, Ad Hoc Professorial Promotions Committee
2004	Ad Hoc Member, Graduate School Thesis Committee
2017-	Founding Director, Neuroscience Translational Center

Membership in Professional and Scientific Societies:

1974-	Association for Research in Vision and Ophthalmology
1979-	American Academy of Neurology (elected Fellow, 1998-)
1980-	American Association for the Advancement of Science
1982-	Society for Neuroscience
1982-	British Brain Research Association (honorary)
1982-	European Brain and Behavior Society (honorary)
1985-	Society of General Physiologists
1986-	Biophysical Society
1988-	American Neurological Association (elected member)
1992-	American Heart Association, Stroke Council Fellow

Major Research Interests: Role of membrane receptors, ion channels and their downstream pathways in neuronal outgrowth, plasticity, and survival.

1. Developed the first clinically-tolerated neuroprotective drug approved by the FDA

- (Memantine/Namenda®/NamendaXR®/Namzaric®), representing an Uncompetitive/Fast “Off-rate” (UFO) inhibitor of the NMDA-type glutamate receptor in the brain; approved by the FDA in early 2004 for moderate-to-severe Alzheimer’s disease. This discovery produced a paradigm shift in the drug industry towards using UFO antagonists (*Nature* 2004;428:473), which our laboratory continues to develop for other targets. Memantine (Namenda®) remains the latest drug approved by the FDA for Alzheimer’s disease.
2. Study of structure/function and redox modifications (S-nitrosylation/sulfonation) of NMDA receptor and multiple other proteins involved in neurodegeneration and neurodevelopmental disorders by chemical biology, patch-clamp electrophysiology, X-ray crystallography, NMR, molecular biology, and proteomic approaches.
 3. Study of nerve cell synaptic injury and neuronal damage in neurodegenerative and neuropsychiatric disorders. Excitatory amino acid (glutamate) and S-nitrosylation-mediated nerve cell injury in Alzheimer’s disease (AD), Parkinson’s disease (PD), AIDS, stroke, trauma, and other neurodegenerative diseases; prevention of these forms of neuronal injury with specific ion channel blockers to decrease excessive calcium influx (i.e., NMDA receptor antagonists including development of the open-channel blocker, Memantine (Namenda®) and NitroMemantine (NitroSynapsin®); prevention of neuronal synaptic damage and apoptosis by stimulating neuroprotective signaling cascades with erythropoietin (EPO) and IGF-I.
 4. First identification, molecular cloning, and redox control of the transcription factor, hMEF2C, involved in control of glutamate (NMDA) neurotransmitter receptor expression, neurogenesis, and neuronal survival. Use of human embryonic stem (ES) cell- and induced pluripotent stem (iPS) cell-derived neural progenitor cells expressing constitutively-active MEF2 for cell-based therapies to reconstruct damaged neuronal networks in diseased brains. Involvement of MEF2C haploinsufficiency in human autism spectrum disorder (ASD), and screening for small molecule activators of MEF2 as potential treatment for ASD.
 5. ‘Disease-in-a-dish’ models of neurodegenerative disorders, including AD, PD, and ASD, using human patient iPSC-derived neurons and fibroblast-direct conversion to neurons (hiNs) to screen for novel drug therapies.
 6. Development of novel pro-drugs for age-related diseases based on the pro-electrophilic compound carnosic acid, isolated from the herb Rosemary, which activates the endogenous phase-2 antioxidant enzyme system via the Nrf2/ARE transcriptional pathway.

Research Support:

ACTIVE

NIH/NIA

U24 AG051129 (suppl)

2019-2020

Integrative Resource to Develop Translational Strategies to Promote Longevity (Alzheimer’s disease supplement)
Total Direct Costs \$259,356
Principal Investigator of Supplement (N. Schork, PI)

CIRM (Calif. Inst. for Regen. Med.) Drug Development for Autism Spectrum Disorder Using DISC2-11070 Human Patient iPSCs

2019-2021	Total Direct Costs \$1,026,728 Principal Investigator
NIH/NIA RF1 AG057409 2017-2022	Dynamic Interactions of the S-Nitrosoproteome in Type 2 Diabetes/Metabolic Syndrome and Alzheimer's Disease Total Direct Costs \$1,756,185 Principal Investigator
NIH/NIA R01 AG056259 2017-2022	S-Nitrosylation-Induced Posttranslational Modification and Aberrant Cell Signaling in Sporadic Alzheimer's Disease Total Direct Costs \$1,750,000 Principal Investigator
NIH/NIDA NIH Director's Avant Garde Grant DP1 DA041722 2016-2021	Novel Proteomics Approach to HIV-Associated Neurocognitive Disorder & Drug Abuse Total Direct Costs \$3,050,000 Principal Investigator
TDRP 27IR-0010 2018-2021	Tobacco-Induced S-Nitrosylation of DNMTs in Epigenetic Regulation of Tumors Total Direct Costs: \$750,000 Principal Investigator
NIH/NINDS R01 NS086890 2014-2019	Modeling Parkinson's Disease with Isogenic hiPSC-Derived Dopaminergic Neurons Total Direct Costs \$1,094,000 Principal Investigator
PREVIOUS	
Hartford Foundation Fellow 1981-1984	Voltage-Clamp Characterization of Neuronal Currents Total Direct Costs \$211,750 Principal Investigator (Sponsor: T.N. Wiesel)
NIH/NINDS K07 NS00879 1984-1989	Communication and Regeneration of CNS Neurites Total Direct Costs \$248,300 Principal Investigator (Sponsor: T.N. Wiesel)
National Science Foundation BNS-8606145 1986-1989	Thy-1 and Neurite Regeneration in the Mammalian CNS Total Direct Costs \$29,462 Principal Investigator
Charles H. Hood Foundation 1986-1988	Thy-1 and Process Regeneration by Central Mammalian Neurons Total Direct Costs \$27,273 Principal Investigator

National Society to Prevent Blindness 1986-1988	Thy-1 Receptors and Regeneration by Mammalian Retinal Ganglion Cells Total Direct Costs \$15,000 Principal Investigator
Fight For Sight, Inc. GA-86-0008 1986-1988	Thy-1 Receptors and Neurite Regeneration by Retinal Ganglion Cells Total Direct Costs \$18,000 Principal Investigator
National Science Foundation INT-8722650 1987-1991	U.S.-F.R.G. Cooperative Research on Retinal Ganglion Cells: Ion Channels and Transmitters Total Direct Costs \$11,610 Principal Investigator
Office of Naval Research	Enhanced Microscopy for Analysis of Neural Growth and 1988 Information Processing, Learning and Memory Total Direct Costs \$75,000 Co-Investigator
American Paralysis Association LA1-8801-1 1988-1990	Thy-1 and Process Regeneration by Central Mammalian Neurons Total Direct Costs \$30,000 Principal Investigator
Sunny von Bulow Coma and Head Trauma Res. Foundation Grant #1 (G1) 1988-1990	Prevention of Coma with Novel Glutamate Antagonists Total Direct Costs \$35,000 Principal Investigator
American Heart Association Established Investigator Award 880103 1988-1993	Thy-1 and Process Regeneration by Central Mammalian Neurons Total Direct Costs \$213,500 Principal Investigator
NIH Small Instrument Program 1989	Calcium Imaging in the Central Nervous System Total Direct Costs \$26,152 Co-Investigator
Muscular Dystrophy Association 1989-1993	Thy-1 and Neurite Regeneration by Spinal Motoneurons Total Direct Costs \$111,426 Principal Investigator
American Fndn for AIDS Res. 1990-1993	Ca ²⁺ channel antagonists prevent gp120 neurotoxicity Total Direct Costs \$100,000 Principal Investigator

American Fndn for AIDS Res. 1991-1993	Clinical Trial of Nimodipine for AIDS Dementia Complex Total Direct Costs \$25,000 Co-Principal Investigator (P.I. at Mt. Sinai Hospital, NY)
NIH/NINDS T32 NS07264 1986-1994	Institutional Training Grant on Developmental Neurology Total Direct Costs \$2,015,062 Principal Investigator
Developmental Neurology Fund at Harvard Medical School 1990-1994	Fellowships in Neurological Research Total Direct Costs \$30,000 Principal Investigator
Pediatric AIDS Res. Fndn 1992-1994	NMDA Antagonists, Macrophages & gp120 Neurotoxicity Total Direct Costs \$66,000 Supervisor/Sponsor of Scholar Award
Miles Pharmaceuticals, Inc. and Bayer AG 1990-1994	Nimodipine Prevents HIV Coat Protein-Induced Neurotoxicity In Vitro Total Direct Costs \$90,000 Principal Investigator
ASTA Medica Pharmaceuticals 1993-1995	Redox Reagents as Clinically Useful NMDA Antagonists Total Direct Costs \$80,700 Principal Investigator
NIH/NEI R01 EY06087 1986-1996	Thy-1 and Neurite Regeneration By Retinal Ganglion Cells Total Direct Costs \$695,279 Principal Investigator
NIH/NEI R01 EY10009 1993-1997	Excitatory Amino Acids in Glaucoma Total Direct Costs \$246,393 Co-Principal Investigator
Balise Memorial Fund at Harvard Medical School 1990-1997	Neuroprotection in AIDS Dementia and Stroke Total Direct Costs \$222,811 Principal Investigator
Fight for Sight, Inc. Grant-in-Aid for D. Zhang 1996-1997	Molecular Determinants Influencing the Expression of GABAC Receptors in Rat Retina Total Direct Costs \$11,000 Supervisor/Laboratory Sponsor of Awardee
American Fndn for AIDS Res. Scholar Award for Z.-H. Pan 1994-1997	NMDA Antagonists for gp120-Related Neurotoxicity Total Direct Costs \$112,200 Supervisor/Sponsor of Scholar Award
NIH/NINDS R13 NS20032	The Neurobiology of Diseases Teaching Workshops Total Direct Costs \$189,624

1992-1999	Investigator (Principal Investigator: Howard L. Fields, UCSF; Other Investigators: Michael Selzer, Univ. of Pennsylvania; Anne B. Young, Harvard Medical School; Nancy Wexler, Hereditary Disease Foundation).
Howard Hughes Medical Institute Student Research Fellowship Student: W. Cheung, 1996-1999	Molecular Neurobiology of Ion Channel Redox Modulation: Effects of NO-Related Species Total Direct Costs \$44,000 (Supervisor/Sponsor of Awardee: Stuart A. Lipton)
American Heart Association Fellowship Award 1997-1999	Control of Neurogenesis by Transcription Factor MEF2: Potential for stroke therapy by precursor cell replacement Total Direct Costs \$55,100 (Supervisor/Sponsor of Awardee: Stuart A. Lipton)
Deutsche Forschungsgemeinschaft (DFG) Fellowship to Marcus Kaul 1997-1999	Neurotoxins Released by HIV-Infected Brain Macrophages and Microglia Total Direct Costs \$56,200 (Supervisor/Sponsor of Awardee: Stuart A. Lipton)
The Wellcome Trust Travelling Research Fellowship to Samantha L. Budd, 1998-2000	Mitochondrial Dysfunction in Neuronal Apoptosis Total Direct Costs \$144,305 (Supervisor/Sponsor of Awardee: Stuart A. Lipton)
NIH/NINDS K08 NS02063 1998-2001 to Gwenn Garden	Caspase Enzymes & Apoptosis in HIV Induced Neural Injury Total Direct Costs \$211,500 (Supervisor/Sponsor of Awardee: Stuart A. Lipton)
Neurobiological Technologies, Inc. (Richmond, CA) 1996-1999	Memantine and Redox-activated Forms of Nitric Oxide for Neurologic Diseases Total Direct Costs \$1,224,112 Principal Investigator
Alcon, Inc. 1999-2001	Caspases and Retinal Ganglion Cell Protection Total Direct Costs \$160,000 Principal Investigator
NIH/NIMH R44 MH57585 1998-2001	Novel NMDA Receptor Antagonists for HIV-Neuroinjury Total Direct Costs \$757,660 University consortium for SBIR I/II grants with Panorama Research, Inc. (Mountain View, CA)
NIH/NIMH R01 MH58164 1997-2001	Inhibition of HIV Neurotoxicity in Transgenic Models Total Direct Costs (consortium) \$230,556 PI of Consortium Project (PI of R01, L. Mucke, UCSF)
American Parkinson's	Role of the Transcription Factor MEF2 in Neurogenesis

Disease Association 2000-2001	Total Direct Costs \$98,000 (Supervisor/Sponsor of Awardee: Stuart A. Lipton)
American Heart Assoc. Grant-in-Aid 0050208N 2000-2003	Erythropoietin Protects Neurons from Oxidative and Nitro- sative Stress via a Novel Jak-2/NFκB Signaling Cascade Total Direct Costs \$214,500 Principal Investigator
Amer. Fndn AIDS Res. 70522-28-RF 2000-2003	Chemokines and Macrophages in HIV Neuronal Apoptosis Total Direct Costs \$90,000 Supervisor/Sponsor of Scholar Award (Kaul): Stuart Lipton
Scios, Inc. 2003-2004	Role of p38 in Neuronal Apoptosis Total Direct Costs \$87,000 Principal Investigator
NIH/NIMH Clinical Study Contract 1996-2004	Neurological and Neuropsychological Assessment of the NMDA Antagonist Memantine for AIDS Dementia Total Direct Costs \$565,600 Co-Principal Investigator (with Brad Navia)
NIH/NINDS P01 NS32228 1994-2005	Neurologic AIDS Research Consortium (NARC) Total Direct Costs \$1,500,499 Program Director: David B. Clifford of Washington Univ.; Stuart A. Lipton, P.I. of Project #1, "Multi-Center Clinical Trials of Voltage-Dependent Calcium Channel Antagonist (Nimodipine) and NMDA Antagonist (Memantine) for the Neurological Manifestations of HIV-1."
NIH/NINDS R13 NS20032 1999-2005	The Neurobiology of Diseases Teaching Workshops Total Direct Costs \$315,275 (Principal Investigator/Director: Stuart Lipton; Other Investigators have included: Marc Dichter and Michael Selzer, University of Pennsylvania; Anne B. Young, Harvard Medical School; Jeff Noebels, Baylor; Howard L. Fields, UCSF.
NeuroMolecular Pharm., Inc. 2004-2006	Novel NitroMemantine NMDA Receptor Antagonists Total Direct Costs \$125,000 Principal Investigator
Ellison Medical Foundation Senior Scholar in Aging 2001-2006	Use of Blood Stem Cells to Regenerate Neurons via the Transcription Factor hMEF2C Total Direct Costs \$600,000 Principal Investigator
NIH/NINDS R01 NS41207 2001-2006	Chemokines and Macrophages in HIV Neuronal Apoptosis Total Direct Costs \$600,000 Principal Investigator

NIH/NINDS R01 NS43242 2002-2007	Erythropoietin-Induced Neuroprotection Total Direct Costs \$760,000 Principal Investigator
NIH/NINDS R01 NS044326 2003-2009	Caspase Cleavage of MEF2 Mediates Neuronal Apoptosis Total Direct Costs \$950,000 Principal Investigator
NIH/NINDS R01 NS046994 2004-2009	S-Nitrosylation of Matrix Metalloproteinases in AIDS Total Direct Costs \$925,000 Principal Investigator
NIH/NIGMS P01 AI055789 2004-2009	Virulence Factors and Cell Death Total Direct Costs (for Lipton Project 3) \$1,000,000 Project Leader (Principal Investigator, R. Liddington)
Department of Defense (Army) W81XWH-09-1-0229 2009-2011	MEF2C Transcription Factor in Autism Spectrum Disorder Total Direct Costs \$100,000 Co-Principal Investigator
NIH/NEI R01 EY09024 1991-2012	AIDS-Related Neurotoxicity & Novel NMDAR Antagonists Total Direct Costs \$1,889,687 Principal Investigator
Calif. Inst. Regen. Med. CIRM RC1-00125-1 2007-2012	MEF2C-Directed Neurogenesis from Human ES Cells Total Direct Costs \$1,600,000 Principal Investigator
Calif. Inst. Regen. Med. CIRM TRI-01245 2009-2012	Early Translational Disease Grant: Human ESCs for Alzheimer's Disease Total Direct Costs \$8,000,000 (~\$1MM to Lipton) Project 3 Leader (PI: Frank LaFerla, UC Irvine)
Calif. Inst. Regen. Med. CIRM DR2-05272 2011-2013	Parkinson's Disease Team Planning Grant Total Direct Costs \$100,000 Principal Investigator
NIH/NEI R01 EY05477 1984-2013	Rat Retinal Ganglion Cells: Ion Channels & Transmitters Total Direct Costs \$6,057,877 Principal Investigator
NIH/NINDS R01 NS047973 2004-2013	EPO Plus IGF-I in Neuroprotection from AIDS Total Direct Costs \$1,155,865 Principal Investigator
NIH/NINDS (16 Institutes) P30 NS057096 Blueprint Grant	La Jolla Interdisciplinary Neuroscience Center Cores Total Direct Costs \$6,750,000

