

A. BRIANNA SHEPPARD

Curriculum Vitae

Address: West Virginia University
Institute for Community and Rural Health
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Education

Ph.D., Psychology-Experimental Concentration, East Tennessee State University, Johnson City, TN, 2014

Dissertation Title: "Role of the ventral tegmental area and ventral tegmental area nicotinic acetylcholine receptors in the incentive amplifying effect of nicotine"

Dissertation Advisor: Matthew I. Palmatier, Ph.D.

M.A., General Psychology, East Tennessee State University, Johnson City, TN, 2008

Thesis Title: "Sex differences in nicotine-conditioned hyperactivity in a model of dopamine D2 receptor priming: roles of dopamine D2 and D3 receptor subtypes"

Thesis Advisor: Russell W. Brown, Ph.D.

B.S., Psychology (Minor in Biology), The University of Virginia's College at Wise, Wise, VA, 2006,

Awarded with Honors: *Cum Laude*

Research and Professional Experience

Program Coordinator, West Virginia University, Robert C. Byrd Health Sciences Center, Institute for Community and Rural Health, 2015-present

Description: Developing, implementing, monitoring and modifying research, programs, and evaluation strategies in support of the WVU ICRH's commitment to improving the health and well-being of West Virginia residents.

Supervisor: April Vestal, MPH

Postdoctoral Scholar, University of Pittsburgh, School of Medicine, Dept. of Anesthesiology, Center for Pain Research, 2014-2015

Description: Peripheral mechanisms of pain including: GABA signaling in inflammation and sex differences in visceral hypersensitivity, role of dural afferents in migraine pain.

Research Advisor: Michael S. Gold, Ph.D.

Graduate Assistant, East Tennessee State University, Dept. of Psychology, 2012-2014; Kansas State University, Dept. of Psychology, 2010-2012

Description: Neural and behavioral mechanisms underlying the effects of nicotine and other drugs with abuse liability on motivation

Research Advisor: Matthew I. Palmatier, Ph.D.

Associate Research Technician, Jones Lab, HepatoSys, Inc., 2008-2010

Description: Developing and testing hypothermic perfusion systems and solutions to improve liver tissue viability for transplant

Supervisors: Jon W. Jones, M.D. & Charles Lee, Ph.D.

Graduate Assistant, East Tennessee State University, Dept. of Psychology, 2006-2008

Description: Neural and behavioral mechanisms underlying drug dependence in a rodent model of schizophrenia

Research Advisor: Russell W. Brown, Ph.D.

Peer-Reviewed Publications

Palmatier, M. I., Kellicut, M. R., **Sheppard, A. B.**, Brown, R. W., & Robinson, D. L. (2014). The incentive amplifying effects of nicotine are attenuated by selective and nonselective dopamine antagonists in rats. *Pharmacology, Biochemistry, and Behavior*, 126, 50-62. doi: 10.1016/j.pbb.2014.08.012

Palmatier, M. I., Marks, K. R., Jones, S. A., Freeman, K. S., Wissman, K. M., & **Sheppard, A. B.** (2013). The effect of nicotine on sign-tracking and goal-tracking in a Pavlovian conditioned approach paradigm in rats. *Psychopharmacology (Berl.)*, 226, 247-259. doi: 10.1007/s00213-012-2892-9

Sheppard, A. B. Gross, S.C., Pavelka, S.A., Hall, M.J., & Palmatier, M.I. (2012). Caffeine increases the motivation to obtain non-drug reinforcers in rats. *Drug and Alcohol Dependence*, 124, 216-222. doi: 10.1016/j.drugalcdep.2012.01.008

Brown, R. W., Hughes, B. A., Hughes, A. B., **Sheppard, A. B.**, Perna, M. K., Ragsdale, W. L., Roeding, R. L., & Pond, B. B. (2012). Sex and dose-related differences in methylphenidate adolescent locomotor sensitization and effects on BDNF. *Journal of Psychopharmacology*, 26, 1480-1488. doi:10.1177/0269881112454227

