

Lori A. Knackstedt, PhD

Psychology Department
114 Psychology Building
P.O. Box 112250
Gainesville, FL 32611
Email: knack@ufl.edu

Education

- Ph.D.** **2005:** Psychology; University of California, Santa Barbara, Santa Barbara, CA
Advisor: Aaron Ettenberg
Dissertation: “Motivating Factors Underlying the Co-administration of Cocaine and Alcohol”
- B.S.** **1999:** Bucknell University, Lewisburg, PA
Major: Biology
Magna cum laude

Positions Held

- 2012-present Assistant Professor
Psychology Department
University of Florida, Gainesville, FL
- 2008-2012 Research Assistant Professor
Neurosciences Department
Medical University of South Carolina, Charleston, SC
- 2005-2008 Post-doctoral Fellow
Neurosciences Department
Medical University of South Carolina, Charleston, SC
Mentor: Peter Kalivas

Teaching Experience

- 2010-2012 Lecturer: MUSC College of Medicine
Lectured in the Neuroscience course component for 1st year medical students and taught the 2 week neuroscience component of Gross Anatomy Lab
- 2005-2012 Adjunct Faculty: Psychology Dept., College of Charleston, Charleston, SC
“PSYCH 103: Introduction to Psychological Science”
“PSYCH 388: Psychology of Substance Abuse”
“PSYCH 214: Behavioral Neuroscience”
- 2003-2004 Adjunct Faculty: Psych. Dept., Santa Barbara City College, Santa Barbara, CA
“PSY 110: Intro to Physiological Psychology”

2003-2004 Instructor: University of California, Santa Barbara, Santa Barbara, CA
 “PSYCH 111: Concepts in Biological Psychology”
 “PSYCH 106: Brain and Behavior”

Research Support

Ongoing:

NIDA: R01 DA033436 (PI: Knackstedt)

“Glutamate Transporters and Cocaine Seeking”

7/1/2012 - 6/30/2017

TDC \$857,980

This grant aims to use the animal model of reinstatement to investigate the role of glutamate transporters in the ability of the antibiotic ceftriaxone to prevent cocaine relapse in rats.

Department of Defense, Institute of Molecular Neuroscience Subcontract 8738sc (PI: Knackstedt)

“Development of an animal model and novel treatments for comorbid PTSD and cocaine addiction”

9/1/2013-1/31/18

TDC \$734,014

This grant aims to establish an animal model of comorbid PTSD and cocaine addiction for the screening of highly translational compounds to reduce PTSD symptoms and the motivation to seek cocaine.

NIDA R01 DA037270

PIs: Abou-Garbia, Rothstein

6/16/2014-6/14/2019

Role: Subcontract PI

“GLT-1 Enhancers as Drug Candidates for Treating Cocaine Addiction”

TDC to Knackstedt \$190,374

This grant funds medicinal chemistry research to identify ceftriaxone analogs with better oral bioavailability and brain penetration. My role will be to test these new compounds for their ability to prevent cocaine reinstatement.

Completed:

NIDA: R21 DA026010 (PI: Knackstedt)

“Striatal Glutamate Homeostasis and Cocaine Relapse”

9/15/08-6/30/11

TDC \$275,000

This grant was aimed at investigating the co-regulation of glutamate transporters in the ventral striatum, and the effect of up-regulating different transport systems on glutamate uptake, reinstatement of cocaine-seeking, and Group I mGluR expression.

Honors and Awards

2016	Winter Conference on Brain Research Travel Award
2015	University of Florida Excellence Award for Assistant Professors
2011	Federation of European Neuroscience Societies Travel Award
2010	American College of Neuropsychopharmacology Annual Meeting Travel Award
2007	Motivational Neuronal Networks Biannual Meeting Travel Award

2006 National Research Service Award (F32)
2006 Federation of European Neuroscience Societies Travel Award
2004 University of California Regents Dissertation Fellowship

