

*Curriculum Vitae*  
*Vivien A. Casagrande*  
07/18/2016

## **CURRICULUM VITAE**

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<http://sitemason.vanderbilt.edu/site/jsRrWg>

### **RESEARCH STATEMENT**

The overall goal of this research is to understand how the visual thalamus and cortex interact to construct our perceptual world.

The first project explores the unconventional proposal that the primary sensory information received by the visual cortex from the visual thalamus [e.g., the lateral geniculate nucleus (LGN)] is not purely visual but rather visual information, primed by inputs from other sensory modalities. In this project, we hypothesize that the primate brain achieves fast and accurate decision-making in part due to its ability to focus, right from the beginning, on relevant aspects of inputs from all sense organs without appreciating all the details presented by each sense organ. Our specific hypothesis is that auditory and visual information are combined in a task dependent manner in the visual thalamus before this message is processed in cortex.

In a second project, we test the hypothesis that all thalamic nuclei contain some cell groups that act as drivers (send the main message) and some that act as modulators for multiple cortical areas, thus mediating the generation of an array of diverse cortical functions. The thalamus is not simply a passive relay to cortex. Instead, just as primary visual cortex (V1) depends on LGN, the secondary visual area (V2) and the middle temporal visual area (MT) depend on a combination of dedicated pathways through the thalamus (e.g., pulvinar) and direct feed forward connections from V1. This arrangement allows new properties to emerge at both the thalamic and cortical levels through dynamic loops.

A third project focuses on communication between cells in different areas of visual cortex and

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examines how visual messages are coded and transmitted from lower to higher visual areas and what the role of feedback is in this process.

We use a variety of electrophysiological, anatomical, and imaging approaches to address these questions including single unit and multielectrode recording in both anesthetized and awake behaving primates, light, electron microscopic and confocal examination of cells and circuits, optical imaging of intrinsic signals and pharmacological manipulation.

Our laboratory also has had a long standing interest in the evolution of the visual system. Therefore, we continue to use a comparative approach to examine for similarities and differences in the organization of the visual system in a variety of primate species.

### **EDUCATION**

- |      |  |
|------|--|
| 1964 | B.A. University of Colorado (Psychology, major; Biology, minor)            |
| 1973 | Ph.D. Duke University Physiological Psychology; Sponsor: Dr. I. T. Diamond |

### **POSITIONS AND FELLOWSHIPS**

- |              |   |
|--------------|---|
| 1965-1967    | Research Assistant, Arthur D. Little, Inc., Cambridge, Massachusetts  |
| 1967-1968    | United States Public Health Service Traineeship in Physiological Psychology, Duke University (sponsor: Dr. I. T. Diamond)       |
| 1968-1970    | United States Public Health Service Fellowship, Duke University   |
| 1970-1972    | United States Public Health Service Fellowship, Duke University   |
| 1972-1973    | National Institutes of Health, NIGMS, Behavioral Medicine, Postdoctoral Fellowship, Duke University                             |
| 1973-1975    | Research Associate, Department of Anatomy, University of Wisconsin (Postdoctoral Supervisor: Dr. R.W. Guillery)                 |
| 1975-1980    | Assistant Professor, Departments of Anatomy (primary appointment) and Psychology (secondary appointment), Vanderbilt University |
| 1980-present | Senior Fellow and Investigator, John F. Kennedy Center for Research on Human Development, Peabody College                       |
| 1980-1986    | Associate Professor, Departments of Cell Biology (formerly Anatomy) and Psychology, Vanderbilt University                       |
| 1986-present | Professor, Departments of Cell & Developmental Biology (formerly Cell Biology) and Psychology, Vanderbilt University            |

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1988-1992 Co-Director for Biomedical Sciences, Kennedy Center for Mental Retardation

1997-present Professor, Department of Ophthalmology and Visual Sciences (secondary appointment), Vanderbilt Medical School

### **ACADEMIC HONORS AND AWARDS**

1967-1968; 1970-72	NIH Predoctoral Traineeships
1972-1973	NIH NRSA Postdoctoral Fellowship
1977-1980	Academic Investigator Salary Award
1981	The Charles Judson Herrick Award for meritorious contributions to comparative neurology, presented by the American Association of Anatomists
1981-1986	Research Career Development Award
1998	President, Cajal Club
2006	Fellow, American Association for the Advancement of Science
2011	Fellow of the American Association of Anatomists
2012	Charles R. Park Award for Basic Research Revealing Insights into Physiology and Pathophysiology, 2012
2013	Chancellor's Award for Research
2016	Outstanding Teacher of the Year 2015-2016, Vanderbilt Brain Institute

### **TEACHING EXPERIENCE**

Introductory Psychology (Graduate Assistant), Duke University

Mechanisms of Visual Perception (Tutorial), Duke University

Central Nervous System (Teaching Assistant), University of Wisconsin  
The Nervous System, Vanderbilt University (Lecturer)

Animal Behavior, Vanderbilt University (Course Director)

Freshman Seminar: Neural Development

Special Topics in Neuroscience, Vanderbilt University (Course Director)

Topics have included: Development of the Nervous System; Structure and Function of Dendrites; Structure and Function of the Vertebrate Eye; Limbic System; History of Neuroscience; Development of the Visual System; Structure and Function of the Tectum; Methods in Neuroscience; Parallel Processing in the Visual System; The Role of Neural Activity in Neural Development; Current issues in Neural Development; Current Methods in Neurobiology; Designing Good Experiments in Neurobiology, Imaging Methods: Cells to Brains

Basic Course in Department of Ophthalmology, Vanderbilt University (Guest Lecturer)

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Neuroanatomy, Meharry Medical College (Guest Lecturer)

Seminar on Brain Imaging - Department of Psychiatry, Vanderbilt University (Guest Lecturer)

Cell Biology - Department of Cell Biology, Vanderbilt University

Neural Development - Department of Psychology, Vanderbilt University

The Visual System - Cross Departmental Course, Vanderbilt University (Lecturer)

Cell and Molecular Neuroscience - Department of Cell Biology, Vanderbilt University (Course Director)

Cellular and Integrative Neuroscience - Departments of Cell Biology, Pharmacology, Physiology and Biophysics, and Center for Neuroscience, Vanderbilt University (Course Director)

Interdisciplinary Graduate Course - Vanderbilt Medical School (Lecturer)

Fundamentals of Neuroscience - Vanderbilt Medical School (Lecturer)

Special Topics in Cell and Developmental Biology - Vanderbilt Medical School (Lecturer)

Systems Neuroscience (NURO 340) (Course Director)

**ADMINISTRATION AND COMMITTEES: NATIONAL & INTERNATIONAL**

National Institutes of Mental Health Fellowship Review Committee, 1975-1977

National Institutes of Health Bio-Psychology Study Section, 1979-1983

National Institutes of Health Behavioral and Neurosciences Fellowship Ad Hoc Review Group, 1979-1983

National Science Foundation, Outside Reviewer

National Eye Institute, Visual Sciences A Study Section, Ad Hoc Reviewer

National Eye Institute, Visual Sciences B Study Section, Ad Hoc Reviewer

Panel for Presidential Young Investigator Awards (NSF), Member, 1989

Association for Research in Vision and Ophthalmology, Program Planning Committee, 1989-present; Chairman, Anatomy and Pathology Subsection, 1990-1991

Selection Committee for 1991 Society for Neuroscience, Young Investigator Award

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Invited Organizer of American Association of Anatomists Cajal Club Symposium, 1992: The Role of Glia in Neural Pattern Formation

Association for Research in Vision and Ophthalmology, Strategic Planning Committee, 1991-1992 (chair, 1992)

