

Curriculum Vitae

Tania L. Roth

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Education and Professional Experience

Assistant Professor, Department of Psychology, University of Delaware (UD), 2010-Present

Postdoctoral Scholar, University of Alabama at Birmingham (UAB), 2006-2010
Department of Neurobiology, Mentor: J. David Sweatt

Postdoctoral Fellow, Baylor College of Medicine, 2005-2006
Department of Neuroscience, Mentor: J. David Sweatt

Ph.D., Zoology, University of Oklahoma (OU), 1999-2004
Core area: Cellular and Behavioral Neurobiology, Mentor: Regina M. Sullivan

B.S., Biology, Roanoke College, 1994-1998
Magna cum laude, Mentor: Gene Grubitz III

Honors, Fellowships, and Awards

Kavli Frontiers of Science Fellow, 2012
Ziskind-Somerfeld Research Award, Society of Biological Psychiatry, 2010
NARSAD Young Investigator Award, 2008
Civitan Emerging Scholar Award, 2008
Dissertation Award, International Society of Developmental Psychobiology, 2005
Excellence in Graduate Student Teaching, OU, 2004
Society for Neuroscience Oklahoma Chapter Research Award, 2004
Zoology Department Adams Memorial Scholarship, OU (2000-2004)
Ruth L. Kirschstein NRSA, 2000-2003
International Society for Developmental Psychobiology Travel Grant, 2000 and 2001
All USA College Academic Third Team, 1998
Senior Scholar-Biology, Roanoke College, 1998
The Rockefeller University Summer Undergraduate Research Fellowship, 1997
Roanoke College Summer Scholar Fellowship, 1996
Beta Beta Beta Biological Honor Society, 1995

Peer-reviewed Publications

J Blaze and **TL Roth**. Exposure to caregiver maltreatment alters expression levels of epigenetic regulators in the medial prefrontal cortex. *International Journal of Developmental Neuroscience*. Accepted Oct 2013.

TL Roth. 2013. Epigenetic mechanisms in vulnerability and resilience to psychopathology: advances, challenges, and future promises of a new field. Accepted, *Development and Psychopathology*. (Invited review for special 25th anniversary issue)

TL Roth, C Rainecki, L Salstein, R Perry, TA Sullivan-Wilson, A Sloan, B Lalji, E Hammock, DA Wilson, P Levitt, F Okutani, H Kaba, RM Sullivan. Neurobiology of secure infant attachment and attachment despite adversity: a mouse model. *Genes, Brain and Behavior*, epub ahead of print Aug 8 2013. PMID 23927771

A Asok, K Bernard, **TL Roth**, JB Rosen, M Dozier. 2013. Parental responsiveness moderates the association between early-life stress and reduced telomere length. *Development and Psychopathology*. 25:577-585. PMID 23527512

J Blaze, L Scheuing, **TL Roth**. 2013. Differential methylation of genes in the medial prefrontal cortex of developing and adult rats following exposure to maltreatment or nurturing care during infancy. *Developmental Neuroscience*. 35:306-316. PMID 23751776

J Blaze, **TL Roth**. 2013. Epigenetic mechanisms in learning and memory. *Wiley Interdisciplinary Reviews: Cognitive Science*. 4:105-115. (Invited review)

TL Roth. 2012. Epigenetics of neurobiology and behavior during development and adulthood. *Developmental Psychobiology*. 54:590-597. (Invited review for themed issue *Developmental Phenomena with Long Tails*) PMID: 22714649

TL Roth, PR Zoladz, JD Sweatt, DM Diamond. 2011. Epigenetic modification of hippocampal BDNF DNA in adult rats in an animal model of post-traumatic stress disorder. *Journal of Psychiatric Research*. 45:919-926. PMID: 21306736

TL Roth and JD Sweatt. 2011. Epigenetic mechanisms and environmental shaping of the brain during sensitive periods of development. *Journal of Child Psychology and Psychiatry*. 52:398-408. (Invited annual research review) PMID: 20626526

