

BIOGRAPHICAL SKETCH

NAME Kevin C. Ess		POSITION TITLE Assistant Professor of Neurology, Pediatrics and Cell & Developmental Biology	
Birthplace, Buffalo, NY			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Cincinnati, Cincinnati, OH	B.M	6/89	Music Performance
University of Cincinnati, Cincinnati, OH	Ph.D.	12/96	Developmental Biology
University of Cincinnati, Cincinnati, OH	M.D.	6/98	Medicine

A. RESEARCH AND PROFESSIONAL EXPERIENCE

Employment

- 1998 – 1999** Pediatric Internship, University of Colorado, Denver Children’s Hospital, Denver, CO. Program Director, Dr. Mimi Glode.
- 1999 – 2002** Pediatric Neurology Residency, Washington University, St. Louis, MO. Program Director, Dr. Steve Rothman.
- 2002 – 2004** Pediatric Epilepsy and Clinical Neurophysiology Fellowship, Washington University, St. Louis, MO. Program Director, Dr. Edwin Trevathan.
- 2003 – 2005** Post-doctoral Research, Laboratory of David Gutmann, Department of Neurology, Washington University.
- 2002 – 2006** Founder and Director, Tuberous Sclerosis Clinic, St. Louis Children’s Hospital.
- 2004 – 2006** Instructor, Department of Neurology, Washington University, St. Louis, MO. Chair, Dr. David Holtzman.
- 2006 – present** Assistant Professor, Department of Neurology, Vanderbilt University, Nashville, TN. Chair, Dr. Robert Macdonald.
- 2006 – present** Assistant Professor, Department of Pediatrics, Vanderbilt University, Nashville, TN. Interim Chair, Dr. Meg Rush.
- 2006 – present** Member, Vanderbilt Kennedy Center for Research on Human Development.
- 2006 – present** Founder and Director, Tuberous Sclerosis Clinic, Vanderbilt Children’s Hospital.
- 2009 – present** Assistant Professor, Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN. Interim Chair, Dr. Susan Wenthe.
- 2009 – present** Member, Vanderbilt Center for Stem Cell Biology, Nashville, TN. Director Dr. Mark Magnuson.

HONORS

- 1996** 1st Place, Graduate Student Research, University of Cincinnati School of Medicine
- 1998** Alpha Omega Alpha
- 2003** National Epifellows Award
- 2008** Adelyn Stroup Lectureship in Pediatric Epilepsy

PROFESSIONAL ACTIVITIES/MEMBERSHIP

- 2003** – present Professional Advisory Board, Tuberous Sclerosis Alliance
- 2004** – present Tuberous Sclerosis Alliance Clinical Consortium
- 2006** – present Ad Hoc Reviewer, various journals
- 2011** – present Editorial Board, Journal of Child Neurology
- 2011** – present Scientific Program Committee, American Epilepsy Society
- 2011** – present Research Committee, Child Neurology Society

PROFESSIONAL SOCIETIES

- 1999** – American Academy of Neurology
- 2000** – Child Neurology Society
- 2001** – American Epilepsy Society
- 2006** – Society for Neuroscience
- 2011** – Society for Developmental Biology

INVITED LECTURES

Tuberous Sclerosis Alliance National Meeting 2002, Washington, DC

Tuberous Sclerosis Alliance-LAM National Meeting 2005, Cincinnati, OH

Tuberous Sclerosis Alliance National Conference 2006, Chicago, IL

Tuberous Sclerosis Alliance National Meeting 2007, Annapolis, MD

“Neurobiology of Tuberous Sclerosis Complex” (Platform Speaker) Keystone Symposia “Towards Identifying the Pathophysiology of Autistic Syndromes” 2008, Santa Fe, NM

“Advances in Tuberous Sclerosis Complex: Animal Models and New Therapies”. 2008, University of Birmingham, AL

"Lessons from Tuberous Sclerosis: Seizures, Autism, and Easter Island". Adelyn Stroup Visiting Lectureship in Pediatric Epilepsy, May 2008, Johns Hopkins School of Medicine, Baltimore, MD

“IDDRC Seminar”. Children’s Research Institute at the Children’s National Medical Center, 2008, Wash. DC

Tuberous Sclerosis, Comorbidity and Connectivity”. American Epilepsy Society Workshop “The comorbidities of epilepsy: The unification of multiple disease states through basic mechanisms.” 2008, Seattle, WA

“Epilepsy and Stigma in Africa”, April 2009, Lusaka, Zambia

“Zebrafish Model of TSC”, Tuberous Sclerosis Alliance Conference 2009, Bloomingdale, IL

“Tuberous Sclerosis Complex: Astrocytomas, mTOR and Easter Island” AAN 2010 Meeting, Toronto, Canada

“Human Stem Cells to Study Neuronal Development and the Role of mTOR Signaling”, 3rd Southwest Stem Cell Consortium Workshop 2010, Nashville, TN

“Combining Clinical and Research Careers: How I Am Doing It”, NINDS/AUPN/ANA Sponsored “Combining Clinical and Research Careers in Neuroscience Symposium” June 2011, Wash. DC

“Tumorigenesis in Zebrafish: TOR is not enough?”, 7th European Zebrafish Meeting July 2011, Edinburgh, Scotland

“Induced Pluripotent Stem Cells in Child Neurology: New Tools, New Hope?”, 40th CNS Meeting, October 2011, Savannah, GA

B. PUBLICATIONS

Original Research

Fu C, Cawthon C, Clinkscales W, Bruce A, Winzenburger P and **Ess, K.** GABAergic Interneuron Development and Function is Modulated by the *Tsc1* Gene. *Cerebral Cortex* (In Press).