Brown, R. W., Maple, A. M., Perna, M. K., **Sheppard, A. B.**, Cope, Z. A. & Kostrzewa, R. M. (2012). Schizophrenia and substance abuse comorbidity: nicotine addiction and the neonatal quinpirole model. *Developmental Neuroscience*, 34, 140-151. doi: 10.1159/000338830

Cope, Z.A., Huggins, K.N., **Sheppard, A.B.**, Noel, D.M., Roane, D.S., & Brown, R.W. (2010). Neonatal quinpirole treatment enhances locomotor activation and dopamine release in the nucleus accumbens core in response to amphetamine treatment in adulthood. *Synapse*, 64, 289-300. doi: 10.1002/syn.20729

Sheppard A. B., Lehmann, J., Cope, Z.A. & Brown, R.W. (2009). Sex differences in nicotine sensitization and conditioned hyperactivity in adolescent rats neonatally treated with quinpirole: role of D2 and D3 receptor subtypes. *Behavioral Neuroscience*, 123, 1296-1308. doi: 10.1037/a0017536

Correll, J.A., Noel, D. M., **Sheppard, A.B.**, Thompson, K.N., Li, Y., Yin, D., & Brown, R.W. (2009). Nicotine sensitization and analysis of brain-derived neurotrophic factor in adolescent β arrestin-2 knockout mice. *Synapse*, 63, 510-519. doi: 10.1002/syn.20625

Edited Book Chapters

Jones, J. W., **Sheppard, A. B.**, Shoe, J. & Lee C. Y., "Hypothermic Machine Perfusion Preservation of Livers," in *Organ Resuscitation and Re-Engineering*, Artech House Publishing, Norwood MA, 2011.

In Preparation

Sheppard, A. B., Floyd, R. M., Garcia, C. R., Jones, J. C., & Palmatier, M. I. (in preparation). Role of the ventral tegmental area and ventral tegmental area nicotinic acetylcholine receptors in the reinforcement enhancing effects of nicotine.

Sheppard, A. B., Floyd, R.M., Kellicut, M. R., Marks, K. R., Moore, M., & Palmatier, M. I. (in preparation). Nicotine administration during acquisition alters incentive learning.

McIlvried, L.A., La, J-H, **Sheppard, A. B.**, Gebhart, G.F., & Gold, M.S. (in preparation). Sex-dependent changes in immune cells in the colon using a mouse model of TNBS-induced inflammation.

Fellowships, Grants and Awards

NIH Training Grant #T32 NS073548 02, School of Medicine, Department of Anesthesiology, Center for Pain Research, University of Pittsburgh, "Training in mechanisms and clinical presentation of pain", 2014-2015

Excellence in Teaching Award for Graduate Teacher Associates, School of Graduate Studies, East Tennessee State University, 2014

Teaching Award for Graduate Teacher Associates, Department of Psychology, East Tennessee State University, 2014

Graduate Student Research Grant, School of Graduate Studies, East Tennessee State University, "Role of ventral tegmental area and ventral tegmental area nicotinic acetylcholine receptors in the incentive amplifying effects of nicotine", 2013

Graduate Student Travel Award, Graduate and Professional Student Association, School of Graduate Studies, East Tennessee State University, 2012 & 2013

Graduate Student Summer Stipend Award, Johnson Center for Basic Cancer Research, Kansas State University, "Neural circuitry underlying the reinforcement enhancing effect of nicotine", 2012

Graduate Student Paper Award: Animal Learning, Psychobiology and Comparative Psychology, Midwestern Psychological Association, 2012

Mentor of the Year, Graduate Association of Psychology Students, Kansas State University, 2011-2012

Vice President, Graduate Student Association of Psychology Students, Kansas State University, 2011-2012

Graduate Student Travel Grant, Johnson Center for Basic Cancer Research, Kansas State University, 2011

Timothy R. Donaghue Graduate Scholarship, Kansas State University, 2010 & 2011

Graduate Student Research Grant, School of Graduate Studies, East Tennessee State University, "Nicotine conditioned context and nicotine sensitization", 2007

Member, Sigma Zeta Math & Science National Honor Society Alpha Xi Chapter, The University of Virginia's College at Wise

