



R. Christopher Pierce, Ph.D.  
Curriculum Vitae  
May, 2012



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### Work Address and Phone Numbers

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### Personal Information

Date and Place of Birth: 21 November 1966 (Somerset, KY)  
Web Site: <http://www.piercelab.org>

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### Education

Ph.D.	1993	Indiana University, Bloomington, IN (Neuroscience and Psychology)
B.A.	1988	University of Kentucky, Lexington, KY (Psychology)

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### Professional Experience

2008 - present	Associate Professor (with tenure) of Neuroscience, Department of Psychiatry University of Pennsylvania School of Medicine
2008	Visiting Scientist, Rudolf Magnus Neuroscience Institute, University of Utrecht, The Netherlands
2008	Professor, Departments of Pharmacology and Psychiatry Boston University School of Medicine
2003 - 2008	Associate Professor, Departments of Pharmacology and Psychiatry Boston University School of Medicine
1997 - 2003	Assistant Professor, Departments of Pharmacology and Psychiatry Boston University School of Medicine
1995 - 1997	Research Assistant Professor, Department of Veterinary Comparative Anatomy, Pharmacology and Physiology, Washington State University
1993 - 1995	Postdoctoral Fellow, Alcohol and Drug Abuse Program, Washington State University, Dr. Peter W. Kalivas, advisor
1989 - 1993	Graduate Studies, Department of Psychology/Program in Neural Science, Indiana University, Dr. George V. Rebec, advisor
1988 - 1989	Statistical Consultant/Laboratory Technician, Forestry Department, University of Kentucky, Dr. David Wagner, supervisor
1987 - 1988	Laboratory Technician, Psychology Department, University of Kentucky Dr. Michael Bardo, supervisor
1985 - 1987	Assistant Director, Standardbred Development Fund Kentucky Harness Racing Commission

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## Consulting

Scientific Consultant for Cocaine Addiction Pharmacotherapy, NIDA (Nora Volkow, director)  
Scientific advisor, SimBiotic Software (Ithaca, NY - makers of GeneBeaker educational software)

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## Grants and Awards

### Active

R01 DA33641, R.C. Pierce (PI) 4/01/12-3/31/17  
NIH/NIDA "Transgenerational Inheritance of a Cocaine Resistance Phenotype"  
Approximately \$2,200,000 total costs  
The major goal of this project is to assess the role of BDNF in the resistance to cocaine self-administration among the offspring of cocaine-experienced sires.

R01 DA22339, R.C. Pierce (PI) 5/15/08-4/30/13  
NIH/NIDA "D1 Dopamine Receptor Signaling and Cocaine Reinstatement"  
Approximately \$1,800,000 total costs.  
The major goal of this project is to assess influences of dopamine receptor signaling on glutamate transmission in the nucleus accumbens during the reinstatement of cocaine seeking.

R01 DA15214, R.C. Pierce (PI) 2/10/03-1/31/13  
NIH/NIDA "mPFC, N. Accumbens and Reinstatement of Cocaine Seeking"  
Approximately \$3,000,000 total costs  
The major goal of this project is to assess the roles of dopamine and glutamate in the medial prefrontal cortex and nucleus accumbens in the reinstatement of cocaine-seeking behavior in rats.  
Supplement to DA15214 (\$50,000 direct costs for 2009-2010) funded under the auspices of the U.S.–Netherlands Binational Research Collaboration on Drug Abuse and Addiction. Dutch collaborator: Louk Vanderschuren from the University of Utrecht.

K02 DA18678, R.C. Pierce (PI) 4/01/06-03/31/16  
NIH/NIDA "Psychostimulant-induced craving and toxicity"  
Approximately \$1,200,000 total costs  
This independent scientist award provides salary support for the PI.

T32 DA28874, R.C. Pierce and A.R. Childress (co-PIs) 7/01/2010-6/30/2013  
NIH/NIDA "Translational Addiction Research Fellowship"  
Approximately \$366,500 total costs.  
This is a pre- and post-doctoral training grant focused on translational addiction research.