2006-2013	Program Director/Principal Investigator
NIH/NIEHS P01 ES016738 2008-2013	La Jolla Parkinson's Disease Center Grant (NIH-designated CNS Institute) Total Direct Costs \$4,362,000 Program Director/Principal Investigator
Michael J. Fox Foundation 2010-2013	Quantitative Analysis of S-Nitrosylated Proteins in Parkinson's Disease Total Direct Costs \$208,250 Principal Investigator
ADAMAS Pharmaceuticals, Inc. 2007-2013	NitroMemantines to Combat Excitotoxicity Total Director Costs \$100,000 Principal Investigator
Michael J. Fox Foundation 2013-2014	Protein S-Nitrosylation as a Potential Biomarker for Parkinson's Disease Total Direct Costs \$125,000 Principal Investigator
NIH/NINDS R21 NS080799 2012-2015	Protection of Brain Injury from Cyanide by Carnosic Acid Total Direct Costs \$500,000 Principal Investigator
NIH/NINDS R21 NS083415 2013-2015	Transnasal Delivery of Chemokine Analogs in Mouse NeuroAIDS Models Total Direct Costs \$275,000 Principal Investigator
Department of Defense (Army) W81XWH-13-0053 2013-2015	Application of FDA-Approved Memantine and Newer Nitro-Memantine Derivatives To Treat Neurological Manifestations in Rodent Models of Tuberous Sclerosis Complex Total Direct Costs \$100,000 Principal Investigator
DARPA N66001-14-4010 2014-2015	Phage Targeting of Brains with Neurodegenerative Disease Total Direct Costs (Lipton) \$213,574 Co-Investigator (Principal Investigator: Erkki Ruoslahti)
Allergan, Inc. (Irvine, CA) 1996-2015	Memantine and Redox-activated Forms of Nitric Oxide for Ophthalmological Diseases including Glaucoma Total Direct Costs \$500,000 Principal Investigator
NIEHS/NIH R01 ES017462-03S1 2012-2016	Endotoxin Exposure and Risk of Parkinsonism: ViCTER Consortium Total Direct Costs \$160,000

	Proteomics Core under Stuart Lipton (PI: Harvey Checkoway, UC San Diego)
NIH/NIMH R21 MH102672 2014-2016	Phosphoproteomic Tools for Synaptic vs. Extrasynaptic NMDA Receptor Signaling Total Direct Costs \$275,000 Principal Investigators (Okamoto and Lipton)
Brain & Behavior Res. Fndn Distinguished Investigator Award 2014-2016	S-Nitrosylated Proteins in Autism Spectrum Disorders Total Direct Costs \$100,000 Principal Investigator
Allergan, Inc. 1998-2016	Redox Active Drugs for Retinal Neuroprotection Total Direct Costs \$280,000 Principal Investigator
Calif. Inst. Regen. Med. CIRM TR4-06788 2014-2017	Programming Human ESC-derived Neural Stem Cells with MEF2C for Transplantation in Stroke Total Direct Costs \$1,200,000 Principal Investigator
NIH/NICHD P01 HD29587 1992-2018	Cellular/Molecular Pathophysiology of Intellectual and Developmental Disabilities Total Direct Costs \$14,521,250 Principal Investigator of Program Project Grant
NIH/NINDS P30 NS076411 2011-2018	La Jolla Interdisciplinary Neuroscience Center Cores Total Direct Costs \$4,564,139 Program Director/Principal Investigator

Teaching Experience:

1974-1976	Neuroanatomy laboratory lectures and demonstrations, Harvard College course in Neurobiology (Biology 25)
1974	Organized and taught Seminars in Neurochemistry (Biology 265), axonal transport and trophic influences in the nervous system, Harvard University
1975	Organized and taught Seminars in Visual Photoreceptor Function (Biology 266), cyclic nucleotides and calcium in visual transduction an adaptation, Harvard University
1979-1980	Organized and delivered basic neurology lectures for medical students from the Chief Resident at Brigham & Women's and Beth Israel Hospitals
1980	Lecturer on seizure types and management at Medical Grand Rounds, Beth Israel Hospital
1980-1981	Lecturer for fall semester Neurobiology Course, Simmons College, Boston
1981-1999	Course instructor for Introduction to Clinical Medicine (Neurology section), Harvard Medical School, Beth Israel or Brigham & Women's Hospitals
1982	Lecturer on emergency treatment of seizures at Mortality & Morbidity

1982	Conference, Department of Medicine, Beth Israel Hospital Visiting lecturer, Department of Physiology, University of California, San Francisco, School of Medicine
1983-1999	Preceptor for laboratory projects by fifteen undergraduate students, ten M.D.-Ph.D. students, eleven Harvard Medical Students, one Dartmouth-Brown Medical Student, one Yale Medical Student, one UCSF Medical Student, five Neurology Residents, and one Neonatology Fellow. Thesis advisor for one M.D.-Ph.D. student in the Program in Biophysics, thesis co-advisor for one and advisor for three M.D.-Ph.D. students in the Program in Neuroscience, thesis advisor for one Ph.D. student in Biological Chemistry & Molecular Pharmacology, thesis advisor for one Ph.D. student in Microbiology and Molecular Genetics, Harvard Medical School. Preceptor for >30 postdoctoral research fellows in Neuroscience
1984-1988	Lecturer and co-organizer, Introduction to Research in Neuroscience (Neurobiology 318), Program in Neuroscience, Harvard Medical School
1984-1988	Lecturer on Single-Channel Ionic Currents, Introduction to Laboratory Research (Biophysics 300r), Program in Biophysics, Harvard University
1984-1988	Lecturer on Regeneration of Axonal Processes by Neurons in the Mammalian CNS (Nervous System Pathophysiology, HMS 709.0), Harvard Medical School
1984-1989	Lecturer on the Molecular Basis for Process Regeneration by Mammalian Central Neurons (Pathophysiology of Neurological Disease, HST 131J, 132) Program in Health Sciences and Technology, Harvard Medical School and Massachusetts Institute of Technology
1985-1999	Laboratory preceptor for Research in Biophysics, Single-Channel Recording in Mammalian Central Neurons (Biophysics 312), Program in Biophysics, Harvard University
1985-1988	Lecturer on the Neurophysiological Basis of Epilepsy, Neurobiology of Disease Course (Neurobiology 210), Program in Neuroscience, Harvard Medical School
1986-1988	Lecturer on the Pathophysiology of Epilepsy (Nervous System Pathophysiology, HMS 709.0), Harvard Medical School
1986-1999	Neurology discussant at Mortality & Morbidity Conferences and Firm Conferences, Department of Medicine, Beth Israel Hospital
1987	Tutor/Preceptor for HMS New Pathway Students in Neurology, Brigham and Women's Hospital
1988	Instructor (along with Drs. A. Aguayo, M. Selzer, D. Pleasure, and A. Tessler) for course in <i>CNS Regeneration</i> at the American Academy of Neurology Meeting in Cincinnati
1989	Lecturer on the Pathophysiology of Epilepsy (HST Introduction to the Nervous System) Program in Health Sciences and Technology, Harvard Medical School and Massachusetts Institute of Technology
1990	Instructor/Preceptor and case writer for tutorial course entitled Genetics 216: Tutorial Experiment in Cross-Discipline Graduate Education (Lou Kunkel, course director), Harvard Medical School
1990	Instructor for course in <i>Neurophysiology</i> at the American Academy of Neurology Meeting in Miami (Robert Barchi, course director)
1991	Instructor for course in <i>Cell and Molecular Neuroscience</i> the American

1991-1995	Academy of Neurology Meeting in Boston (Robert Barchi, course director) Instructor in course entitled <i>Intensive Review of Neurology</i> (annual course taught by members of the Harvard-Longwood Neurologic Training Program), Hyatt Regency Hotel, Cambridge, MA
1992	Instructor (along with Dr. L.I. Benowitz) for course on <i>Nerve Regeneration: Cellular and Molecular Aspects</i> (Neurobiology 300, Advanced Topics in Neurobiology), Program in Neuroscience, Harvard Medical School
1993	Instructor in course entitled <i>Brain Injury & Pediatric Cardiac Surgery</i> (annual review course taught by members of Children's Hospital and guest faculty)
1999	Course Instructor in Biophysics 300r, Lectures on Nitrosylation of Ion Channels to Regulate Physiological Activity, Harvard Biophysics Program
1999, 2001	Instructor, Neuroimmunology Course, Marine Biological Laboratories, Woods Hole, MA
2000-present	Outpatient clinical neurology preceptor for medical students, UCSD
2000-2008	Molecular pathology research lecture on HIV, NMDA receptors, and downstream pathways to neuronal injury and apoptosis, UCSD Molecular Pathology Graduate Program
2002-present	Lecturer, Molecular and Cellular Neurobiology, Neurosciences 268, UCSD
2004-present	Lecturer, PATH 225/BIOM 277, Seminars in Molecular Pathology, UCSD
2004-present	Neurosciences “Boot Camp” lecturer for new graduate students, Program in Neurosciences, UC San Diego School of Medicine
2008-present	Lecturer, Pharmacology, Drugs and Disease, PHARM/BIOM 255, UCSD
2010	Lecturer, Molecular Translational Medicine Course, The Scripps Research Institute
2012-2015	Lecturer, Molecules to Systems Course, Sanford-Burnham-Prebys Medical Discovery Institute
2015	Chief Lecturer on Neurodegenerative Disorders in Neurobiology of Disease “Boot Camp” Course for new graduate students, Program in Neurosciences, UC San Diego School of Medicine
2018	Lecturer, “Treatments in Alzheimer’s Disease,” UCSD Graduate School Course NEUROSICENCE/BMS 270A

Students Trained:

David L. Tauck, Ph.D. -- (Postdoctoral Fellow, 1985-1987).

Presently, Professor (with tenure) of Animal Physiology and Biology (Neurobiology), University of Santa Clara (California).

Dana Leifer, M.D. -- (Harvard Medical Student research project 1983-1984; Postdoctoral Fellow (part-time), 1987-1989, during a Neurology Residency at Massachusetts General Hospital; then, a full-time laboratory member as an Instructor in Neurology and Assistant Professor of Neurology, 1989-1993).

Presently, Associate Professor of Neurology and Director, Stroke and Neuroscience Step-Down Unit, Cornell University Medical College, New York, NY.

Evan B. Dreyer, M.D., Ph.D. -- (Postdoctoral fellow, 1988-1990; Instructor in Ophthalmology, 1990-1992; Assistant Professor of Ophthalmology, Harvard Medical School and Director of Glaucoma Service and Research Laboratory, Mass. Eye and Ear Infirmary, 1993-1997)
Presently, Clinical Ophthalmologist, Pittsburgh, PA.

Andreas Karschin, Ph.D. -- (Graduate Student, 1987-1988; collaborative project with the Max-Planck-Institut für Hirnforschung [Brain Research], Frankfurt, Germany).
Presently, Professor and Chairman, Institute of Physiology, Julius-Maximilians-University, Würzburg.

Elias Aizenman, Ph.D. — (Postdoctoral Fellow, 1985-1987; Instructor, 1987-1988; Assistant Professor of Neuroscience, Children's Hospital & Harvard Medical School, 1988-1989).
Presently, Professor of Neurobiology (Tenured), Univ. Pittsburgh, School of Medicine.

Nikolaus Sucher, Dr. med. -- (Postdoctoral fellow, 1988-1991; Assistant Professor of Neurology, Children's Hospital and Harvard Medical School, 1991-1996; Visiting Professor on sabbatical, 2003-2004).
Presently, Professor of Non-Traditional Medicine, Western University, Sydney, Australia.

Matthew P. Frosch, M.D., Ph.D. -- (M.D.-Ph.D. Student, Harvard Medical School, 1984-1987).
Presently, Associate Professor of Pathology, Massachusetts General Hospital and Harvard Medical School.

Peter Kaiser -- (Undergraduate and medical student research for Harvard College Honors Thesis and Harvard Medical School Honors Thesis, 1987-1992).
Presently, Professor of Ophthalmology, Cleveland Clinic.

Vincent H.S. Chen, M.D., Ph.D. -- (Graduate Student in Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, 1988-1992; Postdoctoral fellow in Neurology, Children's Hospital and Harvard Medical School, with a collaborative arrangement in the Molecular Neurobiology Laboratory at the Salk Institute under Prof. Stephen F. Heinemann, 1993-1994); Instructor in Neuroscience, Harvard Medical School and Medical Resident at Brigham and Women's Hospital, Boston, 1996-1999).
Presently, Associate Professor, Degenerative Disease Program, Sanford-Burnham-Prebys Medical Discovery Institute, and Assistant Cardiologist, UC San Diego.

Dan Levy -- (Research Technician, 1988-1989).
Presently, M.D.-Ph.D. Student in Medical Scientist Training Program (MSTP) at the Univ. of Pennsylvania School of Medicine.

Paul G. Harcourt, M.D. -- (Research Technician, 1983-1985).
Presently, Physician, Lowell General Hospital, Massachusetts.

Mary Hunt -- (Research Technician, 1984-1985).
Presently, Medical Student at the University of Maine.

Micheal Phillips -- (Research Technician, 1985-1986).
Presently, Medical Student at Columbia University (College of Physicians and Surgeons).

Jin S. Hahn, M.D. -- (Postdoctoral Fellow 1985-1987).

Presently, Professor of Pediatrics and Neurology, Stanford Medical School.

Nina Tabachnik-Schor, M.D., Ph.D. -- (Clinical Fellow, Harvard Medical School, 1986).

Presently, Chief of the Division of Child Neurology, Children's Hospital of Pittsburgh.

Leonard A. Levin, M.D., Ph.D. -- (M.D., Ph.D. Student, Harvard Medical School, 1984-1988).

Presently, Professor of Neuro-ophthalmology, University of Wisconsin, Madison;

Professor and Chair of Ophthalmology, University of Montreal School of Medicine.

Julie Lee -- (Research Technician, 1986-1987).

Presently, Patent Attorney at Frommer, Lawrence, & Haug, New York City.

Beth Cahoon -- (Research Technician, 1987-1988).

Presently, graduate student at the University of Georgia.

Jeffrey Offermann -- (Research Technician, 1987-1990).

Presently, Senior Technician, Clinical Virology Laboratory, Children's Hospital-Boston.

Vinita Sehgal -- (Undergraduate research for Harvard College, 1984-1985, followed by medical school at Yale).

Presently, Assistant Clinical Professor of Medicine, Icahn School of Medicine at Mount Sinai, New York.

Ray Rosenbaum -- (Undergraduate research for Harvard College, 1984-1985).

Presently, medical student at Tufts Medical School.

Kim Weber -- (Research Technician, 1986-1987).

Presently, sales engineer for a computer graphics company.

Larry Baum -- (Undergraduate research for Harvard College, 1985-1986; then, Graduate Student in Neuroscience at University of California, San Diego).

Presently, Associate Adjunct Professor, The Chinese University of Hong Kong.

Adam Kibel -- (Undergraduate research for Cornell University, 1985-1986).

Presently, Professor of Surgery, Harvard Medical School and Chief of Urologic Surgery, Brigham and Women's Hospital, Boston.

Gasser Hathout -- (Undergraduate research for Harvard College, 1983-1984; then Medical Student at Yale University School of Medicine)

Presently, Professor Radiology, UCLA and Chief of Neuroradiology, Olive View-UCLA.

Eric Friedman -- (Dartmouth-Brown Medical Student research project, 1987-1988).

Presently, Assistant Clinical Professor of Ophthalmology, University of Medicine and Dentistry of New Jersey/Robert Wood Johnson Medical School.

Rafael Campo -- (Harvard Medical Student research project, 1988-1991).

Presently, Associate Professor of Medicine, Harvard Medical School.

Jorge Arroyo -- (Yale Medical Student honors research project, 1988-1991)

Presently, Associate Professor of Ophthalmology, Harvard Medical School.

Paul Sforza -- (Undergraduate research for Harvard College Honors Thesis, 1988-1989).

Presently, Ophthalmologist, New York Eye and Ear Infirmary, Mount Sinai, New York.

William David, M.D., Ph.D. -- (Research during clinical Neurology fellowship, 1988-1989).

Presently, Associate Professor of Neurology, Massachusetts General Hospital and Harvard Medical School.

