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## Curriculum Vitae

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### EDUCATION

University of Texas	1985-1992	Ph.D.	Biopsychology (Neuroscience)
University of Texas	1980-1984	B.A.	Psychology

### POSITIONS

2015-Present  
Research Assistant Professor  
Dept of Pharmacology  
Vanderbilt School of Medicine

2003-Present  
Manager  
Murine Neurobehavioral Laboratory  
Vanderbilt Brain Institute  
Vanderbilt School of Medicine

1998-2003  
Sr. Research Associate  
Department of Electrical Engineering  
And Computer Science  
Vanderbilt University

1995-1998  
Research Assistant  
Institute of Neuroinformatics  
Swiss Federal Institute of Technology  
and University of Zurich

1992-1995	NIH/NEI Postdoctoral Fellow Department of Cell Biology Vanderbilt School of Medicine
1988-1992	Graduate Research Assistant Department of Psychology University of Texas at Austin
1985-1988	Graduate Teaching Assistant Department of Psychology University of Texas at Austin

## FELLOWSHIPS AND GRANTS

1992-1995	NIH/NEI National Research Service Award (F32 06410): "Organization of Parallel Visual Pathways" Sponsors: Dr. Vivien A. Casagrande Dr. A.B. Bonds
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## AWARDS

2015	Excellence in Contributing to Multi-Investigator Teams Vanderbilt University
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## TEACHING EXPERIENCE

2001	Lecturer, Department of Electrical Engineering & Psychology Vision
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1999	Lecturer, Department of Electrical Engineering & Psychology Vision
1994	Lecturer, Department of Cell Biology, Vanderbilt Medical School Special Topics in Neuroscience--Experimental Design
1993	Lecturer, Department of Psychology, Vanderbilt University Freshman Seminar in Developmental Neurobiology
1992	Lecturer, Department of Cell Biology, Vanderbilt Medical School Special Topics in Neuroscience--Methods in Visual Neurophysiology
1992	Lecturer, Department of Cell Biology, Vanderbilt Medical School Special Topics in Neuroscience--Organization of Sensory Systems
1985-1988	Graduate Teaching Asst., Dept. of Psychology, University of Texas Biopsychology (Lower division undergraduates) Physiological Psychology (Upper division undergraduates) Physiological Psychology Lab (Upper division honor students)

Learning and Behavior (Upper division undergraduates)  
Perception (Upper division undergraduates)  
Motivation (Upper division undergraduates)  
Comparative Psychology (Upper division undergraduates)

## INVITED LECTURES

2000	Department of Psychology Vanderbilt University
1997	Department of Biology Southeastern Louisiana University Hammond, LA
1997	Institute of Toxicology Federal Institute of Technology Schwerzenbach, Switzerland
1995	Department of Neurobiology Duke University School of Medicine Durham, NC
1994	Department of Psychology University of Louisville Louisville, KY

## RESEARCH EXPERIENCE

Experience with techniques used for studies of mice behavior, including open field behavior, conditioned freezing, Morris water maze, various operant conditioning tasks, and anxiety. Extensive experience with using AV hardware/software for behavior analysis including AnyMaze and CleverSys. Limited experience with genotyping mice using PCR

Extensive experience in neurophysiological techniques for recording the single- and multiunit activity of neurons in the central nervous system; experience in recording single- and multiunit activity of neurons in the central auditory system of anuran amphibians; experience in recording single unit activity in the visual cortex of cats and primates; experience with *in vivo* intracellular recording from striate cortical neurons

Extensive experience in the normal histological procedures common in neuroanatomical research, including some experience in immunohistochemistry; extensive experience in

experimental tracing methods, especially horseradish peroxidase histochemistry; experience with *in vivo* intracellular labeling of cortical neurons

Extensive experience with computers and computer networks. Microsoft 2000 Professional and 2000 Server certified. Over 20 years of experience using and administering \*NIX (primarily Linux) operating systems. Broad experience with multiple programming languages including C/C++, awk, Python, Perl and Matlab.