TL Roth and JD Sweatt. 2011. Epigenetic marking of the BDNF gene by early-life adverse experiences. *Hormones and Behavior*. 59:315-320. (Invited review for special themed issue *Epigenetics and Behavior*) PMID: 20483357

MR Penner, **TL Roth**, MK Chawla, LT Hoang, ED Roth, FD Lubin, JD Sweatt, PF Worley, and CA Barnes. 2011. Age-related changes in Arc transcription and DNA methylation within the hippocampus. *Neurobiology of Aging*. 32:2198-2210. PMID: 20189687

C Rainecki, A Pickenhagen, **TL Roth**, DM Babstock, JH McLean, CW Harley, AB Lucion, and RM Sullivan. 2010. The neurobiology of infant maternal odor learning. *Brazilian Journal of Medical and Biological Research* 43:914-919. (Invited review) PMID: 20835686

TL Roth, ED Roth, and JD Sweatt. 2010. Epigenetic regulation of genes in learning and memory. *Essays in Biochemistry*. 48:263-274.

S Moriceau, **TL Roth**, and RM Sullivan. 2010. Rodent model of infant attachment learning and stress. *Developmental Psychobiology* 52:651-660. (Invited address for special issue *Seymour Levine's Legacy: The Infant's World and its Consequences*) PMID: 20730787

- MR Penner, **TL Roth**, CA Barnes, and JD Sweatt. 2010. An epigenetic hypothesis of aging-related cognitive dysfunction. *Frontiers in Aging Neuroscience* 2:9. (Invited Hypothesis and Theory Article) PMID: 20552047
- TL Roth** and JD Sweatt. 2009. Regulation of chromatin structure in memory formation. *Current Opinion in Neurobiology* 19:336-342. (Invited review) PMID: 19539459
- TL Roth**, FD Lubin, M Sodhi, JE Kleinman. 2009. Epigenetic mechanisms in Schizophrenia. *Biochimica et Biophysica Acta (BBA) – General Subjects* 1790:869-877. (Invited review) **This paper was among the top 25 downloaded articles for this journal in 2009.** PMID: 19559755
- TL Roth**, FD Lubin, AJ Funk, and JD Sweatt. 2009. Lasting epigenetic influence of early-life adversity on the *BDNF* gene. *Biological Psychiatry* 65:760-769. **This paper was selected for Faculty of 1000 Biology, and awarded the 2010 Ziskind-Somerfeld Research Award from the Society of Biological Psychiatry.** PMID: 19150054
- FD Lubin, **TL Roth**, and JD Sweatt. 2008. Epigenetic regulation of *bdnf* gene transcription in the consolidation of fear memory. *Journal of Neuroscience* 28:10576-10586. **This paper was selected for Faculty of 1000 Biology.** PMID: 18923034
- TL Roth** and JD Sweatt. 2008. Rhythms of memory. *Nature Neuroscience* 11:993-994. (News and Views, Invited Commentary) PMID: 18725902
- S Shalin, R Egli, S Birnbaum, **TL Roth**, JM Levenson, and JD Sweatt. 2006. Signal transduction mechanisms in memory disorders. *Progress in Brain Research* 157:25-41. PMID: 17167902
- JM Levenson, **TL Roth**, FD Lubin, CA Miller, I Huang, P Desai, LM Malone, and JD Sweatt. 2006. Evidence that DNA (Cytosine-5) methyltransferase regulates synaptic plasticity in the hippocampus. *Journal of Biological Chemistry* 281:15763-15773. PMID: 16606618
- TL Roth**, S Moriceau, and RM Sullivan. 2006. Opioid modulation of Fos protein expression and olfactory circuitry plays a pivotal role in what neonates remember. *Learning and Memory* 13:590-598. PMID: 17015856
- K Shionoya, S Moriceau, L Lunday, C Miner, **TL Roth**, and RM Sullivan. 2006. Development switch in neural circuitry underlying odor-malaise learning. *Learning and Memory* 13:801-808. PMID: 17101877
- TL Roth** and RM Sullivan. 2006. Examining the role of endogenous opioids in learned odor – stroke associations in infant rats. *Developmental Psychobiology* 48:71-78. PMID: 16381030
- TL Roth** and RM Sullivan. 2005. Memory of maltreatment: Neonatal behavioral and neural correlates of maternal maltreatment within the context of classical conditioning. *Biological Psychiatry* 57:823-831. PMID: 15820702
- TL Roth**, DA Wilson, and RM Sullivan. 2004. Neurobehavioral development of infant learning and memory: implications for infant attachment. In *Advances in the Study of Behavior*, Vol 34, pp 103-133 (PJB Slater, JS Rosenblatt, TJ Roper, CT Snowden, et al., Eds.). Academic Press, San Diego. (Invited review)

