Updated: 5/22/2015

Ryan K. Bachtell, Ph.D.
Curriculum Vitae

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EDUCATIONAL BACKGROUND

2004-2007 **Postdoctoral Fellowship**
Department of Psychiatry
University of Texas Southwestern Medical Center, Dallas, TX

1998-2004 **Ph.D., Behavioral Neuroscience**
Doctoral Thesis: Characterization of the Edinger-Westphal nucleus' response to ethanol
Oregon Health & Science University, Portland, OR

1996-1998 **M.S. Experimental Psychology**
Master's Thesis: Ethanol-induced conditioned place aversion: Failure to obtain modulation with external stressor
Central Washington University, Ellensburg, WA

1992-1996 **B.A. Psychology**
Bloomsburg University, Bloomsburg, PA

ACADEMIC EMPLOYMENT HISTORY

2009-present **Assistant Professor**
Department of Psychology and Neuroscience
University of Colorado, Boulder CO

2009-present **Member**
Center for Neuroscience
University of Colorado, Boulder CO

2010-present **Faculty Fellow**
Institute for Behavioral Genetics
University of Colorado, Boulder CO

2008 **Assistant Instructor**
Department of Psychiatry
University of Texas Southwestern Medical Center, Dallas TX

MEMBERSHIPS TO PROFESSIONAL ORGANIZATIONS

- Society for Neuroscience (1998-present)

- American College of Neuropsychopharmacology (2013-present
- American Association for the Advancement of Science (2005-present)
- Faculty for Undergraduate Neuroscience (2012-present)

Research interest areas:

- Analyze the interactive effects of dopamine and adenosine neurotransmitter systems in the striatum following psychostimulant treatment
- Identify how dopamine receptor functioning may predict psychostimulant responsiveness
- Utilization of extinction training from drug self-administration as a tool to reverse drug-induced neuroadaptations and behavioral changes
- Identify mechanisms of glia-to-neuron communication in drug addiction

AWARDS AND HONORS

Awards:

- Outstanding Thesis Award, Central Washington University, Ellensburg, WA, 1998
- Research Society on Alcoholism Student Merit Award, 2000
- Best Oral Presentation, Student Research Forum, Oregon Health & Science University, Portland, OR, 2002
- Research Society on Alcoholism Student Merit Award, 2001
- Best Student Publication Award, Department of Behavioral Neuroscience, Oregon Health & Science University, 2003
- Most Outstanding Journal Article of the Year, Oregon Health & Science University, 2003
- Early Career Investigator Travel Award, National Institute of Drug Abuse, Frontiers in Addiction Research Mini-convention, 2007
- AAAS/Science Program for Excellence in Science, 2007
- Young Investigator Travel Award, American College of Neuropsychopharmacology, 2008
- Junior Faculty Development Award, Council on Research and Creative Work, University of Colorado-Boulder, 2009-2010
- Dean's Summer Grant, 2011

Fellowships:

- Ruth L. Kirschstein Pre-doctoral National Research Service Award, NIAAA 013223, "Characterizing the Edinger-Westphal response to alcohol", 1999-2003
- N.L. Tartar Research Fellowship, "Regulation of alcohol sensitivity by alpha (2)-adrenoceptor antagonists in the Edinger-Westphal nucleus", 2000
- Ruth L. Kirschstein Post-doctoral National Research Service Award, NIDA 018481, "Dopamine receptor interactions with GluR1 in addiction", 2004-2007

Scholarships:

- Eli McClaughlin Scholar-Athlete Scholarship, Bloomsburg University, Bloomsburg, PA, 1992-1996
- Keystone Symposia Education Fund Scholarship, Neurobiology of Addiction, 2007

SERVICE ACTIVITIES

University of Colorado Boulder:

- Office of the Vice Chancellor for Research
  - Institutional Animal Care and Use Committee (IACUC), Member, 2013-present
  - Innovative Seed Grant, Biomedical Review Panel, 2011-2013
  - Searle Scholars Program, Internal Reviewer, 2013

