

CURRICULUM VITAE
JAMES B. HUTCHINS
Department of Health Sciences
Weber State University
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Ogden, UT 84408-3909
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Education

Ph.D., Neuroscience	Baylor College of Medicine, October 1985
M.A., Neurobiology	University of California, Berkeley, August 1982
B.A., Molecular, Cellular and Developmental Biology	University of Colorado, Boulder, May 1980

Relevant Employment

Professor of Health Sciences (tenured) Weber State University	November 2006 to present
Associate Provost for Academic Programs Weber State University	July 2005 to October 2006
Assistant Vice Chancellor for Faculty Development University of Mississippi Medical Center	July 2003 to June 2005
Professor of Health Sciences (tenured) University of Mississippi Medical Center	October 2004 to June 2005
Professor of Anatomy (tenured) University of Mississippi Medical Center	July 2003 to September 2004
Associate Professor of Anatomy (tenured) University of Mississippi Medical Center	July 1994 to June 2003
Assistant Professor of Ophthalmology University of Mississippi Medical Center	January 1997 to June 2005
Assistant Professor of Neurology University of Mississippi Medical Center	March 1993 to June 2005
Assistant Professor of Anatomy University of Mississippi Medical Center	September 1989 to June 1994
Research Assistant Professor of Cell Biology Vanderbilt University School of Medicine	October 1987 to August 1989
Research Associate (postdoctoral) Department of Cell Biology Vanderbilt University School of Medicine Dr. Vivien Casagrande, supervisor	October 1985 to September 1987
Research Assistant (graduate student) Department of Ophthalmology Baylor College of Medicine Dr. Joe G. Hollyfield, supervisor	August 1982 to October 1985

Teaching Experience

Instructor of Record:

Health Sciences 1101, Medical Terminology

Health Sciences 1110, Biomedical Core first semester

Health Sciences 1111, Biomedical Core second semester

(Biomedical Core is a two-semester Anatomy & Physiology course)

January 2007 to present

Health Sciences 2230, Introductory Pathophysiology

Neuroscience 2050, Introductory Neuroscience

Neuroscience 4810, Clinical Neuroscience Seminar

Instructor of Record:

Physiological Psychology (Psychology 3710)

September 2005 to Dec 2006

Weber State University

Instructor of Record:

Basic Human Neurobiology (CHS 622 / PT 503)

Neuroscience Bases for Human Motion (OT 328)

Neurosciences in Physical Therapy (PT 503)

October 2004 to June 2005

Anatomical Basis for Human Movement (CHS 619 / PT 500)

School of Health Related Professions

University of Mississippi Medical Center

Course Director, Dental Neuroanatomy

March 1999 to May 2003

University of Mississippi Medical Center

Teaching Staff, Medical Neuroanatomy

March 1990 to May 2004

University of Mississippi Medical Center

Seminar Instructor: Current Topics in Anatomy

March to May 1991

University of Mississippi Medical Center

Teaching Staff, Medical Histology

December 1989 to February 1990

University of Mississippi Medical Center

Teaching Assistant, Neuroanatomy (for medical students)

January to May 1989

Vanderbilt University

Instructor, Special Topics in Neuroscience (graduate seminar)

September to December 1986

Vanderbilt University

Publications

Manuscripts

- Greenfield R.A., Brown B.R., **Hutchins J.B.** and Jackson R. Chemical agents as potential weapons of mass destruction. *J Okla State Med Assoc* **96**(7):309-312, 2003.
- Greenfield R.A., Brown B.R., **Hutchins J.B.**, Iandolo J.J., Jackson R., Slater L.N. and Bronze M.S. Microbiological, biological, and chemical weapons of warfare and terrorism. *Amer J Med Sci*, **323**(6):326-340, 2002.
- Haines D.E., **Hutchins J.B.** and Lynch J.C. Medical neurobiology: do we teach neurobiology in a format that is relevant to the clinical setting? *Anatomical Record (New Anatomist)*, **269**:99-106, 2002.
- Hutchins, J.B.** Alzheimer's: Daring to play the apoptosis card. *Cerebrum* **2**(3):63-74, 2000.
- Cai Z., **Hutchins J.B.** and Rhodes P.G. Intrauterine hypoxia-ischemia alters nitric oxide synthase expression and activity in fetal and neonatal rat brains. *Dev Brain Res* **109**:265-269, 1998.
- Hutchins J.B.** and Barger S.W. Why neurons die: cell death in the nervous system. *Anatomical Record (New Anatomist)*, **253**(3):79-90, 1998.
- Keller J.N., Kindy M.S., Holtsberg F.W., St Clair D.K., Yen H.C., Germeyer A., Steiner S.M., Bruce-Keller A.J., **Hutchins, J.B.** and Mattson M.P. Mitochondrial Mn-SOD prevents neural apoptosis and reduces ischemic brain injury: suppression of peroxynitrite production, lipid peroxidation and mitochondrial dysfunction. *J Neurosci* **18**: 687-697, 1998.
- Bruce-Keller A.J., Begley J.G., Fu W., Butterfield D.A., Bredesen D.E., **Hutchins J.B.**, Hensley K. and Mattson M.P. Bcl-2 protects isolated plasma and mitochondrial membranes against lipid peroxidation induced by hydrogen peroxide and amyloid β -peptide. *J Neurochem* **70**:31-39, 1998.
- Zhang F.X. and **Hutchins J.B.** Protein phosphorylation in response to PDGF stimulation in cultured neurons and astrocytes. *Dev Brain Res* **99**:216-225, 1997.
- Tibbs R.E. Jr., Bowles A.P., Raila F.A., Fratkin J.D. and **Hutchins J.B.** Should endolymphatic sac tumors be considered part of the Von Hippel-Lindau complex? *Neurosurgery* **40**:848-855, 1997.
- Yasuda S.U., Sausville E.A., **Hutchins J.B.**, Kennedy T. and Woosley R.L. Amiodarone-induced lymphocyte toxicity and mitochondrial function. *J Cardiovasc Pharmacol* **28**:94-100, 1996.
- Zhang F.X. and **Hutchins J.B.** Expression of PDGF receptor α subunit in the mouse brain: comparison of *Patch* mutants and normal littermates. *Cell Molec Neurobiol* **16**:477-485, 1996.
- Zhang F.X., Pan W. and **Hutchins J.B.** Phosphorylation of F₁F₀ ATPase δ -subunit is regulated by PDGF in mouse cortical neurons *in vitro*. *J Neurochem* **65**:2812-2815, 1995.
- Hutchins J.B.** Platelet-derived growth factor receptors of mouse central nervous system cells *in vitro*. *J Comp Neurol* **360**:59-80, 1995.
- Hutchins J.B.**, Bernanke J.M. and Jefferson V.E. Acetylcholinesterase in the developing ferret retina. *Exp Eye Res* **60**:113-125, 1995.
- Hutchins J.B.** The development of muscarinic acetylcholine receptors in the ferret retina. *Dev Brain Res* **82**:45-61, 1994.

