

B. Bradley Wetzell

Psychopharmacology Laboratory

Department of Psychology - American University - Washington, DC, USA

bradley.wetzell@american.edu

Education

American University

Washington, D.C., USA

Ph.D. Neuroscience, Spring 2015 (Anticipated)

- Dissertation: *Effect of adolescent sucrose on the affective properties of morphine in adulthood* (In progress).
- Pre-Doctoral Fellow of the College of Arts and Sciences, 2010-2014
- Advisor: Anthony L. Riley, Ph.D.

M.A. Experimental-Biological Psychology, Spring 2012

- Thesis: *The effects of adolescent exposure to methylphenidate on the aversive properties of cocaine in adulthood* (Chairperson: Anthony L. Riley, Ph.D.; Committee: David N. Kearns, Ph.D. and Scott Parker, Ph.D.)

Neuroscience School of Advanced Studies

San Quirico d'Orcia, Siena, Italy

Addictive Disorders, 2011

- Intensive residential two-week course designed to bring together leading researchers to discuss upcoming research challenges related to addictive disorders with a small group of students in their field.
- Faculty included: George F. Koob, *Professor and Chair of the Committee on the Neurobiology of Addictive Disorders, The Scripps Research Institute*; Nora Volkow, *Director, National Institute on Drug Abuse (NIDA)*; Rainer Spanagel, *Central Institute of Mental Health*; Barbara Mason, *The Scripps Research Institute*; Brigitte Kieffer, *Institute of Genetics and Molecular and Cellular Biology*; David Belin, *Université de Poitiers* and Kathrin Cunningham, *University of Texas, Medical Branch, Center for Addiction Research*.

Old Dominion University

Norfolk, Virginia, USA

B.S. Psychology (Magna cum Laude), May 2010

Minor: English (Professional and Technical Writing/Digital Environments)

- Honors Thesis: *A Longitudinal Analysis of Sex-Related Alcohol Expectancies as Moderators of the Relationship between Alcohol Use and Risky Sex* (Chairperson: Valerian Derlega, Ph.D.; Advisor: James M. Henson, Ph.D.)

Teaching Experience

Psychology as a Natural Science, (PSYC 115) Fall 2014, Enrollment: 93. See description below. *American University, Washington, DC.*

Psychology as a Natural Science, (PSYC 115) Summer 2014, Enrollment: 14. See description below. *American University, Washington, DC.*

Drugs and Human Behavior, (PSYC 176) Spring 2014, Enrollment: 43. Course catalog description: An introduction to psychoactive drugs and their effects includes an overview of general physiology, neurochemistry, and pharmacology as well as a survey of the basic physiological, pharmacological, and behavioral effects of drugs. The course focuses on the etiology of drug use and the factors involved in, and consequences of, drug abuse, addiction and dependence, as well as an overview of clinical psychopharmacology. Critical evaluation of research methodology in drug assessment is stressed. *Howard University, Washington, DC.*

Psychology as a Natural Science, (PSYC 115) Summer 2013, Enrollment: 11. Course catalog description: "Through lectures and discussion, students are introduced to the many experimental questions addressed in psychology, e.g., environmental and genetic factors in behavior, biological bases of behavior, sensations and perception, conditioning and learning, memory and cognition, and drug use and abuse, as well as to the specific methods used in psychological research and the general research approaches used in science." *American University, Washington, DC.*

Neurological Bases of Behavior, (PSYC 325) Spring 2013, Enrollment: 27. Course catalog description: "Includes basic neurophysiology (activation of neurons and communication among cells); the basic organization of the nervous system; the role of the brain in receiving stimuli; and the neurobiology of motivated behavior, learning, and behavior disorders." *American University, Washington, DC.*

Research Interests

Generally, I conduct behavioral and biochemical research in psychopharmacology using the animal model, particularly rodents. A large portion of my work has involved the adaptation and development of various wet assays that complement behavioral work, including protocols for HPLC, Western blotting, fluorescence microscopy, tissue collection/processing, survival surgeries and optogenetic manipulation.

