

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Misty D. Smith, Ph.D.		POSITION TITLE Research Assistant Professor	
eRA COMMONS USER NAME (credential, e.g., agency login) MISTYSMITH			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Muskingum University, New Concord, OH	B.S.	05/96	Biology
University of South Carolina, Columbia, SC	Ph.D.	08/01	Biomedical Science
University of Utah, Salt Lake City, UT	Postdoctoral Fellow	08/01	Pharmacology & Toxicology

NOTE: The Biographical Sketch may not exceed four pages. Follow the formats and instructions below.

A. Personal Statement

I have been an active member of the NINDS-sponsored Anticonvulsant Screening Program at the University of Utah since 2001 and the Senior Scientist in the Anticonvulsant Drug Development (ADD) Program since 2004. Because of my considerable experience with the ADD Program, I am familiar with all of the experimental aspects of anticonvulsant drug discovery and am well-versed in preclinical animal seizure and epilepsy models. In addition, I have been responsible for both the development and oversight of the analgesia studies that are now conducted on promising investigational anticonvulsant substances that are identified in the NINDS-sponsored anticonvulsant screening project. My diverse training and experience will be useful as we develop novel screening capabilities for active investigational anticonvulsant drugs in preclinical models of various non-epilepsy pathologies that impact the quality of life for patients with epilepsy; including, pain, depression, bipolar, and anxiety.

B. Positions and Honors**I. PROFESSIONAL APPOINTMENTS:**

08/95 - 05/96 Biology Department Tutor and Greenhouse Manager, Muskingum University, New Concord, OH

08/98 - 05/99 Laboratory Teaching Assistant, University of South Carolina, Department of Pharmacology & Physiology, Columbia, SC

08/96 - 05/01 Graduate Student, University of South Carolina, Department of Pharmacology & Physiology, Columbia, SC

08/01 - 07/04 Research Associate (Postdoctoral Fellow), University of Utah, Department of Pharmacology and Toxicology, Salt Lake City, UT

08/04 – Present Senior Scientist, University of Utah, Department of Pharmacology and Toxicology, Anticonvulsant Drug Development Program, Salt Lake City, UT

08/04 - Present Adjunct Professor, Biology Department, Salt Lake Community College, Salt Lake City, UT

01/10 - Present Principle Scientist, NeuroAdjuvants, Inc., Salt Lake City, UT

07/11 - Present Research Assistant Professor, University of Utah, Department of Pharmacology & Toxicology, Salt Lake City, UT

II. HONORS:

- 1996 Clement E. Dasch Biology Research Award, Muskingum University
- 1997 James A. Morrow Biomedical Research Fellowship, Graduate Program in Biomedical Sciences, University of South Carolina
- 1998 Health Sciences Student Fellowship, Epilepsy Foundation of America
- 1999 Travel Award Recipient & Speaker, Gender Differences in Brain & Behavior Satellite Symposia, International Behavioral Neuroscience (IBNS) Meeting, Nancy, France.
- 2000 W. Morgan Newton Thesis Research Award, University of South Carolina
- 2000 Pre-doctoral Research Training Fellowship, Epilepsy Foundation of America
- 2001 Dean Barnhart Memorial Research Award, University of South Carolina, Columbia, SC
- 2003 Post-doctoral Research Training Fellowship, Epilepsy Foundation of America
- 2005 Travel Award Recipient & Presenter, International Society of Neurochemistry, European Society of Neurochemistry, Innsbruck, Austria.

III. PROFESSIONAL MEMBERSHIPS:

- 1997-2001 Member, American Society of Pharmaceutical & Experimental Therapeutics (ASPET)
- 1997-2001 Member, Southeastern Pharmacology Society (SEPS)
- 1997-2001 Member & Travel Award Recipient, International Behavioral Neuroscience Society (IBNS)
- 1996-present Member, Society for Neuroscience
- 1998-present Member, American Epilepsy Society
- 2005-2006 Member & Travel Award Recipient, International Society for Neurochemistry
- 2006-2008 Scientific Program Committee Member, American Epilepsy Society

C. Selected Peer-reviewed Publications

1. Rowley NM, **Smith MD**, White HS. Hippocampal Betaine/GABA Transporter mRNA Expression is not Regulated by Inflammation or Dehydration post-Status Epilepticus. *Journal of Neurochemistry*. 2011. PMID: 21219332.
2. Green BR, **Smith M**, White KL, White HS, Bulaj G. Analgesic Neuropeptide W Suppresses Seizures in the Brain Revealed by Rationale Repositioning and Peptide Engineering. *ACS Chem. Neurosci.*, **2011**, 2 (1), pp 51–56. DOI:10.1021/cn1000974.
3. **Smith MD**, Lee HK, Smith BJ, Grussendorf J, Xu L, Gillies RJ, White HS, Bulaj G. Anticonvulsant Met-enkephalin analogues containing backbone spacers reveal alternative non-opioid signaling in the brain. *ACS Chem Biol*. 2009 Aug 21;4 (8):659-71. PMID: 19634861
4. Lee HK, Zhang L, **Smith MD**, White HS, Bulaj G. Glycosylated neurotensin analogues exhibit sub-picomolar anticonvulsant potency in a pharmacoresistant model of epilepsy. *ChemMedChem*. 2009 Mar 4(3): 400-5. PMID: 19173215
5. Bulaj G, Green BR, Lee HK, Robertson, CR, White K, Zhang L, Sochanska M, Flynn SP, Scholl EA, Pruess TH, **Smith MD**, White HS. Design, synthesis, and characterization of high-affinity, systemically active galanin analogues with potent anticonvulsant activities. *J Med Chem*. 2008 Dec 25; 51(24): 8038-47. PMID: 19053761.
6. **Smith, MD**, Saunders GW, Wilcox, KS, Clausen, RP, Frølund, B, Krosgaard-Larsen, P, Larsson, OM, Schousboe, A, and White, HS. Inhibition of the betaine-GABA transporter (mGAT2/BGT-1) modulates spontaneous electrographic bursting in the medial entorhinal cortex (mEC). *Epilepsy Res*. 2008 Mar; 79(1):6-13. PMID: 18262393.