Publications: Manuscripts (continued)

- Hutchins J.B. and Zhang X. Platelet-derived growth factor receptors in the developing mouse optic pathway. *Visual Neuroscience* **11**:33-40, 1994.
- Hutchins J.B. and Ard M.D. Expression of platelet-derived growth factor and its receptor in rat neuronal and astroglial cultures. *Molec Cell Neurosci* **4**:250-258, 1993.
- Kennedy R.E. and Hutchins J.B. Choline acetyltransferase expression studied with an oligonucleotide probe. *Cell Molec Neurobiol* **12**:309-315, 1992.
- Hutchins J.B. and Jefferson V.E. Developmental distribution of platelet-derived growth factor in the mouse nervous system. *Dev Brain Res* **67**:121-135, 1992.
- Casagrande V.A. and Hutchins J.B. Methods for analyzing neuronal connections in mammals. *Methods in Neuroscience* **3**:188-207, 1990.
- Hutchins J.B. and Casagrande V.A. Development of the lateral geniculate nucleus: interactions between retinal afferent, cytoarchitectonic, and glial cell lamination in ferrets and tree shrews. *J Comp Neurol* **298**:113-128, 1990.
- Hutchins J.B. and Casagrande V.A. Vimentin: changes during postnatal brain development. *Glia* **2**:55-66, 1989.
- Hutchins J.B. The 'Hawaiian blot': a new Western blotting variant [letter]. *BioTechniques* **7**:248-251, 1989.
- Hutchins J.B. and Casagrande V.A. Glial cells develop a laminar pattern before neuronal cells in the lateral geniculate nucleus. *Proc Natl Acad Sci* **85**:8316-8320, 1988.
- Hutchins J.B. and Casagrande V.A. Development of acetylcholinesterase activity in the lateral geniculate nucleus. *J Comp Neurol* **275**:241-253, 1988.
- Hutchins J.B. Acetylcholine as a neurotransmitter in the vertebrate retina. *Exp Eye Res* **45**:1-38, 1987.
- Hutchins J.B. and Hollyfield J.G. Cholinergic neurons in the human retina. *Exp Eye Res* **44**:363-375, 1987.
- Hutchins J.B. and Hollyfield J.G. Acetylcholinesterase in the human retina. *Brain Res* **400**:300-311, 1987.
- Hutchins J.B. and Hollyfield J.G. Human retinas synthesize and release acetylcholine. *J Neurochem* **47**:81-87, 1986.
- Hutchins J.B. and Hollyfield J.G. Acetylcholine receptors in the human retina. *Invest Ophthalmol Vis Sci* **26**:1550-1557, 1985.
- Polans A.S., Hutchins J.B. and Werblin F.S. Muscarinic cholinergic receptors in the retina of the larval tiger salamander. *Brain Res* **340**:355-362, 1985.
- Hutchins J.B. and Hollyfield J.G. Autoradiographic identification of muscarinic receptors in human iris smooth muscle. *Exp Eye Res* **38**:515-521, 1984.
- Hutchins J.B., Polans A.S. and Werblin F.S. Localization of acetylcholinesterase activity in the outer plexiform layer of the larval tiger salamander retina. *Brain Res* **292**:303-315, 1984.
- Hutchins J.B., Allen D.L., Cole-Harding L.S. and Wilson J.R. Behavioral and physiological measures for studying ethanol dependence in mice. *Pharmac Biochem Behav* **15**:55-59, 1981.