Mini-Symposium organizer for the Association for Research in Vision and Ophthalmology 1992: A new look at parallel vision channels in primates

C.J. Herrick Award Committee, 1993-1996

Cajal Club Nomination Committee for President and Program Chair, 1992-1994

University of Kansas MRRC Outsider Reviewer - Neuroscience Cores, 1993

National Eye Institute Visual Sciences B Study Section, 1995-1998

Ad Hoc reviewer, National Science Foundation 1976-present

Cajal Club President Elect (Nissl Body) 1997; President (Nucleolus) 1998

Dissertation Committee for D. A. Barker, University of Sydney, (Australia) 1998

NSF/EPSCoR External Advisory Committee 1996-2000

Ad Hoc grant reviewer, Wellcome Trust (1999, 2000, 2002)

Society for Neuroscience Communications and Chapters Committee, 1997-2001

Board Member, Cajal Club Foundation Corporation, 1997-present

University of Sydney AU thesis committee (Andrew White)

Chairperson, National Eye Institute CDA Review Panel, 2006

Medical Research Council (MRC) review (UK) 2007

Editorial Consultant for: *Science*, *J. Comparative and Physiological Psychology*, *Physiology & Behavior*, *Neuroscience*, *Journal of Neuroscience*, *J. Neurophysiology*, *Vision Research*, *Developmental Brain Research*, *Brain Research Bulletin*, *Brain Research*, *Behavioral and Brain Science*, *Laboratory Animal Science*, *Brain Behavior and Evolution*, *Journal of Medical Primatology*, *Investigative Ophthalmology and Visual Science*, *Psychological Bulletin*, *Current Eye Research*, *Visual Neuroscience*, *Cerebral Cortex*, *Physiology and Behavior*; *Laboratory Animal Science*, *Anatomical Record*, *Trends in Neurosciences*, *Proceedings for the National Academy of Sciences*, *Experimental Brain Research*, *Nature*, *J. Neurocytology*, *J. Physiology*, *Lasers in Surgery & Medicine*, *Neuroscience*, *European Journal of Neuroscience*, *J. Neuroscience Methods*; *Neuron*; *Nature Neuroscience*

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Editorial Board: J. Comparative Neurology, 1987-2000; Visual Neuroscience, 1989-1991; 1996-2000; Cerebral Cortex 2006-present; Eye and Brain 2009-present; Frontiers in Neuroscience 2008-present

Associate Editor: Visual Neuroscience, 1991-1993, American Journal on Mental Retardation, 1993-1998; Journal of Experimental and Integrative Medicine 2011-present

Faculty of 1,000 reviewer, 2001-present

Ad Hoc reviewer, NHMRC Project Grants (2000, 2002)

American Association Anatomists EB 2000 Program Committee Meeting

Ad Hoc grant reviewer, Wellcome Trust (1999, 2000, 2002)

Ad Hoc reviewer Integrative, Functional and Cognitive Neuroscience - 8 (IFCN-8) study section, NIH (2003)

Ad Hoc Reviewer, NIH Study Section ZRG1 IFCN-L (03) (2010)

Grant reviewer, NWO-WOTRO Science for Global development (2012)

Ad Hoc Reviewer, NIH study section ZRG1 IFCN-Q (03) M (2014)

American Association of Anatomists Fellows Selection Committee (2015)

Chair, Gordon Research Conference, Thalamocortical Interactions: Cell and Circuit Properties (2016)

### **ADMINISTRATION AND COMMITTEES: LOCAL**

President, Middle Tennessee Chapter for the Society for Neuroscience, 1977-1978

Standing Policy Committee, Biomedical Sciences, 1977-1980

Biomedical Research Support Grant Advisory Board, 1978-1980

Neurobiology Steering Committee, 1978-1981; Program Faculty, 1978-81

Neurobiology Training and Selection Committee, 1978-1982

Visual Science Training Program - Seminar and Speakers Committee, 1978-1979

Visual Science Training Program Faculty, 1976-present

Graduate Studies Committee Psychology, 1979-1981

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Graduate Studies Committee Anatomy, 1979-1982  
Committee on Special Awards, 1982-1984  
Kennedy Center Scientist and Participant in Core Program, 1982-present  
Head Seminar Series, Anatomy, 1983  
Director of Graduate Studies, Anatomy, 1984-1985  
Temporary Committee, Graduate Program, Anatomy 1983-1985  
Director of Graduate Studies, Cell Biology, 1985-1990  
Graduate Student Conduct Council, 1984-1986  
Search Committee for the Director of the Division of Sponsored Research, 1985  
Admissions Committee, Sigma Xi, 1983-present  
Chair, Kennedy Center Colloquium Committee, 1985-1989  
Graduate Faculty Delegate Assembly, 1985-1989  
Search Committee for the Director of the Kennedy Center, 1987-1988  
Committee for Health Sciences: Protection of Human Subjects, 1987-1988  
Member, Graduate Education Committee, 1988-1989  
Co-Chair, Visual Sciences Training Program Seminar Committee, 1987-1989  
Director, Neuroscience Research Cluster, Kennedy Center, 1988-1992  
Associate Director for Biomedical Research, Kennedy Center, 1988-1991  
Chair, Search Committee for Director of Development Neuroscience Center, 1988-1991  
Credentials Committee, Kennedy Center, 1990-1997  
Head, Animal Care Core, Visual Sciences Core Module, 1989-1991  
Head, Neuroscience Core, Kennedy Center Core Module, 1989-1991  
Users Committee, Kennedy Center, 1990-1994  
Graduate Advisory Committee, Cell Biology, 1993-1995

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University Animal Care Committee, 1992-1994

University Faculty Senate, Representing the School of Medicine, 1993-1996

Committee on Academic Policies and Services, 1993-1996

Task Force on Graduate and Postgraduate Education (Vanderbilt Medical School), 1996

Chair Membership Committee Kennedy Center, 1993-1997

Dean Chapman, Special Advisory Committee, 1998

Nicholas Hobbs Society Grant Awards Committee, 1997

Graduate Neuroscience Committee, Vanderbilt University, 1997-present

Center for Integrative & Cognitive Neuroscience, 1998-present

Reviewer for Hobbs Society grants, 1999

Kennedy Center Young Scientist and Graduate Awards Committee, 1999

Molecular Neuroscience Curriculum Committee, 1999-present

Integrative Neuroscience Graduate Admissions Committee, 2000-present

Neuroscience Graduate Programs: Student Oversight Committee, 2000-2002

Vanderbilt Kennedy Center Membership Committee, 2001-2005

Kennedy Center Steering Committee, 2002-2005

Cell and Developmental Biology Appointments and Promotions Committee, 1993-present

Graduate Faculty Delegate Assembly representing Cell & Developmental Biology, 2002-present

Steering Committee for Graduate Education Department of Cell & Developmental Biology,  
2002-present

Institutional Animal Care and Use Committee, 2003-2005

Master in Laboratory Science Committee, 2003-2005

Executive Committee for the Vision Training Grant, 2003-2008

University Faculty Senate Representative for the School of Medicine, 2003-2005



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Vision Training Program Executive Committee, 2003-2008

Graduate Faculty Delegate Assembly Representative for the Department of Cell and Developmental Biology, 2004-present

Cell and Developmental Biology Curriculum Committee, 2004-present

Environmental Enrichment Committee, 2005-2007

Interdisciplinary Collaborations Task Force, 2006-present

Chair search committee for the Department of Hearing and Speech Sciences, 2007-2008

Outstanding Student in Cell and Developmental Biology Selection Committee, 2006-2009