K01 DA31747, Ortinski (PI) 4/01/12-3/31/17  
Control of Cocaine Seeking by D1-dependent Modulation of NMDA Signaling  
Approximately \$706,000 total costs.  
The mentored award focuses on interactions between dopamine and glutamate receptors that underlie cocaine-seeking behavior.  
Role: Mentor

Active Awards cont.

K01 DA30445, Schmidt (PI) 9/15/2010-5/31/2015  
Epigenetics and Incubation of Craving  
Approximately \$683,000 total costs.  
The mentored award focuses on the epigenetic mechanisms underlying the increases in BDNF transcription associated with the incubation of cocaine craving.  
Role: Mentor

F31 DA31535, White (PI) 5/01/2011-4/30/2014  
Cocaine Reinstatement and AMPA Receptor Trafficking  
Approximately \$124,000 total costs.  
This NRSA focuses on the role of AMPA glutamate receptors in an animal model of cocaine craving.  
Role: Mentor

Inactive Grants and Awards

F30 DA14205, K. Famous (PI) 7/01/05-5/31/10  
NIH/NIDA "Nucleus Accumbens Glutamate and Cocaine Reinstatement"  
\$213,993 total costs (R.C. Pierce, Mentor)  
This grant was a pre-doctoral National Research Service Award for MD/PhD students.

R01 DA16866, B.K. Yamamoto (PI) 5/01/03-7/01/07  
NIH/NIDA "Chronic Stress and MDMA Neurotoxicity"  
\$1,128,554 total costs (R.C. Pierce, co-Investigator)  
The major goal of this project is to assess the possible synergistic interactions between prior MDMA exposure and chronic stress and to assess the influence of these variables on subsequent drug self-administration.

R03 DA17166, R.C. Pierce (PI) 3/01/05-2/28/07  
NIH/NIDA "Ephrins and Repeated Cocaine"  
\$161,500 total costs  
This project focused on the effects of cocaine self-administration on the expression of ephrins and Eph receptors in the nucleus accumbens

F31 DA16824, H.D. Schmidt (PI) 8/01/03-7/31/06  
NIH/NIDA NRSA "Eph Receptors and Behavioral Sensitization to Cocaine"  
\$129,742 total costs (R.C. Pierce, Mentor)  
This grant was a pre-doctoral National Research Service Award for PhD students.

R01 NS40783, J.-J. Soghomonian (PI) 3/01/02-1/01/06  
NIH/NINCDS "Behavioral Sensitization and Parkinson's Disease"  
\$1,092,500 total costs (R.C. Pierce, co-Investigator)  
The major goal of this project was to assess the roles of GABA and serotonin in behavioral sensitization to L-DOPA in the 6-OHDA model of Parkinson's disease.

R01 DA13724, D.H. Farb (PI) 5/01/02-4/30/05  
NIH/NIDA "Neuroactive Steroids, Dopamine and Cocaine Sensitization"  
\$777,125 total costs (R.C. Pierce, co-Principal Investigator)  
The major goal of this project was to assess the influence of neuroactive steroids that modulate ionotropic glutamate receptors on dopamine-mediated neurotransmission and behavior.

Inactive Grants and Awards cont.

F31 DA15263, S.M. Anderson (PI) 4/01/02-8/01/05  
NIH/NIDA "Role of the mPFC in Reinstatement of Drug Seeking"  
\$107,151 total costs (R.C. Pierce, Mentor)  
This grant was a pre-doctoral National Research Service Award for PhD students.

F30 DA14205, A.A. Bari (PI) 1/01/01-1/01/07  
NIH/NIDA "Role of the mPFC in Reinstatement of Drug Seeking"  
\$212,681 total costs (R.C. Pierce, Mentor)  
This grant was a pre-doctoral National Research Service Award for MD/PhD students.

R01 DA12171, R.C. Pierce (PI) 9/30/99-7/31/03  
NIH/NIDA "Neurotrophins and Repeated Cocaine"  
\$708,285 total costs  
The major goal of this project was to assess the role of NT-3 and related second messengers in the behavioral and neuronal plasticity resulting from repeated cocaine injections.

F31 DA14435, S.C. Licata (PI) 7/02/01-5/31/03  
NIH/NIDA "The Role of Calcium in Cocaine-Induced Sensitization"  
\$92,420 total costs (R.C. Pierce, Mentor)  
This grant was a pre-doctoral National Research Service Award for PhD students.