Carson R, Van Nielen D, Winzenburger P and **Ess, K.** Neuronal and glia abnormalities in *Tsc1*-deficient forebrain and partial rescue by rapamycin. *Neurobiology of Disease* 2011 10.1016/j.nbd.2011.08.024 (In Press).

Kim, S. H., Speirs, C. K., Solnica-Krezel, L. and **Ess, K. C.** (2011) Zebrafish model of tuberous sclerosis complex reveals cell-autonomous and non-cell-autonomous functions of mutant tuberin. *Dis Model Mech* 4(2): 255-67.

Zeng L, Ouyang Y, Gazit V, Cirrito J, Jansen L, **Ess K,** Yamada K, Wozniak D, Holtzman D, Gutmann D., Wong M. Abnormal glutamate homeostasis and impaired synaptic plasticity and learning in a mouse model of tuberous sclerosis complex. *Neurobiology of Disease*. 2007. PMC2117357

Ess K, Camp K, Tu B, Gutmann D. Developmental Origin of Subependymal Giant Cell Astrocytoma in Tuberous Sclerosis Complex. *Neurology* 64, 1446-1449, 2005.

Ess K, Uhlmann E, Li W, Hongzhen L, DeClue J, Crino P, Gutmann D. Expression Profiling in Tuberous Sclerosis Complex (TSC) Knockout Mouse Astrocytes to Characterize Human TSC Brain Pathology. *Glia* 46 (1) 28-40, 2004.

Wong M, **Ess K,** Uhlmann E, Jansen L, Li W, Phelan C, Crino P, Mennerick P, Yamada K, Gutmann D. Astrocyte-Specific *Tsc1* Inactivation Leads to Impaired Glutamate Transport in a Mouse Epilepsy Model of Tuberous Sclerosis Complex. *Annals of Neurology* 54 (2) 251-56, 2003.

Wong M, **Ess K,** Landt M. Cerebrospinal fluid neuron-specific enolase following seizures in children: role of etiology. *Jrl.Child Neurol.* 17(4):261-4, 2002.

Ess KC, Witte DP, Bascomb CP, Aronow BJ. Diverse developing mouse lineages exhibit high-level c-Myb expression in immature cells and loss of expression upon differentiation. *Oncogene* 18(4):1103-1111, 1999.

Ess K, Chen H, Kier A, Brackenbury R. Suppression of tumorigenicity, but not invasion, in glioblastoma/HeLa cell hybrids. *Journal of Cellular Physiology* 162(3):341-347, 1995.

Ess KC, Whitaker TL, Cost GJ, Witte DP, Hutton JJ, Aronow BJ. A central role for a single c-Myb binding site in a thymic locus control region. *Molecular and Cellular Biology* 15(10): 5707-5715, 1995.

Hutton JJ, **Ess KC,** Witte DP, Aronow BJ. c-Myb and the coordinate regulation of thymic genes. *Transactions of the American Clinical and Climatological Association.* 197:115-124, 1995.

Ess KC, Hutton JJ, Aronow BJ. Double-stranded phosphorothioate oligonucleotide modulation of gene expression. *Annals of the New York Academy of Sciences* 716:321-323, 1994.

Book Chapters

Neely MD, Tidball AM, **Ess KC,** Bowman AB. Induced pluripotent stem cells (iPSCs) - an emerging model system for the study of human neurotoxicology. 2010. In: **Neuromethods: Cell Culture techniques.** Humana Press: New York, NY. Editors: Michael Aschner, Cristina Suñol, Anna Price. *In press.*

Bowman AB, **Ess KC,** Kumar KK, Summar KL. Chapter 130 – Down Syndrome 2011. In: **Comprehensive Developmental Neuroscience.** Elsevier. *In press.*

Ess K. Modeling Tuberous Sclerosis Complex: Brain Development and Hyperexcitability. In: *Animal Models of Epilepsy*. (S. Baraban, editor). Humana Press: Totawa, New Jersey 2008.

Ess K, and Gutmann D. Tuberous Sclerosis Complex and Other Neurocutaneous Disorders, and Neurofibromatosis. In: *Saunders Manual of Neurologic Practice*. (R. Evans, editor). WB Saunders: Orlando. 2003.

Review Articles

Ess KC. Tuberous Sclerosis Complex: A Brave New World? *Current Opinion in Neurology* 2010 Apr;23(2):189-93.

Ess KC. Tuberous Sclerosis Complex: Everything Old is New Again. *Journal of Neurodevelopmental Disorders* 1 (2): 141-149, 2009

Ess KC. Treatment of infantile spasms in tuberous sclerosis complex: dismal outcomes but future hope? *Nature Clinical Practice Neurology* 2009;5(2):72-3

Ess KC. The Neurobiology of Tuberous Sclerosis Complex. *Seminars in Pediatric Neurology* 13 (1) 37-42, 2006.

C. RESEARCH SUPPORT

Active

- 2010 – 2013 “Zebrafish Model of TSC”
Principal Investigator: Kevin C. Ess, MD, PhD
Funding agency: Dept. of Defense
- 2009 – 2012 “Neurogenesis in Tuberous Sclerosis Complex”
Clinical Scientist Development Award
Principal Investigator: Kevin C. Ess, MD, PhD
Funding agency: Doris Duke Foundation
- 2007 – 2012 “The Role of the TSC Genes During Brain Development”
K08 Mentored Clinical Scientist Research Career Development Award
Mentor Christopher Wright, Ph.D.
Principal Investigator: Kevin C. Ess, MD, PhD
Funding agency: NINDS, NIH
5K08NS050484