Andrew Budson -- (Harvard M.D. candidate, laboratory rotation 1989-1990).

Presently, Professor of Neurology, Boston University School of Medicine and Lecturer in Neurology, Harvard Medical School.

Paul Jackson -- (Harvard M.D.-Ph.D. candidate, laboratory rotation 1989-1990).

Presently, Neurosurgeon, Palo Alto Medical Foundation and Deputy Chief of Neurosurgery, Stanford Hospital.

Toni P.O. Cheng, Ph.D. -- (Postdoctoral fellow, 1988-1989).

Presently, Assistant Professor of Anatomy and Neurobiology, State University of New York, Brooklyn, NY.

Michael Marciello, M.D. -- (Research Technician, 1989-1990).

Presently, Physician, Department of Physical Medicine and Rehabilitation, Brigham and Women's Faulkner Hospital, Dedham, Massachusetts.

Mark Bieda -- (Undergraduate research for Harvard College Honors Thesis, 1989-1990).

Presently, Neuroscience Graduate Student, University of Hawaii.

Linda Wong, Ph.D. -- (Postdoctoral fellow, 1989-1991).

Presently, in the Dept. of Pharmacy, Georgetown University, Washington, D.C.

Kuni Uchida, M.D., Ph.D. -- (Postdoctoral fellow, 1990-1992).

Presently, staff position at Max-Planck-Institut für Psychiatrie, Neurophysiology Laboratory, Martinsried, Germany, followed by Staff Scientist at Riken Institute, Tokyo, Japan.

Seizheng Z. Lei, M.D., Ph.D. -- (Postdoctoral fellow, 1990-1991; Instructor in Neurology, 1992-1993).

Presently, Anesthesiology House Officer at Massachusetts General Hospital.

Maureen Oyola -- (Research Technician, 1990-1991; Student Research Project 1992-1993).

Presently, Graduate, Harvard School of Dental Medicine.

Kelly Rothe -- (Research Technician, 1990-1992).

Presently, Hospice Physician in North Carolina.

Kristen Upchurch -- (Research Technician, 1990-1991, then Harvard Medical Student).
Presently, Neurologist, Boston VA Medical Center.

John Heng -- (Graduate Student in Department of Microbiology and Molecular Genetics, Harvard Medical School, 1990-1993).
Presently, Management Consultant, Chicago Area.

Paul Lucek -- (Undergraduate research for Harvard College Honors Thesis, 1989-1991).
Presently, following M.D.-Ph.D. studies in the Medical Scientist Training Program (MSTP) at Columbia University, became Director of Research, Senior Portfolio Manager, and a Member of the Hedge Fund Investment Committee at SSARIS Advisors.

James W. Pellegrini, M.D. -- (Neonatology fellow, Postdoctoral Research fellow, 1990-1992).
Presently, Assistant Prof. of Neonatology, University of Massachusetts Medical Center.

Dongxian Zhang, Ph.D. -- (Postdoctoral fellow, 1991-1993; Instructor in Neurology, 1993-1999).
Presently, Associate Professor of Neuroscience, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA (recently deceased).

Jiang Houg Zhou -- (Research Technician, 1991-1992).
Presently, Graduate Student at Northwestern University.

Sanjay Aggarwal -- (Harvard M.D.-Ph.D. Candidate -- research project, 1991-1992).
Presently, Pediatrician, Johns Hopkins Emergency Medicine, Baltimore, MD

April E. Abele, M.S., J.D. -- (Research Technician, 1991-1992).
Presently, Patent Attorney for scientific applications, Goodwin Proctor, San Francisco, CA.

Jonathan Hartman -- (UCSF Medical Student -- research project, 1991-1992).
Presently, Neuroradiologist, Sacramento Medical Center, Sacramento, CA

Zhuo-Hua Pan, Ph.D. -- (Instructor in Neurology and full-time laboratory member, 1991-1998; Assistant Professor of Neurosurgery (Surgery), Brigham and Women's Hospital, Harvard Medical School, 1998-1999).
Presently, Professor of Physiology (with tenure), Wayne State University, Detroit, MI.

Madhu Gorla -- (Boston University Medical Student -- research project, 1991-1992).

Ravi Shankar, Ph.D. -- (Postdoctoral fellow, 1991-1993).
Presently, Postdoctoral Fellow in Ophthalmology at Massachusetts Eye and Ear Infirmary, Boston.

Luis Politi, Ph.D. -- (Postdoctoral fellow, 1991-1993).
Presently, Professor of Biology, University del Sur, Bahía Blanca, Argentina.

Dimitri Krainc, M.D., Ph.D. -- (Postdoctoral fellow, 1991-1993; Instructor in Neurology, 1993-1996).

Presently, Professor and Chair of Neurology, Northwestern University School of Medicine, Chicago, IL.

David Hellman -- (Harvard Medical Student, Health Science & Technology Program -- research project, 1992-1993).

Presently, Surgical Resident, Massachusetts General Hospital, Boston.

Catherine J. Liu, M.D. -- (Postdoctoral fellow, 1992-1993).

Presently, Staff Ophthalmologist, Veterans General Hospital, University of Taiwan Medical School.

Kara Moscaritolo -- (Research Technician, 1992-1993).

Presently, Research Technician in Ophthalmology at Massachusetts Eye and Ear Infirmary Boston.

Keith Manchester -- (Harvard Medical Student -- research project, 1992-1993).

Presently, Medical Consultant with QVT Capital Group in New York City.

Marc Awobuluyi, M.D., Ph.D. -- (Harvard M.D.-Ph.D. Candidate (MSTP) – doctoral thesis, 1992-1997; postdoctoral fellow, 1999-2001).

Presently, Assistant Professor of Neuroradiology, UCSF.

David Deitcher, Ph.D. -- (Postdoctoral fellow, 1992-1993).

Presently, Associate Professor of Neurobiology and Director of Undergraduate Studies, Cornell University, Ithaca, NY.

Sarah Storm -- (Research Technician, 1992-1993).

Presently, University of Buffalo Medical Student, Buffalo, NY.

Yun-Beom Choi -- (Research Technician, 1992-1993; Harvard M.D.-Ph.D. Candidate -- thesis project, 1994-1999).

Presently, Medical Intern, Massachusetts General Hospital, Boston, MA, followed by Neurology Residency, Columbia-Presbyterian Hospital, NY City, and Research Fellowship with Dr. Eric Kandel.

Carlin Chi -- (Research Technician, 1992-1994).

Presently, Chief Resident, Brigham and Women's Hospital/Harvard Medical School, then Associate Physician, University of California, San Francisco.

Edward Susanto -- (Undergraduate research for Harvard College, summer of 1993).

Erin Coulter -- (Undergraduate research for Colgate University, summer of 1993).

Presently, Graduate Student in Neuroscience at the University of Washington, Seattle

Neal Sondheimer -- (Undergraduate thesis research for Harvard College, 1993-1994; Research Technician, 1994-1995).

Presently, M.D.-Ph.D. (MSTP) Student at the University of Chicago.

Kyun Park -- (Undergraduate research project, 1993-1995).
Presently, Law Student at New York University.

Bangalore Shivakumar, Ph.D. (Postdoctoral fellow, 1993-1994).

Yanming Wang, M.S., M.D. (Postdoctoral fellow, 1993-1997).
Presently, Research Scientist at Millennium Pharmaceuticals, Cambridge, MA.

Jeremy Dittman -- (Harvard M.D.-Ph.D. Candidate (MSTP) -- laboratory rotation, 1993).
Presently, Assistant Professor of Biochemistry, Weill Cornell Medical College, NYC.

Posina Venkata Rayudu-- (Boston Univ. Graduate Student in Neuroscience; laboratory research, 1993-1999).
Presently, Staff Scientist, Salk Institute, La Jolla, CA.

Maria Carles, M.S. -- (Senior Research Technician, 1993-1995).
Presently, Molecular Biology Graduate Student at Northeastern University.

Shengyou Zeng, Ph.D. -- (Postdoctoral fellow, 1993-1995).
Presently, Postdoctoral fellow at Massachusetts General Hospital.

Wael Asaad -- (Research Technician, 1993-1994).
Presently, after obtaining a Ph.D. at MIT, M.D. at Yale and neurosurgical training at Massachusetts General Hospital, Harvard, currently an Assistant Professor of Neurosurgery, Brown University, Providence, RI.

Cynthia Leclerc -- (Research Technician, 1993-1995).
Presently, Molecular Biology Graduate Program at Yale University

Michael Yeh -- (Harvard M.D. Candidate -- laboratory rotation, 1993-1996).
Presently, Assistant Professor of Endocrine Surgery, UCLA.

Amy Brideau -- (Research Technician, 1994-1995).
Presently, Molecular Biology Graduate Program at Princeton University, then Senior Director Neuroscience Research, Allergan, Inc., Irvine, CA.

Emanuela Bonfoco, M.D. -- (Visiting postdoctoral fellow, collaborative project with the Karolinska Institute, Stockholm, Sweden, 1994-1995).
Presently, Research Associate, Scripps Research Institute, La Jolla, CA.

Won-Ki Kim, Ph.D. -- (Postdoctoral fellow, 1994-1995).
Presently, Professor and Head of Neuroscience, Korea University, Seoul, Korea

Michelle Wu -- (Research Technician, 1994-1995).
Presently, Research Technician at Brigham and Women's Hospital.

Xishan (Sam) Zhang, M.S. -- (Research Technician, 1994-1997).
Presently, Research Technician at Brigham and Women's Hospital.

Shanta Messerli (nee Kumar) -- (Research Technician, 1994-1995).

Presently, Assistant Research Scientist, Marine Biological Laboratory, Woods Hole, MA.

Shu-ichi Okamoto, M.D., Ph.D. -- (Postdoctoral fellow, 1994-2000; Research Assistant Professor, Sanford Burnham Prebys Medical Discovery Institute, 2000-2015; Research Associate Professor, Scintillon Institute, San Diego, 2015-2016).

Presently, Research Scientist, Takeda Pharmaceutical Co., Inc., Tokyo.

Hiroyuki Meguro, M.D., Ph.D. --(Postdoctoral fellow, 1995-1996).

Presently, Research Associate, Akita University, Japan.

Joe Yuan -- (Harvard Undergraduate student research project, 1994-1996).

Presently, Molecular Biology graduate student at Johns Hopkins Medical School.

Ishir Bhan -- (Harvard Undergraduate student research project, 1994-1996).

Presently, Instructor in Medicine at Massachusetts General Hospital, Boston.

Wing Cheung -- (Harvard Medical School HST student research on HHMI fellowship, 1995-1999).

Presently, Head of Business Operations, Biogen Idec Innovation Incubator, following Surgical Residency at Massachusetts General Hospital, Boston

Danielle D'Emilia Decourcey -- (Research Technician, 1995-1998).

Presently, Associate Medical Director, Medicine Intensive Care Unit Boston Children's Hospital, Harvard Medical School.

Katerina Sherman -- (Research Technician, 1995-1998).

Presently, Graduate Student in Human Genetics, Brandeis University.

Prajnan Das -- (Harvard Medical School HST student research project, 1996-1999).

Presently, Associate Professor, Department of Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX.

Anna Greka -- (Harvard Undergraduate student thesis, 1996-1998; Harvard MD-PhD Program).

Presently, Assistant Professor of Medicine, Massachusetts General Hospital and Harvard Medical School.

Johanna Joyce Koolen, M.S. (Senior Research Technician, 1996-1997).

Presently, performing research in Lyon, France.

Lalitha Tenneti, Ph.D. -- (Postdoctoral Fellow, 1996-1999).

Presently, Staff Computer Analyst, State Street Bank, Boston, MA

Song-Kyu Park, Ph.D. -- (Postdoctoral Fellow, 1996-1998).

Presently, Postdoctoral Fellow, Beth Israel Deaconess Medical Center, Boston.

Elena Tsai -- (Harvard Undergraduate Thesis Project, 1996-2000).

Thomas Rothe, Ph.D. -- (Postdoctoral Fellow, 1996-1997).
Presently, Staff Scientist, Humboldt University, Berlin, Germany.

Timothy Lishak – (Research Technician, 1998-1999).
Presently University of Vermont Medical School student.

Marcus Kaul, Ph.D. -- (Postdoctoral fellow, 1997-2001; Research Assistant Professor, 2001-2008).
Presently, Associate Professor, Biomedical Sciences, University of California, Riverside, Riverside, CA.

Murat Digicaylioglu, M.D., Ph.D. -- (Postdoctoral fellow at Harvard, 1997-2000; Research Assistant Professor at the Burnham Institute for Medical Research and UCSD, 2000-2006).
Presently, Research Professor, Scintillon Institute, San Diego, CA, and Senior Staff Fellow, The Scripps Research Institute, La Jolla, CA

Dean Le, M.D., Ph.D. -- (Postdoctoral fellow, 1997-1999; Instructor in Neurology (junior faculty) at Massachusetts General Hospital and Harvard Medical School, Boston).
Presently, Clinical Neurologist, Orange County, CA.

Gwenn Garden, M.D., Ph.D. -- (Postdoctoral fellow, 1997-2000 at Harvard and the Burnham Institute for Medical Research).
Presently, Professor and Vice Chair of Neurology, University of Washington, Seattle, Washington.

Samantha Budd, Ph.D. -- (Postdoctoral fellow, 1997-2000).
Presently, Vice President, Alzheimer's Discovery & Development, Biogen, Inc. Cambridge, MA.

Linda Chen -- (Harvard Medical School HST student research project, 1997-1998).

Masashi Kikuchi, M.D., Ph.D. -- (Postdoctoral fellow, 1998-2000).
Presently, junior faculty member, Department of Ophthalmology, Kyoto University, Japan.

Frank Acosta – (Harvard Medical School Student research project, 1998-1999).

Stephen Kerr, Ph.D. -- (Postdoctoral fellow, 1999-2000).
Presently, postdoctoral fellow in Sydney, Australia.

Justin Ortiz -- (Harvard Medical School Student research project, 1999).

Jayme Dowdall -- (Boston University Undergraduate Research Project, 1999).

Lara Jirmanus -- (Harvard Undergraduate Research Project, 1999).

Sophia Chiu -- (Harvard Undergraduate Research Project, 1999).

Satjiv Kohli -- (Research Technician, 1999-2000).

Presently, Vanderbilt Medical School student.

Jed (Jon) Chatterton, Ph.D. -- (Postdoctoral fellow, 1999-2004).
Presently, Senior Staff Scientist at Allergan, Inc.

Jian-kun (Janice) Cui, M.S. -- (Senior microsurgery fellow and Laboratory Manager, 1999-)

Zecong Gu, M.D., Ph.D. -- (Postdoctoral fellow, 1999-2004; Staff Scientist, 2004-2006).
Presently, Assistant Professor, University of Missouri School of Medicine, Columbia, MO.

Thomas Gillessen, M.D. – (Visiting Professor, 2000).
Presently, Assistant Professor, University of Göttingen, Germany.

Gary Tong, M.D., Ph.D. – (Research Assistant Professor, 2000-2006).
Presently, US Therapeutic Area Head of Dementia, Lundbeck Pharmaceutical Co.

Prachee Avasthi – (Visiting Graduate Student, 2000).
Presently, Graduate Student in Neuroscience at the University of Utah.

Shin-ichi Manabe, M.D., Ph.D. -- (Postdoctoral fellow, 2000-2004).
Presently, Assistant Professor of Ophthalmology, Tenri Yoroze Hospital, Japan.

Chung Ju -- (Research Technician, 2000-2001).
Presently, Neurosciences Ph.D. student at Korea University, Seoul.

Sanas Sadrieh -- (Research Technician, 2000-2001).
Presently, Family Practitioner/Physician, Sharp Health Care, San Diego, CA.

Ella Bossy-Wetzel, Ph.D. -- (Staff Scientist, 2000-2002).
Presently, Associate Professor, University of Central Florida.

Hiroto Takahashi, Ph.D. -- (Postdoctoral fellow, 2000-2005).
Presently, Staff Electrophysiologist, Medtronics, Inc.

Chris Brechtel -- (UCSD M.D.-Ph.D. Graduate Student thesis research, 2002-2009).
Presently, on medical leave of absence.

Kelley Chuang -- (UCSD Graduate Student research, 2000-2002).
Presently, medical student at New York Medical College.

James Wang, Ph.D. -- (Senior Postdoctoral fellow, 2000-2001).
Presently, Staff Scientist, University of California, Irvine.

Wilson Lee -- (UCSD Undergraduate Student project, 2000-2002; Research Technician, 2002-2004).
Presently, Graduate Student, New York Medical College

Zhen Li -- (UCSD Graduate Student, 2000-2008).
Presently, Postdoctoral Fellow, UCLA.