Journal Review

Ad hoc reviewer for: *Journal of Neuroscience, Addiction Biology, Biological Psychiatry; Neuroscience; Brain Research, Alcoholism: Clinical and Experimental Research; Neuropsychopharmacology. Neuropharmacology, Nutrients, Psychopharmacology, Stress, British Journal of Pharmacology, Journal of Psychopharmacology, Molecular Psychiatry, Psychopharmacology.*

Grant Review

Ad hoc reviewer for the Neurobiology of Motivated Behavior Study Section (National Institutes of Health): February 2013; June 2015
Ad hoc reviewer for Special Emphasis Panel ZRG1 IFCN-C Alcohol, Drugs and Neurotoxicology Study Section (National Institutes of Health): November 2015; March 2016

Professional Societies/Memberships

2014-present American College of Neuropsychopharmacology, Associate Member
2000-present Society for Neuroscience

Invited Talks

2016 Winter Conference on Brain Research
2015 Symposium on Catecholamines and Other Neurotransmitters in Stress
2015 Society of Biological Psychiatry Annual Meeting
2014 Millersville University Psychology Department
2013 U. of Maryland School of Medicine, Dept. of Anatomy and Neurobiology
2012 American College of Neuropsychopharmacology Annual Meeting
2012 University of North Carolina Wilmington, Psychology Department
2012 University of Florida, Psychology Department
2011 Penn State College of Medicine, Department of Neural and Behavioral Sciences
2011 NCDEU Annual Meeting
2010 American College of Neuropsychopharmacology Annual Meeting
2010 University of California, Santa Barbara Department of Psychology
2008 Smith College Department of Psychology

Publications

Knackstedt LA, Schwendt M. (2016). mGlu5 receptors and relapse to cocaine-seeking: the role of receptor trafficking in post-relapse extinction learning deficits. *Neural Plasticity*, 2016:9312508. PMID: 26881139

- Lacrosse AL, Hill K, **Knackstedt LA**. (2016) Ceftriaxone attenuates cocaine relapse after abstinence through modulation of nucleus accumbens AMPA subunit expression. *European Neuropsychopharmacology*, 26(2):186-94. PMID: 26706696
- Massie A, Boillee S, Hewett S, **Knackstedt L**, Lewerenz J.(2015). System xc- in the central nervous system: a wolf in sheep's clothing? *J Neurochem*, 135(6):1062-79. PMID:26336934
- Griffin, WC, Ramachandra, VS, **Knackstedt, LA**, Becker, HC. (2015). Repeated cycles of chronic intermittent ethanol exposure increases basal glutamate in the nucleus accumbens of mice without affecting glutamate transport. *Frontiers in Pharmacology* 6(27). PMID: 25755641
- Weiland, A, Garcia S, **Knackstedt, LA**. (2015). Cefazolin and ceftriaxone attenuate the cue-primed reinstatement of alcohol-seeking. *Frontiers in Pharmacology*.6 (44). PMID:25805996
- Reissner, K.J., Gipson, C.D, Phuong, K.T., **Knackstedt, L.A.**, Scofield, M.D., Kalivas, P.W. (2015) Glutamate transporter GLT-1 mediates N-acetylcysteine inhibition of cocaine reinstatement. *Addiction Biology*, 20(2):316-23. PMID:24612076
- Hadad NA, **Knackstedt LA**. (2014). Addicted to palatable foods: comparing the neurobiology of Bulimia Nervosa to that of drug addiction. *Psychopharmacology (Berl)*. 231(9): 1897-1912. PMID:24500676
- Knackstedt LA**, Trantham-Davidson H, Schwendt M. (2014). The role of ventral and dorsal striatum mGluR5 in relapse to cocaine-seeking and extinction learning. *Addiction Biology*, 19(1): 87-101. PMID:23710649
- Alajaji M, Bowers MS, **Knackstedt L**, Damaj MI. (2013) Effects of the beta-lactam antibiotic ceftriaxone on nicotine withdrawal and nicotine-induced reinstatement of preference in mice. *Psychopharmacology (Berl)*. 228(3):419-26. PMID: 23503685
- Trantham-Davidson H, Lalumiere RT, Reissner KJ, Kalivas PW, **Knackstedt LA**. (2012). Ceftriaxone Normalizes Nucleus Accumbens Synaptic Transmission, Glutamate Transport, and Export following Cocaine Self-Administration and Extinction Training. *Journal of Neuroscience*, 32(36):12406-10. PMID:22956831
- Wang X, Moussawi K, **Knackstedt L**, Shen H, Kalivas PW. (2012). Role of mGluR5 neurotransmission in reinstated cocaine-seeking. *Addiction Biology*, 18(1): 40-9. PMID: 22340009
- Sondheimer, I, **Knackstedt, L.A.** (2011). Ceftriaxone prevents the induction of cocaine sensitization and produces enduring attenuation of cue- and cocaine-primed reinstatement of cocaine-seeking. *Behavioural Brain Research*, 225(1): 252-258. PMID: 21824497
- Uys JD, **Knackstedt L**, Hurt P, Tew KD, Manevich Y, Hutchens S, Townsend DM, Kalivas PW. (2011). Cocaine Induced Adaptations in Cellular Redox Balance Contributes to Enduring Behavioral Plasticity. *Neuropsychopharmacology*, 36(12): 2551-60. PMID: 21796101