7. White HS, **Smith MD**, Wilcox KS. Mechanisms of action of antiepileptic drugs. *Int Rev Neurobiol.* 2007; 81:85-110. PMID: 17433919.
8. **Smith, MD**, Wilcox, KS and White, HS. Discovery of Antiepileptic Drugs. *Neurotherapeutics.* 4(1): 12-17. Jan 2007. PMID: 17199014.
9. **Smith, M.D.**, Adams, A.C., Saunders, G.W., White, H.S. and Wilcox K.S. Phenytoin- and Carbamazepine-Resistant Spontaneous Bursting in Rat Entorhinal Cortex Is Blocked by Retigabine *In vitro.* *Epilepsy Res* 2007 May; 74(2-3): 97-106. PMID: 17395429.
10. Lenkowski, P.W. Batts, T.W., **Smith, M.D.**, Ko SH, Jones, P.J., Taylor, C.H., McCusker, AK, Davis, GC, Hartmann, HA, White, HS, Brown, ML, and Patel, MK. A pharmacophore derived phenytoin analogue with increased affinity for slow inactivated sodium channels exhibits a desired anticonvulsant profile. *Neuropharmacology.* 2007 Mar; 52(3): 1044-54. PMID: 17174360.
11. Jones, P.J., Wang, Y., **Smith, M.D.**, Hargus, N.J., Eidam, H.S., White, H.S., Kapur, J., Brown, M.L., and Patel, M.K. Hydroxyamide analogues of propofol exhibit state-dependent block of sodium channels in hippocampal neurons: implications for anticonvulsant activity. *J. Pharmacol Exp Ther.* 2007 Feb; 320(2): 828-36. PMID: 17090703.
12. Eyal, S. Lamb, J.G., **Smith-Yockman, M.**, Yagen, B., Fibach, E., Altschuler, A., White, H.S., and Bialer, M. The antiepileptic and anticancer agent, valproic acid, induces P-glycoprotein in human tumour cell lines and in rat liver. *Br. J of Pharmacol.* 2006 Oct;149 (3):250-60. PMID: 16894351.
13. **Smith, M.D.**, Jones, L.S., and Wilson, M.A. (2002) Sex Differences in Hippocampal Slice Excitability: Role of Testosterone. *Neuroscience.* 109 (3); 517-530. PMID: 11823063.
14. Wilson, M.A., **Smith, M.D.**, Biscardi, R., and Wilson, S.P. (1996) Effects of benzodiazepine agonist exposure on corticotropin-releasing factor content and hormonal stress responses: divergent responses in male and ovariectomized female rats. *J. Pharmacol. & Exp. Ther.* 278: 1073-1082. PMID: 8819488.

D. Research Support

ONGOING:

NINDS, NIH: NO1-NS-4-2359, Track One. Role: Senior Scientist (75% Effort) (H. Steve White, PI) Title: Identification and Characterization of Novel Therapeutics for the Treatment and Prevention of Epilepsy” (July 30, 2004 – July 29, 2011). Contract to identify and characterize the mechanism of action and anticonvulsant potential of investigational and anticonvulsant substances.

COMPLETED:

DoD, W81XWH-10-1-0141. Role: Senior Scientist (25% Effort) Title: Evaluation Of Huperzine A for Traumatic Brain Injury, Epilepsy, and Neuropathic Pain (S. Schachter, MD, PI) Co-Investigator: HS White (03/01/10 - 03/28/11) Extended through 08/2011.

Ben B. & Iris M. Margolis Foundation Award (NIH GM48677) Role: Senior Scientist (50% Effort) (J.M. McIntosh, PI) (10/04/07 – 09/30/09)

Epilepsy Foundation of America (EFA) Health Sciences Student Fellowship (**MD Smith, PI**) Title: Gender Differences in Hippocampal GABA-A Receptor Function. (July 1, 2008 - October 1, 2008) To evaluate the effect of gonadal hormones on inhibitory GABA-A receptor function.

EFA Pre-doctoral Research Fellowship (**MD Smith, PI**) Title: Sex Differences in Hippocampal Epileptogenesis. (July 1, 2000 – June 30, 2001) To evaluate the effect of gonadal hormones on inter-ictal bursting following in vitro kindling of hippocampal slices from intact and gonadectomized male and female rats.

Program Director/Principal Investigator (Last, First, Middle):

EFA Post-doctoral Research Fellowship (**MD Smith, PI**) Title: Effects of the Kainic Acid Model of TLE on GABAA Receptor Inhibition in the Medial Entorhinal Cortex (mEC). (July 1, 2003 – June 30, 2004) To evaluate alterations in mIPSC and sIPSC activity in combined mEC-hippocampal (HC) slices at various time points following kainate-induced status epilepticus to determine if altered GABA function was involved in the epileptogenic process in the mEC-HC circuit.

NINDS, NIH: 1-R21 NS-49624-01, Role: Senior Scientist (H. Steve White, PI) Title: "Evaluation of Models of Pharmaco-resistant Epilepsy" (August 2, 2004-April 15, 2007). To evaluate and quantitatively compare a battery of clinically relevant anti-seizure drugs in both in vitro and in vivo models of pharmaco-resistant epilepsy.