Maria Talantova, M.D., Ph.D. -- (Postdoctoral fellow, 2000-2008; Senior Staff Scientist, 2009-).

Vaninder Chhabra -- (UCSD Medical Student project, 2000-2002).

Presently, Neurosurgical Resident, Emory University, Atlanta.

Yeonsook Shin-- (Visiting Graduate Student from Kanazawa University, Japan, 2001-2005).

Presently, Postdoctoral Fellow, NYU.

Xiao-Tao Jin, Ph.D. -- (Postdoctoral fellow, 2001-2002).

Presently, Instructor at Yerkes National Primate Center, Emory University, Atlanta.

Thomas Goetz, M.D., Ph.D. -- (Postdoctoral fellow, 2001-2003).

Presently, Staff Neurologist and Neuroscientist, University of Basel, Switzerland.

Lauren Fletcher -- (Research Technician, 2001-2005).

Presently, Senior Research Technician, Johnson & Johnson, La Jolla, CA.

Katie Medders -- (Research Technician, 2001-2005).

Presently, Graduate Student in Molecular Pathology, UCSD School of Medicine.

Jin Yang -- (Research Technician, 2001-2005).

Presently, Senior Research Technician at The Scripps Research Institute, La Jolla.

Anne Harrop -- (Research Technician, 2001-2005).

Presently, Senior Technician, Vertex Pharmaceuticals.

Ruth Chen-- (Research Technician, 2001-present).

Debbie Sith -- (Research Technician, 2001-2003).

Lida Sionit -- (Research Technician, 2001-2003).

Emily Mathews -- (UCSD M.D.-Ph.D./MSTP Graduate Student rotation, 2001).

Marion Schoelzke -- (Visiting Graduate Student from the University of Heidelberg, 2001-2002).

Dongdong Yao, M.D., Ph.D. -- (Postdoctoral fellow, 2001-2006).

Presently, Anesthesia Clinical Residency, Brigham and Women's Hospital, Boston.

Mehrdad Alirezaei, Ph.D. -- (Postdoctoral fellow, 2002-2005).

Presently, Senior Postdoctoral Fellow, The Scripps Research Institute, La Jolla.

Scott McKercher, Ph.D. -- (Staff Scientist, 2002-2008; Laboratory Manager/Senior Scientist, 2008-present).

Bernd Moosmann, Ph.D. -- (Postdoctoral fellow, 2002-2004).

Presently, Assistant Professor, University of Mainz, Germany

Takashi Uehara, Ph.D. -- (Postdoctoral fellow, 2002-2004).
Presently, Associate Professor, Osaka University, Japan.

Zhongqing Shi, Ph.D. -- (Postdoctoral fellow, 2002-2009).
Presently, Postdoctoral fellow, UCSD.

Lutz Paessens -- (Visiting Graduate Student from Louis Pasteur University, Strasbourg, 2002-2003).

Eleobardo Castro-Luque -- UCSD Graduate Student rotation, 2002).

Dhakshin Ramanathan -- (UCSD MD-PhD Student rotation, 2002).

Mark Barsoum, Ph.D. -- (UCSD Graduate Student, Ph.D. thesis research, 2002-2004).
Presently, Director of the HHMI Mathematics & Science Center, Assistant Professor of Biology, Davidson College, North Carolina.

Claire Gibson -- (Research Technician, 2002-2003).

Brendan Eckelman -- (Research Technician, 2002-2003).
Presently, Graduate Student in Molecular Pathology at UCSD.

Shing Fai Chan -- (Graduate Student in Molecular Pathology, UCSD, 2002-2009; Postdoctoral Fellow, Sanford-Burnham Medical Research Institute, 2009-2015).
Presently, Senior Scientist, Janssen Pharmaceuticals, Inc., La Jolla, CA.

Ruth Chen -- (Research Technician, 2001-2004).

Maya Desai -- (Research Technician, 2003-2005).
Presently, Graduate Student in Neuroscience, University of Rochester.

Won-Kyu (Daniel) Ju, Ph.D. -- (Postdoctoral Fellow, 2003-2005).
Presently, Associate Professor, Dept. of Ophthalmology, UC San Diego, La Jolla.

Ricky Maung -- (Research Technician, 2003-2008).
Presently, Senior Research Technician, Infectious and Inflammatory Disease Center, Sanford-Burnham-Prebys Medical Discovery Institute.

Saya Nakagomi, Ph.D. -- (Postdoctoral Fellow, 2003-2006).
Presently, Research Administrator, Osaka University, Japan.

Tomohiro Nakamura, Ph.D. -- (Postdoctoral fellow, 2003-2009; Staff Scientist, 2009-2010).
Presently, Research Associate Professor, The Scintillon Institute, San Diego.

Bradley States, Ph.D. -- (Postdoctoral Fellow, 2003-2006).
Presently, Staff Scientist, Vertex Pharmaceuticals, Inc., La Jolla, CA.

Takumi Satoh, M.D., Ph.D. -- (Visiting Professor on sabbatical with multiple visits, 2003-2014).
Presently, Professor Tokyo University of Technology, Japan

Sonia Timberlake -- (Research Technician, 2003-2004).
Presently, Graduate Student, MIT.

Akira Wada -- (Research Technician, 2004-2006).
Presently, Medical Student, University of Illinois, Chicago, IL.

Seung-Je Cho, Ph.D. -- (Postdoctoral Fellow, 2004-2006).
Presently, Postdoctoral Fellow, The Scripps Research Institute, La Jolla, CA

Jonathan Radford, Ph.D. -- (Postdoctoral Fellow, 2004-2008).
Presently, Medical Student, University of Warwick, UK.

Toru Kurakawa, M.D., Ph.D. -- (Postdoctoral Fellow, 2004-2005).
Presently, Postdoctoral Fellow, The Scripps Research Institute, La Jolla, CA.

Rosella Russo -- (Visiting Graduate Student from Calabria, Italy, 2004-2006).
Presently, Assistant Professor, University of Calabria, Cantanzarro, Italy

John Lin, Ph.D. -- (Postdoctoral Fellow, 2004-2006).
Presently, Lecturer in Biochemistry and Molecular Biology, University of Tasmania School of Medicine, Australia.

Yitao Liu, Ph.D. -- (Postdoctoral Fellow, 2005-2006).
Presently, Postdoctoral Fellow, University of British Columbia, Vancouver, Canada.

Wagner Zago, Ph.D. -- (Postdoctoral Fellow, 2005-2006).
Presently, Head of Research, Prothena, Inc., South San Francisco, CA

Eun-Gyung Cho, Ph.D. -- (Postdoctoral Fellow, 2005-2011).
Presently, Staff Scientist in Korean Biotech company, Seoul, Korea.

Masaaki Seki, M.D., Ph.D. -- (Postdoctoral Fellow, 2005-2008).
Presently, Assistant Professor of Ophthalmology, Nigata, Japan

Janguo Fang, Ph.D. -- (Postdoctoral Fellow, 2005-2007)
Presently, Professor, School of Chemistry and Chemical Engineering, Lanzhou University, Lanzhou, Gansu China.

Dong-Hyung Cho, Ph.D. -- (Postdoctoral Fellow, 2005-2007).
Currently, Assistant Professor, Kyung Hee University, Korea.

Tina Lozano, Ph.D. -- (Postdoctoral Fellow, 2006-2008).
Presently, Corporate Scientist.

Hao Li, Ph.D. -- (Postdoctoral Fellow, 2006-2009).

Presently, Patent Attorney, Stockholm, Sweden.

Jill Dombraukas, Ph.D., -- (Postdoctoral Fellow, 2006-2008).

Presently, Senior Scientist, GenWay Biotech, Inc., San Diego, CA.

Yeon-Joo Kang, Ph.D., -- (Postdoctoral Fellow, 2006- 2009).

Presently, Staff Scientist, Vertex Pharmaceuticals, Inc., La Jolla, CA.

Hyojun Lee, Ph.D. -- (Postdoctoral Fellow, 2006-2009).

Presently, Patent Attorney in Seoul, Korea.

Yeun Su Choo, Ph.D. -- (Postdoctoral Fellow, 2006-2007).

Presently, Postdoctoral Fellow, Cancer Center, Sanford-Burnham-Prebys Medical Discovery Institute.

Joshua Kamins -- (Research Technician, 2006-2008).

Presently, Neurology Resident, UCLA.

Jeff Zaremba – (Research Technician, 2007-2011).

Presently, Graduate Student, Columbia University, New York City.

Zhiguo Nie, Ph.D. -- (Staff Scientist, 2008-2010).

Presently, Staff Scientist, UCSD.

Walid Soussou, Ph.D. – (Postdoctoral Fellow, 2007-2008).

Presently, Research Scientist, Quantum Applied Science and Research, La Jolla, CA.

Traci Fang Newmeyer -- (Research Technician, 2007-2015).

Presently, Research Associate, Sanford-Burnham-Prebys Medical Discovery Institute.

Peng Xia, Ph.D., -- (Postdoctoral Fellow, 2007- 2012).

Presently, Chief Scientist in Chinese Biotech company, Shanghai, China

Wong Mo Yang, M.D., Ph.D. -- (Postdoctoral Fellow, 2007-2008).

Presently, Assistant Professor, Kyung Hee University, Korea.

Juan Piña-Crespo, Ph.D. -- (Staff Scientist, 2008-2015).

Presently, Senior Staff Scientist, Sanford-Burnham-Prebys Medical Discovery Institute.

Weiping Tan – (Research Technician, 2008-).

Emily Holland– (Research Technician, 2008-2016).

Presently, Jr. College Teacher, La Mesa, California.

Jing Qu, Ph.D. -- (Postdoctoral Fellow, 2008-2010).

Presently, Staff Scientist, Salk Institute for Biological Studies.

Ellie Yang-Hee Kim, Ph.D. – (Professor on Sabbatical 2010-2011).

- Presently, Associate Professor, Dept. of Molecular Biology, Sejong University, Korea.
- Dongho Geum, Ph.D. – (Professor on Sabbatical 2011-2012).
Presently, Professor, Korea University College of Medicine, Seoul, Korea.
- Min-Sik Choi, Ph.D. – (Postdoctoral Fellow, 2009-2010).
Presently, Staff Scientist in Korean Biotech, Seoul, Korea.
- Sugato Banerjee, Ph.D. – (Postdoctoral Fellow, 2009-2010).
Presently, Assistant Professor, Department of Pharmaceutical Sciences and Technology,
Birsa Institute of Technology (BIT) Mesra, Ranchi Jharkhand, India
- Tayebeh Rezaie, Ph.D. -- (Staff Scientist, 2009-2013).
Presently, NIH Staff, NLM, Information Engineering Branch, Bethesda, MD
- Li Yang, Ph.D. – Senior Research Technician, 2009-2010).
Presently, Senior Technician, University of Texas, Austin.
- Carmen Sunico, Ph.D. – (Postdoctoral Fellow, 2009-2016).
Presently, Staff Scientist, La Jolla In Vitro Fertilization Clinic, La Jolla, CA
- Sara Sanz-Blasco, Ph.D. – (Postdoctoral Fellow, 2009-2013).
Presently, Staff Scientist, National Scientific and Technical Research Council, ININFA
Instituto de Investigaciones Farmacológicas, University of Buenos Aires, Argentina.
- Gang Cao, Ph.D. – (Postdoctoral Fellow, 2009-2010).
Presently, Professor of Neuroscience and Molecular Virology, Huazhong Agricultural
University, Wuhan, China.
- Sam Sances – (CIRM Stem Cell Intern from San Diego State University, 2010-2011; Research
Technician, 2011-2012).
Presently, Graduate Student, UCLA/Cedars Sinai Medical Center, Los Angeles, California.
- Mohd. Waseem Akhtar, Ph.D. – (Postdoctoral Fellow, 2010-2015).
Presently, Staff Scientist, Sanford Burnham Prebys Medical Discovery Institute.
- Sofiyan Saleem, Ph.D. – (Staff Scientist, 2010-2015).
Presently, Staff Scientist, Sanford-Burnham-Prebys Medical Discovery Institute.
- Xiaofei Zhang, M.D., Ph.D. – (Postdoctoral Fellow, 2010-2013).
Presently, Pathology Resident, Mt. Sinai School of Medicine, NY.
- Elena Molokanova, Ph.D. – (Postdoctoral Fellow, 2011-2013).
Presently, Founding Scientist, NTBS, Encinitas, CA.
- Scott Ryan, Ph.D. – (Postdoctoral Fellow, 2011-2013).
Presently, Assistant Professor of Molecular and Cellular Biology, University of Guelph,
Toronto, Canada.

Saumya Nagar – (Graduate Student, Sanford Burnham Prebys, 2010-2015, PhD 2015).

Anthony Nutter – (Research Technician, 2011-2015).

Presently, Director of Neurobehavioral Assessment, Samumed, Inc., San Diego.

Alex Pratt, M.D. – (Medical Student Thesis Work for UCSD, 2011-2014).

Presently, Medical Resident, University of Washington.

Rajesh Ambasadhan, Ph.D. – (Research Assistant Professor, 2011-2015).

Presently, Assistant Professor, Scintillon Institute, San Diego.

Samantha Scudder – (Graduate Student rotation, Neuroscience UCSD, 2012).

Nima Dolatabadi – (Research Technician, 2011-).

Chang-ki Oh, Ph.D. – (Postdoctoral Fellow, 2012-).

Elaine Pirie – (Graduate Student Project, Biomedical Sciences (BMS), UCSD, 2012-2015).

Presently, Senior Researcher at Vertex Pharmaceuticals, La Jolla, CA.

Brittney Miller – (Graduate Student rotation, BMS UCSD, 2013).

Olga Prikhodko – (Graduate Student Rotation, BMS UCSD, 2013-2014)

Melissa Galinato – (Graduate Student rotation, Neuroscience UCSD, 2013).

James Parker – (Research Technician, 2013-2017).

Presently, Senior Researcher at Eli Lilly and Co., San Diego, CA.

Sarah Moore Noveral – (Graduate Student, BMS UCSD, 2013-2016).

Presently, Teaching neurobiology in Orlando, FL.

Tim Scheffelin – (Medical Student Thesis Work for UCSD, 2013-2014).

Presently, Neurology Resident, University of California, San Diego.

Karthik Bodhinathan, Ph.D. – (Postdoctoral Fellow, 2014-2015).

Presently, Neurology Medical Science Liaison, Sandoz Pharmaceuticals., Inc., Boston, MA.

Kevin Lopez – (Research Technician, 2014-2017).

Presently, Nursing Student, San Diego, CA.

Dorit Trudler, Ph.D. – (Postdoctoral Fellow, 2015-).

Abdullah Sultan, Ph.D. – (Postdoctoral Fellow, 2015-2017).

Xu Zhang, PhD. – (Postdoctoral Fellow, 2016-).

Swagata Ghatak, Ph.D. – (Postdoctoral Fellow, 2016-).