My specific research interests relate to the connections between the behavioral changes induced by chronic administration of abusable drugs and the biochemical mechanisms that mediate them. I am particularly interested in less-obvious developmental influences on the neural mechanisms that mediate the balance between the rewarding and aversive response to drugs and potentially influence an individual's propensity for compulsive use.

Grant Support

NIH NRSA (1 F31 DA036988-01A1). *Effect of adolescent sucrose on the affective properties of morphine in adulthood.* Submitted April 2013 (Not Discussed). Re-submitted December 2013 (Not Discussed).

Dean's Grant for Graduate Research. *American University, College of Arts and Sciences.* Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013, Fall 2013.

Dean's Grant for Graduate Conference Travel. American University, College of Arts and Sciences. Spring 2012, Spring 2014

Pre-Doctoral Fellow. American University, College of Arts and Sciences. Fall 2010 – Spring 2014.

Publications

1. **Wetzell, BB;** Muller, MM; Flax, SM; King, HE; Decicco-Skinner, KL; Riley, AL. (Under review). *Effect of preexposure on methylphenidate-induced conditioned taste avoidance and related BDNF/TrkB activity in the nucleus accumbens and insular cortex of the rat.* Psychopharmacology.
2. King, HE; **Wetzell, BB;** Rice, KC; Riley, AL. (Under review). *MDPV-induced taste avoidance in the F344/N and LEW rat strains.* Pharmacology Biochemistry and Behavior.
3. **Wetzell, BB;** Muller, MM; Cobuzzi, JL; Hurwitz, ZE; Decicco-Skinner, KL; Riley, AL. (2014). *Effect of age on methylphenidate-induced conditioned taste avoidance and related BDNF/TrkB signaling in the insular cortex of the rat.* Psychopharmacology 231(8): 1493-1501. doi: 10.1007/s00213-014-3500-y
4. Hurwitz, ZE, Cobuzzi, JL, Merluzzi, AP, **Wetzell, B,** Riley, AL. (2013). *Prepubertal Fischer 344 rats display stronger morphine-induced taste avoidance than prepubertal Lewis rats.* Developmental Psychobiology 56(5): 979-988. doi: 10.1002/dev.21176
5. Merluzzi, AM; Hurwitz, ZE; Briscione, MA; Cobuzzi, JL; **Wetzell, B;** Rice, KC; Riley, AL. (2013). *Age-dependent MDPV-induced taste aversions and thermoregulation: A behavioral and physiological assessment of "Bath Salts".* Developmental Psychobiology 56(4): 943-954. doi: 10.1002/dev.21171
6. Cobuzzi, J., Siletti, K., Hurwitz, Z., **Wetzell, B.,** Baumann, M., & Riley, A. (2013). *Age differences in (\pm)3,4-methylenedioxymethamphetamine (MDMA)-induced conditioned taste aversions and monoaminergic activity.* Developmental Psychobiology 56(4): 635-646. doi:10.1002/dev.21132
7. **Wetzell, B.;** Riley, AL. (2012). *Adolescent exposure to methylphenidate has no effect on the aversive properties of cocaine in adulthood.* Pharmacology Biochemistry and Behavior 101(3): 394-402. doi:10.1016/j.pbb.2012.02.002.
8. **Wetzell, B.;** Pearson, MR.; Henson, JM. (2010). *Hierarchical linear modeling of drinking to cope with anxiety among college students.* Old Dominion University Journal of Undergraduate Research.

Published Abstracts

1. **Wetzell, BB;** Muller, MM; Cobuzzi, JL; Hurwitz, ZE; Decicco-Skinner, KL; Riley, AL. *Effect of age on methylphenidate-induced conditioned taste avoidance and related BDNF/TrkB signaling in the insular cortex.* Poster presented at the 2014 Convention of the American Psychological Association; Washington, DC; August 2014.
2. Muller, MM; **Wetzell, BB;** Flax, SM; King, HE; Riley, AL. *Effect of preexposure on methylphenidate-induced conditioned taste avoidance.* Poster presented at the 2014 Convention of the American Psychological Association; Washington, DC; August 2014.
3. **Wetzell, BB;** Muller, MM; Cobuzzi, JL; Hurwitz, ZE; Decicco-Skinner, KL; Riley, AL. *Effect of age on methylphenidate-induced conditioned taste avoidance and related BDNF/TrkB signaling in the insular cortex.* Paper presented at the College on Problems of Drug Dependence 76th Annual Meeting; San Juan, Puerto Rico; June 2014.