Cell and Developmental Biology Mentoring Committee Chair (Dr. Melanie Ohi), 2007-present

Search Committee for Vanderbilt Brain Institute Director, 2007-2008

Basic Sciences Planning-Enhancing Communication Committee, 2007-2008

Neuroscience Graduate Program Curriculum Committee, 2007-present

Module Director Cell Imaging Core (Vision Research Core Grant), 2007-present

Neuroscience Steering Committee, 2009-present

Neuroscience Undergraduate Curriculum Committee, 2008-present

Junior Faculty leadership Development Program Co-Director, 2009-present

Executive Committee for the Middle Tennessee Chapter of the Society for Neuroscience, 2009-2012

President Middle Tennessee Chapter for the Society for Neuroscience, 2009-2011

Advisory Board Conte Grant Supplement, 2010-

Search Committee for two faculty positions, Department of Speech and Hearing Vanderbilt Medical School, 2011

Neuroscience Steering Committee, 2011-present

Vanderbilt Brain Institute Interim Steering Committee, Cell and Developmental Biology Representative, 2011-2012

Vanderbilt Brain Institute Steering Committee, Sensory and Motor Neuroscience, 2012-present

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Music and the Brain Symposium Committee, 2013-2014

Vanderbilt Brain Institute Education & Training Sub-Committee

Vanderbilt Brain Institute Recruitment Committee

### **PROFESSIONAL SOCIETIES**

Sigma Xi

Cajal Club

Society for Neuroscience

The Association for Research in Vision and Ophthalmology

FASEB

American Association of Anatomists

Middle Tennessee Chapter for Society for Neuroscience

Visual Sciences Society

American Physiological Society

### **INVITED PRESENTATIONS**

1973 NRP Work Session on "Sensory-Motor Function of Midbrain Tectum": *Superior colliculus in tree shrew, structural and functional division into superficial and deep layers* (Cambridge, MA (Massachusetts Institute of Technology))

1974 International Conference on Comparative Aspects of Telencephalic Organization: *The effects of visual deprivation in various mammals* (Caracas, Venezuela)

1978 Second International Conference on Myopia: *Ciliary zonule dysplasia in lid suture myopia* (Yokohama, Japan)

1978 Eleventh Symposium of the Center for Visual Science: Comparative Aspects of Visual Deprivation: *Visual deprivation in animals and their analogs in human visual pathology* (Rochester, NY)

1979 Fourth Annual Interdisciplinary Conference: *Binocular interactions in the developing primate visual system* (Jackson Hole, WY)

1979 Society for Neuroscience Regional Meeting: *Binocular interaction in the developing primate visual system* (Birmingham, AL)

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- 1980 Third International Conference on Myopia: *Atropine affects lid suture myopia development* (Copenhagen, Denmark)
- 1980 Colloquium staged by the School of Optometry at the University of Alabama-Birmingham (Birmingham, AL)
- 1980 Colloquium staged by the Department of Psychology at Duke University (Durham, NC)
- 1980 Winter Conference on Brain Research, Colorado (Keystone, CO)
- 1981 Winter Conference on Brain Research, Colorado (Keystone, CO)
- 1982 IXth Congress of the International Primatological Society: *Aspects of visual system development in tree shrew* (Atlanta, GA)
- 1982 Southeast ARVO Conference: *Development of lamination in the lateral geniculate* (Charleston, SC (Medical University of South Carolina))
- 1982 Colloquium staged by the Barrow Neurological Institute (Phoenix, AZ)
- 1982 Colloquium staged by the Department of Anatomy at the University of Wisconsin (Madison, WI)
- 1982 Colloquium staged by the Department of Anatomy at the University of Michigan (Ann Arbor, MI)
- 1982 Winter Conference on Brain Research (Steamboat Springs, CO)
- 1983 Second International Conference on Event Perception: *Comparative aspects of primate visual system* (Nashville, TN (Vanderbilt University))
- 1983 Colloquium staged by the National Institutes of Health (Bethesda, MD) (guest of Dr. Wurtz)
- 1983 Colloquium staged by the Fort Ruckers Sensory Sciences Division (Fort Ruckers, AL)
- 1983 Colloquium staged by the National Institutes of Health (Bethesda, MD) (guest of Drs. Ungerleider and Mishkin)
- 1983 Colloquium staged by the Neuroscience Chapter of the University of Alabama-Birmingham (Birmingham, AL)
- 1983 Colloquium staged by Department of Anatomy at University of Tennessee-Memphis
- 1983 Winter Conference on Brain Research (Keystone, CO)
- 1984 West Coast Regional Developmental Biology Conference: *Afferent influences on cell layer formation* (Tahoe, CA)

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- 1984 Xth Congress of the International Primatological Society: *Aspects of sensory system organization and plasticity in primates* (Nairobi, Kenya)
- 1984 Colloquium staged by Department of Psychology at Massachusetts Institute of Technology (Cambridge, MA)
- 1984 Colloquium staged by the Department of Psychobiology at University of California-Irvine
- 1984 Colloquium staged by the Section of Neurobiology at Brown University (Providence, RI)
- 1984 Winter Conference on Brain Research (Steamboat Springs, CO)
- 1985 Colloquium staged by the Department of Anatomy at University of Tennessee-Memphis
- 1985 Colloquium staged by the Neuroscience Institute at the University of Oregon (Eugene, OR)
- 1985 Winter Conference on Brain Research (Vail, CO)
- 1986 Cajal Club Symposium on Developmental Neuronal Plasticity, American Association of Anatomists Convention: *Normal and abnormal development of the lateral geniculate nucleus* (Reno, NV)
- 1986 College of Neurophysics: Organization of the Brain, International Center for Theoretical Physics: *Three Lectures on brain development* (Trieste, Italy)
- 1986 Colloquium staged as part of the Neuroscience Series of the Marine Biological Institute (Woods Hole, MA)
- 1986 Colloquium staged by the Department of Neuroanatomy at Oxford University (Oxford, UK)
- 1986 Winter Conference on Brain Research (Keystone, CO)
- 1987 Colloquium staged by the Department of Anatomy at the University of Wisconsin (Madison, WI)
- 1987 Winter Conference on Brain Research (Vail, CO)
- 1988 Colloquium staged by Department of Neurobiology and Behavior at State University of New York-Stony Brook
- 1988 Colloquium staged by Department of Biology at Tennessee State University (Nashville, TN)
- 1988 Winter Conference on Brain Research (Steamboat Springs, CO)

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- 1988 Colloquium staged by the University of Kansas Medical Center (Kansas City, KS)
- 1989 Winter Conference on Brain Research (Snowbird, UT): *Central reorganization after injury* (speaker); *Recent evidence concerning the roles of activity and surface factors in sensory system development* (speaker and panel organizer)
- 1989 Colloquium staged by the Department of Anatomy, University of Wisconsin (Madison, WI): *Interactions between neurons and glia in laminar development*
- 1989 Colloquium staged by the Wisconsin Regional Primate Center (Madison, WI): *Parallel information channels in primates*
- 1989 Colloquium staged by the Neuroscience Seminar Series at Johns Hopkins School of Medicine (Baltimore, MD): *Intrinsic and extrinsic factors in the development of the lateral geniculate nucleus*
- 1989 Colloquium staged by the Department of Anatomy and Neurobiology, St. Louis University School of Medicine (St. Louis, MO): *Interactions between neurons and between neurons and glia in the formation of cell layers*
- 1990 Conference on Neural Regeneration and Transplantation: *The morphological and functional basis (Plasticity in the retinogeniculate and geniculostriate pathways)* (Singapore)
- 1990 American Academy of Optometry Symposium: *A new look at parallel visual channels* (Nashville, TN)
- 1990 Colloquium staged by the Department of Ophthalmology, University of British Columbia (Vancouver, BC, Canada): *Development of neural architecture in the visual system: intrinsic and extrinsic factors*
- 1990 Colloquium staged by the Neuroscience and Behavior Program, University of Massachusetts-Amherst: *Development of neural architecture in the visual system: intrinsic and extrinsic factors*
- 1991 Winter Conference on Brain Research (Vail, CO): *Extrinsic and intrinsic influences on the development of sensory system topography* (workshop chair)
- 1992 Cajal Club Symposium: *The role of glia in neural pattern formation* (New York, NY)
- 1992 American Association for Research in Vision and Ophthalmology (Sarasota, FL): *A new look at parallel visual pathways in primates* (symposium organizer and speaker)
- 1992 Winter Conference on Brain Research (Steamboat Springs, CO): *What are the blobs?*
- 1993 American Association of Anatomists Presidential Symposium: *Cellular organization of cerebral cortex* (San Diego, CA) (speaker)