Member, National Residence Hall Honorary Diamondback Terrapin Chapter, The University of Virginia's College at Wise

Member, Darden Society of the University of Virginia's College at Wise

Outstanding Research Contribution in Psychology, Department of Social and Behavioral Sciences, The University of Virginia's College at Wise, 2006

Who's Who Among Students in American Colleges and Universities, 2005 & 2006

Secretary, Psi Chi Honor Society in Psychology, The University of Virginia's College at Wise, 2005-2006

Treasurer, Phi Sigma Sigma Theta Rho Chapter, The University of Virginia's College at Wise, 2004-2005

Intermediate Honors, The University of Virginia's College at Wise, August 2004

Teaching Experience

Adjunct Instructor, Dept. of Psychology, East Tennessee State University, Summer 2013

Description: Instructor of record for three online sections of Principles of Psychological Research Lab.

Graduate Instructor, Dept. of Psychology, East Tennessee State University, 2012-2013

Description: Instructor of record for two undergraduate courses: Principles of Psychological Research (Fall 2012) and Behavioral Neuroscience (Spring & Fall 2013)

Graduate Teaching Assistant, Dept. of Psychology, Kansas State University, 2010-2012

Courses: General Psychology, Drugs and Behavior, Cognitive Psychology, Psychobiology, Principles of Learning, Health Psychology

Professional Memberships and Affiliations

West Virginia Rural Health Association, Member, 2015-present

National Rural Health Association, Member, 2015-present

West Virginia Clinical & Translational Science Institute, Member, 2015-present

American Pain Society, Member, 2014-present

International Association for the Study of Pain, Member, 2014-Present

Society for Neuroscience, Student Member, 2011-2014

Professional Development and Service

West Virginia University, University College, Pre-Health Constituency Board Member; *2015-present*

West Virginia University, University College, Pre-Health Advisory Committee, *2015-present*

WV Rural Health Conference Planning Committee, Posters Subcommittee, *2015*

Vanderbilt University, "An Introduction to Evidence-Based Undergraduate STEM Teaching". Voluntary completion with certificate of accomplishment. *Fall 2014*

Invited Presentations

"Cigarettes and Krispy Kreme: Understanding How Nicotine Affects Our Motivational Systems"
Dept. of Social & Behavioral Sciences, West Liberty University, 101 Faculty Dr. Wheeling, WV 26003
April 29, 2015

"Brains, Guts and Heart: The Flexibility of a Degree in Experimental Psychology"
Psychology Club, West Liberty University, 101 Faculty Dr. Wheeling, WV 26003
April 29, 2015

Volunteer Activities

Mon County Try This Community Conversation Group, Monongalia County, WV, *2015-present*
Assist in grant-writing, community project development and implementation.

Scott's Run Settlement House, 41 Ladybug Dr, Osage, WV 26543, *2015-present*
Assist in putting together food orders for clients of the food pantry, volunteering for special events, and working with staff to develop programs to meet the needs of those served by Scott's Run Settlement House.

Mountain Region Donor Services, 110 KLM Drive Suite 2, Gray TN 37615 United States, *2009-2010*
Set up information tables at community events, answered questions concerning organ and tissue donation, and helped interested individuals register to become an organ/tissue donor.

The Crisis Center, 100 Oakview Ave, Bristol, VA 24201, *2007-2008*
Answered Crisis Center hotline, provided information on resources callers or visitors to the center could seek concerning situations such as sexual assault, suicidal ideation, and grief.

Up 'til Dawn, The University of Virginia's College at Wise, 1 College Ave Wise, VA 24293, *2005-2006*
Helped establish a chapter of Up 'til Dawn UVA-Wise as assistant director by recruiting student members, organizing campus-wide letter-writing parties and a date auction, and soliciting community support in the form of cash, food and prize donations for campus fundraising events for St. Jude's Children's Hospital.

Conference Presentations

Odineal, E. M., Palmatier, M. I., Cummins, E. D., **Sheppard, A. B.**, & Brown, R. W. (2014, November). *Timing deficits are improved by nicotine pre-treatment in the neonatal quinpirole model of schizophrenia*. 44th Annual Meeting of the Society for Neuroscience, Washington, D. C.