- Office of Animal Resources
  - Review committee for electronic research administration (eRA) software, 2013

- Department of Psychology and Neuroscience
  - Neuroscience Honors program, Associate Director, 2012-2014
  - Faculty Search Committee (Behavioral Neuroscience Area), Member, 2012-13
  - Undergraduate Neuroscience Curriculum Committee, Member, 2012-present
  - Institutional Animal Care and Use Committee (IACUC), Departmental Representative, 2013-present
  - Faculty Search Committee (Neuroscience/MCDB), Member, 2014-15
  - Personnel Committees:
    David Allen, Senior Instructor, 2014
    Natalie Smutzler, Senior Instructor, 2014
    Diane Martichuski, Senior Instructor, 2014
    Tina Pittman-Wagers, Senior Instructor, 2013
    Brett King, Senior Instructor, 2012
    Joseph Berta, Senior Instructor, 2012
    Brett King, Senior Instructor, 2010
  - Member, Helping Undergraduate Education (HUGE) working group, 2012

- Neuroscience Club, Affiliated undergraduate student organization
  - Faculty Advisor, 2013-present

Professional:

- Journal Editorial Board
  - Academic Editor, PLoS One, 2013-present

- Grant Reviewer
  - National Institute of Health, Special Emphasis Panel/Scientific Review Group ZRG1 MDCN-N, 2014
  - National Institute of Health, Special Emphasis Panel/Scientific Review Group ZDA1 MXL-F, 2013
  - American Institute of Biological Science, Department of Defense, Congressional Directed Medical Research Program, 2012

- American College of Neuropsychopharmacology, Panel Co-Chair, The Role of Neuroinflammatory Pathways in Opioid, Stimulant, and Alcohol Abuse: Preclinical and Clinical Studies, 2014

- Ad Hoc Reviewer Assignments
  Alcoholism: Clinical and Experimental Research, Behavioral Brain Research, Biological Psychiatry, Brain Behavior and Immunity, Brain Research, Brain Sciences, Chronobiology International, Hippocampus, International Journal of Neuropsychopharmacology, Journal of Comparative Neurology, Journal of Neuroscience, Journal of Neuropsychopharmacology, Journal of

Psychopharmacology, Molecular Psychiatry, Neuroscience, Neuroscience Letters, Psychoneuroendocrinology, Psychopharmacology, Neuropsychopharmacology, PLoS One

TEACHING ACCOMPLISHMENTS:

Courses Taught:

University of Colorado:

- NRSC 2110: Introduction to Neuroscience 2
  Spring 2011 (34 students)- Instructor- 4.5/6.0, Course- 4.5/6.0
- NRSC 4132/5132: Neuropharmacology
  Fall 2009 (35 students): Instructor- 4.8/6.0, Course- 4.8/6.0
  Fall 2010 (45 students): Instructor- 4.9/6.0, Course- 5.0/6.0
  Fall 2011 (47 students): Instructor- 5.1/6.0, Course- 4.9/6.0
  Fall 2012 (40 students): Instructor- 5.1/6.0, Course- 5.0/6.0
  Fall 2013 (45 students): Instructor- 5.5/6.0, Course- 5.3/6.0
  Fall 2014 (45 students): Instructor- 5.5/6.0, Course- 5.4/6.0
- NRSC 4545/5545: Neurobiology of Addiction
  Spring 2012 (23 students)- Instructor- 5.5/6.0, Course- 5.3/6.0
  Spring 2013 (13 students)- Instructor- 5.8/6.0, Course- 5.8/6.0
  Spring 2014 (10 students)- Instructor- 5.8/6.0, Course- 5.3/6.0
- NRSC 4911/5911: Teaching of Neuroscience
  Spring 2011 (7 students)- Instructor- 6.0/6.0, Course- 5.8/6.0
- NRSC 6100: Advances in Neuroscience
  Spring 2013 (20 students)- Instructor- 5.0/6.0, Course- 5.1/6.0
  Spring 2014 (19 students)- Instructor- 5.5/6.0, Course- 4.9/6.0
- NRSC 7102: Topics in Neuroscience
  Fall 2011 (8 students)- Instructor- 5.4/6.0, Course- 4.8/6.0
- PSYC 2012: Biological Psychology
  Spring 2010 (148 students): Instructor- 4.7/6.0, Course- 4.7/6.0
  Summer 2011 (42 students): Instructor- 4.4/6.0. Course- 4.1/6.0
- PSYC 4521: Critical Thinking: Neural Basis of Addiction
  Spring 2009 (24 students): Instructor- 5.1/6.0, Course- 4.9/6.0