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- 1993 Winter Conference on Brain Research (Whistler, BC, Canada): *The retina and its targets: how are early developmental events coordinated?*
- 1993 Visiting Scholars Program, Vision Science Research Center, University of Alabama-Birmingham: *Parallel visual pathways: a new perspective*
- 1993 Colloquium staged by the Department of Anatomy at the University of Mississippi Medical School (Jackson, MS): *Parallel visual pathways: a new perspective*
- 1993 Colloquia staged by the Department of Psychology at University of North Carolina-Chapel Hill: *Parallel visual pathways; Challenges faced by women in science*
- 1993 Colloquium staged by the Department of Anatomical Science and Neurobiology at the University of Louisville Health Science Center (Louisville, KY): *Parallel visual pathways in primates: new perspectives*
- 1994 Symposium on Neural Dynamics (Washington, DC): *Parallel pathways* (invited speaker)
- 1994 Winter Conference on Brain Research (Snowbird, UT): *How plastic are developing retinal ganglion cells?*
- 1995 25th Cambridge Ophthalmological Symposium (Cambridge, United Kingdom): *The neuronal pathways of binocular vision and stereopsis*
- 1995 Winter Conference on Brain Research (Steamboat Springs, CO): *Why do we have multiple thalamic pathways to sensory cortex?*
- 1995 Colloquium staged by the Department of Anatomy and Neurobiology at the Boston University School of Medicine (Boston, MA): *Parallel processing of visual information: new perspectives*
- 1995 Colloquium staged by the Department of Human Anatomy at the University of Oxford (Oxford, UK): *Parallel processing of visual information: new perspectives*
- 1996 Society for Neuroscience National Meeting (Washington, DC): *The individual investigator in systems neurobiology* (invited speaker); Women in Neuroscience (WIN) symposium: *Running a laboratory: issues in scientific style*
- 1996 Colloquium staged by the Center for Neuroscience at University of California-Davis: *Parallel pathways and functional modules: insights into visual cortical function*
- 1996 Winter Conference on Brain Research (Snowmass Village, CO)
- 1997 Visual Sciences Symposium in dedication of the Vision Center at the University of Tennessee Health Sciences Center (Memphis, TN)
- 1999 Colloquium at the A.A. Bogomoletz Institute of Physiology at the National Academy of Sciences of Ukraine (Kiev, Ukraine): *The visual brain of primates: progress and puzzles*

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- 1997 Winter Conference on Brain Research (Breckenridge, CO): *Optical imaging and functional modules: changing views of hypercolumns* (organizer and speaker); *The rainbow's end: from cones to color perception* (invited speaker)
- 1997 Wisconsin Regional Primate Research Center, University of Wisconsin (Madison, WI): *The visual brain of primates: progress and puzzles*
- 1997 Colloquium staged by the Department of Anatomy at the University of Wisconsin Medical School (Madison, WI): *A new look at the functional organization of primate geniculocortical and corticocortical visual pathways*
- 1997 Colloquium staged by the Visiting Scholar Program at the Visual Science Research Center at the University of Alabama-Birmingham: *The visual brain of primates: progress and puzzles on parallel pathways in cortex*
- 1997 Inaugural Symposium, Center for Vision Research, University of Tennessee-Memphis: *Vision in primates: progress and puzzles*
- 1998 Colloquium staged by the Center for Cognitive and Behavioral Science at State University of New York-Stony Brook: *Vision in primates: progress and puzzles*
- 1999 Winter Conference on Brain Research (Snowmass Village, CO): *What's so special about the development of the primate visual system?*
- 1999 Department of Biology, Georgia State University (Atlanta, GA): *Parallel pathways and functional modules: insights into visual function in primates*
- 2000 Colloquium staged by the University of Alabama at Birmingham: *Anatomy of central visual pathways*
- 2000 Colloquium staged by the American Association for Laboratory Animal Science's District IV Meeting (Knoxville, TN): *Seeing the light: what comparative studies can tell us about human vision*
- 2000 Kaas Festschrift: *Seeing the light* (Nashville, TN (Vanderbilt University))
- 2001 Anthropoid Origins Symposium: *Conservation and change in primate vision* (Pittsburgh, PA (Carnegie Natural History Museum))
- 2001 Cajal Club/Cajal Institute International Conference: *Changing Views of Cajal's Neuron* (Madrid, Spain): *Static and dynamic views of visual cortical organization*
- 2001 XXXIVth International Congress of Physiological Sciences (Christchurch, New Zealand / Manly, Australia): *Partitioning the image: how many parallel pathways are there and what are they doing?*
- 2001 Colloquium staged by the Vision, Touch and Hearing Research Centre within the

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- Department of Physiology and Pharmacology at the University of Queensland (Brisbane, Australia): *The lateral geniculate nucleus revisited: new messages from down under*
- 2001 Colloquium staged by the Department of Physiology, University of Sydney (Sydney, Australia): *The lateral geniculate nucleus revisited: new messages from down under*
- 2002 Neuroscience Seminar, Vanderbilt Integrative and Cognitive Neuroscience Program, Vanderbilt University (Nashville, TN): *Why does the thalamus exist?*
- 2002 Society for Neuroscience Symposium (Orlando, FL): *Visual cortex: functional organization* (chair)
- 2003 Structure, Function and Evolution of the Primate Visual System (Tübingen, Germany): *The role of the lateral geniculate nucleus and parallel pathways in a dynamic system*
- 2003 Winter Conference on Brain Research (Snowbird, UT): *So many areas, so little time: transformations of visual information in extrastriate cortex* (invited panel speaker)
- 2003 Colloquium staged by the Department of Ophthalmology and Visual Science within the Moran Eye Center at the University of Utah School of Medicine (Salt Lake City, UT): *The geometry of feature maps in primate striate and extrastriate cortex examined with optical imaging*
- 2003 Howard Hughes Medical Lecture at the Department of Biology at Murray State University (Murray, KY): *The language of vision: pathways, maps and modules*
- 2003 Colloquium staged by the Department of Neurology at Vanderbilt University (Nashville, TN): *The role of the lateral geniculate nucleus in a dynamic system*
- 2004 Colloquium staged by the Department of Physiology and Neurobiological Branch of the Szeged Division of the Hungarian Academy of Sciences (Szeged, Hungary): *Constructing visual reality: the impact of attention and motor planning on the lateral geniculate nucleus*
- 2004 "Cortical Function: A View from the Thalamus" at the University of Wisconsin (Madison, Wisconsin): *The impact of attention and motor planning on the lateral geniculate nucleus (LGN)* (symposium co-organizer)
- 2004 Colloquium staged by the Department of Physiology and Neurobiological Branch of the Szeged Division of the Hungarian Academy of Sciences (Szeged, Hungary): *Constructing visual reality: the impact of attention and motor planning on the lateral geniculate nucleus*
- 2004 Colloquium staged by the Vanderbilt Institute of Imaging Science (VUIIS) (Nashville, TN): *The geometry of feature maps in primate striate and extrastriate cortex examined with optical imaging*
- 2004 Colloquium staged by the MARC Program at Tennessee State University (Knoxville, TN):