Minority Supplement, A.Y. Freeman 7/01/01-6/30/02  
NIH/NIDA  
\$17,300 total costs (R.C. Pierce, Mentor)  
This was a minority graduate student supplement grant.

New Investigator Award, R.C. Pierce (PI) 10/01/99-9/30/01  
The Medical Foundation (Harcourt Charitable Foundation)  
\$100,000 total costs "Neurotrophins and Cocaine Addiction"  
The major goal of this project was to assess the effects of neurotrophin-induced plasticity in the mesolimbic dopamine system on cocaine self-administration in rats.

R03 DA11168, R.C. Pierce (PI) 8/05/97-10/30/99  
NIH/NIDA "Dopamine, Calcium and Repeated Cocaine"  
\$154,341 total costs  
The major goal of this project was to assess the role of calcium and calcium-stimulated second messengers in the initiation of behavioral sensitization to cocaine.

Young Investigator Award, R.C. Pierce (PI) 7/15/99-7/14/01  
National Alliance for Research on Schizophrenia and Depression  
\$60,000 total costs "The Role of Calcium in Behavioral Sensitization to Cocaine"  
The major goal of this project was to assess the role of L-type calcium channels in the enhanced accumbal dopamine release observed in cocaine-sensitized rats.

Young Investigator Award, R.C. Pierce (PI) 7/15/97-7/14/99  
National Alliance for Research on Schizophrenia and Depression  
\$60,000 total costs "The Role of Calcium in Behavioral Sensitization to Cocaine"  
The major goal of this project was to assess the role of L-type calcium channels in the enhanced accumbal dopamine release observed in cocaine sensitized rats.

Inactive Grants and Awards cont.

Washington State Alcohol and Drug Abuse Grant Support Program

R.C. Pierce (PI) 1/01/96-12/31/96

\$22,600 total direct costs

“The Role of Excitatory Amino Acids in Cocaine Self-Administration Behavior in Rats”

DA05589, R.C. Pierce (PI) 10/01/93-9/30/96

NIH/NIDA “Neurobiology of Cocaine-Induced Behavioral Sensitization”

\$72,900 total direct costs

NRSA Postdoctoral Research Fellowship (Peter Kalivas, Mentor)

Honors and Awards

- 2008 Jacob P. Waletzky Memorial Award for Innovative Research in Drug Addiction and Alcoholism, Society for Neuroscience (\$25,000 honorarium)
  - 2006 Joseph Cochin Young Investigator Award, College on Problems of Drug Dependence (\$1,500 honorarium)
  - 2006 NIDA Independent Scientist Award (K02 Research Career Development Award)
  - 2001 Hall of Fame, Western Hills High School, Frankfort, KY.
  - 1997 Travel Award, 1997 College on Problems in Drug Dependence meeting in Nashville, TN (\$750 travel award).
  - 1995 NIDA Director's Travel Award for the 1995 College on Problems in Drug Dependence meeting in Scottsdale, AZ (\$750 travel award).
  - 1992 J. Stewart and Dagmar K. Riley Dissertation Year Fellowship (\$10,000 fellowship awarded to the outstanding student in the Indiana University Graduate School).
  - 1991 Omnitech Travel Fellowship (\$150 for the Society for Neuroscience meeting in New Orleans).
  - 1991 Research Commendation, Indiana University Psychology Department.
  - 1988 Graduate with Distinction, University of Kentucky College of Arts and Sciences.
  - 1988 Graduate with Honors, University of Kentucky Department of Psychology.
  - 1988 University of Kentucky Oswald Research and Creativity Scholarship (\$150).
  - 1988 University of Kentucky Phi Beta Kappa Scholarly Research Award (\$750).
  - 1988 Griffin Award (outstanding presentation - \$100), Kentucky Academy of Sciences.
  - 1987 Sigma Xi (Scientific Research Honor Society)
  - 1987 Omicron Delta Kappa (Leadership Honor Society)
  - 1986 Psi Chi (Psychology Honor Society)
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## Community Outreach