- Cummins, E. D., Odineal, E. M., **Sheppard, A. B.**, Palmatier, M. I., & Brown, R. W. (2014, November). *Neonatal quinpirole treatment enhances nicotine self-administration in adult rats*. 44th Annual Meeting of the Society for Neuroscience, Washington, D. C.
- Kellicut, M. R., Brown, A. M., **Sheppard, A. B.**, Odineal, E. M., & Palmatier, M. I. (2014, November). *A menthol conditioned reinforcer promotes acquisition of nicotine self-administration in rats*. 44th Annual Meeting of the Society for Neuroscience, Washington, D. C.
- Kellicut, M. R., **Sheppard, A. B.**, & Palmatier, M. I. (2014, April). *Role of dopamine D1 and D2 receptors in nicotine-enhanced sign-tracking*. Appalachian Student Research Forum, Johnson City, TN.
- Odineal, E. M., Myers, D. A., **Sheppard, A. B.**, & Palmatier, M. I. (2014, March). *A menthol incentive promotes nicotine self-administration at low-doses in rats*. Symposium for Young Neuroscientists and Professors of the SouthEast (SYNAPSE), Asheville, NC.
- Kellicut, M. R., Moore, M., **Sheppard, A. B.**, & Palmatier, M. I. (2014, March). *Effects of dopaminergic antagonists on nicotine-enhanced sign-tracking in rats*. Symposium for Young Neuroscientists and Professors of the SouthEast (SYNAPSE), Asheville, NC.
- Palmatier, M. I., Odineal, E., Myers, D., & **Sheppard, A. B.** (2014, February). *A menthol incentive promotes low-dose nicotine self-administration in rats*. Paper presented at the 20th Annual Meeting of the Society for Research on Nicotine and Tobacco, Seattle, WA.
- Sheppard, A. B.**, Floyd, R. M., Dietz, Z., & Palmatier, M. I. (2013, November). *Nicotine exposure during acquisition increases the motivational valence of non-drug reinforcers*. 43rd Annual Meeting of the Society for Neuroscience, San Diego, CA. **Presenter.**
- Peterson, D. J., **Sheppard, A. B.**, Brown, R. W. & Palmatier, M. I. (2013, November). *Adolescent methylphenidate exposure increases the reinforcement enhancing effects of nicotine*. 43rd Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Sheppard, A. B.**, Wissman, K. M., & Palmatier, M. I. (2013, May). *Prior nicotine exposure increases sign-tracking but not goal tracking in rats*. 85th Annual Meeting of the Midwestern Psychological Association, Chicago, IL. **Presenter.**
- Sheppard, A. B.**, Jones, J. C., Noll, C. R., & Palmatier, M. I. (2013, April). *Role of ventral tegmental area nicotinic acetylcholine receptors in the incentive amplifying effects of nicotine*. Appalachian Student Research Forum, Johnson City, TN. **Presenter.**
- Palmatier, M. I. & **Sheppard A. B.** (2013, February). *Amplification of incentive learning by nicotine: evidence from operant conditioning and Pavlovian conditioned approach models*. Winter Conference on Animal Learning and Behavior, Winter Park, CO.
- Palmatier, M. I., Jones, S., A., & **Sheppard, A. B.** (2013, February). *Experimenter-administered caffeine increases alcohol self-administration in rats*. Winter Conference on Animal Learning and Behavior, Winter Park, CO.