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*The language of vision: pathways, maps and modules*

- 2005 Vision Sciences Society Convention: *Evolution of visual pathways* (Sarasota, FL)  
(Invited symposium talk; proceedings published in *Journal of Vision* 5(12) 32a)
- 2005 Fourth Asian Pacific International Congress of Anatomists (APICA) (Kusadasi, Turkey):  
*The language of vision: pathways, maps and modules* (also chaired one session)
- 2005 Colloquium staged by the Department of Physiological Optics at the University of  
Alabama-Birmingham: *Geniculostriate pathways*
- 2005 VSRC Visiting Scholars Program, University of Alabama-Birmingham: *Functional  
organization of primate visual cortex revealed by imaging of intrinsic signals*
- 2005 Summer Neuroscience Apprenticeship Program (SNAP), Vanderbilt University  
(Nashville, TN): *Neuroimaging: a window into the working brain* (invited talk)
- 2006 Optical Society of America (Tuscon, AZ): *Evolution of visual pathways*
- 2006 Krasnow Institute at George Mason University (Fairfax, VA): *The geometry of feature  
maps in primate striate and extrastriate cortex: what optical imaging reveals about  
connections and function* (invited talk)
- 2006 Winter Conference on Brain Research (Steamboat Springs, CO): *The obsolete cortical  
module: setting boundaries on the problem* (invited panel speaker)
- 2006 Frontiers in Neuroimaging Program, University of Alabama (Birmingham AL): *A different  
slant on orientation bias and perception revealed by optical imaging of intrinsic signals*  
(invited panel speaker)
- 2006 Colloquium: The Vanderbilt Vision Research Center and Department of Ophthalmology  
& Visual Sciences, Vanderbilt University (Nashville, TN): *New perspectives on the  
evolution of the visual system*
- 2006 Neuroscience Seminar: Department of Psychology, Vanderbilt University (Nashville,  
TN): *New perspectives on the evolution of the visual system*
- 2006 Seminar: Department of Cell & Developmental Biology, Vanderbilt Medical School  
(Nashville, TN): *The language of Vision, Pathways, Maps and Modules: How Does it All  
Work Together?*
- 2007 Seminar Class MARC PROGRAM: Physiology University of the Virgin Islands (St Thomas,  
United States, Virgin Islands): *How we see: links between brain mechanisms and  
perception*
- 2007 Cell and Developmental Biology 2007 Seminar Series, Vanderbilt Medical School  
(Nashville, TN): *Seeing More Than the Light: Brain Maps, Modules and Perception*

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- 2007 Mathematical Biosciences Institute at Ohio State University. Workshop in the visual system Ohio State University (Columbus OH): *The Evolution of Parallel Visual Pathway in Primates*
- 2007 Center for Integrative Neuroscience and Neuroengineering, University of Chicago (Chicago, IL) 9/07: *The Evolution of Parallel Visual Pathways in Primates*
- 2007 International Conference on Cognitive Neurodynamics (ICCN2007) Invited Symposium Speaker. (Shanghai, China) 11/07: *What language is spoken here? Conversations between neurons in primate visual cortex*
- 2007 Tennessee State University invited speaker in Biological Sciences 11/07: *The language of vision: what code does the brain use to allow us to recognize a face*
- 2008 Winter Conference on Brain Research (Snowbird, UT): All for One and One for All: Emerging Ideas about Population Coding in the Brain (invited speaker and workshop organizer)
- 2008 Barrow Neurological Institute (Phoenix, AZ): Brain Maps, Modules, and Perception
- 2009 The Institute of Electrical and Electronics Engineers (IEEE) Symposium Series on Computational Intelligence panel on "Functional principles underlying biological intelligence": *Brain Modules and Perception*. (Nashville, TN)
- 2009 Tufts Veterinary School (Grafton, MA): *Birds, Vision and Darwin: What do we have in common?*
- 2010 Vanderbilt University, Department of Psychology Neuroscience Seminar: *Parallel Visual Pathways: Looking back*
- 2010 Montreal University (Montreal, Canada): *The role of feedback in shaping the visual message*
- 2010 Vanderbilt University, Department of Cell Biology Faculty Exchange: *Linking Perception to Neurons: The role of cortical modules and feedback*
- 2012 Vision Down Under Symposium: ACEVS Satellite Meeting on Vision of the Australian Neuroscience Society (Brisbane, Australia) 1/27/12: *The Pulvinar Does More*
- 2012 University of Melbourne (Melbourne, Australia) 2/03/12: *The impact of the pulvinar on Visual Cortex*
- 2012 Save the Sight Institute, University of Sydney (Sydney, Australia) 2-09-12: *New insights into visual thalamic function: the pulvinar*
- 2012 University of Memphis (Memphis, TN): *New insights into visual thalamic function: the pulvinar*

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- 2012 Visual Science Society Symposium (Naples, FL): Organizer. May 11, 2012: *Pulvinar and Vision: New insights into circuitry and function*
- 2012 Cajal Club Satellite Symposium of the Federation of European Neurosciences (Barcelona, Spain) July 13, 2012: *The Thalamus* (role symposium organizer and speaker). Talk title: *The impact of the pulvinar on visual cortex*
- 2012 Vanderbilt, A Symposium in Honor of the Contributions of Dr. Ford Ebner: *Where do we go from here?*
- 2012 Vanderbilt Kennedy Center, A Potential Role for the Thalamus in Developmental Disorders Involving Inattention and Neglect.
- 2013 Ernst Strüngmann Institute (ESI) of Neuroscience, Max Planck Society workshop: Interareal Interactions (10/7-10/8): *Illuminating the Role of Pulvinar-Cortical Interactions in Vision*
- 2013 Fens-IBRO-Hertie Winter School, Thalamus and Thalamo-Cortical Interactions: Cells, Networks, Dynamics and Disease. (Obergurgl, Austria) December 8-15
- 2014 Cosyne 2014 Meeting Workshop, "Thalamocortical Network Mechanisms for Cortical Functioning." Organizers: Murray Sherman, W. Martin Usrey Cosyne 2014 (Snowbird, Utah): *Perceptual decision related activity in the lateral geniculate nucleus (LGN)*
- 2015 Janelia Farms Conference: Thalamus and Corticothalamic Interactions. "Illuminating the role of the visual thalamus in interactions with cortex" organizers László Acsády, Jesse Goldberg and Karl Svoboda
- 2016 Gordon Research Conference, Cell and Circuit Properties of Thalamocortical Interactions: Cell and Circuit Properties (Ventura, CA)

**GRANT SUPPORT (currently active support in bold)**

- KO7-EY00061                      Effects of Visual Deprivation in Primates. 1/1/77 - 1/1/80  
(Academic Investigator Salary Award), \$90,000.
- EY001778-37                      Visual System Organization and Development in Primates.  
5/1/76 - 4/31/79, 7/1/78 - 6/30/84, 7/1/84 - 6/30/87, \$247,106.  
(Principal Investigator, 40% effort). 4/1/88 - 3/31/93, \$110,912  
(1st year); \$587,179 (total); Principal Investigator 30% effort.  
4/1/93-3/31/98, \$179,534 (1<sup>st</sup> year); 4/1/98-3/31/03,  
\$270,956; \$872,814 (total); Principal Investigator 35% effort.  
4/1/03-3/31/08, \$216,667 (1<sup>st</sup> year); \$1,177,407 (total direct);  
2/1/2009-1/31/2014, \$370,452 (4th year); 2/1/2014-1/31/2015  
Unfunded Extension Principal Investigator 50% effort.