Publications (cont'd)

Book

Hutchins J.B. *Do-It-Yourself Agility Equipment: Constructing Agility Equipment for Training or Competition*, Second edition, ISBN 978-1-892694-22-5, 2008. (First edition, ISBN 1-892694-00-X, 2002.)

Book Chapters

Hutchins J.B. Unit 6.4: The nature of behavior. In: *Biology: A Community Context Student Resource*, Speziale B.J., Leonard W.H. and Penick J.E., eds. Cincinnati: South-Western Educational Publishing, ISBN 0-538-68573-5, 1999.

Mason C.A., Hays L., **Hutchins J.B.**, Kick B. and Wagner S. Unit VI: Behavior. In: *Biology: A Community Context*, Leonard W.H. and Penick J.E., eds. Cincinnati: South-Western Educational Publishing, ISBN 0-538-65208-X, 1998.

Hutchins J.B. Functions of acetylcholine in signal processing and development of the mammalian retina. *Post-Proceedings of the II Workshop on Cybernetic Vision*, IEEE Computer Society Press, ISBN 0-8186-8058-X, 1997.

Hutchins J.B., Ard M.D. and Naftel J.P. Cell biology of neurons and glia (chapter 2). In: *Fundamental Neuroscience* (Haines D.E., editor), New York: Churchill Livingstone, ISBN 0-443-08874-8, 1997. (Also revised for 2nd edition, ISBN 0-443-06603-5, 2002).

Evans O.B. and **Hutchins J.B.** Development of the nervous system (chapter 5). In: *Fundamental Neuroscience* (Haines D.E., editor), New York: Churchill Livingstone, 1997. (Also revised for 2nd edition, ISBN 0-443-06603-5, 2002).

Hutchins J.B. and Corbett J.J. Visual system (chapter 19). In: *Fundamental Neuroscience* (Haines D.E., editor), New York: Churchill Livingstone, 1997. (Also revised as Chapter 20 for 2nd edition, ISBN 0-443-06603-5, 2002).

Hutchins J.B. (co-editor). *Neuroscience Laboratory and Classroom Activities*, Reston, VA: National Association of Biology Teachers, ISBN 0-941212-20-3, 1996.

Gene Sequences

Hutchins J.B. and Glasgow, C.G. Characterization of a ferret brain cDNA library: cloning and sequencing of ferret beta-actin. Genbank accession number AF038150.

Hutchins J.B., Glasgow C.G., Cox C.K. and Case S.T. Messenger RNA species which are differentially expressed during development of the ferret lateral geniculate nucleus. Genbank accession number AF072130.

Hutchins, J.B., Xiao, F., Rhodes, P.G. and Cai, Z. *Rattus norvegicus* TRC8 gene, partial cds. Genbank accession #AH009105.

Hutchins, J.B., Xiao, F., Rhodes, P.G. and Cai, Z. *Rattus norvegicus* TRC8 gene, 3'UTR. Genbank accession #AF195046.

Hutchins, J.B., Xiao, F., Rhodes, P.G. and Cai, Z. TRC8 gene, partial cds. Genbank #AF195045.

Hutchins, J.B., Xiao, F., Rhodes, P.G. and Cai, Z. ShC1A3 Rat hippocampal cDNA, differential display *Rattus norvegicus* cDNA, mRNA sequence Genbank accession #AW067630.

Hutchins, J.B., Xiao, F., Rhodes, P.G. and Cai, Z. HIA5A3 Rat hippocampal cDNA, differential display *Rattus norvegicus* cDNA, mRNA sequence. Genbank accession #AW067629.

Hutchins, J.B., Xiao, F., Rhodes, P.G. and Cai, Z. HIA2B3 Rat hippocampal cDNA, differential display *Rattus norvegicus* cDNA, mRNA sequence. Genbank accession #AW067628.

Publications (continued)