Central Washington University:

- Techniques in Physiological Psychology, Instructor
  Spring 1998, Fall 1998
- Principles of Learning, Teaching assistant
  Winter 1997, Spring 1997, Fall 1998, Winter 1998
- Experimental Methods in Behavioral Research, Instructor
  Fall 1997, Fall 1998
- Physiological Psychology, Teaching assistant
  Spring 1997, Spring 1998
- Intermediate Statistics, Teaching assistant
  Winter 1997, Winter 1998

Bloomsburg University

- General Psychology, Undergraduate teaching assistant
  Fall 1996

Community Teaching and Outreach:

- Kids Judge! Neuroscience Fair: Oregon Museum of Science and Industry, Portland, OR, 2001
- The Brain Fair, Oregon Museum of Science and Industry, Portland, OR, 2003
- Brain Awareness Week, Oregon Health & Science University, Portland, OR, 2001-2003
- University of Colorado Neuroscience Club, Informational Meet and Greet, Boulder CO, 2012
- University of Colorado Psi Chi, Adderall and Its Effects on the Brain, Boulder, CO 2013
- University of Colorado Neuroscience Club, The Vulnerabilities of Adolescent Caffeine Consumption, 2015

Advisory and supervisory responsibilities:

Graduate student mentoring:

- Brian Cadle, Behavioral Genetics and Neuroscience PhD program, 2013-2014
  Topic: Reinforcing effect of optogenetic stimulation of dorsal subiculum
- Casey O'Neill, Neuroscience PhD program, 2009-present
  Topic: Role of adenosine-dopamine interactions in the nucleus accumbens on cocaine relapse
- Kyle Brown, Neuroscience PhD program, 2014-present
  Topic: Role of microglia in cocaine relapse
- Nicholas Haynes, Neuroscience PhD program, 2014-present
  Topic: Involvement of adenosine receptors on glutamate terminals in cocaine relapse

Graduate student committee memberships:

- Robert Rozeske, Comprehensive examination committee (2009) and Thesis committee (2011)
- Alexis Northcutt, 2nd year paper defense (2011), Comprehensive examination committee (2012), Thesis committee (2014)
- William Horton, Comprehensive examination committee (2010) and Thesis committee (2013)
- Brittany Thompson, Comprehensive examination committee (2012) and Thesis committee (2013)
- Giuseppe Cortese, 2nd year paper defense (2010), comprehensive examination committee (2012) and Thesis committee (2013)
- Lauren Chun, 2nd year paper defense (2013)
- Jonathon Herrera, Master Thesis Defense (2014)
- Brian Cadle, Comprehensive examination committee (2011) and Thesis committee chair (2014)
- Casey O'Neill, 2nd year paper defense, Chair (2011), Comprehensive examination committee (2013) and Thesis committee (2015)
- Mathew Arnold, Preliminary Review committee (2014)
- Michael Weber, Thesis committee (2015)

Undergraduate Honor's thesis committee advisor:

- Talia Scott, *Advisor/Committee Chair,* Psychology and Neuroscience, 2014
- Drew Schreiner, *Advisor/Committee Chair,* Psychology and Neuroscience, 2013
- Sophia Levis, *Advisor/Committee Chair*, Psychology and Neuroscience, 2012
- Benjamin Hobson, *Advisor/Committee Chair*, Molecular, Cellular and Developmental Biology, 2012

Undergraduate Honors thesis committees:

- Over 25 undergraduate honors thesis committees in various Departments since 2009

Undergraduate student laboratory mentoring:

- Kathryn Merritt- Current Masters student in Public Health at George Washington University
  - UROP-Summer Assistantship 2009 & 2010
  - Honors Thesis Committee Member, 2011
- Benjamin Hobson- Current research technician at Stanford University
  - BURST, 2009-2010
  - HHMI Fellowship, 2010-11
  - UROP-Individual Research Grant, 2011-12
  - Barry M. Goldwater Scholarship- Honorable Mention, 2012
  - Honors Thesis Committee Chair, 2012
- Sophia Levis- Current research technician at Anschutz Medical Campus
  - Honors Thesis Committee Chair, 2012
  - Muenzinger Thesis Award winner, 2012
  - UROP-Summer Assistantship, 2011
- Hollene Hongdoxmai- Current English teacher abroad
  - UROP-Assistantship, 2011-12
  - TRiO Advanced Study Community, 2011
- Kevin Kavanagh- Current pharmaceutical technician
  - UROP-Individual Research Grant, 2011-12
  - UROP-Summer Assistantship, 2012
  - HHMI Fellowship, 2012-2013
- Drew Schreiner- Current research technician at University of Colorado
  - UROP-Assistantship, 2011-12
  - UROP-Summer Assistantship, 2012
  - HHMI Fellowship, 2012-2013
  - Honors Thesis Committee Chair, 2013
- Sarah Cross- Current graduate student in Neurobiology at UC-Irvine
- Kayla Brown- Current clinical assistant at Lucille Packard Children's Hospital
- Talia Scott
  - UROP-Assistantship, 2013-2014
  - UROP-Summer Assistantship, 2014
  - Honors Thesis Committee Chair, 2014
- Evan Harrington
  - BURST, 2013-2014
- Jacob Stafford
  - BURST, 2013-2014
  - UROP-Summer Assistantship, 2014
- Solana Archuleta
  - UROP-Assistantship, 2014
  - HHMI Fellowship, 2014-15
- Emilee Greager
  - BURST, 2014-2015
- Michaela Palumbo
  - BURST, 2014-2015

RESEARCH ACTIVITIES

Grant Support

Current Grants:

Title, Source and Role	*Period*	*Award Total*
"Adenosine receptor involvement in methamphetamine reward and relapse", R01 DA 033358, NIH, **Principal Investigator**	2013-2017	$1,795,762
"Combating drug abuse by targeting toll-like receptor 4 (TLR4)", PR110146, PI: Watkins, DoD, PRMRP, **Co-Principal Investigator**	2012-2015	$295,218

Pending Grants:

Title, Source and Role	*Period*	*Award Total*
"Neuroimmune signaling in cocaine relapse", R01 DA DA039908, NIH, **Principal Investigator**	2015-2020	$1,918,750

Completed Grants:

Title, Source and Role	*Period*	*Award Total*
"Adenosine receptor involvement in methamphetamine reward and relapse", R01 DA 033358 Supplement, NIH, **Principal Investigator**	2014-2015	$152,500
"The role of glucocorticoids and neuroinflammation in mediating the effects of stress on drug abuse", PR 100303, PI: Maier, DoD, PRMRP-IIRA, **Collaborator**	2011-2014	$43,500
"Effects of adenosine signaling on cocaine reward and relapse", R03 DA 029420-02, NIH, **Principal Investigator**	2011-2013	$151,500
*"*Rethinking the causes of drug abuse: targeting a key receptor on brain immune-like cells", Peter F. McManus Trust, PI: Watkins, **Co-investigator**	2012-2013	$50,000
*"*Role of Acid-sensing Ion Channels in Opiate Withdrawal", Innovative Seed Grant, University of Colorado, **Principal Investigator**	2010-2011	$43,633
*"*Role of dopamine-adenosine interactions in cocaine relapse", Junior Faculty Development Award, CRCW, University of Colorado, **Principal Investigator**	2009-2010	$5,000
"Dopamine receptor interactions with GluR1 in addiction", F32 DA 018481, NIH, **Principal Invesigator**	2004-2007	$141,700
"Characterizing the Edinger-Westphal response to alcohol", F31 AA 013223, NIH, **Principal Investigator**	2001-2003	$57,802
Regulation of alcohol sensitivity by alpha(2)-adrenoceptor antagonists in the Edinger-Westphal	2000-2001	$2,500

nucleus, N.L. Tartar Research Fellowship, **Principal Investigator**

Invited Presentations:

- NIAAA Trainee Workshop, 2001, Indianapolis, IN
- Winter Conference on Brain Research, 2007, Snowmass, CO
- University of Texas, 2008, Austin, TX
- University of Wisconsin, 2008, Milwaukee, WI
- University of Colorado, 2008, Boulder, CO
- George Mason University, 2008, Fairfax, VA
- University of Toronto, 2008, Toronto, ON, Canada
- American College of Neuropsychopharmacology, 2008, Scottsdale, AZ
- Institute for Behavioral Genetics, 2009, Boulder, CO
- University of Northern Colorado, 2011, Greeley, CO
- University of Colorado Boulder, 2011, Boulder, CO
- College on Problems of Drug Dependence, 2014, San Juan, Puerto Rico
- American College of Neuropsychopharmacology, 2014, Phoenix, AZ
- Regis University, Department of Psychology and Neuroscience, 2015, Denver, CO

Data Presentations:

- Project Seminar, Oregon Health & Science University, 2000. Interactive effects of nicotine and alcohol on expression of inducible transcription factors in mouse brain
- Student Research Forum, Oregon Health & Science University, 2001. Comparison of the Edinger-Westphal nucleus and its sensitivity to alcohol in two inbred mouse strains
- Student Research Forum, Oregon Health & Science University, 2002. Signal transduction pathways involved in alcohol-induced c-Fos expression in the Edinger-Westphal nucleus of C57BL/6J mice
- Works in Progress seminar, University of Texas Southwestern Medical Center, yearly 2004-2008
- Faculty Reappointment Seminar, University of Colorado, 2012

Manuscripts In Preparation:

** Undergraduate or graduate student under supervision*

1. *O'Neill, CE, *Levis, SC, *Schreiner, D, **Bachtell RK** (in preparation). Differential involvement of pre- and post-synaptic adenosine A_{2A} receptors in cocaine seeking.
2. *O'Neill, CE, *Levis, SC, *Stafford, J, **Bachtell, RK** (in preparation). Adolescent caffeine consumption enhances anxiety behaviors in adulthood.
3. *Levis, SC, *O'Neill, CE, Northcutt, AL, Watkins, LR, **Bachtell, RK** (in preparation). Reinstatement to cocaine seeking is inhibited by toll-like receptor 4 blockade.

Non-Peer Reviewed Open Science Articles:

** Undergraduate or graduate student under supervision*

1. Rasmus, KC, O'Neill, CE, **Bachtell, RK**, Cooper, DC (2013). Cocaine self-administration in rats lacking a functional trpc4 gene [v1; ref status: indexed, http://f1000r.es/w9] *F1000Research* 2013, **2**:110 (doi: 10.12688/f1000research.2-110.v1)

Peer-Reviewed Publications and Submitted Work:

** Undergraduate or graduate student under supervision*

1. **Bachtell, RK**, Ryabinin, AE, Wang, Y-M, Freeman, P, & Risinger, FO (1999). Selective induction of inducible transcription factors in response to alcohol self-administration in mouse brain. *Brain Research,* 847(2): 157-165.

2. Ryabinin, AE, Wang, Y-M, **Bachtell, RK,** Kinney, AE, Grubb MC, & Mark, GP. (2000). Cocaine- and alcohol-mediated expression of inducible transcription factors is blocked by pentobarbital anesthesia. *Brain Research*, 877(2): 251-261.