- Knackstedt, LA**, Moussawi, K, Lalumiere, R, Schwendt, M, Klugman, M, Kalivas, PW. (2010). Extinction training after cocaine self-administration induces glutamatergic plasticity to inhibit cocaine-seeking. *Journal of Neuroscience*, 30(23):7984-92. PMID: 2534846.
- Knackstedt, LA**, Melendez, RI, Kalivas, PW. (2010). Ceftriaxone restores glutamate homeostasis and prevents relapse to cocaine seeking. *Biological Psychiatry*, 67(1): 81-4. PMID: 19717140.
- Knackstedt, LA**, Kalivas, PW. (2009). Glutamate and reinstatement. *Current Opinion in Pharmacology*, 9(1): 59-64. PMID: 19157986.
- Knackstedt, LA**, Larowe, S, Mardikian, P, Malcolm, R, Upadhaya, H, Hedden, S, Markou, A, Kalivas, PW. (2009). The role of cystine-glutamate exchange in nicotine dependence in rats and humans. *Biological Psychiatry*, 65(10):841-5. PMID: 19103434
- Kalivas, PW, Lalumiere, R, **Knackstedt, L**, Shen, HW. (2008). Glutamate transmission in addiction. *Neuropharmacology*, 56 Suppl 1:169-73. PMID: 18675832.
- Knackstedt LA**, Kalivas PW. (2007). Extended-access to cocaine self-administration enhances drug-primed reinstatement but not behavioral sensitization. *J Pharmacol Exper Ther* 322(3): 1103-09. PMID: 17601982.
- Knackstedt LA**, Ettenberg A. (2006). Alcohol consumption is preferred to water in animals pretreated with cocaine. *Pharmacol Biochem Behav* 85: 281-86. PMID: 17049976.
- Kalivas PW, Peters J, **Knackstedt LA**. (2006). Animal models and brain circuits in drug addiction. *Mol Intervent* 6(6): 339-44. PMID: 17200461.
- Knackstedt LA**, Kalivas PW. (2006). Pharmacotherapy targets for regulating cocaine-induced plasticity. *Drugs of the Future*, 31(10): 893-912.
- Knackstedt LA**, Ettenberg A. (2004). Ethanol consumption reduces the adverse consequences of self-administered intravenous cocaine in rats. *Psychopharmacology*, 178: 143-50. PMID: 15338105.
- Knackstedt LA**, Samimi MM, Ettenberg A. (2002). Evidence for the opponent-process actions of intravenous cocaine and cocaethylene. *Pharmacology Biochemistry Behavior* 72: 931-36. PMID: 12062583

In revision:

- Hadad NA, Wu L, Hiller H, Krause EG, Schwendt M, **Knackstedt LA**. Conditioned stress prevents cue-primed cocaine reinstatement only in stress-responsive rats. *Stress, in revision*
- Dipanwita P, Kyle K, Stennett B, Frazier CJ, **Knackstedt LA**. Alcohol self-administration increases basal glutamate in the nucleus accumbens of outbred rats without affecting pre-synaptic release properties. *Eur.J. Neuro, in revision*

Invited Book Chapters

Polysubstance-related disorders. LaCrosse A, Stennett, B, Knackstedt L. The SAGE Encyclopedia of Abnormal and Clinical Psychology. *In press*, Wenzel AE (ed.)