Limited experience in field behavior and sound analysis procedures used in investigations of acoustic communication in frogs

Limited experience in experimental methods employed in studies of human psychoacoustics and psychophysics

### **RESEARCH INTERESTS**

behavioral neuroscience  
information (sensory) processing in the central visual pathways  
integrative neuroscience  
computational neuroscience  
reproductive behavior  
computer science

### **OTHER PROFESSIONAL ACTIVITIES**

Executive Planning Committee, Laboratory for Neurobehavior, Vanderbilt University  
*ad hoc* Reviewer, National Science Foundation  
Student, Neural Systems & Behavior, Marine Biological Laboratory, Woods Hole, MA  
*ad hoc* Reviewer, *European Journal of Neuroscience*  
*ad hoc* Reviewer, *Visual Neuroscience*

## PUBLICATIONS

Doctoral Thesis: Acoustic Modulation of Neural Activity in the Hypothalamus of the Green Treefrog (*Hyla cinerea*). 1992 University of Texas

Thesis Advisor: Dr. Walter Wilczynski  
Department of Psychology  
University of Texas  
Austin, TX 78712

## RESEARCH JOURNAL ARTICLES

- Siemann, J.K., Muller, C.L., Bamberger, G., Allison, J.D., Veenstra-VanderWeele, J., and M.T. Wallace (2015) A novel behavioral paradigm to assess multisensory processing in mice. *Frontiers in Behavioral Neuroscience*, 8:456. doi: 10.3389/fnbeh.2014.00456
- Bernardo, A., McCord, M., Troen, A., Allison, J.D. and M.P. McDonald (2007) Impaired spatial memory in APP-overexpressing mice on a homocysteinemia-inducing diet. *Neurobiology of Aging*, 8:1195-1205.
- Samonds, J.M., Allison, J.D., Brown, H.A. and A.B. Bonds (2004) Cooperative synchronized assemblies enhance orientation discrimination. *Proceedings of the National Academy of Sciences*, 101(17):6722-7.
- Brown, H.A., Allison, J.D., Samonds, J.M. and A.B. Bonds (2003) Nonlocal origin of response suppression from stimulation outside the classic receptive field in area 17 of the cat. *Visual Neuroscience* 20:85-96.
- Samonds, J.M., Allison, J.D., Brown, H.A., and Bonds, A.B. (2003) Cooperation between area 17 neuron pairs enhances fine discrimination of orientation. *J. Neurosci.* 23:2416-2425.
- Allison, J.D., Smith, K. R. and A.B. Bonds (2001) Temporal frequency selectivity of the cross orientation mechanism in cat primary visual cortex. *Visual Neuroscience* 18: 941-948.
- Xu, X., Ichida, J.M., Allison, J.D., Boyd, J.D., Bonds, A.B., and V.A. Casagrande (2001) A comparison of koniocellular, magnocellular and parvocellular receptive field properties in the lateral geniculate nucleus of the owl monkey (*Aotus trivirgatus*). *J. Physiology* 531: 203-218.
- Allison, J.D., P. Melzer, Y. Ding, A.B. Bonds, and V.A. Casagrande (2000) Differential contributions of magnocellular and parvocellular pathways to the contrast response of neurons in bush baby primary visual cortex (V1). *Visual Neuroscience* 17: 71-76.