3. **Bachtell, RK** & Ryabinin, AE (2001). Interactive effects of nicotine and alcohol coadministration on expression of inducible transcription factors in mouse brain. *Neuroscience,* 103(4): 941-954.

4. Ryabinin, AE, **Bachtell RK**, Freeman, P, & Risinger, FO (2001). ITF expression in mouse brain during acquisition of alcohol self-administration. *Brain Research*, 890(1): 192-195.

5. **Bachtell, RK**, Tsivkovskaia, NO & Ryabinin, AE (2002). Strain differences in the expression of urocortin in the Edinger-Westphal nucleus and its relationship to alcohol-induced hypothermia. *Neuroscience*, 113(2): 421-434.

6. Ryabinin, AE, **Bachtell, RK**, Heinrichs, SC, Lee, S, Rivier C, Olive, MF, Mehmert, KK, Camarini, R, Kim, JA, Koenig, HN, Nannini, MA, Hodge, CW, Roberts, AJ, and Koob, GF (2002). The Corticotropin-Releasing Factor/Urocortin system and alcohol. *Alcoholism: Clinical and Experimental Research,* 26(5): 714-722.

7. **Bachtell, RK**, Tsivkovskaia, NO & Ryabinin, AE (2002). Alcohol-induced c-Fos expression in the Edinger-Westphal nucleus: Pharmacological and signal transduction mechanisms. *Journal of Pharm. And Exp. Therapeutics*, 302(2): 516-524.

8. Kiianmaa K, Hyytiä P, Samson HH, Engel JA, Svensson L, Söderpalm B, Larsson A, Colombo G, Vacca G, Finn DA, **Bachtell RK**, Ryabinin AE (2003). New Neuronal Networks Involved in Ethanol Reinforcement. *Alcoholism: Clinical and Experimental Research*, 27(2): 209-219.

9. **Bachtell, RK**, Tsivkovskaia, NO & Ryabinin, AE (2003). Identification of temperature-sensitive neural circuits in mice using c-Fos expression mapping. *Brain Research*, 960(1-2): 157-64.

10. Ryabinin, AE, Galvan-Rosas, A, **Bachtell, RK**, & Risinger, FO (2003). High Alcohol/Sucrose consumption during dark circadian phase in C57BL/6J mice: Involvement of hippocampus, lateral septum and urocortin-positive cells of the Edinger-Westphal nucleus. *Psychopharmacology*, 165(3): 296-305.

11. **Bachtell, RK**, Weitemier, AZ, Galvan-Rosas, A, Tsivkovskaia, NO, Risinger, FO, Grahame, NJ, Phillips, TJ and Ryabinin, AE (2003). The Edinger-Westphal-Lateral Septum urocortin pathway and its relationship to alcohol consumption. *Journal of Neuroscience,* 23(6): 2477-2487.

12. **Bachtell, RK**, Weitemier, AZ and Ryabinin AE (2004). Lesions of the Edinger-Westphal nucleus in C57BL/6J mice disrupt ethanol-induced hypothermia and ethanol consumption. *European Journal of Neuroscience,* 20: 1613-1623.

13. **Bachtell, RK**, Whisler, K, Karanian, D and Self, DW (2005) Effects of intra-nucleus accumbens administration of dopamine agonists and antagonists on cocaine-taking and –seeking behaviors. *Psychopharmacolog*y, 183(1): 41-53.

14. Edwards, S, Graham, DL, **Bachtell, RK** and Self, DW (2007). Region-specific tolerance to cocaine-regulated cAMP-dependent protein phosphorylation following chronic self-administration. *European Journal of Neuroscience,* 25(7): 2201-2213.

15. Graham, DL, Edwards, S, **Bachtell, RK**, DiLeone, RJ, Rios, M and Self DW (2007). Dynamic BDNF regulation in nucleus accumbens during cocaine use leads to increased self-administration and relapse. *Nature Neuroscience,* 10(8): 1029-1037.