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ARRA supplement-33S1      Direct Costs: \$85,075 2010

EY02221                      Ophthalmic Parameters in the Development of Myopia. 1/1/78 - 12/31/85, \$455,651. (Co-Principal Investigator, 5% effort).

K04-EY00223                Principles of Visual System Development (Research Career Program Award). 7/1/81 - 6/30/86, \$179,685.

EY03881                      Anatomical Studies of Visual System Development. 6/1/81 - 11/30/83, \$192,544. (Co-Principal Investigator, 40% effort).

BNS-8216684                Stereoscopic Vision in Animals. 6/1/83 - 5/31/85. (Co-P.I. 10% effort; P.I. Robert Fox). \$40,279.

EY 05038                     Mechanisms of Visual System Maturation. 12/1/83 - 11/30/86, (P.I. 40% effort). \$187,251, 3/1/87 - 2/28/91 (35% effort), \$438,389.

BRSR RR0524                Mechanisms of Visual System Maturation 8/01/83 - 11/30/83 (P.I.) \$7,000.

BNS-8708429                Early Development of Visual Pathways. 8/15/87 - 8/14/90, P.I. 20%, \$103,028.

URC                            Morphology of Retinal Terminals Arbors Projecting Ipsilaterally and Contralaterally in the Tree Shrew. 7/1/86 - 6/30/87, \$6,878.

URC                            Morphology of the Visual System: In vitro Development. 6/1/87 - 6/30/88, \$6,000.

BRSR RR0524-27            A new intracellular injection technique. 9/1/88 - 8/31/89, \$4,800 (P.I.).

EY-07007                    Program faculty in NIH Training Grant at Vanderbilt: Visual Science Training Program. (3% effort)

EY07135                     Training Grant in Vision Research 12/1/93 - 11/30/98 (total direct: 632,737), 12/1/96 - 11/30/97 \$147,832 direct (Faculty; P.I. M. Powers), 12/1/98 - 11/30/03 \$165,392

MH-15452                    Program faculty in NIH Training Grant at Vanderbilt: Neurobiology Training Program. (3% effort)

BRSR RR0524                Geniculate Layer Development (P.I.), 9/1/91 - 8/31/92, \$6,000.

URC                            The Role of Glia in Optic Axon Guidance, 7/1/91 - 6/30/92, \$5,000.

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ONR Center for Medical and Materials Research with Free-Electron Lasers (Investigator 5% effort) Total \$13,392,610.

EY03778-17 Spatial Characteristics of Neurons in the Striate Cortex, 7/94 - 6/30/99 (CO-P.I. 10% effort; AB Bonds P.I.) total direct costs \$315633: year 94 - 95 \$ 74328; 7/1/99-6/30/03, \$ 5,869 (current year) total project is \$154,164

ONR Welding Procedure Development and Wound Healing in Ocular Tissues: 3/15/97 - 3/14/99 Project 1 (Investigator 20% effort) 3/15/97 - 3/14/98 direct \$54,873. 5/1/99 - 4/30/00, \$72,957

ONR Welding Procedure Development and Wound Healing in Ocular Tissues: 3/15/97-3/14/99 Project II (CO-Investigator 10% effort) 3/15/97-3/14/98 direct \$96,229. 5/1/99 - 4/30/00, \$92,714

Hobbs Society The Role of Proteoglycans in Visual System Development 6/1/98 - 5/31/99, \$8,800.

Cell Biology Dept. Mammalian Visual System Development 6/1/98 - 5/31/00, \$10,000. Vanderbilt University

T32- MH 65215 Postdoctoral Training Program in Neurogenomics. [Faculty] Project period: 2002-2007; direct cost for year 06 (2004-2005) \$292,354. Dr. Randy Blakely PI.

2R01 EY03778-20A1 Spatial Characteristics of Cells in the Striate Cortex (A.B. Bonds) [Co-PI 15% effort] 04/01/03 - 03/31/08 NIH/NEI \$20,284

IBN-0234646 Cognitive Control of Thalamic Activity [PI] 1/01/03 - 12/31/05 20% effort \$172,784

NIH Representation of Visual Information in Striate Cortex. (A. B. Bonds PI) [Co-PI] 04/01/03 - 03/31/08 [co-PI] 5% effort NIH/NEI \$6,761

S10RR13947-01 Optical Imaging System 4/1/99-3/31/00. Principal Investigator \$169,538

ARRA supplement-33S1 Direct Costs: \$85,075 4/1/10-2/28/11

F31 NS44691-02 Cognitive Modulation of Thalamic Function. David Royal, predoc [mentor] Project period: 09-1-2002 - 08-31-2005, \$22,808 1<sup>st</sup> year, \$68,424 total.

1S10RR20066-01 High-Field MRI/MRS for Non-human Primates. Instrument Grant, Project period: 07-01-04 - to 6/30/06, direct total cost

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\$2,000,000. P. I.: Dr. Malcolm Avison.

- 9T32NS061201-08 "Alliance for Research Training in Neuroscience"  
Director: Mark Wallace  
Role: faculty  
Project Dates: 8/1/07 – 6/30/10
- R21 EY019132-01A1 "Multisensory Interactions in the Lateral Geniculate Nucleus"  
Principle Investigator: Vivien A. Casagrande  
Agency: National Eye Institute  
Type: R21  
1st Year Direct: \$125,000  
Project Direct: \$250,000  
Period: April 1, 2009-March 31, 2011  
(unfunded extension until March 31, 2012)
- 3R01EY001778-33S1 03/1/2010 – 02/28/2011 Visual System Organization and  
Development, Equipment Supplement \$85,075
- P50 MH078028 "Silvio O. Conte Center for Neuroscience Research Supplement"  
(Supplement)  
Principle Investigator: Randy Blakely  
Agency: NIMH  
Type: NOT-OD-10-043  
Total Direct: \$621,206  
Period: 07/01/10-06/30/11
- 3R01EY001778-36S102/01/2013 – 01/31/2015 Visual System Organization and  
Development, Bush Baby Supplement \$40,273
- 5P30HD015052-33 Vanderbilt Kennedy Center for Research on Human Development  
(Core Grant) 8/01/89 - 7/31/94, \$4,560,366, Investigator and  
Associate Director Biomedical Research (15% effort). 8/1/94 -  
7/31/99 total direct costs \$2,724,466; HD15052-15 1994 - 1995  
\$523,130 (faculty). 7/1/2002 - 6/30/03 total direct costs current  
year \$1,162,876 (faculty), 7/1/03-6/30/04 (faculty) \$871,728 ,  
7/1/04-6/30/09 (faculty) \$888,286, Total project is \$6,208,426.  
End date 6/30/15
- T32 EY007135-20** "Training Grant in Vision Research"  
PI & Director: Jeffrey D. Schall  
Role: Preceptor  
Funding Dates: 12/1/93 - 11/30/98 (total direct: 632,737),  
12/1/96 - 11/30/97 \$147,832 direct (Faculty; P.I. M. Powers),  
12/1/98 - 11/30/03 \$165,392 **1/1/10-7/31/15**  
Current Year Funding: \$323,430
- 5 T32MH064913-10** "Training in Fundamental Neuroscience"  
Director: Mark Wallace