Matthew Albertolle, Ph.D. – (Postdoctoral Fellow, 2019-)

Invited Lectures

December 1975	Harvard Medical School, Howe Laboratory of Ophthalmology Massachusetts Eye and Ear Infirmary
December 1975	Harvard University, The Biological Laboratories
April 1975	Association for Research in Vision and Ophthalmology, Spring Meeting lecture
May 1975	Participant, National Retinitis Pigmentosa Foundation Meeting
February 1976	University of Pennsylvania School of Medicine, Vision Center, Institute for Neurological Science, Department of Anatomy
May 1976	Association for Research in Vision and Ophthalmology, Spring Meeting lecture
November 1976	Yale University School of Medicine, Association for Research in Vision and Ophthalmology
January 1977	University of Pennsylvania School of Medicine Medical Scientist Training Program Seminar
April 1977	University of Pennsylvania School of Medicine Medical Research Colloquium
October 1977	University of California, San Francisco School of Medicine, Department of Physiology
February 1979	Harvard Medical School, Department of Neurobiology
January 1980	Yale University School of Medicine, Departments of Physiology, Visual Science and Ophthalmology
February 1980	Harvard Medical School, Department of Neurology and Neuropathology
July 1980	Harvard Medical School, Beth Israel Hospital, Department of Medicine
October 1981	Society for Neuroscience, Los Angeles Meeting
October 1981	Harvard University, The Biological Laboratories
March 1982	Harvard Medical School, Department of Neurobiology
September 1982	Cornell University Medical College, Department of Neurology
October 1982	Harvard Medical School, Beth Israel Hospital, Department of Medicine
November 1982	Society for Neuroscience, Minneapolis Meeting
December 1982	University of California, San Francisco, School of Medicine, Program in Neuroscience, Departments of Neurology and Physiology
January 1983	Department of Biological Sciences, Purdue University, West Lafayette, IN
March 1983	Harvard Medical School, Department of Neurobiology
April 1983	Association for Research in Vision and Ophthalmology, Spring Meeting lecture, Sarasota, FL
May 1983	Harvard University, The Biological Laboratories
November 1983	Society for Neuroscience, Boston Meeting
June 1984	Harvard Medical School, Howe Laboratory of Ophthalmology, Massachusetts Eye and Ear Infirmary
Sept. 1984	University of Lausanne, Institute of Anatomy, Lausanne, Switzerland

October 1984	Society for Neuroscience, Anaheim Meeting
January 1985	Harvard University, The Biological Laboratories
June 1985	The Rockefeller University, Laboratory of Neurobiology
September 1985	Harvard Medical School, The Vision Group (Departments of Ophthalmology, Neurology, and Neurobiology)
October 1985	Society for Neuroscience, Dallas Meeting
January 1985	Brigham & Women's Hospital, Harvard Medical School, Department of Neurology
January 1986	Brigham & Women's Hospital, Harvard Medical School, Department of Ophthalmology
February 1986	Brigham & Women's Hospital, Harvard Medical School, Department of Neurology
November 1986	Society for Neuroscience, Washington, D.C. Meeting
December 1986	Harvard University, The Biological Laboratories
January 1987	The Rockefeller University, Laboratory of Neurobiology
January 1987	Harvard University, Department of Biochemistry & Molecular Biology
February 1987	University of Miami, Departments of Physiology & Biophysics and Ophthalmology
March 1987	Harvard Medical School, The Vision Group (Departments of Ophthalmology, Neurology, and Neurobiology)
April 1987	Harvard University, The Biological Laboratories
November 1987	Society for Neuroscience, New Orleans Meeting
December 1987	Harvard Medical School, Berman-Gund Laboratory, Massachusetts Eye and Ear Infirmary
February 1988	Yale University School of Medicine, Department of Cellular and Molecular Physiology
April 1988	American Academy of Neurology Meeting in Cincinnati, OH
May 1988	National Institutes of Health, Laboratory of Neurophysiology
November 1988	Society for Neuroscience, Toronto Meeting
February 1989	Columbia University, College of Physicians & Surgeons, Center for Neurobiology
February 1989	The Rockefeller University, Laboratory of Neurobiology
April 1989	Harvard University, The Biological Laboratories
May 1989	Association for Research in Vision and Ophthalmology, Spring Meeting lecture
July 1989	Gordon Conference on Neuronal Plasticity, Brewster Academy, Wolfeboro, NH
June 1989	Tufts Medical School, Program in the Neurosciences
August 1989	Max Planck Institute for Brain Research, Frankfurt, FRG
September 1989	Institute for Neurophysiology, University of Pisa, Italy
November 1989	Society for Neuroscience, Phoenix Meeting
November 1989	Massachusetts Eye and Ear Infirmary, Harvard Medical School
December 1989	University of Buffalo School of Medicine, Departments of Physiology and Biophysics
March 1990	University of Minnesota, Department of Physiology
March 1990	Miles Laboratories, Invited Speaker on Therapeutic Uses of Calcium Channel Antagonists, Scottsdale, AZ
May 1990	American Academy of Neurology, Miami Meeting

June 1990	Columbia University, College of Physicians & Surgeons, Department. of Neurology, The Pattison Lecture
July 1990	AIDS Clinical Trials Group (ACTG) Meeting sponsored by NIH, Invited Lecturer, Neurology Section, Bethesda, MD
August 1990	AIDS Clinical Drug Development Committee (ACDDC) sponsored by NIH, Invited Speaker, Bethesda, MD
August 1990	Max Planck Institute for Brain Research, Frankfurt, FRG
August 1990	Max Planck Institute for Psychiatry/Biochemistry, Martinsried, FRG
August 1990	Knoll Pharmaceuticals Invited Lecturer, Ludwigshaven, Germany
September 1990	European Neuroscience Association, Stockholm Meeting
September 1990	University of Pittsburgh School of Medicine, Department of Neuroscience, Principal Speaker at Departmental Retreat
October 1990	Society for Neuroscience, St. Louis Meeting
November 1990	Brown University, Division of Biology and Medicine
January 1991	Winter Brain Conference, General Symposium, Vail, Colorado
February 1991	Johns Hopkins School of Medicine, Dept. of Neurology, and Kennedy Mental Retardation Research Center.
March 1991	Society for Neurochemistry, Symposium Lecture on Redox Modulatory Site of the NMDA Receptor-Channel Complex
March 1991	AIDS Clinical Trials Group (ACTG) Meeting sponsored by NIH, Invited Lecturer, Neurology Section, Washington, D.C.
March 1991	Eunice K. Shriver Center, Mental Retardation Research Center
April 1991	Merck Pharmaceuticals, Invited Lecturer, King of Prussia, PA
April 1991	Harvard Medical School, Dept. of Neurobiology
May 1991	Harvard-Longwood Neurology Training Program, Festschrift for Dr. Charles F. Barlow
May 1991	Association for Research in Vision and Ophthalmology, Spring Meeting lecture
May 1991	Neuroscience Symposium, The Retina: Insights for Neuroscience, University of Alabama and the Birmingham Chapter of the Society for Neuroscience, Birmingham, AL
July 1991	AIDS Clinical Trials Group (ACTG) Meeting sponsored by NIH, Invited Lecturer, Neurology Section, Washington, D.C.
July 1991	Speaker at Workshop on Neuro-AIDS, Division of AIDS, NIAID/NIH, Portland, ME
September 1991	University of Michigan School of Medicine, Program in Neuroscience, Principal Speaker at Departmental Retreat
October 1991	NIH/National Eye Institute/ National Eye Transplant Research Foundation Retreat entitled “Repair and Replacement to Restore Sight,” Bethesda, MD
December 1991	Bayer Pharmaceuticals, Invited Speaker and Consultant, Cologne, Germany
January 1992	Speaker at Workshop on neurological consequences of immune dysregulation: lessons from HIV infection and multiple sclerosis, Sanibel Island, FL
March 1992	University of California, Los Angeles, Department of Neurology
March 1992	Laboratory of Molecular Neurobiology and Laboratory of Computational Neurobiology, The Salk Institute, La Jolla, CA
March 1992	Department of Neurology, Children’s Hospital, Boston, MA
April 1992	Calcium Channel Antagonists in the CNS, Miles Laboratories Symposium

	in Santa Fe, NM
May 1992	Department of Neurobiology, Harvard Medical School
May 1992	Playfair Neurosciences Unit, University of Toronto
June 1992	Department of Psychiatry, McLean Hospital, Harvard Medical School
June 1992	Department of Neurosciences, University of California, San Diego
June 1992	Department of Neurology, San Diego VA Medical Center
July 1992	VIII International Conference on AIDS, Symposium Speaker on Neuro-AIDS, Amsterdam
July 1992	Speaker at Second Annual Workshop on Neuro-AIDS, Division of AIDS, NIAID/NINDS/NIH, Portland, ME
September 1992	Symposium Speaker on Neuro-AIDS, European Neuroscience Association, Munich
October 1992	Chairman, Symposium on Neuro-AIDS, Society for Neuroscience, Anaheim, CA
November 1992	Department of Neurology, Louisiana State University
November 1992	Neuroscience Center, Louisiana State University School of Medicine
December 1992	Symposium speaker on Neuro-AIDS, Association for Research in Nervous and Mental Disease (ARNMD), New York City
January 1993	Visiting Professor, Department of Neurology, University of Pittsburgh
January 1993	Visiting Professor, Department of Neurology, University of Wisconsin (Madison)
January 1993	AIDS Center, University of Alabama at Birmingham
February 1993	Public Television, AIDS Lecture Series (segment on AIDS dementia)
February 1993	Plenary Lecture, IBRO Neurodegeneration Meeting in Ocho Rios, Jamaica
March 1993	Neuroscience Group, Massachusetts General Hospital
March 1993	Plenary Lecturer, Workshop entitled Macrophages/Microglia and Pathophysiology of CNS Injuries in AIDS, sponsored by the French Agency for AIDS Research (Agence Nationale de Recherches sur le SIDA, ANRS), Bougival (near Paris), France
April 1993	Eunice K. Shriver Center, Mental Retardation Research Center
April 1993	Visiting lecturer, Center for Neural Science, New York University
April 1993	Allergan, Pharmaceutical Research Division, Invited Lecturer, Irvine, CA
April 1993	Symposium Speaker, NIMH conference on CNS manifestations of AIDS
April 1993	Department of Anesthesiology, Brigham and Women's Hospital
May 1993	Parke-Davis, Pharmaceutical Research Division, Invited Lecturer, Ann Arbor, Michigan
June 1993	Course Speaker, Canadian Neurological Congress, All-Canada Neurobiology Review Course, Toronto
July 1993	Symposium Lecture on Nitric Oxide and the Redox Modulatory Site of the NMDA Receptor, Gordon Conference on Neuronal Plasticity, Brewster Academy, Wolfeboro, NH
August 1993	Speaker at Third Annual Workshop on Neuro-AIDS, Division of AIDS, NIAID/NINDS/NIH, Portland, ME
September 1993	Symposium Speaker, HIV and the Nervous System, World Congress of Neurology, Vancouver, British Columbia, Canada
September 1993	Invited Speaker, University of British Columbia, Department of Ophthalmology and Visual Sciences, Brain Research Centre, Vancouver, British Columbia, Canada

September 1993	Program in Neuroscience, Department of Pharmacology, Univ. of Massachusetts Medical School, Worcester
September 1993	Symposium Speaker, NIH/NIAID/Division of AIDS conference on HIV-Mediated Immune Defects
October 1993	Symposium Speaker and Moderator, Philippe Laudat Conference, CNRS, Alsace, France
October 1993	Presidential Symposium Speaker, Experimental Society for Neuropathology (Satellite Meeting of American Neurological Association), Boston.
October 1993	Allergan, Pharmaceutical Research Division, Invited Lecturer, Irvine, CA
October 1993	Visiting lecturer, Department of Neurosciences, Johns Hopkins University Medical School, Baltimore
November 1993	Department of Neurobiology, Harvard Medical School
November 1993	Symposium Speaker, Oxygen Club of Washington, D.C., NIH, and the New York Academy of Sciences
November 1993	Invited Speaker, Banbury Conference on Nitric Oxide, Cold Spring Harbor, NY (unable to present because of Taniguchi Symposium, below)
November 1993	Symposium Speaker, 17th Symposium of the Taniguchi Foundation on Brain Sciences, Japan
November 1993	Visiting lecturer, Kyoto University, Japan; hosted by Professors Nakanishi and Honda
December 1993	Symposium Chairman, Nitric Oxide in the CNS, Fifth Int'l Symposium on Neural Regeneration, Asilomar Conference Center, Pacific Grove, CA
December 1993	Symposium Speaker, Calcium Hypothesis of Aging and Dementia, NIH/NIA, Bethesda, MD and the New York Academy of Sciences
January 1994	Discussant, NIMH Symposium on NeuroAIDS, Bethesda
February 1994	Invited Speaker, Nitric Oxide: New Therapeutic Strategies for the Treatment of Human Diseases, New Orleans, LA
April 1994	Invited Speaker, NIMH Conference on Pathogenesis of HIV Infection of the Brain: Impact on Function and Behavior, Bethesda
March 1994	<i>New England Journal of Medicine</i> : Seminars in Medicine of the Beth Israel Hospital, Pathogenesis and Treatment of NeuroAIDS
March 1994	AIDS Clinical Drug Development Committee (ACDDC) of the Division of AIDS, NIH and FDA.
March 1994	Symposium Speaker, HIV and the Brain, Society of Neurochemistry, Albuquerque, NM
March 1994	Invited Symposium Speaker, Spring Brain Conference, HIV-related neuronal injury, Orlando, FL
April 1994	Invited Discussant, NIMH Conference on HIV Infection and the Brain
April 1994	Invited Speaker, Bristol-Myers Squibb Pharmaceutical Institute, Wallingford, CT
May 1994	Symposium Speaker, 14 th Blankenese/European Community Scientific Conference, Modulation of Signals in Neural Systems, Hamburg, Germany
May 1994	Invited Speaker, Unite de Neurobiologie et Physiopathologie du Developpement, INSERM, Hôpital de Port Royal, Paris, France
May 1994	Invited Speaker, Institute for Brain Research, Zurich, Switzerland
May 1994	Nobel Forum Lecture, Karolinska Institute, Stockholm, Sweden
May 1994	Invited Speaker, Institute for Brain Research, Univ. of Zurich, Switzerland
June 1994	Invited Speaker, NitroMed, Inc. and HealthCare Investment Corp.,

	Cambridge, MA
June 1994	Invited Speaker, Tufts University School of Medicine, Dept. of Infectious Diseases
July 1994	Invited Speaker, FASEB Conference on Neuroimmunology, Copper Mountain Colorado
July 1994	Plenary Speaker, AIDS Clinical Trials Group (ACTG) Meeting in Washington, D.C.
July 1994	Speaker and Co-Organizer (with John Garthwaite and Solomon Snyder), Symposium on Nitric Oxide in the Nervous System, Laurentian Mountains, Canada
August 1994	Grand Rounds Speaker, Dept. of Neurology, University of California, San Francisco
October 1994	Invited Speaker, Neuroscience Center, University of Alabama, Birmingham
October 1994	Visiting Professor, Wayne State Univ., Dept. of Neurology Grand Rounds
October 1994	Keynote Speaker, Michigan Neurological Society, Detroit, MI
November 1994	Invited Speaker, The Scripps Research Institute, Dept. of Neuropharmacology, La Jolla, CA
November 1994	Co-Organizer (with Don Price, Johns Hopkins) and Speaker, Neurobiology of Disease Course on Excitotoxicity and Free Radicals, Society for Neuroscience Meeting, Miami, FL
December 1994	Invited Speaker, Department of Neurobiology, Harvard Medical School
December 1994	Invited Speaker, Neuroscience Research Center, University of Alabama at Birmingham
December 1994	Invited Speaker, NO ⁻ as a neuroprotective agent, NitroMed, Inc., Cambridge, MA
December 1994	Invited Speaker, Memantine for AIDS Dementia, NitroMed, Inc. and HealthCare Investment Corporation, Cambridge, MA
February 1995	Medical Grand Rounds Speaker, University of Nebraska Medical Center
March 1995	Co-Keynote Speaker (with Stephen F. Heinemann), Symposium on Neuronal and Glial Injury, Signal Transduction and Neuroprotection, Satellite Meeting of the American Society for Neurochemistry, Santa Monica, CA
April 1995	Neuroscience Visiting Professor, University of Utah
April 1995	Clinical Pathological Conference for <i>The New England Journal of Medicine</i> on AIDS in the Nervous System, Massachusetts General Hospital, Boston
April 1995	Invited Speaker, Boston University Course on Neuroscience and Neurodegenerative Diseases
April 1995	Grass Lecture, University of Kansas School of Medicine
May 1995	Keynote Retreat Speaker, University of Pennsylvania School of Medicine, M.D.-Ph.D. (MSTP) Program
May 1995	Invited Speaker, XVth Washington International Spring Symposium, Neurodegenerative Diseases '95, Washington, D.C.
May 1995	Invited Speaker, Excitatory Amino Acids & the Cerebral Cortex, Portonovo Bay, Italy
May 1995	Invited Speaker, Faculty of Pharmacology, Calabria, Italy
May 1995	Invited Speaker, University of Rome and CNR, Rome, Italy
June 1995	Invited Speaker, Nobel Forum Symposium on HIV Infection in the Brain,