- Sheppard, A. B.**, Jones, J. C., Noll, C. R., Habiger, C. J., Crumer, A., & Palmatier, M. I. (2012, October). *Role of ventral tegmental area nicotinic acetylcholine receptors in the reinforcement enhancing effects of nicotine*. 42nd Annual Meeting of the Society for Neuroscience, New Orleans, LA.
Presenter
- Gross, S. C., Ring, K. M., **Sheppard, A. B.**, & Palmatier, M. I. (2012, October). *Adolescent rats are more sensitive to the reinforcement enhancing effects of caffeine than adults*. 42nd Annual Meeting of the Society for Neuroscience, New Orleans, LA.
- Palmatier, M. I., Jones, S. A., Rindt, B. L. & **Sheppard, A. B.** (2012, June). *Effects of oral and intraperitoneal caffeine on alcohol drinking and self-administration in an intermittent-access paradigm*. Research Society on Alcoholism Annual Scientific Meeting, San Francisco, CA.
- Sheppard, A. B.** & Palmatier, M. I. (2012, May) *Reinforcement enhancing effects of nicotine: role of the ventral tegmentum*. 84th Annual Meeting of the Midwestern Psychological Association, Chicago, IL. **Presenter**
- Sheppard, A. B.**, Crumer, A, Marks, K, Habiger, C. J., Ring, K., Flynn, K. & Palmatier, M. I. (2012, May). *Nicotine administered during acquisition of operant conditioning increases the salience of a visual reward*. 84th Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
Presenter
- Gross, S. C., Dikeman, M. E., **Sheppard, A. B.**, Floyd, R. M. & Palmatier, M. I. (2012, May). *Reinforcement enhancing effects of caffeine*. 84th Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
- Sheppard, A.B.** & Palmatier, M.I. (March, 2012). *Effect of nicotine on the acquisition of sensory reinforcement in rats*. 19th Annual Meeting of the Society for Research on Nicotine and Tobacco, Houston, TX.
- Noll, C. R., **Sheppard, A. B.**, Pavelka, S. A., Floyd, R, & Palmatier, M. I. (2011, November). *Impulsive action as a predictor of the reinforcement enhancing effect of nicotine*. 41st Annual Meeting of the Society for Neuroscience, Washington, D.C.
- Jones, J. A., **Sheppard, A. B.**, Strutz, A. K., & Palmatier, M. I. (2011, November). *Caffeine increases the motivation to obtain alcohol and drinking in an intermittent-access paradigm*. 41st Annual Meeting of the Society for Neuroscience, Washington, D.C.
- Jones, J.W., **Sheppard, A.B.**, Clemens, M., & Lee, C. (2010, May). *Hypothermic Machine Preservation is Superior to Cold Storage in a Porcine DCD Model*. Paper presented at the Annual American Transplant Congress, San Diego, CA.
- Noel, D.M., Hughes, B.A., **Sheppard, A.B.**, Ordway, G. A., & Brown, R.W. (2008, November). *Eszipiclone facilitation of the antidepressant efficacy of fluoxetine using a social defeat stress model in the mouse*. 38th Annual Meeting of the Society for Neuroscience, Washington, DC.

