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Education

Neuropathology Fellow, The Johns Hopkins Hospital, Baltimore, Maryland, July, 2003-
June, 2005
Resident, Anatomic Pathology, The Johns Hopkins Hospital, Baltimore, Maryland, July,
2001-June, 2003
M.D., The University of Arizona College of Medicine, Tucson, Arizona, May, 2001
Ph.D., The University of Arizona, Program in Neuroscience, Tucson, Arizona, May,
1999
M.S., The University of Arizona, Program in Neuroscience, Tucson, Arizona, December,
1991
B.A., Boise State University, 1989, Boise, Idaho
Psychology, Magna Cum Laude

Licensure and Certification

Medical Licensure, State of Pennsylvania (MD425212, inactive), 2004
Medical Licensure, State of Tennessee (MD40055, active), 2005
Diplomate, American Board of Pathology, Anatomic Pathology and Neuropathology
(9/28/05)

Academic Appointments

Assistant Professor, Neuropathology Division, Department of Pathology, Vanderbilt
University Medical Center, 2005 to present

Honors and Awards

Finalist, Burroughs Wellcome Career Award for Medical Scientists, 2008
Vanderbilt Physician Scientist Development Award, 2006 to 2008
MD/PhD Fellowship, University of Arizona College of Medicine, 1993-1995, 1999-2001
Predoctoral Fellowship, Robert S. Flinn Biomedical Research Initiative, 1995-1997
Graduate Merit Scholarship, 1992
Magna Cum Laude, 1989
Phi Kappa Phi, 1989
John Lynn Driscoll, Jr. Scholarship, 1986

Research

Refereed Publications

Sun, D.A., Yu, H., Spooner, J., Tatsas, A.D., Davis, T., **Abel**, T.W., Kao, C., Konrad,
P.E. Postmortem analysis following 71 months of deep brain stimulation of the

subthalamic nucleus for Parkinson's disease. *Journal of Neurosurgery*, 109, 325-329, 2008.

Bierie, B., Stover, D.G., **Abel**, T.W., Chytil, A., Gorska, A.E., Aakre M., Yang, L., Forrester, E., Wagner K., Moses, H.L. TGF- β regulates mammary carcinoma cell survival and interaction with the adjacent microenvironment. *Cancer Research*, 68, 1809-1819, 2008.

Valentine, W.M., **Abel**, T.W., Hill, K.E., Austin, L.M., Burk, R.F. Neurodegeneration in mice resulting from loss of functional selenoprotein P or its receptor ApoER2. *Journal of Neuropathology and Experimental Neurology*, 67, 68-77, 2008.

Danthi, P., Kobayashi, T., Holm, G.H., Hansberger, M.W., **Abel**, T.W., Dermody, T.S. Reovirus apoptosis and virulence is regulated by host cell membrane-penetration efficiency. *Journal of Virology*, 82, 161-172, 2008.

Becher, M.W., Hofecker, J.L., Moss, T.L., **Abel**, T.W. Optimization of central nervous system stereotactic needle and pituitary biopsies with histogel™ tissue-processing medium. *The Journal of Histotechnology*, 30, 1-3, 2007.

Ehtesham, M., Sarangi, A., Valadez J.G., Chanthaphaychith S., Becher M.W., **Abel** T.W., Thompson, R.C., and Cooper, M.K. Ligand-dependant activation of the hedgehog pathway in glioma progenitor cells. *Oncogene*, 26: 5752-5761, 2007.

Eberhart, C.G., Copeland, J, **Abel** T.W. Brief report: S6 ribosomal protein phosphorylation in autistic frontal cortex and cerebellum: a tissue array analysis. *Journal of Autism and Developmental Disorders*, 36:1131-1135, 2006.

Abel, T.W., Curtis, M., Lin, D.D., Burger, P.C., Cummings, T.J. Complex choristoma of the gyrus rectus: a distinct clinicopathologic entity? *American Journal of Surgical Pathology*, 30: 625-629, 2006.

Stearns, D., Chaudhry, A., **Abel**, T.W., Burger, P.C., Dang, C.V., Eberhart, C.G. c-Myc overexpression causes anaplasia in medulloblastoma. *Cancer Research*, 66:673-681, 2006.