16. Winstanley, CA, LaPlant, Q, Theobald, DEH, Green, TA, **Bachtell, RK**, Perrotti, LI, DiLeone, RJ, Russo, SJ, Garth, WJ, Self, DW and Nestler, EJ (2007). Delta-FosB induction in orbitofrontal cortex regulates cocaine-induced cognitive dysfunction. *Journal of Neuroscience*, 27(39): 10497-507.

17. **Bachtell, RK**, Choi, K-H, Monteggia, L, Neve, RL, Self, DW (2008). Role of GluR1 expression in nucleus accumbens neurons in cocaine sensitization and cocaine-seeking behavior. *European Journal of Neuroscience,* 27(9): 2229-40.

18. Perrotti, LI, Weaver, RR, Robison B, Renthal, W, Maze, I, Yazdani, S, Elmore, RG, Knapp, DJ, Selley, DE, Martin, BR, Sim-Selley, L, **Bachtell, RK,** Self, DW, Nestler, EJ (2008). Distinct patterns of DeltaFosB induction in brain by drugs of abuse. *Synapse*, 62(5): 358-369.

19. **Bachtell, RK** & Self, DW (2008). Renewed cocaine exposure produces transient alterations in nucleus accumbens AMPA receptor-mediated behavior. *Journal of Neuroscience*, 28(48): 12808-14.

20. Graham DL, Krishnan V, Larson EB, Graham A, Edwards S, **Bachtell RK**, Simmons D, Gent LM, Berton O, Bolanos CA, DiLeone RJ, Parada LF, Nestler EJ, Self DW (2009). Tropomyosin-Related Kinase B in the Mesolimbic Dopamine System: Region-Specific Effects on Cocaine Reward. *Biological Psychiatry*, 65(8): 696-701. Epub. Nov 6 2008.

21. Winstanley, CA, **Bachtell, RK,** Theobald, DEH, Laali S, Green, TA, Kumar A, Self, DW and Nestler, EJ (2009). Concurrent cognitive testing and cocaine self-adminstration reveals increased impulsivity during withdrawal from cocaine: role for ΔFosB in the orbitofrontal cortex. *Cerebral Cortex*, 19(2): 435-444. Epub. Jun 6 2008.

22. **Bachtell, RK** & Self, DW (2009). Effects of adenosine A_{2A} receptor stimulation on cocaine-seeking behavior in rats. *Psychopharmacology*, 206(3): 469-78. Epub. Jul 30, 2009.

23. Cadle, BA, Rasmus, KC, Leverich, LS, O'Neill, CE, **Bachtell, RK**, & Cooper, DC (2010). Cellular phone-based image acquisition and quantitative ratiometric method for detecting cocaine and benzoylecgonine for biological and forensic applications. *Substance Abuse: Research and Treatment*, 4: 21-33.

24. Edwards, S, **Bachtell, RK**, Guzman D, Whisler, KN & Self, DW (2011). Emergence of context-associated GluR1 and ERK phosphorylation in the nucleus accumbens core during withdrawal from cocaine self-administration. *Addiction Biology*, 16(3): 450-7. Epub. Feb 11, 2011.

25. *O'Neill, CE, Letendre, M & **Bachtell, RK** (2012). Adenosine A_{2A} receptors in the nucleus accumbens bi-directionally alter cocaine seeking in rats. *Neuropsychopharmacology*, 37(5): 1245-56. Epub. Dec 14, 2011.

26. Hutchinson MR, Northcutt AL, Hiranita T, Wang X, Lewis S, Thomas, J., van Steeg, K, Kopajtic TA, Loram L, Sfregola C, Galer E, Miles NE, Bland SJ, Amat J, Rozeske RR, Maslanik T, ChapmanT, Strand K, Fleshner M, **Bachtell RK**, Somogyi, AA, Yin H, Katz JL, Rice KC, Maier SF, Watkins LR (2012). Opioid activation of toll-like receptor 4 contributes to drug reinforcement. *Journal of Neuroscience*, 32(33): 11187-11200.