	Karolinska Institute, Stockholm, Sweden
June 1995	Centennial Symposium Lecture, Virtanen Institute, Kuopio, Finland
June 1995	Invited Speaker, Tufts University School of Medicine, Department of Pharmacology
July 1995	Invited Speaker, Corsican Hippocampal Conference, Corsica, France
August 1995	Invited Speaker, International Conference on Free Radicals in Brain Physiology and Disorders, Tokyo, Japan
August 1995	Invited Speaker, Department of Neurology, Children's Hospital of Philadelphia, University of Pennsylvania School of Medicine
September 1995	Symposium Speaker, AIDS and the Nervous System, American EEG Society, Washington, D.C.
September 1995	Fourth International Meeting on the Biology of Nitric Oxide, Chairman of Session on NO in Neuroscience, Amelia Island, FL
September 1995	Grand Rounds Lecture, Department of Pediatrics, Children's Hospital, Boston
September 1995	Lectures on "the Neuroscience of AIDS" and "Redox Congeners of Nitric Oxide" to be delivered in South Africa; Selected with 11 US Speakers on Other Topics in Neuroscience by the National Research Council, US National Committee for the International Brain Research Organization, and the National Academy of Sciences
October 1995	Invited Speaker, 3rd Mainzer Forum on Medicinal Chemistry, Mainz, Germany
October 1995	Invited Speaker, Department of Neurosciences, Tufts University School of Medicine
October 1995	Invited Speaker, Department of Pharmacology, Emory University, Atlanta
October 1995	Plenary Symposium Speaker, Joint Meeting of the American Neuropsychiatric Association and the Behavioral Neurology Society, Pittsburgh, PA
October 1995	Invited Speaker, Workshop on the Calcium Hypothesis of Brain Aging, Zentralinstitut für Seelische Gesundheit, Heidelberg, Germany
October 1995	Grand Rounds Speaker, Department of Neurology, Johns Hopkins School of Medicine, Baltimore
November 1995	Invited Speaker, Signal Pharmaceutical, La Jolla, CA
November 1995	Invited Speaker, Taniguchi Conference on Retinal Physiology, Kyoto, Japan
December 1995	Invited Speaker, Department of Pharmacology, Boston University
January 1996	Chairman of Session on Excitotoxicity, Adler Foundation Alzheimer's Disease Symposium, The Salk Institute, La Jolla, CA.
February 1996	Invited Speaker, Australian National Boden Conference on Nitric Oxide
February 1996	Invited Speaker, Department of Pharmacology, State University of New York, Medical Center Stony Brook
March 1996	Invited Speaker on NeuroAIDS, Neuroimmunology Course, American Academy of Neurology Meeting, San Francisco
April 1996	Invited Speaker, Dept. of Pharmacology and Physiology, University of Medicine and Dentistry, Newark, NJ
April 1996	Invited Speaker, Korean National Pharmacology Conference, Seoul, Korea
May 1996	Invited Speaker, Dept. of Biochemistry, New York University
June 1996	Invited Speaker, The Glaucoma Foundation, New York City
June 1996	Invited Speaker, Department of Neurology and Neurosciences Institute,

	University of California, Irvine
June 1996	Symposium Speaker, The College on Problems of Drug Dependence, San Juan Puerto Rico
June 1996	Invited Speaker, Neuronal Death Symposium, London, U.K.
July 1996	Invited Speaker, Conference on Cerebrovascular Disease, Marburg, Germany
July 1996	Invited Speaker, University of Konstanz, Department of Molecular Toxicology, Konstanz, Germany
September 1996	Invited Lecturer, NIMH Conference on Drug Development for AIDS Dementia Complex, Washington, D.C., September 4-6, 1996.
September 1996	Invited Speaker, Dept. of Pharmacology and Physiology, University of Medicine and Dentistry, Newark, NJ
September 1996	Invited Speaker, Neurology Grand Rounds, Brigham and Women's Hospital, Boston
September 1996	Invited Speaker, Free Radicals in Neurotoxicity, Satellite Conference of XII Annual International Congress of Eye Research, University of Kyoto, Kyoto, Japan
October 1996	Invited Speaker, Nitric Oxide in Retinal Research, XII Annual International Congress of Eye Research, Yokohama, Japan
October 1996	Invited Speaker, Harvard University Undergraduate Society for Neuroscience, Cambridge, MA
November 1996	Invited Speaker, Excitatory Amino Acid Receptors, Satellite Conference of Society for Neuroscience Meeting, Washington, D.C.
January 1997	Invited Speaker, Molecular Neurobiology Laboratory, The Salk Institute, La Jolla, CA
January 1997	Invited Speaker, St. Petersburg Russian Conference on Neuroscience
February 1997	Symposium Speaker, American Neuropsychiatric Society, Orlando, FL
April 1997	Visiting Professor, Dept. of Ophthalmology, Mt. Sinai Medical Ctr., NYC
April 1997	Symposium Speaker on Free Radicals in Neurodegeneration, British Neuroscience Association, Liverpool, U.K.
April 1997	Invited Speaker, Dept. of Pharmacology, University of Dundee, Scotland
April 1997	Invited Speaker, Fujisawa Institute of Neuroscience, Edinburgh, Scotland
May 1997	Visiting Professor, Department of Biochemistry, Colorado State University, Fort Collins, CO
May 1997	Invited Speaker, Ernst Schering Symposium on Glutamate Receptors: Genes to Channel, Berlin, Germany
June 1997	Invited Speaker, International Symposium on Oxidative Stress, Barcelona, Spain
July 1997	Plenary Lecture, Korean Neuroscience Association, Seoul, Korea
July 1997	Symposium Speaker, Dept. of Pharmacology, Seoul National University, Seoul, Korea
July 1997	Symposium Lecturer, Harvard Medical International Course on Cerebrovascular Disease, Asan Medical Center, Seoul, Korea
July 1997	Invited Speaker, Excitatory Amino Acid Satellite Symposium, International Society for Neuropharmacology, Waterville Valley, NH
July 1997	Plenary Lecture on AIDS Dementia, AIDS Clinical Trials Unit (ACTU) Meeting, NIAID/NIH, Washington, D.C.
July 1997	Colloquium Speaker, International Society for Neuropharmacology, Boston

August, 1997	Course Lecturer, Cold Spring Harbor Laboratory Course on Neurodegenerative Diseases
September 1997	Invited Speaker, University of Tübingen, Germany
September 1997	Invited Speaker, Dept. of Neuropathology, University of Vienna, Austria
September 1997	Symposium Speaker, Pharmacological Treatment for Cerebrovascular and Neurodegenerative Disorders, The German Society of Experimental and Clinical Pharmacology and Toxicology, University of Vienna, Austria
October 1997	Symposium Speaker, Satellite Meeting of the Society for Neuroscience, Nitric Oxide and Other Diffusible Signals in Brain Disease, New Orleans, LA
October 1997	Symposium Speaker, Satellite Meeting of the Society for Neuroscience, Cytokines in the Brain, New Orleans, LA
November 1997	Invited Speaker, Dept. of Neurobiology, Cornell University, Ithaca, NY
January 1998	Plenary Speaker, International Symposium on Neurobiology, Japan Intractable Diseases Research Foundation, Tokyo, Japan
February 1998	Invited Speaker, Dept. of Pharmacology, Northeastern University, Boston, MA
February 1998	Plenary Speaker, Keystone Symposium on Molecular Aspects of Viral Immunity, Tamarron, CO
February 1998	Invited Speaker, Cellular and Systemic Reservoirs of HIV Replication under Highly Active Antiretroviral Therapy, American Foundation for AIDS Research Symposium, MIT Endicott House, Dedham, MA
March 1998	Invited Speaker, NINDS/NIH, Laboratory of Molecular Medicine and Neuroscience, Bethesda, MD
May 1998	Invited Speaker, NIH-wide Symposium on The Glutamate Cascade: Common Pathways of CNS Disease States, Bethesda, MD
May 1998	Plenary Lecture, Congress of Molecular Medicine, Berlin, Germany
July 1998	Invited Speaker, FASEB Conference in Neural-Immune Interactions, Wilsonville, Oregon
July 1998	Invited Speaker, International Symposium on Pharmacology of Cerebral Ischemia, Marburg, Germany
July 1998	Chairman, NO Symposium, European Neurochemistry Society, St. Petersburg, Russia
September 1998	Visiting Professor, Grand Rounds, Department of Neurology, Columbia University College of Physicians & Surgeons, New York, NY
September 1998	Invited Speaker, The Burnham Institute, La Jolla, CA
February 1999	Plenary Speaker, NIH/NINDS Conference on NeuroAIDS, Miami, FL
March 1999	Plenary Speaker, Keystone Symposium on Neuroimmunology, Taos, NM
March 1999	Symposium Speaker, Satellite Meeting of the International Society of Neurochemistry, New Orleans, LA
March 1999	Symposium Speaker, Meeting of the International Society of Neurochemistry, New Orleans, LA
March 1999	Visiting Professor, Department of Anatomy and Neurobiology, Louisiana State University, New Orleans, LA
April 1999	Invited Speaker, National Academy of Sciences Decade of the Brain Symposium, Washington, D.C.
April 1999	Symposium Speaker, NIH/NIMH Conference on NeuroAIDS, Bethesda, MD
May 1999	Invited Symposium Speaker on Neuroprotection, Association for Research

	in Vision and Ophthalmology, Ft. Lauderdale, FL
July 1999	Invited Speaker, Department of Neurosciences, Louisiana State University, New Orleans, LA
August 1999	Invited Speaker, Symposium on Neuronal Apoptosis, Satellite Meeting of the International Society of Neurochemistry, Tübingen, Germany
November 1999	Plenary Speaker, International Symposium on Neurodegenerative Diseases of the Ramon Areces Foundation, Seville, Spain
December 1999	Invited Speaker, Neuroscience Seminar Series, Scripps Research Institute, La Jolla, CA
February 2000	Invited Speaker, Stanford Medical School Brain Research Center, Neurobiology of Disease Symposium, Stanford, CA
April 2000	Plenary Speaker, Neurodegenerative Disease Symposium in Ophthalmology, Kyoto, Japan
April 2000	Invited Speaker, European Community Symposium on Apoptosis, Sant Feliu de Guíxols, Spain
May 2000	Invited Speaker, Department of Anatomy and Neurobiology, Wayne State University, Detroit, Michigan
July 2000	Neurology Grand Rounds Speaker, University of California, San Diego Department of Neurosciences
September 2000	Invited Speaker, Smith-Kline Beecham, Harlow, Essex, England
September 2000	Invited Speaker, Emerging Roles for Inflammation in CNS Injury and Disease, University of Oxford, England
September 2000	Visiting Professor and Lecturer, Max Delbruck Center for Molecular Medicine, Berlin, Germany
September 2000	Symposium Speaker, German Neurological Association, Baden-Baden, Germany
October 2000	Plenary Speaker, Stem Cells for Neurodegenerative Diseases, Parkinson's Disease Association, San Diego
November 2000	Chair, Neurobiology of Disease Workshop on Parkinson's Disease, Society for Neuroscience Meeting, New Orleans, LA
November 2000	Invited Speaker, Mechanisms of Neuroinflammation, Boehringer Ingelheim Symposium Rye Brook, New York
November 2000	Plenary Speaker, Medical Student Research Day, University of Alabama, Birmingham, School of Medicine
March 2001	Speaker and Co-Organizer, Sam Hersch Symposium on Cerebral Palsy, The Salk Institute, La Jolla
March 2001	Invited Speaker, Multiple Sclerosis Society Symposium, New Orleans, LA
May 2001	Invited Speaker, Nikolas Foundation/Histiocytosis Society, Athens, Greece
June 2001	Invited Speaker in Apoptosis Symposium, BioTechnology Conference 2001, San Diego
June 2001	Invited Speaker, Departments of Neurology and Neurosurgery, Cornell University Medical College, co-hosted by The Rockefeller University
July 2001	Speaker, Grand Rounds in Neurology, UCSD
September 2001	Invited Speaker, Wolfson Institute Conference on Nitric Oxide, University College, London, UK
October 2001	Invited Speaker, Nobel Conference on Apoptosis, The Karolinska Institute, Stockholm, Sweden
October 2001	Invited Speaker and Symposium Chair, Nitric Oxide and the Brain, European

November 2001	Congress of Pharmacology, Istanbul, Turkey
November 2001	Course Co-Organizer and Speaker, Cell Death: Apoptosis and Beyond, Society for Neuroscience Short Course, San Diego
November 2001	Invited Speaker, Scios, Inc., Sunnyvale, CA
February 2002	Invited Speaker, Immusol, Sorrento Valley, CA
March 2002	Invited Speaker, Oxygen Club of California, Oxidants and Antioxidants in Biology, Santa Barbara, CA
March 2002	Clinical Case Discussant, Grand Rounds in Neurology, UCSD
March 2002	Invited Speaker, UCSD/Salk/Nature Medicine, Days of Molecular Medicine Symposium on Heart and Brain, Signaling Pathways in Complex Human Diseases, La Jolla, CA
March 2002	Invited Speaker, Princeton Conference on Stroke, Coronado, CA
April 2002	Invited Speaker, Mechanisms of Glaucoma, Sydney, Australia
May 2002	Invited Speaker, VI Workshop on Apoptosis in Biology and Medicine, Port Pirgos, Parghelia, Calabria, Italy
May 2002	Invited Speaker, Institute of Neuropathology, University Hospital, Zürich, Switzerland
May 2002	Invited Speaker, International Symposium on Neuroimmunology, University Club, Bonn, Germany
May 2002	Invited Speaker, Stem Cell Symposium for California State Senate Hearing, The Salk Institute
June 2002	Invited Speaker, Gordon Conference on Cell Death, Colby, NH
June 2002	Invited Speaker and Chair, Workshop on Mechanisms of Neuronal Cell Injury in HIV-Associated Dementia, International Society for NeuroVirology, Düsseldorf, Germany
July 2002	Invited Speaker, Pharmacology of Cerebral Ischemia, Marburg, Germany
August 2002	Keynote Speaker, FASEB Conference on Neural-Immune Interactions in Injury and Diseases: Pathways to Therapy, Tucson, AZ
November 2002	Invited Speaker, Joint Symposium of the National and International Neurotrauma Societies, Tampa, FL
November 2002	Invited Speaker, NIH Conference on NeuroAIDS, Washington, D.C.
January 2003	Invited Speaker, Stem Cell Forum, The Salk Institute, La Jolla, CA
January 2003	Plenary Speaker, Critical Care Society, San Antonio, TX
January 2003	Invited Speaker, The Adler Symposium, The Salk Institute, La Jolla, CA
March 2003	Invited Speaker, International Glaucoma Meeting, Barcelona, Spain
April 2003	Symposium Speaker, Experimental Biology Meeting, Regeneration, Stem Cells, and Neuroplasticity, San Diego, CA
May 2003	Invited Speaker, Zinc Signals Meeting, Grand Cayman Island
June 2003	Invited Speaker, Children's Hospital of Los Angeles, Department of Pediatric Neurology, and the University of Southern California
July 2003	Invited Speaker, Neuroprotection Board and Use of Erythropoietin in the Brain, Johnson and Johnson, Co., NYC
September 2003	Keynote Speaker, British Toxicology Society Meeting, University of Nottingham, UK
October 2003	Invited Speaker on Neuroprotection, Merck and Co., San Diego, CA
October 2003	Invited Speaker, Hedge Fund Directors, Gerson-Lehrman, Inc., San Francisco
October 2003	Invited Speaker, ARCS Graduate Student Fellowship Society, San Francisco
December 2003	Invited Speaker, Neurosciences Program, University of Utah, Salt Lake City

December 2003	Invited Speaker, NINDS Conference on Glial Inflammation and Neurodegeneration, Washington, DC
December 2003	Invited Speaker and Thesis Defense Committee, University of Copenhagen, Denmark
January 2004	Invited Speaker, The Buck Institute, Novato, CA
January 2004	Invited Speaker, Chemicon, Inc., Temecula, CA
February 2004	Invited Speaker, Hedge Fund Directors, Gerson-Lehrman, Inc., Boston
February 2004	Guest Professor and Invited Speaker, Student Research Day, University of New Mexico
February 2004	Invited Speaker, Department of Neurology, University of New Mexico
February 2004	Invited Speaker, Sidney Kimmel Cancer Center Conference on Stem Cells, Genomics, Signaling and Tumor Targeting
March 2004	Invited Speaker, Grand Rounds in Neurology, University of Washington, Seattle
March 2004	Guest Professor and Invited Speaker, Student Research Day, University of Southern California
March 2004	Invited Speaker, American Chemical Society Meeting, Anaheim, CA
April 2004	Invited Speaker, Department of Pharmacology, University of California, San Diego
April 2004	Invited Speaker, Merck and Co., West Point, PA
May 2004	Speaker, Burnham Institute Spring Symposium on Redox Mechanisms in Biology, La Jolla
May 2004	Invited Speaker and Award Recipient, Ernst Jung Foundation, Hamburg, Germany
May 2004	Invited Speaker, Swiss Federal Institute of Technology, Lausanne, Switzerland
June 2004	Plenary Speaker, Institute on Aging Symposium, New York City
June 2004	Invited Speaker, National University of Singapore, Department of Biochemistry, Singapore
July 2004	Invited Speaker, American Heart Association Basic Cardiovascular Science Symposium, Stevenson, WA
July 2004	Invited Speaker, Pharmacology of Cerebral Ischemia, Marburg, Germany
October 2004	Invited Speaker, Institute on Aging Grantees Conference, New Jersey
October 2004	Invited Speaker, National Institute on Aging, NIH, Bethesda, MD
October 2004	Opening Lecture, Brazilian Pharmacology Society, Aguas de Linolias, Brazil
November 2004	Invited Speaker, Cell Press Meeting on Aging, Abbey of Spineto, Tuscany, Italy
November 2004	Invited Speaker, Molecular Pathology Program, UCSD, La Jolla, CA
March 2005	Invited Speaker, Department of Microbiology and Immunology, Cornell University Medical College, NYC
March 2005	Invited Speaker, Grand Rounds in Neurology, Cornell University Medical College, NYC
March 2005	Invited Speaker, Chemicon, Inc., Temecula, CA
March 2005	MRC Lectureship, Society of Toxicology, New Orleans, LA
April 2005	Plenary Speaker, Nitric Oxide Symposium, Hokkaido University, Sapporo, Japan
May 2005	Invited Speaker, Santa Lucia Foundation, Rome Institute for Molecular Medicine, Rome, Italy