- Ahmed, B., Allison, J.D., Douglas, R.J.D. and K.A.C. Martin (1997) An intracellular study of the contrast dependence of neuronal activity in cat visual cortex. *Cerebral Cortex* 7:559-570.
- Allison, J.D., J.F. Kabara, R.K. Snider, V.A. Casagrande, and A.B. Bonds (1996) GABA<sub>B</sub>-receptor mediated inhibition influences the orientation selectivity of neurons in cat striate cortex. *Visual Neuroscience* 13:559-566.
- Allison, J.D., V.A. Casagrande, and A.B. Bonds (1995) The influence of input from the lower cortical layers on the visual receptive field properties of upper layer V1 cells in a primate. *Visual Neuroscience* 12: 309-320.
- Allison, J.D. and A.B. Bonds (1994) Inactivation of the infragranular striate cortex broadens orientation tuning of superficial visual neurons in the cat. *Experimental Brain Research* 101: 415-426
- Allison, J.D. and W. Wilczynski (1994) Suprachiasmatic nucleus efferents to basal forebrain regions in the green treefrog (*Hyla cinerea*). *Brain Behavior and Evolution* 43: 129-139.
- Allison, J.D., V.A. Casagrande, E.J. DeBruyn, and A.B. Bonds (1993) Contrast adaptation in striate cortical neurons of the nocturnal primate bush baby (*Galago crassicaudatus*). *Visual Neuroscience* 10: 1129-1139
- Wilczynski, W., J.D. Allison, and C. Marler (1993) Sensory pathways linking social and environmental cues to endocrine control regions of the amphibian forebrain. *Brain Behavior and Evolution* 42: 252-264
- Allison, J.D. (1992) Acoustic modulation of neural activity in the preoptic area and ventral hypothalamus of the green treefrog (*Hyla cinerea*). *Journal of Comparative Physiology* 171: 387-395.
- Allison, J.D. and W. Wilczynski (1991) Thalamic and midbrain auditory projections to the preoptic area and ventral hypothalamus in the green treefrog (*Hyla cinerea*). *Brain Behavior and Evolution* 38: 322-331.
- Wilczynski, W. and J.D. Allison (1989) Acoustic modulation of neural activity in the hypothalamus of the leopard frog. *Brain Behavior and Evolution* 33: 317-324.

## ABSTRACTS OF PAPERS PRESENTED

- Siemann, J.K., Bamberger, G., Allison, J.D., and M.T. Wallace (2013) A Behavioral Paradigm to Assess Multisensory Processing in Mice. *Soc Neurosci Abstr* 39: 456.01/TT12
- Brown, H.A., *et al.* (2003) Characterization of area 18 modulation from stimulation outside the receptive field of area 17 cells in the cat. *Journal of Vision* 3(9): 373a.
- Xu, X. *et al.* (2003). Spatial frequency preference maps of primate visual cortex revealed by optical imaging of intrinsic signals. *Journal of Vision* 3(9): 107a.
- Thomas, A. *et al.* (2003) Compound stimuli promote architectural reorganization in cat striate cortex. *Journal of Vision* 3(9): 379a.
- Samonds, J.M., Allison, J.D., Brown, H.A. and A.B. Bonds (2003) Cooperative synchronized assemblies and orientation discrimination. *Journal of Vision* 3(9): 152a.
- Allison, J.D. And M.P. McDonald (2003) Resistance to apoptosis and amyloid plaque formation in GD3 synthase (gd3s) knockout mice. *Soc. Neurosci. Abstr.* 29: 629.19
- Samonds, J.M., Allison, J.D., Brown, H. A., and A.B. Bonds (2002) Spike train analysis reveals cooperation between area 17 neuron pairs that enhances fine discrimination of orientation. *Journal of Vision* 2(7): 196a
- Brown, H.A., Allison, J.D., Samonds, J.M. and A.B. Bonds (2002) Area 18 contribution to spatial integration of receptive fields of area 17 cells in the cat. *Journal of Vision* 2(7): 582a
- Brown, H.A., Allison, J.D., Samonds, J.M. and A.B. Bonds (2001) Nonlocal origin of response suppression from stimulation outside the classic receptive field in area 17 of the cat. *Vis.Sci. Soc.*, Sarasonta, FL.
- Xu, X., Ichida, J.M., Allison, J.D., Bonds, A.B. and V.A. Casagrande (2000) Orientation and direction selectivity of lateral geniculate nucleus (LGN) cells in the owl monkey (*Aotus Trivirgatus*). *Soc Neurosci Abstr* 26: 447.3
- Allison, J.D. *et al.* (2000) Temporal frequency tuning of cross orientation inhibition in the striate cortex of cats. . *Invest Ophthalmol Vis Sci Suppl* 41: S51.
- Xu, X-M., J. Boyd, J.D. Allison, J. Ichida, A.B. Bonds, and V. A. Casagrande (1999) Receptive field properties of K cells in the lateral geniculate nucleus (LGN) of owl monkeys (*aotus trivirgatus*). *Soc Neurosci Abstr* 25: 1429.
- Atherton, M.E., Allison, J.D. and A.B. Bonds (1999). Distribution of Cross-Orientation influences within local cell clusters in cat striate cortex. *Invest Ophthalmol Vis Sci Suppl* 40: S641.