Abstracts

- Hutchins J.B.**, Watson, S., Olson, J., Woodward, L., Rockhold, R., Brown, J., Olivier, J. and Schimmel, C. Learning styles in the first-year medical class at the University of Mississippi Medical Center. *J Miss Acad Sci* **50**(1):111, 2005.
- Quilter, B., Averett N.T., **Hutchins J.B.** Methyl parathion intoxication alters the neurochemistry of the septohippocampal pathway. *J Miss Acad Sci* **48**(1):20, 2003.
- Hutchins, J.B.**, Averett, N., Bernanke, J., Kramer, R. and Baker, R. Effects of methyl parathion intoxication on gene expression and neurochemistry of the septohippocampal pathway. *Soc Neurosci Abstr* **28**, 2002.
- Hutchins, J.B.**, Averett, N., Bernanke, J., Kramer, R. and Baker, R. Methyl parathion intoxication alters the neurochemistry of the septohippocampal pathway. *FASEB J* **16**: A734, 2002.
- Hutchins, J.B.**, Averett, N. and Forsberg-Nilsson, K. Altered gene expression in a mouse transgenic model before and after bilateral carotid artery ligation hypoxia/ischemia. *FASEB J* **16**:A1099, 2002.
- Lerant, A.A., Berry, C.S. and **Hutchins, J.B.** Effects of ovarian steroids on body weight, food intake, energy expenditure and heart rate in ad libitum fed and food-restricted rats. *FASEB J* **16**, 2002.
- Lerant, A. and **Hutchins, J.B.** Changes in hypothalamic gene expression in female rats with tumor-induced chronic hyperprolactinemia. Endocrine meeting.
- Hutchins, J.B.**, Baker, R.C. and Kramer R.E. Changes in the neurochemistry and development of the ferret retinogeniculate pathway after methyl parathion treatment. *Soc Neurosci Abstr* **27**, 2001.
- Hutchins, J.B.**, Baker, R.C. and Kramer R.E. Methyl parathion treatment alters the neurochemistry of the developing ferret visual system. *FASEB J* **15**, 2001.
- Hutchins, J.B.**, Baker, R.C. and Kramer, R.E. Cutaneous application of methyl parathion alters ferret visual system gene expression. *Soc Neurosci Abstr* **26**, 2000.
- Averett, N.T., Cai, Z., Rhodes, P.G. and **Hutchins, J.B.** Tumor necrosis factor (TNF) and TNF receptor alterations in prenatal hypoxia-ischemia. *Soc Neurosci Abstr* **26**, 2000.
- Hutchins, J.B.**, Baker, R.C. and Kramer, R.E. Studies of methyl parathion toxicity in a novel mammalian model system. *Southeastern Pharmacology Society Abstracts*, 2000.
- Hutchins, J.B.**, Xiao, F., Rhodes, P.G. and Cai, Z. Rat HIC29A, elevated in prenatal hypoxia/ischemia, is identical to the human gene TRC8. *FASEB J* **14**:A635, 2000.
- Hutchins J.B.**, Xiao F., Rhodes P.G. and Cai Z. Differential display reveals genes whose expression is altered by prenatal hypoxia-ischemia. *Soc Neurosci Abstr* **25**:825, 1999.
- Xiao F., **Hutchins J.B.**, Rhodes P.G. and Cai Z. Post-treatment with NOS inhibitors and hypoxic-ischemic brain injury in neonatal rats. *Soc Neurosci Abstr* **24**:1234, 1998.
- Moore R.L. and **Hutchins J.B.** Effect of platelet-derived growth factor (PDGF) on mitochondrial function in neurons and fibroblasts. *FASEB J* **12**(5):A636, 1998.
- Smith A.L. and **Hutchins J.B.** PDGF stimulates changes in the phosphorylation of muscle cell proteins. *J Miss Acad Sci* **43**:17, 1998.

Publications: Abstracts (continued)

- Moore R.L. and **Hutchins, J.B.** Effect of platelet-derived growth factor (PDGF) on mitochondrial function in neurons and fibroblasts. *J Miss Acad Sci* **43**:18, 1998.
- Cai Z., **Hutchins J.B.** and Rhodes P.G. In utero hypoxia-ischemia and expression of nitric oxide synthases in developing rat brains. *Soc Neurosci Abstr* **23**:2436, 1997.
- Hutchins J.B.** Platelet-derived growth factor (PDGF) modifies the glutamate-evoked calcium response of cultured mouse neurons. *Soc Neurosci Abstr* **23**:1150, 1997.
- Glasgow C.G., **Hutchins J.B.**, and Mihailoff G.M. Cloning and sequencing of a cDNA coding for β -actin: initial characterization of a ferret brain cDNA library. *Soc Neurosci Abstr* **23**:91, 1997.
- Hutchins J.B.** Calcium imaging of neurons exposed to platelet-derived growth factor (PDGF). *FASEB J* **11**(3):A626, 1997.
- Frascona N. and **Hutchins J.B.** Changes in expression of platelet-derived growth factor-related proteins during mouse muscle cell differentiation. *J Miss Acad Sci* **42**:26, 1997.
- Hutchins J.B.** and Zhang F.X. Platelet-derived growth factor alters actin-binding proteins of cortical neurons *in vitro*. *Soc Neurosci Abstr* **22**:1932, 1996.
- Zhang F.X. and **Hutchins J.B.** Identification of F₁F₀ ATPase δ -subunit whose phosphorylation is regulated by platelet-derived growth factor. *J Miss Acad Sci* **41**:45, 1996.
- Zhang F.X. and **Hutchins J.B.** Protein phosphorylation induced by platelet-derived growth factor in mouse brain cells *in vitro*. *Soc Neurosci Abstr* **21**:552, 1995.
- Sundaram N., **Hutchins J.B.** Effect of epileptic discharges on the number of GABA_A receptor sites in a neuron-based system. American Epilepsy Society, 1995.
- Sigrest T.D., **Hutchins J.B.** and Rhodes P.G. Assay of tyrosine-phosphorylated proteins in a rat *in utero* asphyxiation model. Presented at the Southeastern Conference on Perinatal Research, Miami FL, March 6, 1995.
- Hutchins J.B.**, Halpain S., Maness P. and Otey C. Signal transduction during neurite growth. Winter Conference on Brain Research, 1995.
- Zhang X. and **Hutchins J.B.** Platelet-derived growth factor-induced protein phosphorylation in mouse neurons and type 1 astrocytes. American Society for Cell Biology, Dec 1994, H23.
- Hutchins J.B.** Platelet-derived growth factor receptors of central nervous system cells *in vitro*. *Molec Biol Cell* **5**:232a, 1994.
- Hutchins J.B.** Affinity cross-linking of platelet-derived growth factor receptors. Mississippi Academy of Sciences, February 1994.
- Booth A.E. and **Hutchins J.B.** Primary culture of central nervous system cells. Mississippi Academy of Sciences, February 1994.
- Hutchins J.B.** Changes in muscarinic acetylcholine receptor properties during development of the ferret retina. *Soc Neurosci Abstr* **19**:41, 1993.
- Zhang X. and **Hutchins J.B.** Platelet-derived growth factor receptor expression in *Patch* mutant mice and normal littermates. *Soc Neurosci Abstr* **19**:1302, 1993.
- Zhang X. and **Hutchins J.B.** Studies of the retinogeniculate pathway in normal and patch mice. Mississippi Academy of Sciences, February 1993.