- 3/16/12 Brain Awareness Day, Franklin Institute, Philadelphia, PA  
 3/17/11 Brain Awareness Day, Franklin Institute, Philadelphia, PA  
 5/06/08 Laboratory tour and presentation outlining animal models of addiction for underprivileged high school students from South Boston.  
 1/23/03 P. O'Donnell (organizer), R.C. Pierce, G. Hanson, K. Anstrom, W. Carlezon, K. Frantz, M. Laruelle, M. Picciotto. Town meeting in Sandy, UT associated with the Winter Conference on Brain Research. *Drug abuse – morality versus medicine: a proper perspective.*

## Editorial Activities

Advisory Editor, Behavioral Pharmacology in Laboratory Animals  
 Psychopharmacology (2009 – present)

### Editorial boards

European Journal of Pharmacology (2008 – present)  
 Neuropsychopharmacology (2009 – present)

### Ad hoc referee

American Journal of Physiology	Journal of Pharmacology and Experimental Therapeutics
Archives of General Psychiatry	Learning & Memory
Behavioral Neuroscience	Nature Neuroscience
Behavioural Pharmacology	Neuroscience
Behavioural Brain Research	Neuropharmacology
Biochemical Pharmacology	Neuropsychopharmacology
Biological Psychiatry	Neurotoxicity Research
Brain Research	Parkinsonism & Related Disorders
Brain Structure and Function	Peptides
Cellular and Molecular Life Sciences	Pharmacology, Biochemistry and Behavior
Chemical Reviews	Physiology and Behavior
Circulation Research	PLoS Biology
Clinical Neuropharmacology	PLoS One
CNS & Neurological Disorders-Drug Targets	Proceedings of the National Academy of Science (USA)
European Journal of Neuroscience	Progress in Molecular Biology and Translational Science
European Neuropsychopharmacology	Progress in Neuro-Psychopharmacology & Biological Psychiatry
Experimental Brain Research	Psychopharmacology
Inflammation Research	Synapse
Journal of Neurochemistry	Trends in Neuroscience
Journal of Neurophysiology	
Journal of Neuroscience	
Journal of Neuroscience Methods	

### Memberships in Scientific Organizations and Committee Service

College on Problems of Drug Dependence (2004-present)  
Awards Committee (2005-2008)  
European Behavioural Pharmacology Society (2005-present)  
Society for Neuroscience, USA (1989-present)

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### Grant Review

#### Regular Member, NIH Study Section

Molecular Neuropharmacology and Signaling (MNPS) 2007 – 2011  
Associate Chair (2009-2010)

#### Temporary Member, NIH Study Sections

Molecular Neuropharmacology and Signaling (MNPS)  
Biobehavioral Regulation, Learning and Ethology (BRLE)  
Biobehavioral and Behavioral Processes-1 (BBBP-1)  
Training and Career Development Subcommittee (NIDA-K)

#### NIH Special Emphasis Panels

Extinction and Pharmacotherapies for Drug Addiction  
NIDA Program Projects  
Neurobiology of Substance Abuse Behavior (ZRG1 NNB 04)  
Scientific Review Group for Program Projects (ZDA1 KXA-N 22 P)  
Behavioral Science Track Awards for Rapid Transition (ZDA1 JXP-R31)  
Special Emphasis Panel (ZRG1 IFCN-A)  
Cutting-Edge Basic Research Awards (CEBRA)

#### Non-NIH

The Netherlands Organisation for Health Research and Development (ZonMw)  
New York University Intramural Grant Program  
Veterans Administration (USA)  
Medical Research Council (United Kingdom)  
Royal Society of New Zealand Centres of Research Excellence Fund  
Innovative Research Incentives Scheme, Netherlands Organisation for Scientific Research  
European Science Foundation

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## Administrative Service

### University of Pennsylvania

Neuroscience Graduate Group Admissions Committee (2009 – present)

Chair (2011 – present)

This committee processes 210-260 applications to the Neuroscience Graduate Group PhD program and interviews 45-55 of these students for 15-20 slots in the program per year.