4. **Wetzell, BB**; Muller, MM; Cobuzzi, JL; Hurwitz, ZE; Decicco-Skinner, KL; Riley, AL. *Effect of age on methylphenidate-induced conditioned taste avoidance and related BDNF/TrkB signaling in the insular cortex*. Paper presented at the 24th Annual Robyn Rafferty Mathias Student Research Conference, American University, Washington, DC; March 2014.
5. Muller, MM; **Wetzell, BB**; Flax, SM; King, HE; Riley, AL. *Effect of preexposure on methylphenidate-induced conditioned taste avoidance*. Poster presented at the 24th Annual Robyn Rafferty Mathias Student Research Conference, American University, Washington, DC; March 2014.
6. Muller, MM; **Wetzell, BB**; Flax, SM; King, HE; Riley, AL. *Effect of preexposure on methylphenidate-induced conditioned taste avoidance*. Poster Presentation, Discover the Sciences event sponsored by American University's Scientific Advisory Council, Washington, DC; October 2013.
7. **Wetzell, BB**; Muller, MM; Cobuzzi, JL; Hurwitz, ZE; Riley, AL. *Effect of age on methylphenidate-induced conditioned taste avoidance and related BDNF/TrkB signaling in the insular cortex*. Poster Presentation, Discover the Sciences event sponsored by American University's Scientific Advisory Council, Washington, DC; October 2013.
8. Hurwitz, ZE, Cobuzzi, JL, Merluzzi, AP, **Wetzell, B**, Riley, AL. *Age and strain differences in morphine-induced taste aversions: A behavioral and neurochemical assessment*. Poster Presentation at the College on Problems of Drug Dependence 75th Annual Meeting; San Diego, CA; June 2013.
9. Cobuzzi, JL, Siletti, KA, Hurwitz, ZE, **Wetzell, B**, Baumann, MH, Riley, AL. *Age differences in (\pm)3,4-methylenedioxymethamphetamine (MDMA)-induced conditioned taste aversions and monoaminergic activity*. Poster Presentation at the College on Problems of Drug Dependence 75th Meeting, San Diego, CA; June 2013.
10. Merluzzi, AP, Hurwitz, ZE, Briscione, MA, Cobuzzi, JL, **Wetzell, B**, Rice, KC, Riley, AL. *The differential expression of MDPV-induced taste aversions, thermoregulation and brain amine levels in adolescent and adult rats: A behavioral and neurochemical assessment of "bath salts"*. Poster Presentation at ASPET's Experimental Biology Conference, Boston, MA; April 2013
11. Cobuzzi, JL, Siletti, KA, Hurwitz, ZE, **Wetzell, B**, Baumann, MH, Riley, AL. *Age differences in (\pm)3,4-methylenedioxymethamphetamine (MDMA)-induced conditioned taste aversions and monoaminergic activity*. Poster presented at the 23rd annual Robyn Rafferty Mathias Student Research Conference, American University, Washington, DC; March 2013.
12. Hurwitz, ZE, Cobuzzi, JL, Merluzzi, AP, **Wetzell, B**, Riley, AL. *Age and strain differences in morphine-induced taste aversions: A behavioral and neurochemical assessment*. Poster presented at the 23rd annual Robyn Rafferty Mathias Student Research Conference, American University, Washington, DC; March 2013.
13. Merluzzi, AP, Hurwitz, ZE, Briscione, MA, Cobuzzi, JL, **Wetzell, B**, Rice, KC, Riley, AL. *The differential expression of MDPV-induced taste aversions, thermoregulation and brain amine levels in adolescent and adult rats: A behavioral and neurochemical assessment of "bath salts"*. Oral presentation at the 23rd annual Robyn Rafferty Mathias Student Research Conference, American University, Washington, DC; March 2013.
14. Merluzzi, AP, Hurwitz, ZE, Briscione, MA, Cobuzzi, JL, **Wetzell, B**, Rice, KC, Riley, AL. *The differential expression of MDPV-induced taste aversions, thermoregulation and brain amine levels in adolescent and adult rats: A behavioral and neurochemical assessment of "bath salts"*. Poster presented at Behavior, Biology and Chemistry, University of Texas Health Science Center, San Antonio, TX; March 2013.