May 2005	Invited Speaker, University of Genoa, Genoa, Italy
May 2005	Invited Speaker, University of Pavia, Pavia, Italy
May 2005	Plenary Speaker, University of Calabria, School of Pharmacy, Calabria, Italy
May 2005	Invited Speaker, Parkinson's Disease and Other Neurodegenerative Disorders: From Genes to Molecular Mechanisms and Therapy, University of Göttingen, Göttingen, Germany
June 2005	Plenary Speaker, Erythropoietin for Neuroprotection, Johnson & Johnson (Ortho Biotech, Inc.) CARE Consultant Symposium, Jersey City, New Jersey
June 2005	Invited Speaker, Department of Physiology, Harvard Medical School, Boston
June 2005	Plenary Speaker, American Society for Neurochemistry Annual Meeting, Madison, WI
July 2005	Invited Speaker, Symposium on Memantine for Glaucoma (supported by Allergan, Inc.), World Glaucoma Congress, Vienna, Austria
July 2005	Invited Speaker, Federation of European Neuroscience Societies (FENS) Course for Neuroscience Students, Ofir, Portugal
August 2005	Invited Speaker, Ellison Foundation Symposium on Aging Research, Woods Hole, MA
October 2005	Invited Speaker, 13 th Euroconference on Apoptosis, Budapest, Hungary.
November 2005	Invited Speaker, Department of Neurology, Johns Hopkins School of Medicine, Baltimore, MD
November 2005	NINDS Neurodegenerative Disease Annual Invited Lectureship, National Institutes of Health, Bethesda, MD
November 2005	25 th Anniversary Speaker, Neurobiology of Disease Workshops, Society for Neuroscience, Washington, D.C.
December 2005	Guest Professor and Keynote Speaker, Student Research Retreat, University of Texas, Austin
March 2006	Invited Speaker, Departments of Neurology and Neuroscience, Mayo Clinic, Jacksonville, FL
April 2006	Speaker, American Academy of Neurology, Advances in Stem Cell Therapy for Stroke, San Diego, CA
June 2006	Plenary Speaker, International Neurotoxicology Meeting, Venice, Italy
July 2006	Invited Speaker, Rare Neuroimmunological Diseases Meeting, Johns Hopkins School of Medicine, Baltimore, MD
September 2006	Plenary Speaker, Neuroinflammation in neuronal death and repair, Italian Societies of Pharmacology and Neuroscience, Calabria, Italy
January 2007	Invited Public Lecture for UCSD on New Treatments and Stem Cells for the Aging Brain, San Diego Museum of Natural History
February 2007	Invited Speaker, Department of Pharmacology, University of California Riverside
February 2007	Invited Speaker, Department of Neuroscience and Cell Biology, Robert Wood Johnson Medical School, New Jersey
March 2007	Keynote Speaker, Academia Europaea Workshop, Heidelberg, Germany
May 2007	Keynote Speaker, Neuroprotection and Neuroregeneration Symposium, New Jersey Medical School.
June 2007	Invited Speaker, Frontiers in Science Series, CONNECT, La Jolla, CA
June 2007	Invited Speaker, Kentucky Spinal Cord and Head Injury Research Symposium, Louisville, KY
July 2007	Invited Speaker, World Glaucoma Conference, Singapore

August 2007	Opening Lecture, Neuroscience Course for International Neuroscience Students, 8 th ISN Advanced School of Neurochemistry, Valladolid, Mexico
August 2007	Plenary Speaker, International Society for Neurochemistry, Cancun, Mexico
October 2007	Invited Speaker, National Institute for Brain Research, New Delhi, India
October 2007	Plenary Speaker, Int'l NeuroVirology Meeting, San Diego, CA
November 2007	Invited Speaker, Int'l Symposium on Protein Modification and Degradation, Beijing, China
November 2007	Visiting Professor, Department of Neuroscience, Xiamen University, Xiamen, China
December 2007	Grand Rounds Speaker, Department of Neurology, University of California, San Diego
March 2008	Plenary Speaker, Oxygen Club of California, Santa Barbara, CA
May 2008	Grand Rounds Speaker, Department of Neurology, Cornell University Medical College, NYC
May 2008	Invited Speaker, Gordon Conference on Thiol-based Redox Chemical Biology, Tuscany, Italy
September 2008	Invited Speaker, The Aging Brain, Foley-Larder Law Firm, Orlando, FL
September 2008	Distinguished Investigator Seminar Series, University of Connecticut Health Science Center, Farmington, CT
October 2008	Invited Speaker, Bill Narayan Memorial Symposium, University of Kansas
November 2008	Plenary Speaker, Hypoxia, Ischemia and Inflammation BioSymposia, Boston, MA
January 2009	Invited Discussant, Adler Symposium on Alzheimer's Disease, The Salk Institute for Biological Studies, La Jolla
March 2009	Plenary Speaker, 5 th Cajal Winter Conference, Benasque, Spain
March 2009	Invited Speaker, 9 th International Conference on Alzheimer's Disease and Parkinson's Disease (AD/PD), Prague, Czech Republic
April 2009	Distinguished Kopriva Award Lectureship, Montana State University, Bozeman, MT
May 2009	Plenary Speaker, Neurodegeneration, University of Leicester and MRC Toxicology Unit, U.K.
May 2009	Invited Speaker, Neurodegeneration – Nobel Commemoration for Rita Levi-Montalcini's 100 th Birthday Celebration at Cell Death & Differentiation, Nature Conference, Rome, Italy
May 2009	Invited Speaker, XII Workshop on Apoptosis in Biology and Medicine, Parghelia, Calabria, Italy
August 2009	Invited Speaker, Department of Biochemistry, Technion Institute, Haifa, Israel
August 2009	Invited Speaker, Department of Neuroscience, Tel Aviv University, Israel
September 2009	Plenary Speaker, Neurodegeneration Satellite Symposium of the International Society for Neurochemistry, Taipei, Taiwan
September 2009	Invited Speaker, European Cell Death Conference, Paris, France
March 2010	Invited Speaker, Clinical Trial Planning Meeting, Norwegian and International Huntington's Disease Association, Oslo, Norway
March 2010	Plenary Speaker Selected by Neuroscience Graduate Students, Northwestern University School of Medicine, Chicago, IL
April 2010	Keynote Lecture, Society of Neuroimmune Pharmacology, Manhattan Beach, CA

April 2010	Symposium Speaker, Mitochondrial Fragmentation in Neurodegenerative Diseases, Experimental Biology Meeting, Anaheim, CA
May 2010	Invited Speaker, New York Academy of Sciences Symposium on Mitochondrial Involvement in Neurodegeneration, NYC
May 2010	Keynote Lecturer, 6 th Annual Hotchkiss Brain Institute Research Day, Calgary, Alberta, Canada
May 2010	Invited Speaker, International Symposium on Nitric Oxide and other Gaseous Neurotransmitters, Toronto, Canada
May 2010	Invited Speaker, Nobel Symposium on the Cell Cycle and Cell Death in Honor of the 200 th Anniversary of the Karolinska Institute, Nobel Forum, Stockholm, Sweden
June 2010	Invited Speaker, Salk Symposium on Oxidative Stress, La Jolla, CA
June 2010	Invited Speaker, International Nitric Oxide Meeting, Kyoto, Japan
September 2010	Invited Speaker, Memantine Clinical Trial Planning Meeting for Huntington's Disease, Prague, Czech Republic
October 2010	Invited Speaker, Cell Press LabLinks Symposium: Protein Folding and Misfolding, Disease and Function, Neuroscience Institute, La Jolla, CA
October 2010	Invited Speaker and Session Chair, American Society for Biochemistry and Molecular Biology (ASBMB) Special Symposium on Post Translational Modifications: Detection and Physiological Evaluation, Lake Tahoe, CA
April 2011	Invited Symposium Speaker, Redox/Hypoxic Modulation of Neuronal and Synaptic Function, Experimental Biology, Washington, DC
April 2011	Keynote Speaker, Neurosurgical Research Day, Upstate Medical Center, Syracuse, NY
May 2011	Invited Speaker, Howard Hughes Medical Research Institute (HHMI) Conference on The Expanding Roles of Mitochondria in Cell Biology and Disease, Janelia Farm, VA
September 2011	Invited Speaker, Ageing and Neurodegeneration Conference, German Center for Neurodegenerative Diseases and Max Planck Institute for Biology of Ageing, Bergisch Gladbach, Germany
September 2011	Invited Speaker, EMBO Conference on Thiol Chemistry in Disease, Sant Feliu de Guixols, Spain
September 2011	Visiting Professor, University of Navarra, Pamplona, Spain
September 2011	Invited Speaker, Ion Channels Target Conference, San Francisco, CA
October 2011	Speaker, NIEHNIH Annual Meeting for Centers for Neurodegeneration Science, Atlanta, GA
November 2011	Speaker, Michael J. Fox Foundation Parkinson's Grant Awardee Meeting, Phoenix, AZ
November 2011	Invited Speaker, Optic Nerve Protection Meeting, Chicago, IL
November 2011	Symposium Chair and Speaker, Extrasynaptic versus synaptic excitatory receptors in neuronal signaling and neurodegeneration, Society for Neuroscience Annual Meeting, Washington, D.C.
November 2011	Invited Speaker, NIEHS/NIH Autism Workshop, Raleigh, NC
December 2011	Invited Speaker, Pathology Research Lecture Series, University of California, San Diego, La Jolla, CA
February 2012	Invited Speaker, International Symposium on Ionotropic Glutamate Receptors, Valencia, Spain
February 2012	Keynote Speaker, Drug Discovery for Ion Channels XII, Satellite Symposium

	of the Biophysical Society Conference, San Diego, CA
March 2012	Visiting Professor, Florida Atlantic University, Boca Raton, FL and Max Planck Institute, Jupiter, FL
April 2012	John F. Anderson Memorial Lecture, University of Virginia School of Medicine, Charlottesville, VA
July 2012	Symposium Speaker, The Physiology Society International Meeting, Edinburgh, Scotland
July 2012	Course Organizer, Neuroscience School of Advanced Studies, San Quirico de Orcia, Tuscany, Italy
July 2012	Invited Speaker, Gladstone Institute, University of California San Francisco
September 2012	Symposium Speaker, Society for Free Radical Research International Meeting, Imperial College, London, UK
October 2012	Visiting Professor and Lecturer, Department of Neurology, Seoul National University Medical School, Korea
October 2012	Invited Symposium Lecture, Korean Society of Clinical Neurophysiology Meeting, Seoul, Korea
October 2012	Plenary/Keynote Lecturer, Korean Society of Neurodegenerative Disorders Meeting, Seoul, Korea
March 2013	Invited Symposium Lecture and Chair, The 11 th International Conference on Alzheimer's & Parkinson's Diseases (AD/PD 2013), Florence, Italy
March 2013	Invited Speaker, Burke Rehabilitation Center of Cornell Medical College, White Plains, NY
April 2013	Invited Speaker, Pathogenesis and Potential Treatment of HIV Associated Neurocognitive Disorders (HAND), Office on AIDS Research (OAR), National Institutes of Health (NIH), Bethesda, MD
May 2013	Annual Distinguished Biomedical Scholar Lecture on graduation day, University of Iowa, Carver College of Medicine, Iowa City, Iowa
June 2013	Invited Speaker, NIH CounterACT Network Research Symposium, Bethesda, MD
September 2013	Invited Speaker, Pfizer Pharmaceutical Corp., New York, NY
September 2013	Invited Speaker, Harrington Foundation/BioMotiv, Inc. Public-Private Partnership, Philadelphia, PA
October 2013	Invited Lecture, Huntington Medical Research Institutes and California Institute of Technology, Pasadena, CA
October 2013	Invited Speaker, Eli Lilly Pharmaceutical Company, Indianapolis, IN
November 2013	Invited Speaker, Alpha7 Nicotinic Receptor Satellite Symposium, Society for Neuroscience, San Diego, CA
December 2013	Presidential Lecture, Whitehead Institute of the Massachusetts Institute of Technology, Cambridge, MA
December 2013	Invited Seminar, Columbia University College of Physicians & Surgeons, Taub Alzheimer's Research Center, New York, NY
December 2013	Keynote Speaker, Korea University Symposium on Translational Medicine, Seoul, South Korea
December 2013	Invited Speaker, DaeWoong Pharmaceutical Corp., Seoul, South Korea
December 2013	Invited Speaker, Shinpoong Pharmaceutical Corp., Seoul, South Korea
December 2013	Invited Speaker, Chong Kun Dang (CKD) Pharmaceutical Corp. Seoul, South Korea

April 2014	Invited Speaker, Michael J. Fox Foundation for Parkinson's Research, New York City
April 2014	Invited Speaker, Allergan, Inc., Irvine, CA
April 2014	Invited Speaker, MP Biologic, Santa Ana, CA
May 2014	Invited Symposium Speaker, DZNE (German Translational Neuroscience Center), Bonn, Germany
June 2014	Invited Speaker, UCSD Neurosciences, La Jolla, CA
June 2014	Keynote Speaker, Neuroplasticity and Neurodegenerative Diseases in the Brain, Wuhan, China
July 2014	Invited Speaker, Chinese Academy of Sciences, Kunming, China
October 2014	Visiting Professor, University of British Columbia, Vancouver, BC, Canada
November 2014	Invited Speaker, Neurobiology of Disease Workshop, Society for Neuroscience, Washington, DC
December 2014	Invited Speaker, University of Pittsburgh School of Medicine
January 2015	Invited Speaker, Scintillon Institute, La Jolla, CA
January 2015	Dean's Distinguished Lecture Series, Weill Cornell Medical College, NYC
February 2015	Invited Speaker, Keynote Session, Nitric Oxide Gordon Research Conference, Ventura, CA
March 2015	Invited Speaker, Gordon Research Conference on Oxidative Stress and Disease: The Redox Biology of Age-Related Diseases, Ventura, CA
March 2015	Visiting Professor, Department of Neuroscience, University of Paris V, Rene Descartes School of Medicine, Paris, France
March 2015	Invited Speaker and Chair, 12 th International Conference on Alzheimer's Disease and Parkinson's Disease (AD/PD 2015) Meeting, Nice, France
March 2015	invited Speaker, <i>Lancet</i> Neurology Meeting on NMDA Receptors and Inflammation, Barcelona, Spain
April 2015	Invited Speaker, Department of Neurology, University of Massachusetts School of Medicine, Worcester, MA
April 2015	Invited Speaker, Department of Neuroscience, Indiana University School of Medicine, Indianapolis, IN
May 2015	Invited Speaker, Program in Neuroscience, Regeneration, and Repair and Department of Neurology, Yale School of Medicine, New Haven, CT
June 2015	Invited Speaker, 35th Blankenese Conference 2015--Brain Repair: From Neuroregeneration to Cellular Reprogramming, Hamburg, Germany
June 2015	Invited Speaker, Institute of Neurology, Queen Square, University College London
August 2015	Invited Speaker and Consultant, Turing Pharmaceuticals, LLC, New York City
October 2015	Invited Speaker, Lerner Research Institute, Cleveland Clinic
May 2016	Graduate School Retreat Speaker (voted by graduate students), University of Buffalo, Buffalo, NY
June 2016	Grand Rounds Speaker, Department of Neurology, Emory University School of Medicine, Atlanta, Georgia
October 2016	Invited Speaker, Alzheimer's Disease Data Blitz, UC San Diego Alzheimer's Disease Research Center (ADRC), La Jolla
November 2016	Invited Speaker, Neurobiology of Disease Workshop, Society for Neuroscience, San Diego, CA
March 2017	Invited Speaker and Chair, 13 th International Conference on Alzheimer's