Chair, Neuroscience Graduate Group Rotation Talks (2009 – 2010)

### Boston University

Chair of Steering Committee, Interdepartmental Program in Biomedical Neuroscience (2002 – 2004)

Executive Committee, Interdepartmental Program in Biomedical Neuroscience (2002 – 2004)

Medical School Laboratory Animal Science Center User Committee (2006 – 2008)

Medical School Committee on Curriculum Reform (Vertical Integration) (2005 - 2006)

Medical School Curriculum Committee (1999 - 2003)

Medical School Committee on Training in the Responsible Conduct of Research (2001 - 2003)

Department of Pharmacology Graduate Education Committee (2001 - 2008)

Department of Pharmacology Awards Committee (2001 - 2008)

Department of Pharmacology Space Committee (2001 - 2003)

Steering Committee, Program in Neuroscience (2005 - 2008)

Science Day Awards Committee (2000, 2001, 2004)

### Other

Neuroscience representative, Indiana University Graduate Student Organization; 1991-1993.

Undergraduate representative on the University of Kentucky Psychology Department Chair Search Committee; 1988.

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## Thesis Advisees

### Doctoral

Antoinette Y. Freeman (PhD, 2002) "The role of endogenous BDNF and NT-3 in cocaine-induced behavioral sensitization: an immunohistochemical and behavioral analysis"

Honors/Awards: NIDA Minority Student Fellowship.

Current position: Assistant Professor, Huston-Tillotson University (Austen, TX).

Stephanie C. Licata (PhD, 2003) "Neurochemical mechanisms within the mesolimbic dopamine system of sensitization to the locomotor-stimulating effect of cocaine in rodents"

Honors/Awards: NIDA NRSA predoctoral fellowship, Russek Student Achievement Award.

Current position: Assistant Professor of Psychiatry, McLean Hospital, Harvard Medical School (Belmont, MA)

Ghazaleh Sadri-Vakili (PhD, 2003) "Neurosteroids modulate ionotropic glutamate receptor-induced dopamine release and locomotor activity in the rat"

Student advised jointly by Chris Pierce and David Farb.

Current position: Instructor of Neurology, Massachusetts General Hospital, Harvard Medical School (Charlestown, MA)

Ausaf A. Bari (PhD, 2004) "The role of nucleus accumbens glutamate and dopamine receptors in cocaine reward" (completing the PhD portion of the combined MD-PhD degree).

Honors/Awards: NIDA NRSA predoctoral fellowship; American Academy of Neurology research scholarship; Wotiz family MD/PhD fellowship; Norris Cotton graduate student award, 31<sup>st</sup> Annual New England Pharmacologists meeting, Russek Student Achievement Award (second place).

Current position: Resident in Neurosurgery, UCLA.

Sharon M. Anderson (PhD, 2005) "The role of dopamine receptor signaling in the rat nucleus accumbens in cocaine-induced reinstatement"

Honors/Awards: NIDA NRSA predoctoral fellowship, Russek Student Achievement Award.

Current position: Maternity leave

Heath Schmidt (PhD, 2006) "The neuronal circuitry underlying the reinstatement of cocaine-seeking behavior in rats"

Honors/Awards: NIDA NRSA predoctoral fellowship, Russek Student Achievement Award.

Current position: Research Associate in Psychiatry, University of Pennsylvania School of Medicine (Philadelphia, PA)

Katie Famous (PhD, 2007; MD, 2010) "The contributions of ionotropic glutamate receptors and CaMKII to the reinstatement of cocaine-seeking behavior in rats"

Honors/Awards: NIDA NRSA predoctoral fellowship, Russek Student Achievement Award.

Current position: Resident in Internal Medicine, Massachusetts General Hospital

Fair Vassoler (PhD, 2011) ""

Samantha White (current)

Advisees continuedMasters

Ausaf A. Bari (MA, 1999) "Increases in N-type calcium channel mRNA in the ventral tegmental area contribute to behavioral sensitization to cocaine"

Current position: Resident in Neurosurgery, UCLA.

Arthur R. Jey (MA, 2001) "An investigation into cortico-accumbal projections and their effect on reinstatement of cocaine seeking behavior"

Current position: Resident in Surgery, University of Rochester (Rochester, NY)

Justin Dunn (MA, 2003) "The role of ionotropic glutamate receptors in the initiation of behavioral sensitization to cocaine"

Current position: Resident in Internal Medicine, Johns Hopkins University (Baltimore, MD)

Brian Inderwies (MA, 2004) ""

Current position: Operations Analyst, Silverlink Communications, Inc.

