

Erica Lynn Unger

EDUCATION

- Ph.D. Candidate, Neuroscience, Huck Institute for Life Sciences
The Pennsylvania State University, University Park, PA
Advisor: Dr. Anne M. Andrews
- B.S., Biology, cum laude, 1998
Lebanon Valley College, Annville, PA

RESEARCH EXPERIENCE

- 1999-present: Graduate Researcher, Department of Chemistry, The Pennsylvania State University, University Park, PA
- Investigated the roles of the serotonin and dopamine neurotransmitter systems in the control of locomotor activity, anxiety-related behavior and spatial learning and memory in mice genetically engineered to lack the serotonin transporter
 - Explored age-related neurodegeneration, plasticity and neuroprotection via immunocytochemistry in mice with genetic and pharmacologic reductions in serotonin reuptake
 - Studied the effects of overexpression of alpha-synuclein on the dopamine system in mice as a model of Parkinson's disease through locomotor activity monitoring and receptor and transporter autoradiography
 - Assessed the neurotoxin 2'-NH₂-MPTP as a model of serotonin and norepinephrine neurodegeneration using transporter autoradiography and behavioral measures
- 1998-1999: Research Technician, The Pennsylvania State University, University Park, PA
- Determined the effects of reduced serotonin and dopamine transporter expression on regional receptor and transporter densities in brain by autoradiography
 - Established, maintained breeding and genotyped a colony of 300+ genetically engineered mice
- 1995-1998: Research Technician, The Pennsylvania Department of Agriculture, Harrisburg, PA
- Assisted in detecting viruses in fruit trees and flowering plants

AWARDS

- Travel Grant - The 8th International Conference on Alzheimer's Disease and Related Disorders, Stockholm, Sweden.
- Apple Fellowship – The Pennsylvania State University Chemistry Department

AFFILIATIONS

- Society for Neuroscience

REFERRED PUBLICATIONS

E.L. Unger, P. Mazzola-Pomietto, D.L. Murphy and A.M. Andrews (2002) 2'-NH₂-MPTP depletes serotonin and norepinephrine in rats: A comparison with 2'-CH₃-MPTP. *Journal of Pharmacology and Experimental Therapeutics* 303:527-533.

A. L. Numis, **E. L. Unger**, D. L. Sheridan, A. C. Chisnell, G. H. Uhl, D. L. Murphy and A. M. Andrews. Assessing the role of SERT and VMAT2 in 2'-NH₂-MPTP neurotoxicity using genetic and pharmacologic models. (submitted to *Journal of Pharmacology and Experimental Therapeutics*)

E.L. Unger, D.J. Eve, X.A. Perez, D.K. Reichenbach, Y. Xu, M.K. Lee and A.M. Andrews. Preclinical hyperactivity and alterations in dopamine neurotransmission are associated with A53T α -synuclein expression in mice. (in preparation for *Pharmacology, Biochemistry and Behavior*)

E.L. Unger, B.A. Luellen, M.E. Szapacs, A.L. Numis, K. J. Sowinski, W.E. Lyons, L.A. Mamounas and A.M. Andrews. Life-long reductions in serotonin transporter expression protect hippocampus from age-related serotonergic neurodegeneration: Implications for the human aging brain. (in preparation for *Nature*)

T. A. Mathews, **E. L. Unger** and A. M. Andrews. Adaptive changes in dopamine neurotransmission in SERT knockout mice: Differential effects of methamphetamine. (in progress)

B. A. Luellen, **E. L. Unger**, D. K. Reichenbach, M. L. Aponte, A. L. Numis, T. A. Mathews and A. M. Andrews. The effects of serotonin degeneration on behavior and synaptic neurochemistry. (in progress)

CONTRIBUTED PRESENTATIONS (presenter in bold)

E.L. Unger, B.A. Luellen, O. Lee, W.E. Lyons, M.E. Blue, L.A. Mamounas and A.M. Andrews. *Decreased serotonin transporter expression prevents age-related serotonergic fiber loss in the forebrain.* Winter Conference of Brain Research, Snowbird, UT, January 2003.

E.L. Unger, B.A. Luellen, O. Lee, W.E. Lyons, M.E. Blue, L.A. Mamounas and A.M. Andrews. *Decreased serotonin transporter expression prevents age-related serotonergic fiber loss in the forebrain.* Society for Neuroscience 32nd Annual Meeting, Orlando, FL, November 2002.

E.L. Unger, D.K. Reichenbach, M.K. Lee and A.M. Andrews. *A53T α -synuclein transgenic mice show preclinical motor abnormalities that precede the development of fatal motoric dysfunction.* The 8th International Conference on Alzheimer's Disease and Related Disorders, Stockholm, Sweden, July 2002.

E.L. Unger, B.A. Luellen, O. Lee, W.E. Lyons, M.E. Blue, L.A. Mamounas and A.M. Andrews. *Decreased serotonin transporter expression prevents age-related serotonergic fiber loss in the forebrain.* The 8th International Conference on Alzheimer's Disease and Related Disorders, Stockholm, Sweden, July 2002.

A.C. Chisnell, **E.L. Unger**, B.A. Fierst, D.L. Sheridan and A.M. Andrews. *Effects of 2'-NH₂-MPTP in VMAT2 knockout mice.* Society for Neuroscience 31st Annual Meeting, San Diego, CA, November 2001.

T.A. Mathews, D.E. Fedele, E.L. Unger, K.-P. Lesch, D.L. Murphy and A.M. Andrews. *Effects of serotonin transporter inactivation on extracellular 5-HT levels, in vivo microdialysis recovery, and MDMA-induced release of serotonin and dopamine in mouse striatum.* Society for Neuroscience 30th Annual Meeting, New Orleans, LA, November 2000.