Abel, T.W., Baker, S.J, Fraser, M.M, Tihan, T., Nelson, J.S., Yachnis, A., Bouffard, J., Mena, H., Burger, P.C., Eberhart, C.G. Lhermitte-Duclos disease: a report of 31 cases with immunohistochemical analysis of the PI3K/PTEN/AKT pathway. *Journal of Neuropathology and Experimental Neurology*, 64:341-349, 2005.

Krajewski S.J., **Abel** T.W., Voytko M.L., Rance N.E. Ovarian steroids differentially modulate the gene expression of gonadotropin-releasing hormone neuronal subtypes in the ovariectomized cynomolgus monkey. *Journal of Clinical Endocrinology and Metabolism*, 88:655-665, 2003.

Abel, T.W., Rance, N.E. Stereologic study of the hypothalamic infundibular nucleus in young and older women. *Journal of Comparative Neurology*, 424:679-688, 2000.

Abel, T.W., Voytko, M.L., Rance, N. E. The effects of hormone replacement therapy on hypothalamic neuropeptide gene expression in a primate model of menopause. *Journal of Clinical Endocrinology and Metabolism*, 84:2111-2118, 1999.

Abel, T.W., Rance, N.E. Proopiomelanocortin gene expression is decreased in the infundibular nucleus of postmenopausal women. *Molecular Brain Research*, 69: 202-208, 1999.

Korol, D.L., **Abel**, T.W., Church, L.T., Barnes, C.A., and McNaughton, B.L. Hippocampal synaptic enhancement and spatial learning in the Morris swim task. *Hippocampus*, 3, 127-132, 1993.

Reviews/Book Chapters

Becher, M.W., **Abel**, T.W., Thompson, R.C., Weaver, K.D., Davis, L.E. Immunohistochemical analysis of metastatic neoplasms of the central nervous system. *Journal of Neuropathology and Experimental Neurology*, 65, 2006.

Rance, N.E., **Abel**, T.W. Hypothalamic gene expression in postmenopausal women. In: *Functional Neurobiology of Aging*, Hof, P.R. and Mobbs, C.V. (eds.), Academic Press, San Diego, 2001.

Rance, N.E., **Abel**, T.W., Danzer, S.C. Reproductive aging and the human hypothalamus. In: *Biology of Menopause, Serono Symposium Proceedings*. Springer-Verlag, New York, 2000.

Abstracts

Abel, T.W., Clark, C., Bieri, B., Chytil, A., Aakre, M., Gorska, A., Moses, H. Activation of oncogenic *k-ras* in glioneuronal precursor cells results in simultaneous expansion of the subventricular zone and infiltrating glioma. Platform presentation, American Association of Neuropathologists Annual Meeting, 2008, San Diego, CA.

Antar, A.A.R., **Abel**, T.W., Konopka, J.L., Campbell, J.A., Sato, T.N., Perdigoto, A.L., Carter, B.D., Dermody, T.S. Junctional Adhesion Molecule-A Is Required for Efficient Hematogenous Dissemination of Reovirus in Infected Newborn Mice. Keystone Symposia: *Cell Biology of Virus Entry, Replication and Pathogenesis*, 2008, Victoria, British Columbia.

Cheng, K., Chytil, A., **Abel**, T. W., Moses, H.L. Loss of one *Tgfr2* allele in fibroblasts results in earlier mammary tumor onset and increased metastasis in the MMTV-

Polyoma middle T transgenic mice. Keystone Symposia: *Mouse Models at the Frontier of Cancer Discovery*, 2007, Whistler, British Columbia.

Abel, T.W., Margraf, L., Raghavan, R., Eberhart, C.G. Activation of the mTOR pathway in subependymal giant cell astrocytoma: immunohistochemical analysis of eighteen cases. XVI International Congress of Neuropathology, 2006, San Francisco, CA.

Abel, T.W., Thompson, M.A., Kim, J., Yenamandra, A., Becher, M. Primary central nervous system Burkitt lymphoma: report of a case confirmed with identification of t(8;14) by FISH. XVI International Congress of Neuropathology, 2006, San Francisco, CA.