Publications: Abstracts (continued)

- Casagrande V., **Hutchins J.**, Jhaveri S., McKanna J. and Sretevan D. The retina and its targets: how are early developmental events coordinated? Winter Conference on Brain Research, 1993.
- Hutchins J.B.** Expression of platelet-derived growth factor and its receptor during nervous system development: *in vitro* and tissue section studies. *Molec Biol Cell* **3**:358a, 1992.
- Hutchins J.B.** and Edstrom M.E. Biochemical and immunohistochemical development of muscarinic acetylcholine receptors in the ferret retina. *Invest Ophthalmol Vis Sci* **33**(4):1061, 1992.
- Edstrom M.E. and **Hutchins J.B.** Development of muscarinic acetylcholine receptors in the ferret retina. Mississippi Academy of Sciences, February 1992.
- Kennedy R.E. and **Hutchins J.B.** Use of an oligonucleotide probe to study choline acetyltransferase message expression in the nervous system. Mississippi Academy of Sciences, February 1992.
- Hutchins J.B.** and Ard M.D. Platelet-derived growth factor receptor expression in rat neuronal and astroglial cultures. *Soc Neurosci Abstr* **17**:753, 1991.
- Jefferson V.E. and **Hutchins J.B.** Localization of platelet-derived growth factor during mouse brain development. Mississippi Academy of Sciences, February 1991.
- Hutchins J.**, Bothwell, M., McKanna J. and Wood J. Proto-oncogenes and growth factors: key signals during brain development. Winter Conference on Brain Research, 1991.
- Hutchins J.B.** Proto-oncogene protein expression during mouse brain development. *Soc Neurosci Abstr* **16**:1150, 1990.
- Hutchins J.B.**, Cooper N.G.F., Tolbert L. and Meyer M. Glial-neuronal interactions during development of vertebrate and invertebrate nervous systems. Winter Conference on Brain Research, 1990.
- Casagrande V.A., Cooper N.G.F., **Hutchins J.B.** and Sretevan D. Recent evidence concerning the roles of activity and surface factors in sensory system development. Winter Conference on Brain Research, 1989.
- Hutchins J.B.** and Casagrande V.A. Cholinergic profiles in the lateral geniculate nucleus (LGN): light and electron microscopic observations. *Soc Neurosci Abstr* **14**:38, 1988.
- Casagrande V.A. and **Hutchins J.B.** Development of glial cell lamination in the ferret lateral geniculate nucleus. *Soc Neurosci Abstr* **14**:38, 1988.
- Woosley R.L., Wright G., Woosley J., **Hutchins J.** and Kennedy T. Comparison of the cytotoxicity of amiodarone and des-ethyl amiodarone to human lymphocytes in vitro. *FASEB Journal* **2**:A1557, 1988.
- Hutchins J.B.** and Casagrande V.A. Lamination of glial cell markers precedes the formation of neuronal lamination in the lateral geniculate nucleus (LGN). *Soc Neurosci Abstr* **13**:591, 1987.
- Lachica E.A., **Hutchins J.B.** and Casagrande V.A. Morphology of corticogeniculate axon arbors in a primate. *Soc Neurosci Abstr* **13**:1434, 1987.
- Lachica E.A., **Hutchins J.B.** and Casagrande V.A. Early development of the tree shrew retina: observations using Nissl, cytochrome oxidase (CO) and acetylcholinesterase (AChE) stains. *Invest Ophthalmol Vis Sci* **28**(3:suppl):348, 1987.
- Hutchins J.B.** and Casagrande V.A. Ontogeny of cholinergic neurotransmission in the tree shrew lateral geniculate nucleus. *Soc Neurosci Abstr* **12**:590, 1986.

Publications: Abstracts (continued)

- Hutchins J.B.** and Hollyfield J.G. Acetylcholine is a neurotransmitter in the human retina. *Invest Ophthalmol Vis Sci* **27**(3:suppl):230, 1986.
- Hutchins J.B.** and Hollyfield J.G. Evidence for cholinergic neurotransmission in the human retina. *Invest Ophthalmol Vis Sci* **26**(3:suppl):96, 1985.
- Hutchins J.B.** and Hollyfield J.G. Evidence for cholinergic neurotransmission in the human retina. Sixth International Congress on Eye Research, October 1984.
- Hutchins J.B.** and Hollyfield J.G. Localization of acetylcholine receptors in the human iris and retina. *Invest Ophthalmol Vis Sci* **25**(3:suppl):283, 1984.
- Hutchins J.B.**, Polans A.S. and Werblin F.S. Localization of cholinesterase and acetylcholine receptors in the retina of the larval tiger salamander. American Society for Cell Biology, December 1983.
- Hutchins J.B.**, Polans A.S. and Werblin F.S. Localization of cholinesterase and acetylcholine receptors in the retina of the larval tiger salamander. *Invest Ophthalmol Vis Sci* **24**(3:suppl):223, 1983.