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Agency: NIH  
Type: Training Grant  
Project Dates: **7/1/13 – 6/30/18**  
Current Year Direct: \$923,040  
Role: faculty

**5P30EY008126-27**

Core Grant in Vision Research  
PI & Director: Jeffrey D. Schall  
(Module Director) 0.24 calendar months  
4/1/89 - 3/31/99 (total direct: \$785,788), 4/1/96 - 3/31/97  
\$155,767 direct (Faculty; P.I. J. Schall), 4/1/99 - 3/31/04, direct  
costs \$177,199; Total direct \$996,894, 4/1/04-3/31/09, Project  
Period: 05/01/10-04/30/14 **09/01/14-06/30/19** Current Year  
Direct: \$499,997 Role: Faculty Module Director, .24 calendar  
months

P50 MH096972

April 1, 2014-March 31, 2015  
Serotonergic mechanisms of visual dysfunction in autism  
Agency: Silvio O. Conte Center, \$20,000

**2R01EY019882-05A1**

(Woodman) **05/01/14 – 04/30/18**  
Role: Consultant 0.6 calendar months  
Comparative electrophysiology: Visual event-related potentials  
and oscillations  
NIH/NEI \$250,000

**R21 NS084301**

(John Wolfe, Houston)  
Role: Consultant  
Probes for optogenetic interrogation and precise localization of  
neural circuits Total cost of the VSM subcontract is \$ 28,821 and  
\$29,283 for the first and second years, respectively.  
**09/01/2014 08/31/2016**

**1 R01 EY025422-01**

Project dates: **05/01/15 – 04/03/2019**  
PI: Vivien A. Casagrande, Vanderbilt University, 2015  
Structural and Functional Divisions of the Primate Pulvinar  
Funding IC: NEI  
Amount: \$392,158

**SPONSORED STUDENTS**

Sherre (Florence) Phillips (1979 - 1985, graduate student) (Ph.D. 1985, Vanderbilt University),  
Research Associate Professor, Department of Psychology, Vanderbilt University.

Edward DeBruyn (1977 - 1983, Anatomy graduate student) (Ph.D. 1983, Vanderbilt  
University), currently Research Assistant Professor, Biomedical Engineering, Vanderbilt  
School of Engineering.

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Jean Graham (1977 - 1979, postdoctoral fellow) (Ph.D. 1977, Washington University), currently Research Associate Professor, Department of Anatomy, University of Washington.

Eric Haseltine (1978 - 1979, postdoctoral fellow) (Ph.D. 1978, University of Indiana), currently Associate Director of National Intelligence for Science and Technology, Office of the Director of National Intelligence.

Judy Brunso-Bechtold (1979 - 1981, postdoctoral fellow; 1981-1983, research assistant) (Ph.D. 1977, Florida State University), currently Professor, Department of Neurobiology & Anatomy, Wake Forest University School of Medicine.

Heywood Petry (1980 - 1982, postdoctoral fellow) (Ph.D. 1981, Brown University), currently Professor, Department of Psychological & Brain Sciences and Professor, Ophthalmology & Visual, University of Louisville, Louisville, Kentucky.

Michael Sesma (1981 - 1983, postdoctoral fellow) (Ph.D. 1981, University of California-Riverside), Assistant Professor, School of Optometry, University of Missouri. 1983-1987; currently Chief, Research Scientist Development Program, Office for Special Populations, National Institute of Mental Health/National Institutes of Health, and Vice President of the Gaithersburg, Maryland City Council.

Michael Conley (1984 - 1985, postdoctoral fellow) (Ph.D. 1983, Duke University), currently Research Assistant Professor, Department of Psychology, Duke University.

George Condo (1984 - 1988, postdoctoral fellow) (Ph.D. 1984, University of California-Riverside). Research Assistant Professor, Department of Cell Biology, Vanderbilt University 1988-1990; currently Associate Professor, Bowdoin College.

Edward Lachica (1985 - 1990, graduate student, Ph.D., Psychology, 1990) NIH postdoctoral fellow with Dr. Edwin Rubel, University of Washington, Seattle, Washington; currently Director of Digital Imaging and Image Analysis, Meridian Instruments.

James Hutchins (1985 - 1987, postdoctoral fellow) (Ph.D. 1985, Baylor College of Medicine), Research Assistant Professor, Department of Cell Biology, Vanderbilt Medical School 1987-1989; currently Professor of Health Sciences, Assistant Professor of Neurology (Research) and Ophthalmology, and Assistant Vice Chancellor for Faculty Development, University of Mississippi.

Alfonso Claps, M.D., Ph.D. (1989 - 1991, postdoctoral fellow) (Ph.D. 1988, Catholic University of Chile; M.D. 1982, University of Chile); currently Professor, Catholic University of Chile.

John Kelly Johnson, Ph.D. (1990 - 1993, postdoctoral fellow) (Ph.D. 1987, University of Kansas; NEI postdoctoral fellow, Syracuse University, Syracuse, N.Y., 1987-1990); currently Instructor, Division of Biological Sciences, University of Kansas.



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John D. Allison, Ph.D. (1992 - 1996, postdoctoral fellow) (Ph.D. 1992, University of Texas, Austin, Texas); currently Research Assistant Professor, Department of Electrical Engineering, Vanderbilt University.

Yuchuan Ding, M.D., Ph.D. (1994 - 1998, postdoctoral fellow) (M.D. 1983, Beijing Medical College, Beijing China; Ph.D. 1994, Australian National University); currently Associate Professor, Department of Neurological Surgery Wayne State University School of Medicine

Jamie Boyd, Ph.D. (1995 - 1999, postdoctoral fellow) (Ph.D. 1995, Department of Ophthalmology, University of British Columbia, Vancouver, BC, Canada); currently Postdoctoral Fellow, Department of Biological Sciences, Simon Fraser University.

Amy (Wiencken) Wiencken-Barger (1995 - 2001, graduate student; Department of Cell Biology, Vanderbilt Medical School); currently research fellow in the Department of Pharmacology, School of Medicine, University of North Carolina at Chapel Hill.

Jennifer Ichida (1996 - 2002, graduate student) Department of Psychology, Vanderbilt University; currently Research Assistant Professor, Department of Ophthalmology and Visual Science, Moran Eye Center, University of Utah.

Xiangmin Xu (1998 - 2004, graduate student) (Ph.D. 2004, Vanderbilt University), Department of Psychology, Vanderbilt University; currently Associate Professor, Department of Anatomy & Neurobiology, University of California, Irvine.

Zhuang Song (1999 - 2001, graduate student), Department of Psychology, Vanderbilt University); currently postdoc, University of California, San Diego.

Yuri Shostak, Ph.D. (Ph.D. 1992, Institute of Radiobiology of the National Academy of Sciences of Belarus; Minsk, Belarus). (1999 - 2002, post-doctoral fellow) Department of Cell Biology, Vanderbilt University; currently Director, Tiggroup.

Gyula Sáry, M.D. Ph.D. (M.D. 1985, Albert Szent-Gyorgyi Medical University; Szeged, Hungary, [now University of Szeged] Ph.D. 1996, currently Professor, University of Szeged). (2000 - 2002, post-doctoral fellow; summers 2003 - 2006, 2009, visiting scholar), Department of Cell Biology, Vanderbilt University; currently Chair, Dept. Physiology, University of Szeged, Hungary.