15. Muller, M; **Wetzell, B**; Cobuzzi, JL; Hurwitz, ZE; Riley, AL. *Age-dependent differences in methylphenidate-induced conditioned taste aversions*. Poster Presentation, Gateway to Your Future Conference, College of Arts and Sciences, American University, Washington, DC; January 2013.
16. Muller, M; **Wetzell, B**; Cobuzzi, JL; Hurwitz, ZE; Riley, AL. *Age-dependent differences in methylphenidate-induced conditioned taste aversions*. Poster Presentation, Discover the Sciences event sponsored by American University's Scientific Advisory Council, Washington, DC; October 2012.
17. Merluzzi, AM; Hurwitz, ZE; Briscione, MA; Cobuzzi, JL; **Wetzell, B**; Rice, KC; Riley, AL. *Age-dependent differences in MDPV-induced taste aversions and thermoregulation: A behavioral and neurochemical assessment of "bath salts"*. Poster Presentation, Discover the Sciences event sponsored by American University's Scientific Advisory Council, Washington, DC; October 2012.
18. Siletti, KA; Cobuzzi, JL; Hurwitz, ZE; **Wetzell, B**; Riley, AL. *Age-dependent differences in (\pm)3,4-methylenedioxymethamphetamine (MDMA)-induced conditioned taste aversions*. Poster Presentation, Discover the Sciences event sponsored by American University's Scientific Advisory Council, Washington, DC; October 2012.
19. **Wetzell, B.**; Riley, AL. *Adolescent exposure to methylphenidate has no effect on the aversive properties of cocaine in adulthood*. Poster Presentation, College on Problems of Drug Dependence Annual Meeting; La Quinta, CA; June 2012.
20. **Wetzell, B.** *Pharmaceutical psychostimulants*. Guest lecture for undergraduate Drugs and Behavior class; Prof. MA Hutchison, American University; Washington, DC; March 2012.
21. **Wetzell, B.**; Riley, AL. *Adolescent exposure to methylphenidate has no effect on the aversive properties of cocaine in adulthood*. Nanosymposium Paper Presentation, Society for Neuroscience Annual Meeting; Washington, DC; November 2011.
22. Pearson, M.; Kholodkov, T.; **Wetzell, B.**; Henson, J.M. *Implicit alcohol expectancies: Unique predictors of alcohol-related problems*. Poster, Association of Psychological Sciences Annual Conference; May 2010.
23. **Wetzell, B.**; Pearson, MR.; Henson, JM. *A longitudinal analysis of sex-related alcohol expectancies as moderators of the relationship between alcohol and risky sex*. Poster, Colonial Academic Alliance Conference; Richmond, Virginia; April 2010.
24. **Wetzell, B.**; Pearson, MR.; Henson, JM. *A longitudinal analysis of sex-related alcohol expectancies as moderators of the relationship between alcohol and risky sex*. Paper Presentation, Southeastern Psychological Association Annual Conference; Chattanooga, Tennessee; March 2010.
25. **Wetzell, B.**; Pearson, MR.; Henson, JM.. *Hierarchical linear modeling of drinking to cope with anxiety among college students*. Paper Presentation, Honors College Undergraduate Research Symposium, Old Dominion University; February 2010.
26. **Wetzell, B.**; Pearson, MR.; Henson, JM. *Drinking to cope with anxiety: A longitudinal analysis of college student drinking*. Poster, Honors College Undergraduate Research Symposium, Old Dominion University; April 2009

Research Groups

Psychopharmacology Laboratory, American University, Dept. of Psychology, August 2010 – Present.

Advisor: Anthony L. Riley, Ph.D.