Electronic Media

- Consultant, *The Spine*, CD-ROM and videotape tutorial, version 1.0. A.D.A.M. Legal, 1995.
- The PDGF Home Page*, http://anatomy.umc.edu/hutchins/pdgf_home_page.html

Reviews

- Hutchins J.B.** Resources for biosciences: the Golgi at 101. *Science and Engineering Network News*, **5**(2):8-9, Feb 1999.
- Hutchins J.B.** Resources for biosciences: public aquariums. *Science and Engineering Network News*, **4**(10):8-9, Oct 1998.
- Hutchins J.B.** Resources for biosciences: electronic journals in biology. *Science and Engineering Network News*, **4**(6):8-9, Jun 1998.
- Hutchins J.B.** Resources for biosciences: toxicology. *Science and Engineering Network News*, **4**(2), Feb 1998.
- Hutchins J.B.** Resources for biosciences: agriculture and pesticides. *Science and Engineering Network News*, **3**(9), Sep 1997.
- Hutchins J.B.** SENN Q&A: aquaculture and mariculture. *Science and Engineering Network News*, **3**(6):8, Jun 1997.
- Hutchins J.B.** Resources for biosciences: veterinary medicine. *Science and Engineering Network News*, **3**(5):8-9, May 1997.
- Hutchins J.B.** Feature: science education and the Internet. *Science and Engineering Network News*, **3**(3):1,12-13, Mar 1997.
- Hutchins J.B.** Resources for biosciences: exobiology. *Science and Engineering Network News*, **3**(1):6-7, Jan 1997.
- Hutchins J.B.** Urban legends with a bioscience twist. *Science and Engineering Network News*, **2**(10):1,8, Oct 1996.

(7 others not listed)

Manuscript Reviews

American Journal of the Medical Sciences
American Journal of Physiology: Regulatory, Integrative and Comparative Physiology
Brain Research
Experimental Eye Research
Investigative Ophthalmology and Visual Science
Journal of Chemical Neuroanatomy
Journal of Neurochemistry
Journal of Histochemistry and Cytochemistry
Journal of Neuroscience
New Anatomist
Receptor
Receptors and Signal Transduction
Visual Neuroscience

Editorial Board

Science and Engineering Network News, 1995-1999

Monograph Review

Atlas of the Prenatal Mouse Brain, Schambra et al.

Grant Reviews

National Science Foundation
NIMH Special Emphasis Panel (study section): ZMH1 BRB-S, March and June, 2000.
NIH Special Emphasis Panel (study section): NIGMS IMSD grants, July 2001 and July 2002.
American Institute for Biological Sciences, panel review for DoD Congressionally-mandated research program (head injury research), October 2000 and mail reviews summer 2001.

Professional Societies

American Association of Anatomists
American Society for Cell Biology
Sigma Xi
Society for Neuroscience

Awards and Honors

M1 Excellence in Teaching Award, University of Mississippi Medical Center Class of 1999
“All Star” Award, top five basic science professors of the year, 1997-98, chosen by the student body
“All Star” Award, top five basic science professors of the year, 1998-99, chosen by the student body
Basic Science Teacher Award, 2000-2001, University of Mississippi Medical Center School of Dentistry
Basic Sciences Professor of the Year, 2001-2002, UMMC Carl G. Evers, MD Society (award voted by the student body).
“All Star” Award, top five basic science professors of the year, 2002-2003, chosen by the student body
Teacher of the Year (2012-13), Dumke College of Health Professions, Weber State University

Service Activities

Weber State University: Ex officio as Associate Provost (all July 2005—October 2006)

Deans' Council
Undergraduate Research Committee
Research, Scholarship and Professional Growth Committee
Teaching, Learning and Assessment Committee
Animal Care & Use Committee
Institutional Review Board (Human Subjects)
University Council on Teacher Education

University of Mississippi Medical Center: as Chair or other leader

2000-2005 Chair, Radiation Safety Committee
2003-2005 Chair, Faculty Orientation Committee
2003-2005 Convener, Thomas M. (Peter) Blake Academy for Teaching Excellence
2003-2005 Chair, Faculty Development Committee
1998-99 Chair, Anatomy Department Faculty Search Committee
1997-98 Chair, Anatomy Department Faculty Search Committee
1996-2005 Moderator, UMC Mini-Med School