Bulimia Nervosa as an Addiction. Hadad, N & Knackstedt, L. in The Neuropathology of Drug Addictions and Substance Misuse. *In press*, Preedy, V (ed.)

Neuropharmacology of Cocaine and Amphetamine. Knackstedt, LA. in Biological Research on Addiction: Comprehensive Addictive Behaviors and Disorders (2013), Vol 2 Pages: 573-577, Miller, PM (ed.)

Poster Presentations

Stennett, B. and **Knackstedt, LA.** Voluntary consumption of alcohol in combination with cocaine alters the neurobiology underlying relapse to cocaine-seeking. American College of Neuropsychopharmacology Annual Meeting, Hollywood, FL: December 2015.

LaCrosse AL, Gordon MA, Jackson BS, and **Knackstedt LA.** Antisense-mediated downregulation of xCT reduces basal glutamate in the NA and alters post-synaptic AMPA receptor subunit expression. Society for Neuroscience. Chicago, IL. October 2015.

Stennett B and **Knackstedt LA.** The role of glutamate release in the nucleus accumbens core during cocaine reinstatement in rats with a history of both alcohol and cocaine self-administration. Society for Neuroscience. Chicago, IL. October 2015.

Hadad NA, Schwendt M, Hiller H, Krause E, and **Knackstedt LA.** Predator Stress Combined with Extinction-Reinstatement as an Animal Model of PTSD Comorbid with Cocaine Addiction. Anxiety and Depression Association of America. Miami, FL. April 2015.

Reissner, K & **Knackstedt, L.A.** Ceftriaxone requires both xCT and GLT-1 up-regulation in the nucleus accumbens to attenuate the reinstatement of cocaine-seeking and alter AMPA receptor subunit composition. American College of Neuropsychopharmacology Annual Meeting, Phoenix, AZ: December 2014.

Stennett, B & **Knackstedt, L.A.** Using a rodent model of simultaneous cocaine and alcohol use to screen medications to prevent cocaine relapse. Society for Neuroscience Annual Meeting Washington, DC: November 2014.

Bilodeau, J, Reissner, K, **Knackstedt, LA.** Ceftriaxone requires both xCT and GLT-1 up-regulation in the nucleus accumbens to attenuate the reinstatement of cocaine-seeking. Society for Neuroscience Annual Meeting Washington, DC: November 2014.

Knackstedt, LA, Schwendt, M. The role of glutamate in the nucleus accumbens in the context-primed relapse of cocaine-seeking after abstinence. Society for Neuroscience Annual Meeting Washington, DC: November 2014.