Center for Mediated Experience (CeME), Old Dominion University, Dept. of English, August 2009 - May

2010. Supervisor: Liza Potts, Ph.D.

Division of Community Health and Research, Eastern Virginia Medical School, Dept. of Pediatrics, May

2009 - May 2010. Supervisors: Kelli England-Will, Ph.D., Krystall Dunaway, Ph.D.

Henson Lab, Old Dominion University, Dept. of Psychology, January 2009 - May 2010. Supervisors: James

M. Henson, Ph.D., Matthew R. Pearson, M.S.

Research and Laboratory Skills

- Optogenetic manipulation, including setup/operation of laser equipment controlled with Agilent Technologies 33500 Waveform Generator and uni- and bilateral fiberoptic patch construction
 - Rodent drug self-administration (using automated Med-Associates operant system)
 - Rodent chronic indwelling jugular catheter implantation
 - Rodent care and maintenance (Certified by American University IACUC, April 2011)
 - Rodent injections
 - Preparation of drugs/solutions
 - Aseptic survival surgical techniques
 - Rodent anesthesia/post-op care for survival surgeries
 - Conditioned taste aversion
 - Conditioned place preference and locomotor testing (using automated data collection with San Diego Instruments Place Preference System)
 - Rodent euthanasia (as recommended/approved by the AVMA)
 - Rodent transcardial perfusion/brain tissue fixation
 - Rodent brain extraction
 - Cryosectioning, tissue slide mounting
 - Rodent brain microdissection, including Palkovits' micropunch technique
 - Brightfield and fluorescence microscopy
 - Preparation of tissue/standards for various wet assays
 - Principles of analytical chemistry
 - High-performance liquid chromatography, including reverse-phase protocol development, polished mobile phase preparation and detection with UV-Vis and Coulochem-III®
 - Western blot protein analysis, including buffer preparation, total protein analysis, SDS-PAGE gel electrophoresis and UV imaging
 - Laboratory consumables supply ordering and maintenance
 - Human stimulus design with Inquisite® and Adobe Flash®
 - Research design and advanced analysis with Microsoft Excel® and SPSS®
 - Preparation of publication-ready scientific figures with GraphPad Prism®
-

Awards and Honors

- *The Alan L. Chaikin Award*; 2010. (Awarded to ODU's most outstanding Psychology Honors Thesis)
- *The Elizabeth C. Guy Service Award*; 2010. (Awarded to the graduating senior with the most outstanding record of service to the Psychology Department of ODU)
- The Honor Society of Phi Kappa Phi; Spring 2010
- *Appellate Justice*; ODU Office of Student Conduct and Academic Integrity, Spring 2010
- *Judicial Advisor*; ODU Office of Student Conduct and Academic Integrity, Fall 2009
- Omicron Delta Kappa National Leadership Honor Society, Fall 2009
- *Associate Justice*; 2009-2010, Old Dominion University Honor Council
- *Treasurer*; 2009-2010, ODU Psi Chi and APS
- *Excellence in Undergraduate Research Award*; 2009, 2010, ODU Honors College
- *Member of the Year*, 2008-2009; ODU Psi Chi
- Psi Chi International Honor Society in Psychology; Fall 2008
- *Dean's Perfect Scholar*; ODU College of Sciences, Fall 2007, Spring 2008, Fall 2009

Departmental Service

- *Center for Behavioral Neuroscience Faculty Search Committee*, Ph.D. Representative. American University; Washington, DC; Fall 2013.
- *Graduate Curriculum Committee*, Ph.D. Representative. Department of Psychology, American University; Washington, DC; 2012-2013.

Professional Memberships

- American Chemical Society (ACS, Student Member)
- American Society for Pharmacology and Experimental Therapeutics (ASPET, Student Affiliate)
- College on Problems of Drug Dependence (CPDD, Member In-Training)
- Society for Neuroscience (SFN, Student Affiliate)
- American Association for the Advancement of Science (AAAS, Student Affiliate)
- American Psychological Association (APA, Student Affiliate)
 - APA Division 28: Psychopharmacology and Substance Abuse
- Psi Chi, International Honor Society in Psychology