

BIOGRAPHICAL SKETCH

NAME Neely, M. Diana		POSITION TITLE Research Assistant Professor	
eRA COMMONS USER NAME diana.neely			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Swiss Federal Institute of Technology	MS equiv	1984	Biochemistry
Brown University	PhD	1990	Biochemistry
University of Basel, Switzerland	Postdoc	1990–1995	Neurobiology
Vanderbilt University Medical Center	Postdoc	1995–1999	Neurotoxicology

A. Positions and Honors**Positions and Employment**

- 1999 – 2001 Research Instructor, Department of Pathology, Vanderbilt University Medical Center, Nashville, TN
- 2001 – 2002 Research Assistant Professor, Department of Pathology, Vanderbilt University Medical Center, Nashville, TN
- 2002 – pres Research Assistant Professor, Department of Psychiatry, Vanderbilt University Medical Center, Nashville, TN

Honors

- 1987 – 1988 NIH Traineeship
- 1987 Student Travel Award of the American Society for Cell Biology
- 1990 MBL Fellowship
- 1990 – 1993 Biocenter Fellowship, University of Basel, Switzerland
- 1991 Travel Award, University of Basel, Switzerland

Professional Memberships

- 1991 – pres Member, Society for Neuroscience
- 1999 – 2002 Member, Society for Free Radical Biology and Medicine (formerly The Oxygen Society)

B. Selected Peer-Reviewed Publications (in chronological order)

1. Neely, M.D. and K. Boekelheide (1988) Sertoli cell processes have axoplasmic features: an ordered microtubule distribution and an abundant high molecular weight microtubule-associated protein (cytoplasmic dynein). *J. Cell. Biol.* 107:1767-1776.
2. Boekelheide, K., M.D. Neely, and T.M. Sioussat (1989) The Sertoli cell cytoskeleton: a target for toxicant-induced germ cell loss. *Toxicol. Appl. Pharmacol.* 101:373-389.
3. Neely, M.D., H.P. Erickson, and K. Boekelheide (1990) HMW-2, the Sertoli cell cytoplasmic dynein from rat testis, is a dimer composed of nearly identical subunits. *J. Biol. Chem.* 265 (15):8691-8698.
4. Boekelheide, K., Eveleth, J., Neely, M.D., and T.M. Sioussat, T.M (1991) Microtubule assembly is altered following covalent modification by the n-hexane metabolite 2,5-hexanedione. *Adv. Exp. Med. Biol.* 283:433-442.