Natasha D'Agostini (MA, 2006) "Elevated levels of forebrain alpha CaM-KII in the acquisition and maintenance of cocaine self-administration in mice"

Current position: Medical student

Prianka Chawla (MA, 2007) "The role of brain-derived neurotrophic factor on the medial prefrontal cortex in cocaine seeking"

Current position: Medical student, Drexel University

Undergraduate

Tino Hyuhn (BS, 2002). Honors/Awards: Undergraduate Research Opportunities Program award.

Delia Silva (Undergraduate honors in Chemistry, 2004)

Christina Ferrari (Undergraduate honors in Biology, 2004)

Judy Yee (BS, 2007). Honors/Awards: Undergraduate Research Opportunities Program research award.

Menglu Yan (BS, 2008). Honors/Awards: Undergraduate Research Opportunities Program research award.

Thomas Hopkins (current)

Michael McMullen (current)

Post-Doctoral Fellows:

Woo-Kyu Park (2000-2001).

Current position: Senior Research Scientist, Pharmaceutical Screening Research Team, Korea Research Institute of Chemical Technology.

Ruth Reeves (2003-2004).

Current position: Safety Pharmacologist at Sepracor, Inc.

Honors/awards: NIDA post-doctoral fellowship.

Vidhya Kumaresan (2004-2008).

Current position: Research Assistant Professor, Department of Pharmacology, Boston University School of Medicine

Lisa Briand (current, supervised jointly with Dr. Julie Blendy).

Fair Vassoler (current)

Research Associates and Research Assistant Professors (junior faculty):

Heath Schmidt (Research Associate 2008 – 2011, Research Assistant Professor 2011 – present)

Pavel Ortinski (Research Associate 2009 – present)

Thesis Committee Memberships:

Julie Onton (PhD in Neuroscience, 2001) Tufts University School of Medicine, Ronald Hammer, advisor.

Mark Todtenkopf (PhD in Psychology, 2001) Northeastern University, James Stellar, advisor.

Heather Murray (PhD in Pharmacology, 2002) BUSM, Kevin Jarrel, advisor (RCP committee chair).

Janine Steiger (PhD in Pharmacology, 2002) BUSM, Shelley Russek/David Farb, advisors.

William Donohue (PhD in Pharmacology, 2003) BUSM, Kevin Jarrel, advisor (RCP committee chair).

Mathew Jones (PhD in Pharmacology, 2003) BUSM, Katya Ravid, advisor (RCP committee chair).

Yolanda Black (PhD in Psychology, 2003) Boston University, Kathleen Kantak, advisor.

Kirsten Neilsen (PhD in Anatomy and Neurobiology 2004) Boston University School of Medicine, Jean-Jacques Soghomonian, advisor

Andrew Long (PhD in Pharmacology 2005) BUSM, Clive Wood, advisor (RCP committee chair)

Lori Fitz (PhD in Pharmacology 2005) Boston University School of Medicine, Clive Wood, advisor

Barbara Thompson (PhD in Psychology, 2006) Boston University, John Cherry, advisor

Nina Di Pietro (PhD in Psychology 2006) Boston University, Kathleen Kantak, advisor

Herbert Covington (PhD in Psychology 2006) Tufts University, Klaus Miczek, advisor

Ed Lavalley (PhD in Pharmacology 2006) Boston University School of Medicine

Theo Hadjipetros (PhD in Pharmacology 2007) BUSM, Bryan Yamamoto, advisor

Karla Mark (PhD in Pharmacology 2007) BUSM, Bryan Yamamoto, advisor

Amy Janes (PhD in Psychology 2007) Boston University, James Cherry, advisor

David Eyerman (PhD in Pharmacology 2007) BUSM, Bryan Yamamoto, advisor

Noriko Yamamoto (PhD in Anatomy and Neurobiology 2007) BUSM, J.-J. Soghomonian, advisor

Jamie Raudensky (PhD in Pharmacology 2008) BUSM, Bryan Yamamoto, advisor (RCP committee chair)

Hilarie Tomasiewicz (PhD in Neuroscience 2010) Mt. Sinai School of Medicine, Yasmin Hurd, advisor

Maartje Veeneman-Rijkens (PhD in Neuroscience 2011) University of Utrecht, Louk Vanderschuren, advisor

Catherine Wei (PhD in Pharmacology, 2011) Boston University School of Medicine

Current: Laurel Ecke (UPenn), Matthew Young (UPenn; chair), Emilia Moscato (UPenn).