S Moriceau, **TL Roth**, T Okotoghaide, and RM Sullivan. 2004. Corticosterone controls the developmental emergence of fear and amygdala function to predator odors in infant rat pups. *International Journal of Developmental Neuroscience* 22:415-422. PMID: 15380840

TL Roth and RM Sullivan. 2003. Consolidation and expression of a shock-induced odor preference in rat pups is facilitated by opioids. *Physiology and Behavior* 78(1):135-142. PMID: 12536020

TL Roth and RM Sullivan. 2001. Endogenous opioids and their role in odor preference acquisition and consolidation following odor-shock conditioning in infant rats. *Developmental Psychobiology* 39:188-198. PMID: 11745312

Invited Book Chapters

S Matt, ED Roth, and **TL Roth**. Role of epigenetics in the brain. In *Epigenetics in Psychiatry* (D Avramopoulos, DR Grayson, J Peedicayil, Eds.) Submitted.

K Taylor and **TL Roth**. Epigenetic mechanisms in the development of behavior. In *Developmental Psychopathology*, 3rd edition (D Cicchetti, Ed.). Wiley. Accepted with revisions.

J Blaze, ED Roth, and **TL Roth**. The contribution of genetics, epigenetics, and early-life experiences to behavior. In *The New Cognitive Neurosciences V.* (M Gazzaniga, R Mangun, Eds.) In press.

TL Roth and Frances Champagne. 2012. Epigenetic pathways and the consequences of adversity and trauma. In *Trauma, Psychopathology, and Violence*, pp 23-48 (C Spatz Widom, Ed.). Oxford University Press.

TL Roth, ED Roth, and JD Sweatt. 2010. Epigenetics of memory processes. In *Handbook of epigenetics: the new molecular and medical genetics*, pp 381-390 (T Tollefsbol, Ed.). Oxford Academic Press.

RM Sullivan, S Moriceau, **TL Roth**, K Shionoya. 2010. Developmental neurobiology of olfactory preference and avoidance learning. In *Handbook of Developmental and Comparative Neuroscience*, pp 573-586 (M Blumberg, J Freeman, S Robinson, Eds.). Oxford University Press.

RM Sullivan, S Moriceau, C Rainecki, and **TL Roth**. 2009. Amygdala ontogeny and infant fear learning. In *Cognitive Neuroscience*, pp 889-904 (MS Gazzaniga, JE LeDoux, Eds.). MIT Press.

FD Lubin, ED Roth, JD Sweatt, and **TL Roth**. 2008. A novel approach to understanding neural plasticity: epigenetic regulation of the *BDNF* gene. In *Neural Pathways Research*, pp 193-203 (FL Pichler, Ed.). Nova Science Publishers, Inc., NY.

TL Roth, JM Levenson, RM Sullivan, and JD Sweatt. 2006. Epigenetic marking of the genome by early experiences: implications for long-lasting effects of early maltreatment on adult cognitive and emotional health. In *Child Abuse and its Impact*, pp 79-114 (F Columbus, Ed). Nova Science Publishers, Inc., NY.