University of Mississippi Medical Center: as member

2004-2005 Institutional Effectiveness Committee
2004 Attendance Policy Review *Ad Hoc* Advisory Committee
2004-2005 Cultural Proficiency Advisory Committee
2003-2005 Information Systems Strategic Planning Committee
2002-2003 *Ad Hoc* Committee on Medical School Promotion and Tenure
2002-2003 LCME Self-Study Steering Committee
2002-2003 Faculty Development Committee
2002-2005 Faculty Orientation Committee
2002-2005 Hospital Disaster Preparedness Committee
2001-2004 Dental Admissions Committee
2001-2005 Commencement Committee
2001-2004 Committee on Neuroscience Literacy, Society for Neuroscience
1999-2000 SACS Self-Study Committee: Administrative Processes
1997-2005 Radiation Safety Committee
1996-97 Publicity Chairman, Mississippi Academy of Sciences
1996-2004 Graduate Committee, Dept. of Anatomy
1996-2004 Faculty Advisor for entering Medical Students
1996 LCME Self-Study Subcommittee: Educational Program for the M.D.
1995-2000 Institutional Biohazards Committee
1993-1997 Committee on Neuroscience Literacy, Society for Neuroscience
1993-94 BioCom Curriculum Project, Dept. of Education, Clemson University: Consultant in an NSF-funded project to develop a high school biology curriculum and text
1992 Science Education Partnership (SEPA): Participant in nationwide workshop to train high school teachers in neuroscience; review panelist to prepare final, edited student laboratory exercises to be distributed to 6000 high school science teachers
1989-92 Science-By-Mail elementary and secondary-school students annually

Other Educational Outreach Efforts

Speaker/guest at high schools throughout Mississippi, including Hernando High, Murrah (Jackson) High, Ackerman High, and Weir Attendance Center.

Participant in "Electronic Emissary Project", a science classroom by electronic mail.

Sponsor for high school students under NIH-funded Minority Access to Research Careers (MARC), Dr. Leon Anderson, P.I. One student sponsored each summer since 1990.

Participant in SEPA Workshop, co-sponsored by Society for Neuroscience and National Association of Biology Teachers, Wake Forest University, July-August 1992.

Charter Participant in "Base Pair", a joint effort of the University of Mississippi Medical Center and Jackson Public Schools, pairing high school students with faculty mentors.

Elected Positions

Australian Cattle Dog Club of America, President, 1999-2001

Australian Cattle Dog Club of America, Regional Director, 1997-99

American Association of Anatomists Audit Committee, 1997

President, Univ Mississippi Med Ctr Chapter Sigma Xi, 1997-98

Committee on Neuroscience Literacy, Society for Neuroscience, 1994-97

President, Mississippi Chapter, Society for Neuroscience, 1992-94

Division Chairperson, Mississippi Academy of Science, Molecular, Cellular and Developmental Biology Division, 1992

Secretary-Treasurer, Middle Tennessee Chapter, Society for Neuroscience, 1986-87

Advisory Committee Membership

Chairman

Xiaorong Zhang, Ph.D. 1996, Anatomy Department

Member

Yungao Ding, Ph.D. 1994, Biochemistry Department

Wensi Sun, Ph.D. 1995, Anatomy Department

Xiaobing Qian, Ph.D. 1996, Anatomy Department

Matthew Velkey, M.A. 1998, Anatomy Department

Donalee Andrew, Ph.D. 1998, Anatomy Department

Min Yan, Ph.D. 1999, Anatomy Department

Yan Pan, Ph.D. 2003, Anatomy Department

Hong Yang, Ph.D. 2004, Anatomy Department

Ann Peden, Ph.D. candidate, Clinical Health Sciences, School of Health Related Professions

Invited Lectures

- “Development and Neurochemistry of the Brain”, Community Mental Health Conference, Mississippi State Dept of Mental Health, Jackson, MS, May 30, 2002
- “Studying Changes in Gene Expression during Ferret Visual System Development”
University of Mississippi Medical Center (Neuroscience), January 1999
- “How to Build a Brain: Molecular and Cellular Changes during Visual System Development”
Belhaven University, October 1998
- “Mechanisms of Stroke Damage and Neuroprotection”
University of Mississippi Medical Center (Physiology), September 1997
- “Does Platelet-Derived Growth Factor Protect Neurons From Ischemic Damage?”
University of Mississippi Medical Center (Pharmacology), January 1997
- “Functions of Acetylcholine in Signal Processing and Development of the Mammalian Retina”
II International Workshop on Cybernetic Vision, Universidad de São Paulo, São Carlos, SP, Brazil, December 1996
- "The Brain: An Owner's Manual"
Mississippi Science Teachers Association, November 1996.
- "Brain Development: Growth Factors and the Cytoskeleton"
University of Mississippi Medical Center (Pharmacology), October 1994
California Institute of Technology, February 1996
- "Development of Muscarinic Cholinergic Synapses in the Central Nervous System"
University of Arizona, ARL Division of Neurobiology, January 1995
- "Cellular and Biochemical Interactions During Brain Development"
University of Mississippi Medical Center (Physiology), March 1993
University of Mississippi Medical Center (Neuroscience Series), December 1992
Bowman Gray School of Medicine/Wake Forest University, July 1992
Mississippi State University, October 1991
- "'Hawaiian' Blotting: A New Western Blotting Variant"
Symposium on Methods and Applications in Nucleic Acid and Protein Analysis
National Institutes of Health, Bethesda, MD, April 1990
- "Neurochemical Factors Driving Development of the Visual System"
University of Mississippi Medical Center (Anatomy), May 1989
University of Colorado Medical Center, April 1989
University of Missouri School of Medicine (Kansas City), February 1989
Wayne State University School of Medicine, May 1988
Michigan State University, April 1988
Pennsylvania State University School of Medicine (Hershey), October 1987

Other Trainees

Changes in Cytokines after Chemotherapy in Juvenile Leukemia Patients

Tiffany Scarff, Medical Student, June 2003-July 2003.

Effect of Methyl Parathion on Mouse Brain Development

Ben Quilter, Base Pair Student, Murrah High School, January 2002-May 2003.