- Allison, J.D. and K.A.C. Martin (1997) Contrast adaptation produced by null direction and cross orientation stimulation of neurons in cat visual cortex. *Soc Neurosci Abstr* 23: 454.
- Allison, J.D. *et al.* (1996) Contrast gain control in neurons of the cat primary visual cortex: input-output analysis. *Soc Neurosci Abstr* 22: 1705
- Allison, J.D. (1996) Differential contributions of parallel pathways to primate visual cortex. *Swiss Soc Neurosci Abstr* 3: 6.17
- Allison, J.D. *et al.* (1995) The contribution of LGN M and P layers to the contrast sensitivity of primate V1 neurons. *Soc Neurosci Abstr* 21:1647
- Allison, J.D. *et al.* (1995) The GABA<sub>B</sub>-receptor blocker phaclofen reduces orientation tuning of striate cortical neurons in cats. *Invest Ophthalmol Vis Sci Suppl* 36: 692
- Allison, J.D., and V.A. Casagrande (1994) Receptive field structure of V2 neurons in the prosimian primate *Galago crassicaudatus*. *Soc Neurosci Abstr* 20: 1741
- Allison, J.D., V.A. Casagrande, and A.B. Bonds (1994) Inactivation of the infragranular layers of V1 changes the orientation selectivity of supragranular neurons in the prosimian primate, *Galago crassicaudatus*. *Invest Ophthalmol Vis Sci Suppl* 35: 1972
- Kabara, J.F., R.K. Snider, J.D. Allison, and A.B. Bonds (1994) Compound stimuli modify receptive field spatial tuning in cat cortical cells. *Invest Ophthalmol Vis Sci Suppl* 35: 1469
- Allison, J.D., E.J. Debruyn, and A.B. Bonds (1993) Changes in orientation tuning of striate cortical neurons following reversible inactivation of the infragranular layers. *Soc Neurosci Abstr* 19: 629
- Allison, J.D. *et al.* (1993) Contrast adaptation of V1 neurons in a nocturnal primate *Galago crassicaudatus*. *Invest Ophthalmol Vis Sci Suppl* 34: 793
- Allison, J.D. and W. Wilczynski (1992) An HRP study of pathways linking the preoptic area to auditory nuclei in *Hyla cinerea*. *Soc Neurosci Abstr* 18: 327
- Allison, J.D. (1991) Acoustic modulation of hypothalamic function in *Hyla cinerea*. *Soc Neurosci Abstr* 17: 1403
- Allison, J.D., W. Wilczynski, and J.A. Morgan (1990) Connections between limbic and neuroendocrine nuclei in the forebrain of *Hyla cinerea*. *Soc Neurosci Abstr* 16: 129
- Allison, J.D. and W. Wilczynski (1989) An HRP study of pathways linking the preoptic area to auditory nuclei in *Hyla cinerea*. *Soc Neurosci Abstr* 15: 374
- Allison, J.D. and W. Wilczynski (1987) Auditory sensitivity of hypothalamic neurons in *Rana pipiens*. *Soc Neurosci Abstr* 13: 869



## REFERENCES

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