David Royal (2000 - 2006, graduate student), Neuroscience Program: Molecular Neuroscience track, Vanderbilt Medical School; currently LTJG, Health Care Administrator, Medical Service Corps, United States Navy Reserves.

Maria Couppis (2003 - 2004, graduate student), Neuroscience Program, Vanderbilt Medical School; currently postdoctoral fellow at the University of Colorado Health and Sciences Center.

Ilya Khaytin (2003 - 2008, graduate student), MSTP Program, Vanderbilt Medical School;

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currently Resident, Wake Forest.

Fatih Yazar (M.D. 1991, Gulhane Military Medical Academy; Ankara, Turkey) (2003 - 2004, visiting scholar) Department of Cell Biology, Vanderbilt University; currently Associate Professor, Gulhane Military Medical Academy, Ankara, Turkey.

Octavio Ruiz (Ph.D. Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV) Mexico City) (2004 – 2006, postdoctoral fellow) Department of Neuroscience, Vanderbilt University; currently Research Associate Professor in Neuroscience, Department of Biology and Medicine-Neuroscience, Brown University.

Xin Chen (Ph.D., Center for Brain Science Research, School of Life Science, Fudan University; Shanghai, PRC) (2004 – 2007, postdoctoral fellow), Department of Cell and Developmental Biology, Vanderbilt University; currently Postdoc, UC Berkeley.

Walter John Jermakowicz (2005 – 2009, graduate student), MTSP Program, Vanderbilt Medical School; currently Resident, Miami.

Roan Marion (2006 - present, graduate student), Interdisciplinary Neuroscience, Vanderbilt Medical School; currently Clinical Neurophysiologist at Sentient Medical Systems.

Gopathy Purushothaman (Ph.D. 1999, University of Houston) (2006 – present, Research Assistant Professor), Department of Cell and Developmental Biology, Vanderbilt University.

Keji Li (B.S. 2009, Fudan University) (Ph.D. 2015) Department of Psychology, Vanderbilt University. Currently Postdoc, MIT.

Yaoguang Jiang (B.S. 2007, Peking University) (Ph.D. 2015) Department of Psychology, Vanderbilt University. Currently Postdoc, University of Pennsylvania.

Moore, Brandon (B.S. 2009, MIT, M.P.H. 2012, Tufts Medical School) (2012 - present) Vanderbilt Brain Institute, Vanderbilt University.

## **PUBLICATIONS**

Ware, C.B., Casagrande, V.A. and Diamond, I.T. (1972) Does the acuity of the tree shrew suffer from removal of striate cortex? A commentary on the paper by Ward and Masterton. *Brain Behavior and Evolution*, 5: 18-29.

Casagrande, V.A., Harting, J.K., Hall, W.C., Diamond, I.T. and Martin, G.F. (1972) Superior colliculus of the tree shrew: A structural and functional subdivision into superficial and deep layers. *Science*, 177: 444-447.

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- Casagrande, V.A. and Diamond, I.T. (1974) Ablation study of the superior colliculus in the tree shrew (*Tupaia glis*). *Journal of Comparative Neurology*, 156 (2): 207-238.
- Ware, C.B., Diamond, I.T. and Casagrande, V.A. (1974) Effects of ablating the striate cortex on a successive pattern discrimination: Further study of the visual system in the tree shrew (*Tupaia glis*). *Brain Behavior and Evolution*, 9: 264-279.
- Guillery, R.W., Casagrande, V.A. and Oberdorfer, M.D. (1974) Congenitally abnormal vision in Siamese cats. *Nature*, 252: 195-199.
- Casagrande, V.A. (1974) Dual function of the tectum in the tree shrew (*Tupaia glis*). In "Sensory-Motor Function of Midbrain Tectum." *NRP Bulletin*, 13 (2): 251-254.
- Sherman, S.M., Norton, T.T. and Casagrande, V.A. (1975) X- and Y-cells in the dorsal lateral geniculate nucleus of the tree shrew (*Tupaia glis*). *Brain Research*, 93: 152-157.
- Casagrande, V.A. and Harting, J.K. (1975) Transneuronal transport of tritiated fucose and proline in the visual pathways of the tree shrew (*Tupaia glis*). *Brain Research*, 96 (2): 367-372.
- Guillery, R.W. and Casagrande, V.A. (1976) Adaptive synaptic connections formed in the visual pathways in response to congenitally aberrant inputs. *Cold Spring Harbor Symposia on Quantitative Biology*, 40: 611-617.
- Raczkowski, D., Casagrande, V.A. and Diamond, I.T. (1976) Visual neglect in the tree shrew after interruption of the descending projections of the deep superior colliculus. *Experiments in Neurology*, 50: 14-29.
- Kaas, J.H., Lin, C. and Casagrande, V.A. (1976) The relay of ipsilateral and contralateral retinal input from the lateral geniculate nucleus to striate cortex in the owl monkey: a transneuronal transport study. *Brain Research*, 106: 371-378.
- Weber, J.T., Casagrande, V.A. and Harting, J.K. (1977) Transneuronal transport of <sup>3</sup>H proline with the visual system of the grey squirrel. *Brain Research*, 129: 346-352.
- Sherman, S.M., Norton, T.T. and Casagrande, V.A. (1977) Myopia in lid-sutured tree shrew (*Tupaia glis*). *Brain Research*, 124: 154-157.
- Guillery, R.W. and Casagrande, V.A. (1977) Studies of the modifiability of the visual pathways in Midwestern Siamese cats. *Journal of Comparative Neurology*, 174: 15-46.
- Norton, T.T., Casagrande, V.A. and Sherman, S.M. (1977) Loss of Y-cells in the lateral geniculate nucleus of monocularly deprived tree shrews. *Science*, 197: 784-786.
- Casagrande, V.A., Guillery, R.W. and Harting, J.K. (1978) Differential effects of monocular deprivation seen in different layers of the lateral geniculate nucleus. *Journal of Comparative Neurology*, 179: 469-486.

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- Harting, J.K., Casagrande, V.A. and Weber, J.T. (1978) The projection of the primate superior colliculus upon the dorsal lateral geniculate nucleus: autoradiographic demonstration of interlaminar distribution of tectogeniculate axons. *Brain Research*, 150: 593-599.
- McKanna, J.A. and Casagrande, V.A. (1978) Reduced lens development in lid-suture myopia. *Experiments in Eye Research*, 26: 715-723.
- Haseltine\*, E.C., DeBruyn\*, E.J. and Casagrande, V.A. (1979) Demonstration of ocular dominance columns in Nissl-stained sections of monkey visual cortex following enucleation. *Brain Research*, 176: 153-158.
- McKanna, J.A. and Casagrande, V.A. (1980) Zonular dysplasia in myopia. Proceedings of the Second International Conference on Myopia, Yokohama, Japan, p. 21-32.
- Graham\*, J. and Casagrande, V.A. (1980) A light microscopic and electron microscopic study of the superficial layers of the superior colliculus of the tree shrew (*Tupaia glis*). *Journal of Comparative Neurology*, 191: 133-151.
- DeBruyn\*, E.J., Wise\*, V.L. and Casagrande, V.A. (1980) The size and topographic arrangement of retinal ganglion cells in the galago. *Vision Research*, 20: 315-327.
- Joseph\*, R. and Casagrande, V.A. (1980) Visual deficits and recovery following monocular lid closure in a prosimian primate. *Behavioral Brain Research*, 1: 165-186.
- Casagrande, V.A. and Joseph\*, R. (1980) Morphological effects of monocular deprivation and recovery on the dorsal lateral geniculate nucleus in Galago. *Journal of Comparative Neurology*, 194: 413-427.
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