Morenike Irving, Base Pair Student, Murrah High School, January 2001-May 2001.

Platelet-Derived Growth Factor and its Receptor in Muscle Cells

Alexa Smith, Junior Student, Millsaps College, September 1997-June 1998.

Platelet-Derived Growth Factor and its Receptor in Muscle Cells

Nan Frascogna, Senior Student, Millsaps College, June 1996-March 1997.

PCR and Single-Stranded Conformation Polymorphism Analysis of the Von-Hippel Lindau Gene

Rob Tibbs, M.D., Fellow in Neurosurgery, June 1995-May 1996. Currently resident in Neurosurgery, University of Mississippi Medical Center.

Platelet-Derived Growth Factor and its Receptor in a Model of Neonatal Cerebral Ischemia

Ted Sigrest, M.D., Fellow in Pediatrics. September 1994-December 1995. Currently resident in Pediatrics, University of Mississippi Medical Center.

Platelet-Derived Growth Factor and its Receptor in Muscle Cells

Sumona Versie Smith, Jim Hill High School, June-August 1994-95. Currently undergraduate student, Jackson State University.

Platelet-Derived Growth Factor and its Receptor in Cultured Neurons and Astroglia

Angela Booth, Honors Student, Millsaps College, September 1992-August 1993. Currently medical student, Louisiana State University.

Growth and DNA Repair of E. coli in PABA-Containing Media

Chris Murriel, Clinton High School, June 1992-August 1993. Currently undergraduate student, Washington University, St. Louis.

Development of Nicotinic Acetylcholine Receptors in Ferret Retina

Demethous Chambliss, ASCB Summer Fellow, June 1992 - August 1992. Currently Biology Dept. Chair, St. Andrews High School, Madison, Mississippi.

In Situ Hybridization Histochemistry of Choline Acetyltransferase mRNA

Richard Kennedy, Medical Student, June 1991 - May 1992. Currently resident in Medicine, University of Arkansas Medical Center.

Development of Muscarinic Acetylcholine Receptors in Ferret Retina

Clay Calcote, Medical Student, June 1991 - August 1991. Currently resident in Pathology, University of Mississippi Medical Center.

Development of Acetylcholinesterase Activity in Retina

Karen Salzman, Undergraduate Honors Student, June 1987 - July 1989. Currently resident in Radiology, Baylor College of Medicine.

GABAergic cells in Galago Lateral Geniculate Nucleus

John Ryu, Medical Student, June 1988 - July 1989. Currently practicing in Anesthesiology.

References

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University of Maryland
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Statement of Research Interests and Goals

I am interested in how nerve cells stay alive, and what genetic switches are turned on (or off) when nerve cells are subjected to stress.

A part of this study is the normal development of the nervous system. As organisms develop, the nervous system becomes less 'plastic' and the effects of injury are much more severe.

We have three major projects ongoing in the lab.

Effects of methyl parathion on nervous system development

This developmental toxicology project is part of the larger 'Signals and Sensors' effort which is a collaboration between investigators at the University of Mississippi (Oxford), University of Mississippi Medical Center (Jackson) and Tulane University (New Orleans). In these experiments, we expose neonatal rodents to methyl parathion. The metabolites of this organophosphate insecticide inhibit acetylcholinesterase, increasing the availability of acetylcholine at the synapse. We are using gene arrays to find genes whose expression is changed by methyl parathion exposure, then following up those that show interesting patterns of expression. Because nerve agents used by terrorists and rogue states are also organophosphates, there are implications for public health and safety as well.

Neuroprotection by platelet-derived growth factor

Platelet-derived growth factor (PDGF) is found in developing neurons, and has been shown to have neuroprotective effects. Our lab has found that PDGF is located within neurons. In neurons, PDGF administration alters the expression of actin-binding proteins, phosphorylates the F_1F_0 ATPase, and reduces the increase in intracellular Ca^{++} triggered by glutamate. We are currently examining gene expression in a mouse strain transgenic for PDGF-B in order to better understand the mechanisms of PDGF-mediated neuroprotection.

Response to hypoxia/ischemia in neonatal rodents

We are also exploring the effect of perinatal hypoxia/ischemia on gene expression in rats. The uterine and cervical arteries are clamped for 30 minutes at E17, then the tissue is examined at P8. It is known that neonatal hypoxia/ischemia causes long-term changes in the human brain. We are trying to determine what long-term changes in gene expression occur in the rat brain in this experimental model. We have identified a gene, HIC29A, which has sequence similarity to human TRC8. Current work is focused on the role of HIC29A/TRC8 in the brain's response to perinatal hypoxia/ischemia.

My current skills include hands-on experience with:

- molecular biological techniques, including proteomics and genomics
- electron microscopy
- immunohistochemistry (LM and EM)
- histochemistry of neurotransmitter markers
- autoradiography (LM and EM)
- transmitter uptake/release, enzymatic, and receptor binding assays
- chromatography (thin-layer, paper)
- electrophoresis (PAGE and high voltage paper); 2D electrophoresis of proteins; Western blotting
- neuronal pathway tracing (cholera toxin B, ^3H -amino acids, WGA-HRP, HRP, PHA-L)
- cell culture including: primary neuronal and astroglial culture; fibroblast and muscle lines; organotypic culture