- Hughes, B.A., Hughes, A.B., **Sheppard, A.B.**, Pond, B.B., Woodruff, M. L., & Brown, R.W. (2008, November). *A dose response analysis of methylphenidate sensitization in adolescent rats: Sex differences in locomotor activation*. 38th Annual Meeting of the Society for Neuroscience, Washington, DC.
- Thompson, K. N., Cope, Z.A., **Sheppard, A.B.**, Roane, D.S., & Brown, R.W. (2008, November). *Dopamine D2 receptor priming enhances locomotor activation and dopamine release in the nucleus accumbens core in response to amphetamine*. 38th Annual Meeting of the Society for Neuroscience, Washington, DC.
- Lehmann, J., **Sheppard, A.B.**, Amine, L., Baisden, R.H., & Brown, R.W. (2008, November). *The role of dopamine D2 and D3 receptors in adolescent nicotine sensitization and conditioned hyperactivity in rats D2-receptor primed as neonates*. 38th Annual Meeting of the Society for Neuroscience, Washington, DC.
- Whittemore, J.D., Cope, Z.A., **Sheppard, A.B.**, Longacre, I.D., Perna, M.K., Thompson, K.N., & Brown, R.W. (2008, March). *Amphetamine sensitization in a rodent model of psychosis*. Symposium for Young Neuroscientists and Professors of the SouthEast (SYNAPSE), Charleston, SC.
- Lehmann, J., **Sheppard, A.B.**, Amine, L., & Brown, R.W. (2008, March). *Nicotine-conditioned hyperactivity in male and female D2-primed adolescent rats*. Symposium for Young Neuroscientists and Professors of the SouthEast (SYNAPSE), Charleston, SC.
- Hughes, B.A., Hughes, A.B., **Sheppard, A.B.**, & Brown, R.W. (2008, March). *Dose-response analysis of methylphenidate locomotor sensitization in adolescent D2-primed rats*. Symposium for Young Neuroscientists and Professors of the SouthEast (SYNAPSE), Charleston, SC.
- Cope, Z.A., **Sheppard, A.B.**, Longacre, I.D., Perna, M.K., Thompson, K.N., Roane, D.S., & Brown, R. W. (2008, January). *Amphetamine sensitization in D2-primed rats*. Spring Meeting of the Appalachian Chapter of Society for Neuroscience, Johnson City, TN.
- Hughes, A.B., **Sheppard, A.B.** Longacre, I.D., & Brown, R.W. (2008, January). *Methylphenidate locomotor sensitization in adolescent D2-primed rats*. Spring Meeting of the Appalachian Chapter of the Society for Neuroscience, Johnson City, TN. **Presenter**
- Sheppard, A.B.**, Amine, L., Woodruff, M.L. & Brown, R.W. (2008, January). *Nicotine-conditioned hyperactivity in adolescent D2-primed rats*. Spring Meeting of the Appalachian Chapter of Society for Neuroscience, Johnson City, TN. **Presenter**
- Hughes, A.B., **Sheppard, A.B.**, Longacre, I.D., & Brown, R.W. (2007, November). *Methylphenidate locomotor sensitization in adolescent D2-primed rats: Effects of exposure on initial nicotine activity in adulthood*. 37th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Sheppard, A.B.**, Amine, L., Woodruff, M. L. & Brown, R.W. (2007, November) *Nicotine-conditioned hyperactivity in male and female adolescent D2-primed rats*. 37th Annual Meeting of the Society for Neuroscience, San Diego, CA. **Presenter**

- Cope, Z.A., **Sheppard, A.B.**, Longacre, I.D., Perna, M. K., Thompson, K. N., Roane, D.S., & Brown, R. W. (2007, October). *Amphetamine sensitization in a rodent model of psychosis*. 37th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Noel, D. M., Correll, J. A., **Sheppard, A.B.**, & Brown, R.W. (2007, April). *Nicotine sensitization in adolescent beta-arrestin-2 knockout mice: Implications for mechanisms of nicotine addiction*. Annual Appalachian Student Research Forum at East Tennessee State University, Johnson City, TN.
- Hughes, A.B., **Sheppard, A.B.**, Longacre, I.D., & Brown, R.W. (2007, April). *Methylphenidate (Ritalin) exposure to adolescent D2-primed rats eliminates the initial hypoactive response to nicotine in adulthood*. Annual Appalachian Student Research Forum at East Tennessee State University, Johnson City, TN.
- Cope, Z. A., **Sheppard, A.B.**, Longacre, I.D., Hughes, A.B., & Brown, R.W. (2007, April). *D2-primed rats demonstrate increased sensitization and stereotypy after administered d-amphetamine*. Annual Appalachian Student Research Forum at East Tennessee State University, Johnson City, TN.
- Sheppard, A.B.**, Amine, L., & Brown, R.W. (2007, April). *Nicotine-conditioned hyperactivity in a rodent model of psychosis*. Annual Appalachian Student Research Forum at East Tennessee State University, Johnson City, TN. **Presenter**
- Sheppard, A.B.**, & Horton, J.E. (2006, April). *Social attitudes concerning organ transplantation*. Annual Appalachian Student Research Forum at East Tennessee State University, Johnson City, TN. **Presenter**
- Mullins, K., Rainey, R., Romero, L., **Sheppard, B.**, Whitt, C. J., & Horton, J. E. (2006, April). *Correlates of voxel-based morphometry of anterior cingulate and TAS absorption measures*. Annual Appalachian Student Research Forum at East Tennessee State University, Johnson City, TN.