5. Neely, M.D. (1993) Role of substrate and calcium in neurite retraction of leech neurons following depolarization. *J. Neurosci.* 13:1292-1301.
6. Masuda-Nakagawa, L.M., A. Walz, D. Brodbeck, M.D. Neely, S. Grumbacher-Reinert (1994) Substrate-dependent interactions of leech microglial cells and neurons in culture. *J. Neurobiol.* 25:83-91.
7. Neely, M.D. and M. Gesemann (1994) Disruption of microfilaments in growth cones following depolarization and calcium influx. *J. Neurosci.* 14:7511-7520.
8. Neely, M.D. and J.G. Nicholls (1995) Electrical activity, growth cone motility and the cytoskeleton. *J. Exp. Biol.* 198:1433-1446.
9. Neely M.D. and E. Macaluso (1997) Motile areas of leech neurites are rich in microfilaments and two actin-binding proteins: gelsolin and profilin. *Proc. R. Soc. Lond. Biol. Sci.* 264:1701-1706.
10. Montine, K.S., E. Reich, M.D. Neely, K.R. Sidell, S.J. Olson, W.R. Markesbery and T. J. Montine (1998) Distribution of reducible 4-hydroxynonenal adduct immunoreactivity in Alzheimer disease is associated with APOE genotype. *J. Neuropath. Exp. Neurol.* 57:415-25.
11. Neely M.D., K.R. Sidell, D.G. Graham and T.J. Montine (1999) The lipid peroxidation product 4-hydroxynonenal inhibits neurite outgrowth, disrupts neuronal microtubules, and modifies cellular tubulin. *J. Neurochem.* 72:2323-2333.
12. Bassett, C.N., M.D. Neely, K.R. Sidell, W.R. Markesbery, L.L. Swift and T.J. Montine (1999) Cerebrospinal fluid lipoproteins are more vulnerable to oxidation in Alzheimer's disease and are neurotoxic when oxidized *ex vivo*. *Lipids.* 34:1273-1280.
13. Neely, M.D., L.L. Swift and T.J. Montine (2000) Lipids in Alzheimer's disease brain. *Res. Adv. in Lipids.* 1:63-72.
14. Bassett, C.N., K.S. Montine, M.D. Neely, L.L. Swift and T.J. Montine (2000) Cerebrospinal fluid lipoproteins in Alzheimer's disease. *Microsc. Res. Tech.* 50:282-286.
15. Neely, M.D., L. Zimmerman, M.J. Picklo, J.J. Ou, C.R. Morales, K.S. Montine, V. Amarnath and T.J. Montine (2000) Congeners of N -acetyl-L-cysteine but not aminoguanidine act as neuroprotectants from the lipid peroxidation product 4-hydroxy-2-nonenal. *Free Radic. Biol. Med.* 29:1028-1036.
16. Neely, M.D., L.L. Swift and T.J. Montine (2000) Human, but not bovine, oxidized CSF lipoproteins disrupt neuronal microtubules. *Lipids* 35:1249-1257.
17. Neely, M.D., V. Amarnath, C. Weitlauf and T.J. Montine (2002) Synthesis and cellular effects of an intracellularly activated analogue of 4-hydroxynonenal. *Chem. Res. Toxicol.* 15:40-47.
18. Montine, T.J., M.D. Neely, J.F. Quinn, M.F. Beal, W.R. Markesbery, L.J. Roberts II and J.D. Morrow (2002) Lipid peroxidation in aging brain and Alzheimer's disease. *Free. Radical. Biol. Med.* 33:620-626.
19. Neely, M.D. and T.J. Montine (2002) CSF lipoproteins and Alzheimer's disease. *J. Nutr. Health. Aging.* 6:383-391.
20. Picklo, M.J, Sr., T.J. Montine, V. Amarnath and M.D. Neely (2002) Carbonyl Toxicology and Alzheimer's Disease. *Toxicol. Appl. Pharmacol.* 184:187-197.
21. Swift, L.L., Zhu, M.-Y., Kakkad, B., Jovanovska, A., Neely, M.D., Valyi-Nagy, K., Roberts, R.L., Ong, D.E. and W.G. Jerome (2003) Subcellular localization of microsomal triglyceride transfer protein. *J. Lipid. Res.* 44:1841-1849.
22. Shie, F., Neely, M.D., Maezawa, I., Wu, H., Olson, S.J., Jürgens, G. Montine, K.S. and T.J. Montine (2003) Oxidized low-density lipoprotein is present in astrocytes surrounding cerebral infarcts and stimulates astrocyte interleukin-6 secretion. *Am. J. Pathol.* 164:1173-1181.
23. Neely, M.D., Boutte, A., Milatovic, D. and T.J. Montine (2005) Mechanisms of 4-hydroxynonenal-induced neuronal microtubule dysfunction. *Brain. Res.* 1037:90-98.
24. Boutte, A.M., Neely, M.D., Bird, T.M., Montine, K.S. and T.J. Montine (2005) Diminished taxol/GTP-stimulated tubulin polymerization in diseased region of brain from patients with late-onset or inherited Alzheimer's disease or frontotemporal dementia with parkinsonism linked to chromosome-17 but not individuals with mild cognitive impairment. *J. Alzheimers. Dis.* 8:1-6

C. Research Support

Ongoing Research Support

P01 NS044282 Deutch (PI)

07/01/02 – 06/30/07

NIH/NINDS

Dendritic Plasticity and Parkinson's Disease

The goal of this study is to establish the mechanism by which loss of striatal dopaminergic innervation causes the decrease in spine density on medium spiny neurons in the striatum of late Parkinson's disease patients.

Role: PI of Core C

Completed Research Support

AHA 0160221 Neely (PI)

07/01/01 – 06/30/03

Beginning Grant In Aid, American Heart Association

Plasma Lipoproteins in Reperfusion Injury to Brain

This study is designed to analyze uptake of oxidized plasma lipoproteins into neurons and astrocytes and their effect on glutamate uptake into these cells.

Role: PI