- Schwendt, M, Hiller, H, Krause, E, **Knackstedt, LA**. Development of an animal model and treatments for comorbid PTSD and cocaine addiction. Society for Neuroscience Annual Meeting Washington, DC: November 2014.
- Knackstedt, LA**, Schwendt, M. Ceftriaxone and MTEP attenuate context-primed relapse of cocaine-seeking after abstinence. Federation of European Neuroscience Societies, Milan, Italy: July 2014.
- Schwendt, M, Krause, E, **Knackstedt, LA**. Development of an animal model and treatments for comorbid PTSD and cocaine addiction. Federation of European Neuroscience Societies, Milan, Italy: July 2014.
- Stennett, B, **Knackstedt, L.A.** Restoring glutamate homeostasis to prevent relapse in a rodent model of alcohol-seeking. Society for Neuroscience Annual Meeting, San Diego CA: November 2013.
- Knackstedt, L.A.** Restoring glutamate homeostasis to prevent relapse in a rodent model of alcohol-seeking. NCDEU Annual Meeting, Hollywood, FL: June 2013.
- Reissner, KJ, Boger, HA, Tran, PK, **Knackstedt, LA**, Scofield, MD, Kalivas, PW. Effects of cocaine self-administration and extinction on astrocyte content and protein expression in the nucleus accumbens, and relationship to reinstatement. American College of Neuropsychopharmacology Annual Meeting, Hollywood, FL: December, 2012.
- Ramachandra, VS, **Knackstedt, LA**, Griffin III, WC, Hazelbaker, CL, Haun, HL, Snyder, LL, Becker, HC. Glutamate transporter expression in nucleus accumbens after chronic intermittent ethanol exposure. Society for Neuroscience Annual Meeting, New Orleans, LA: October 2012.
- Knackstedt, LA**, Reissner, K. Ceftriaxone increases glutamate transport and basal glutamate levels in the nucleus accumbens core of cocaine self-administering animals. American College of Neuropsychopharmacology Annual Meeting, Kona, HI: December, 2011.
- Knackstedt, LA**. The effects of simultaneous cocaine and alcohol consumption on glutamatergic markers in the nucleus accumbens of the rat. American College of Neuropsychopharmacology Annual Meeting, Miami, FL: December, 2010.
- Knackstedt, LA**, Kalivas, P.W. The effects of ceftriaxone on basal glutamate levels in the nucleus accumbens following withdrawal from cocaine self-administration. Society for Neuroscience Annual Meeting, San Diego, CA: November 2010.
- Hohman, M, Kalivas, PW, **Knackstedt, LA**. The effects of ceftriaxone on cocaine-induced locomotion and glutamate release in the nucleus accumbens. Society for Neuroscience Annual Meeting, Chicago, IL: October 2009.

- Knackstedt, LA, Moussawi, K, Kalivas, PW.** Glutamatergic adaptations in the nucleus accumbens following cocaine self-administration: abstinence vs. extinction. Society for Neuroscience Annual Meeting, Washington, DC: November 2008.
- Knackstedt, LA, Kalivas, PW.** Cocaine self-administration alters the expression of proteins associated with glutamatergic transmission and homeostasis at cortico-accumbens synapses. American College of Neuropsychopharmacology Annual Meeting, Boca Raton, FL: December, 2007.
- Knackstedt, LA, Melendez, R, Kalivas, PW.** Cocaine self-administration alters the expression of proteins associated with glutamatergic transmission and homeostasis at cortico-accumbens synapses. Society for Neuroscience Annual Meeting, San Diego, CA: November, 2007.
- Knackstedt, LA, Kalivas, PW.** Cocaine self-administration alters the expression of proteins associated with glutamatergic transmission and homeostasis at cortico-accumbens synapses. Motivational Neuronal Network Conference, Porquerolles, France: May 2007.
- Knackstedt, LA, Kalivas, PW.** The Long-Access Model of Cocaine Addiction: Extended access to cocaine does not alter the expression of locomotor sensitization or reinstatement behavior relative to controls. Society for Neuroscience Annual Meeting, Atlanta, GA: October, 2006.
- Knackstedt, LA, Kalivas, PW.** Long-Access Model of Cocaine Addiction: Extended access to cocaine and escalation of drug-intake does not alter the expression of locomotor sensitization relative to non-escalated controls. Federation of European Neuroscience Societies Forum, Vienna, Austria: July 2006.
- Knackstedt, LA, Ettenberg, A.** Effects of ethanol consumption on the opponent-process properties of intravenous cocaine. Society for Neuroscience Annual Meeting, San Diego, CA: November 2004.
- Knackstedt, LA, Ettenberg, A.** Ethanol consumption voluntarily increases after pre-treatment with intravenous cocaine. Society for Neuroscience Annual Meeting, New Orleans, LA: November 2003.
- Knackstedt, LA, Ettenberg, A.** Ethanol consumption reduces the anxiogenic effects of IV cocaine in rats. Society for Neuroscience Annual Meeting, Orlando, FL: November 2002.
- Knackstedt, LA, Samimi, M, Ettenberg, A.** Evidence for the opponent-process actions of intravenous cocaine and cocaethylene. Society for Neuroscience Annual Meeting, San Diego, CA: November 2001.