Spooner, J, Tatsas, A.D., **Abel**, T.W., Yu, H; Yao, T.L., Kao, C; Konrad, P., Davis, T. Deep brain stimulation in white matter superior to STN is effective in Parkinson's disease: a 5-year postmortem analysis. American Society for Stereotactic and Functional Neurosurgery Biennial Meeting, 2006, Boston, MA.

Abel, T.W., Baker, S.J., Fraser, M., Tihan, T., Burger, P.C., Eberhart, C.G. PTEN expression in ganglion cell tumors: an immunohistochemical study. American Association of Neuropathologists Annual Meeting, 2004, Cleveland, OH.

Abel, T., Eberhart, C., Tihan, T., Hasan, C., Rao, C., Perlman, E., Burger, P. Nodular/desmoplastic medulloblastomas arising in immature teratomas: a report of three cases. American Association of Neuropathologists Annual Meeting, 2002, Denver, CO.

Krajewski, S., **Abel**, T.W., Voytko, M.L., Gruener, R., Rance, N.E. Hormone replacement therapy suppresses GnRH gene expression in the ovariectomized cynomolgus monkey. *Society for Neuroscience Abstracts*: Vol 25, 2000.

Abel, T.W., Rance, N.E. Neuronal hypertrophy occurs without neuron loss in the infundibular nucleus of postmenopausal women. *Society for Neuroscience Abstracts*: Vol 25, 1999.

Abel, T.W., Voytko, M.L., Rance, N.E. Hormone replacement therapy (HRT) does not produce estrogen toxicity in the primate hypothalamus. *Society for Neuroscience Abstracts*: Vol 24, 1998.

Abel, T.W., Voytko, M.L., Rance, N.E. Hormone replacement suppresses neurokinin B gene expression in the arcuate nucleus of ovariectomized monkeys. *Society for Neuroscience Abstracts*: Vol 22, 1996.

Rao, G., Barnes, C.A., McNaughton, B.L., Shen, J., **Abel**, T.W. Age-related decrease in the NMDA-mediated EPSP in CA1. *Society for Neuroscience Abstracts*: Vol 19, 1993.

Shen, J., Barnes, C.A., McNaughton, B.L., Rao, G., **Abel**, T.W. Effect of aging on a slow, atropine-, AP5- and CNQX-sensitive depolarizing response in hippocampal region CA1 following tetanization of stratum oriens/alveus. *Society for Neuroscience Abstracts*: Vol 19, 1993.

Stevenson, G.D., Korol, D.L., Galganski, M.E., **Abel**, T.W., McNaughton, B.L., Barnes, C.A. "Saturation" of perforant path granule cell LTP/LTP does disrupt some spatial tasks. *Society for Neuroscience Abstracts*: Vol 19, 1993.

Jung, M.W., McNaughton, B.L., **Abel**, T.W. Spatial firing characteristics of dentate gyrus granule cells. *Society for Neuroscience Abstracts*: Vol 18, 1992.

Markus, E.J., Barnes, C.A., McNaughton, B.L., Gladden, V., **Abel**, T.W., Skaggs, W.E. Decrease in the information content of hippocampal CA1 cell spatial firing patterns in the dark. *Society for Neuroscience Abstracts*: Vol 18, 1992.

Jung, M.W., McNaughton, B.L., **Abel**, T.W. Spatial firing characteristics of dentate granule cells. *Society for Neuroscience Abstracts*: Vol 18, 1992.

Research Support

Johns Hopkins Pathology Department Resident Research Grant, 2004: "Analysis of the PI3K/PTEN signaling pathway in ganglion cell lesions and subependymal giant cell astrocytoma"

Vanderbilt Physician Scientist Development Award, July 2006 to present, "TGF- β in CNS Development, Neoplasia and Inflammation"

NIH Mentored Clinical Scientist Research Career Development Award (K08), pending, "TGF- β , Neural Stem Cells and Gliomagenesis"

Professional Organizations

American Association of Neuropathologists

American Association for Cancer Research

National Society for Histotechnology

National Committees

Junior Member, College of American Pathologists Neuropathology Committee, 2002-2004

Awards Committee, American Association of Neuropathologists Annual Meeting, 2007-2008

Chair, Awards Committee, American Association of Neuropathologists Annual Meeting, 2009

Institutional Committees

Translational Research Committee, Vanderbilt University Medical Center Pathology Department