April 2017	Disease and Parkinson's Disease (AD/PD 2017), Vienna, Austria Invited Speaker, Department of Biology/Neurobiology, École Normale Supérieure, Paris, France
May 2017	Invited Speaker, German Center for Translational Neuroscience (DZNE), Bonn, Germany
May 2017	Keynote Speaker, International Meeting on Brain Aging, University of Consenza, Calabria, Italy
September 2017	Retreat Speaker, Department of Neuroscience, The Scripps Research Institute, La Jolla, CA
September 2017	Invited Speaker, Columbia University College of Physicians & Surgeons, Taub Alzheimer's Research Center, New York, NY
October 2017	Invited Speaker, Gairdner Foundation Symposium: Molecular Mechanisms of Neurodegenerative and Neuroinflammatory Diseases, University of Alberta, Edmonton, Alberta, Canada
November 2017	Invited Speaker, Department of Neuroscience Seminar Series, The Scripps Research Institute, Jupiter, Florida
February 2018	Invited Speaker, Developing New Therapies for Neurodegenerative and Neurodevelopmental Disorders, California Institute for Biomedical Research (Calibr), La Jolla, CA
March 2018	Invited Speaker, 2018 NIH Alzheimer's Disease Research Summit: Path to treatment and Prevention, NIH, Bethesda, MD
September 2018	Invited Speaker, Effect of Protein S-Nitrosylation on Mitochondria, International Nitric Oxide Meeting, Oxford University, Oxford, UK
October 2018	Invited Speaker, Autism Tree Project Foundation 4th Annual Neuroscience Conference, Sanford Consortium for Regenerative Medicine, La Jolla, CA
March 2019	Invited Speaker, Division of Regenerative Medicine Stem Cell Symposium, Sanford Consortium For Regenerative Medicine (SCRM), University of California, San Diego
March 2019	Invited Symposium Speaker, German Neuroscience Association, Göttingen, Germany
March 2019	Invited Speaker, Heidelberg Brain Health Forum Symposium, University of Heidelberg, Germany
March 2019	Invited Speaker and Chair, 14 th International Conference on Alzheimer's Disease and Parkinson's Disease (AD/PD 2019), Lisbon, Portugal
April 2019	Invited Speaker, Tenth Anniversary Symposium, German Neuroscience Translational Centers (DZNE), Bonn, Germany

Principal Clinical and Hospital Service Responsibilities:

1981-1999	Attending Physician, Neurology Service, Beth Israel Hospital, Boston. Ward and/or Consult Attending Physician for one to two months per year
1981-1999	Member, Wednesday Afternoon Adult Neurology Clinic, Beth Israel Hospital, Boston
1981-1999	Staff Physician, Neurology Service, Children's Hospital, Boston.
1981-1997	Member, Tuesday Morning Pediatric Neurology Clinic, Children's Hospital, Boston
1986-1990	Ward and Consult Attending Physician for one month per year, Neurology

	Service, Children's Hospital, Boston
1988-1992	Attending Physician, Neurology Service, Brigham and Women's Hospital, Boston. Ward and/or Consult Attending Physician for one month per year.
1991-1992	Co-Director, Outpatient Adult Neurology Unit, Beth Israel Hospital-Boston
1991-1999	Program Director/Principal Investigator, Nimodipine and Memantine Trials for the Neurological Manifestations of AIDS, Massachusetts General Hospital, Beth Israel Hospital, of the Harvard-Boston AIDS Clinical Trials Unit (ACTU).
1991-2001	Program Director/Principal Investigator/Consultant, Nimodipine and Memantine Trials for the Neurological Manifestations of AIDS, Multi-Center National Trial of the AIDS Clinical Trials Group (ACTG), Division of AIDS, National Institute of Allergy and Infectious Disease, NIH.
1992	Attending Physician, Neurology Service, University of California, San Diego
2000-	Member, Wednesday Afternoon Neurology Clinic, University of California, San Diego (UCSD Medical Center and La Jolla Outpatient Clinics)

Major Administrative Responsibilities:

Harvard University

1981-1982	Assistant Senior Tutor (Dean) of Quincy House, Harvard College
1984-1999	Preceptor and advisor, Program in Biophysics
1985-1999	Undergraduate advisor for concentrators in neurobiology, Harvard College

Harvard Medical School

1984-1990	Steering Committee, Program in Neuroscience
1986-1999	Student Advisor, Medical Scientist Training (M.D.-Ph.D.) Program
1988-1994	Director/Principal Investigator, Developmental Neurology Training Grant, Neurology Research Laboratories, Longwood Area Neurology Program
1989-1999	Executive Committee, Medical Scientist Training (M.D.-Ph.D.) Program

Children's Hospital, Boston

1988-1994	Member, Steering Committee for Neurology Research
1990-1997	Member of Research Administrative Council (Enders Council)
1991-1997	Member of Administrative Committee for Overseeing Reorganization and Computerization of Grants Management, Purchasing, and Accounting Departments, Children's Hospital
1994-1997	Member of Enders Building Facilities Maintenance Committee
1992-1997	Program Director/Principal Investigator, Program Project on the Cellular and Molecular Pathophysiology of Mental Retardation, including Hypoxic-Ischemic Brain Injury and Neuro-AIDS, Children's Hospital, Boston.

Beth Israel Hospital, Boston

1991-1992	Co-Director and Administrator, Outpatient Adult Neurology Clinic
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Brigham and Women's Hospital, Boston

1997-1999	Chief, Cerebrovascular and NeuroScience (CNS) Research Institute Member, Neurosurgical Service Executive Committee
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Sanford Burnham Prebys Medical Discovery Institute, La Jolla, California

- 1999- Center Director (Senior Vice President level appointment)
- 2000- Member, Executive Leadership Committee
- 2000 Member, Program Director's Committee
- 2000- Promotions Committees for Professorial Appointments
- 2004-2009 Member, Board of Trustees

The Scripps Research Institute

- 1999 Ad hoc member, Promotions Committee for Tenure

University of California, San Diego

- 2004 Member, Search Committee for Cancer Center Co-Director

Editorships of Scientific Journals

- 2017- *Scientific Reports* (Nature companion journal), Editorial Board Member
- 2016- *PLOS Biology*, Academic Editor
- 2015 *Oncotarget*, Section on Autophagy and Cell Death, Editorial Board
- 2014 *Channels*, Editorial Board
- 2012- *Cell Death and Disease* (Nature Journals), Editorial Board
- 2012 Versita Open Access Books in Biology, Editorial Advisory Board
- 2011-2014 *CNS Neuroscience & Therapeutics*, Editorial Board
- 2011 *Neuroscience Bulletin*, Editorial Board
- 2011- Wiley International Reviews: *WIREs Membrane Transport and Signaling*, Editorial Board
- 2009- *HIV/AIDS - Research and Palliative Care*, Editorial Board
- 2008- *Ophthalmology and Eye Diseases*, Editorial Board
- 2008- *Journal of Cell Death*, Editorial Board
- 2008- *Journal of Neuroimmune Pharmacology*, Editorial Board
- 2007 *The Open Neuroscience Journal*, Editorial Advisory Board Member
- 2007- *Open Access Aging (Longevity Science) Journal*, Editorial Board
- 2007- *Open Access Medicinal Chemistry Journal*, Editorial Board
- 2007- *Current Drug Discovery Technologies*, Editorial Board
- 2006- *Recent Patents on Central Nervous System Drug Discovery*, Editorial Advisory Board Member
- 2005- *Molecular Neurodegeneration*, Editorial Board
- 2003- *Molecular Neurobiology*, Editorial Board
- 2001- *NeuroMolecular Medicine*, Editorial Board
- 2000- *Cell Death and Differentiation*, Receiving/Handling Editor
- 2000- *Neurobiology of Disease*, Editorial Board
- 2000- *Current Molecular Medicine*, Associate Editor
- 2000- *Journal of Molecular Neuroscience*, Editorial Board
- 1995- *Neuron*, Associate Editor
- 1995-2005 *European Journal of Pharmacology* -- Molec. Pharm. Section, Editorial Board
- 1995- *Journal of NeuroVirology*, Editorial Board
- 1995- *Frontiers in Bioscience*, Editorial Board
- 1994- *CNS Drug Reviews*, Editorial Board
- 1994-1998 *CNS Meeting Reports*, Editorial Board

Reviewer for Scientific Journals

Science	Cell	Journal of Clin. Investigation
Nature	Neurology	Annals of Neurology
New England Journal of Medicine	Neuron	CRC Critical Reviews
Journal of Neuroscience	Archives of Neurology	Experimental Eye Research
Trends in Neuroscience	Journal of Neurochemistry	Neuropharmacology
Journal of Immunology	Brain Research	Journal of Physiology (Lond)
Neuroscience	Developmental Biology	Journal of Neurophysiology
Eur. Journal of Pharmacology	Eur. Journal of Neuroscience	Visual Neuroscience
Neuroscience Letters	Curr Opin Therap Patents	J. Leukocyte Biology
AIDS Res Hum Retroviruses	Neurosci. Res. Commun.	Trends in Pharmacol. Sci.
The Neurologist	J Cereb Blood Flow Metab	Vision Research
Nature Medicine	Molecular Medicine	Journal of Virology
Proc Natl Acad Sci USA	Nature Neuroscience	Molecular Medicine
Cell Death & Differentiation	Cancer Research	Cell Rep.

Patents Allowed or Issued to S.A. Lipton, among 56 total (<http://patents.justia.com/inventor/stuart-lipton>)

Filing Date

1980	Rapid diagnosis of altered redox states with a simple urinary test for beta-hydroxybutyrate in confused or comatose patients.
1989, 2008, 2011	MEF2 transcription factors for neurogenesis, myogenesis, and survival.
1989	Calcium channel antagonists for the neurological manifestations of AIDS.
1990	Drugs acting at the redox modulatory site of the NMDA receptor for neuroprotection in neurological disorders including glutathione.
1990	<i>N</i> -methyl-D-aspartate (NMDA) receptor antagonists for the neurological manifestations of AIDS.
1991, 1993	Nitric oxide-related species (nitroso-compounds, including nitroglycerin and sodium nitroprusside) for neuroprotection in neurological disorders.
1992	Memantine, an NMDA receptor antagonist, to treat painful peripheral neuropathies and neuropathic pain.
1993	Memantine, an NMDA receptor antagonist, to treat all non-ischemic neurodegenerative disorders.
1993	Glaucoma treatment by neuroprotection of retinal ganglion cells.
1993	Use of superoxide dismutase mimics for stroke and neurodegeneration.
1996	Novel caspase pseudoenzyme for ophthalmological disorders.
1999	Hydroxamic acids as free radical scavengers and complement inhibitors to q treat stroke and neurodegenerative disorders.
2000	NitroMemantines, novel NMDA receptor antagonists, for acute and chronic neurological disorders.
2004	Synergistic action of Erythropoietin (EPO) and Insulin-like Growth Factor-I (IGF-I) for the treatment of neurodegenerative diseases.
2005	Anti-diabetic agents for the treatment of Alzheimer's disease.
2007, 2011, 2013	Electrophilic and Pro-Electrophilic Drugs for Neuroprotection.
2010	Novel platform for drug screening for Uncompetitive/Fast Off-rate (UFO) therapeutics.
2010	Screen for small molecules to protect from specific, aberrant S-nitrosylation reactions.

N.B. Approximately 50 other patent applications are pending.

Consultant to the following BioPharma Companies or Agencies (past or present):

Eli Lilly, Merck, Johnson & Johnson, Forest Laboratories, Neurobiological Technologies, Inc., Suntory Pharmaceutical, Takeda, Teva Neurosciences, Inc., Berlex Biosciences, Allergan, Alcon, Biogen-Idec, Parke-Davis, GSK, Bayer, Bristol-Myers Squibb, Ortho-Biotech, Scios, ADAMAS (formerly NeuroMolecular) Pharmaceuticals, Inc., Chemicon (Millipore), Immusol (currently ItherX), Vertex, Orphagen, Antibodies by Design (MorphoSys), Gerson-Lehrman, MEDACorp., The Frankel Group, Myriad Pharmaceuticals.

Scientific Founder or Chief Scientific Advisor (past or present):

Adamas Pharmaceuticals, Inc. (formerly NeuroMolecular Pharmaceuticals, Inc.), Neurobiological Technologies, Inc., Electra Pharmaceuticals, LLC.

Corporate Scientific Advisory Board Member (past or present):

Eli Lilly & Co., Vertex Pharmaceuticals, Inc.

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(h-Index = 133 on Google Scholar)

Original Reports

1. Hyun J, Lipton SA. Quantitative analysis of immunoglobulins by single radial immunodiffusion. St. Francis Hosp Bull 1970; (Oct) :15-20.
2. Lipton SA, Ostroy SE, Dowling JE. Electrical and adaptive properties of rod photoreceptors in *Bufo marinus*. I. Effects of altered extracellular calcium. J Gen Physiol 1977;70:747-770.
3. Lipton SA, Rasmussen H, Dowling JE. Electrical and adaptive properties of rod photoreceptors in *Bufo marinus*. II. Effects of cyclic nucleotides and prostaglandins. J Gen Physiol 1977;70:771-791.
4. Lipton SA, Markis JE, Pine MB, Paulin S, Lindsay HE. Cessation of smoking followed by Prinzmetal's variant angina and diffuse esophageal spasm: treatment with a calcium channel blocker. N Engl J Med 1978;299:775-776.
5. Lipton SA, Ostroy SE, Dowling JE. Calcium and photoreceptor adaptation. Nature 1979;281:407-408.
6. Lipton SA, Dowling JE. The relation between calcium and cyclic nucleotides in rod photoreceptors. Curr Topics Membr Transp 1981;15:381-392.
7. Lipton SA, Samuels MA. The diagnosis of stroke by CPK isoenzymes. Ann Neurol 1982;11:434-435.
8. Lipton SA. cGMP and EGTA increase the light-sensitive current in retinal rods. Brain Res 1983;265:41-48.
9. Lipton SA, Hickey W, Morris J, Loscalzo J. Candida infection in the central nervous system. Am J Med 1984;76:101-108.
10. Lipton SA, Hickey W, Morris J, Loscalzo J. Candida infection. Infectious Disease Digest 1984; (Sep): 24-25.
11. Lipton SA, Hickey W, Morris J, Loscalzo J. Central candidiasis. Extracta Otorhinolaryngologica 1985;7:104-107.
12. Leifer D, Lipton SA, Barnstable CJ, Masland RH. Monoclonal antibody to Thy-1 enhances regeneration of processes by rat retinal ganglion cells in culture. Science 1984;224:303-306.
13. Lipton SA. Conditioning hyperpolarization reveals a property of the light-sensitive current in photoreceptors that is modified by cGMP and EGTA. Brain Res 1985;341:337-349.
14. Lipton SA. Antibody activates cationic channels via second messenger calcium. Biochim

- Biophys Acta 1986;856:59-67.
15. Lipton SA. Prevention of classical migraine headache by digital massage of the superficial temporal arteries during visual aura. *Ann Neurol* 1986;19:515-516.
 16. Tabachnik-Schor NF, Lipton SA. Association of lupus-like anticoagulant and nonvasculitic cerebral infarction. *Arch Neurol* 1986;43:851-852.
 17. Lipton SA. Blockade of electrical activity promotes the death of mammalian retinal ganglion cells in culture. *Proc Natl Acad Sci USA* 1986; 83:9774-9778.
 18. Lipton SA, Tauck DL. Voltage-dependent conductances of solitary ganglion cells dissociated from the rat retina. *J Physiol (London)* 1987;385:361-391.
 19. Lipton SA, Schor NF. Lupus like anticoagulant and stroke. *Arch Neurol* 1987;44:691-692.
 20. Lipton SA. Bursting of calcium-activated cation-selective channels is associated with neurite regeneration in a mammalian central neuron. *Neurosci Lett* 1987;82:21-28.
 21. Lipton SA, Aizenman E, Loring R. Neural nicotinic acetylcholine responses in solitary mammalian retinal ganglion cells. *Pflügers Archiv Eur J of Physiology* 1987;410:37-43.
 22. Aizenman E, Frosch MP, Lipton SA. Responses mediated by excitatory amino acid receptors in solitary retinal ganglion cells from rat. *J Physiol (London)* 1988;396:75-91.
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 24. Tauck DL, Frosch MP, Lipton SA. Characterization of GABA- and glycine-induced currents of solitary rodent retinal ganglion cells in culture. *Neuroscience* 1988;27:193-203.
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 52. Lipton SA. Calcium channel antagonists in the prevention of neurotoxicity. *Adv Pharmacol* 1991;22:271-297.
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