27. *Hobson, BD, *Merritt, KE, **Bachtell, RK** (2012). Stimulation of adenosine receptors in the nucleus accumbens reverses the expression of cocaine sensitization and cross-sensitization to dopamine D_2 receptors in rats. *Neuropharmacology*, 63(6): 1172-1181. Epub. Jun 28, 2012.

28. *Hobson, BD, *O'Neill, CE, *Levis, SC, Monteggia, LM, Neve, RL, Self DW, **Bachtell, RK** (2013). Adenosine A_1 and dopamine D_1 receptor regulation of AMPA receptor phosphorylation and cocaine-seeking behavior. *Neuropsychopharmacology*, 38(10): 1974-1983. Epub. Apr 18, 2013.

29. *Merritt, KE & **Bachtell, RK** (2013). Initial sensitivity to dopamine D_2 receptors predicts cocaine sensitivity and reward in rats. *PLoS One*, 8(11): e78258. doi:10.1371/journal.pone.0078258

30. *O'Neill, CE, *Hobson, BD, *Levis, SC, **Bachtell, RK** (2014). Persistent reduction of cocaine seeking by pharmacological manipulation of adenosine A_1 and A_{2A} receptors during extinction training in rats. *Psychopharmacology*, 231(16): 3179-3188. Epub Feb 23, 2014.

31. *O'Neill, CE, *Levis, SC, *Schreiner DC, Amat, J, Maier, SF, **Bachtell, RK** (2015). Effects of adolescent caffeine consumption on cocaine sensitivity. *Neuropsychopharmacology*, 40: 813-821. Epub Oct. 20, 2014
Featured on Neuropsychopharmacology Brainpod
Featured on NIDA Science Highlights: http://www.drugabuse.gov/news-events/latest-science/adolescent-caffeine-use-cocaine-sensitivity

32. *Kavanagh, KK, *Schreiner, DC, *Levis, SC, *O'Neill, CE, **Bachtell, RK** (2015). Role of adenosine receptor subtypes in methamphetamine reward and reinforcement. *Neuropharmacology*, 89: 265-73. Epub Oct. 6, 2014

33. Northcutt AL, Hutchinson MR, Wang, X, Barrata, MV, Hiranita T, Cochran, TA, Pomrenze, MB, Galer, EL, Kopajtic, TA, Li, CM, Amat, J, Larson, G, Cooper, DC, Huang, Y, *O'Neill, CE, Yin, H, Zahniser, NR, Katz, JL, Rice, KC, Maier, SF, **Bachtell, RK**, Watkins, LR (2015). DAT isn't all that: cocaine reward requires Toll Like Receptor 4 signaling. *Molecular Psychiatry*. Epub Feb. 3, 2015

34. **Bachtell, RK**, Hutchinson, MR, Wang, X, Rice, KC, Maier, SF, Watkins, LR (2015). Targeting the toll of drug abuse: The translational potential of toll-like receptor 4. *CNS & Neurological Disorders - Drug Targets*, 14(6).

35. Klipec W, Burrow K, *O'Neill CE, Cao J, Lawyer CR, Ostertag E, **Bachtell RK**, Illig KR, Cooper DC (*submitted*). Loss of the trpc4 gene is associated with a selective reduction in cocaine reward and reduced spontaneous ventral tegmental area dopamine neuronal activity. *Behavioral Brain Research.*

Published Abstracts and Poster Presentations:

1. O'Neill CE, Levis SC, Schreiner D, Bachtell RK (2014). Blockade of presynaptic and postsynaptic adenosine A_{2A} receptors produces bi-directional effects on cocaine seeking. Neuropsychopharmacology.
2. Stafford J, O'Neill CE, Newsome RJ, Levis SC, Scott T, **Bachtell RK** (2014). Effects of adolescent caffeine consumption on anxiety behaviors, plasma corticosterone, and neural activity. Soc. for Neuroscience Abst. 33.08
3. O'Neill CE, Levis SC, Schreiner D, **Bachtell RK** (2014). Opposing effects of pre- and postsynaptic adenosine A_{2A} receptor blockade on cocaine seeking. Soc. for Neuroscience Abst. 430.09
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