## Teaching Experience

## University of Pennsylvania

Course Manager

Neuropharmacology/Neurochemistry (Graduate Students) – Spring 2010

Managed Neurotransmitters Part II section of course

Neuropsychopharmacology (Graduate Students) – Fall 2010

Managed Addiction section of course

Neuroscience Core III

Will manage Limbic System section (Graduate Students) – Spring, 2012

## Teaching Experience

University of Pennsylvania cont.

### Lecturer

Neuropharmacology/Neurochemistry (Graduate Students) – Spring 2009, 2010  
Lectures on Dopamine and Behavioral Methods  
Neuroscience, Core III (Graduate Students) – Spring 2009, 2010 (Lectures on Addiction)  
Neuropsychopharmacology (Graduate Students) – Fall 2010 (Lecture on Addiction)  
Behavioral Neuroscience (Graduate Students) – Fall 2010 (Lecture on Addiction)  
Foundations of Clinical Neuroscience (Psychiatry Residents) – Spring 2009, 2010  
Lecture on Addiction

Boston University School of Medicine (1997-2008)

### Primary Instructor

Neuropsychopharmacology (Graduate Students) – Fall 1998, Fall 2001, Fall 2003, Fall 2006.  
Current Topics in Pharmacology (Graduate Students) – Spring 2000, Spring 2001, Spring 2005.

### Lecturer

Neuroscience of Substance Abuse Disorders (Psychiatry Residents)  
Lecture on Psychostimulant Abuse and Treatment  
General Medical Pharmacology (Medical Students)  
Lectures on Psychostimulants, Epilepsy, Drugs of Abuse and Dose-response curves  
Medical Neuroscience (Medical Students)  
Lecture on Drugs of Abuse  
Dental Pharmacology (Dental Students)  
Lectures on Drugs of Abuse, Epilepsy, Psychostimulants, Nicotine and Opioids  
Introduction to Medical Pharmacology (Graduate Students)  
Lectures on Drugs of Abuse, Psychostimulants and Nicotine  
Advanced General Pharmacology (Graduate Students)  
Lecture on Dopamine and Opioid Neurophysiology and Pharmacology  
Molecular Neuropharmacology (Graduate Students)  
Lecture on Neuropsychopharmacology, Microdialysis and Behavioral Pharmacology  
Neuroendocrinology (Graduate Students)  
Lecture on Stress-Related Hormones and Psychostimulants

1994, University of Idaho

Primary Instructor; Advanced Pharmacology (Undergraduates)

1989-1993, Indiana University

Primary Instructor: Experimental Psychology (Undergraduates)

Graduate Assistant: Introductory Psychology, Statistical Techniques, Sensation and Perception,  
Drugs and the Nervous System, Advanced Statistics in Psychology (Undergraduates)  
Neuropsychopharmacology (Graduate Students)

Seminar Coordinator: Psychology Undergraduate Summer Research Program (1992 and 1993).

## Publications

71. Vassoler, F.M., S. White, H.D. Schmidt, G. Sadri-Vakili and **R.C. Pierce** (submitted). Inheritance of a cocaine resistance phenotype. *Nature Neuroscience*
70. Ortinski P.I., F.M. Vassoler, G.C. Carlson and **R.C. Pierce** (in press). Temporally dependent changes in cocaine-induced synaptic plasticity in the nucleus accumbens shell are reversed by D1-like dopamine receptor stimulation. *Neuropsychopharmacology*
69. Briand, L.A., F.S. Lee, J.A. Blendy and **R.C. Pierce** (in press). Enhanced extinction of cocaine seeking in brain-derived neurotrophic factor Val66Met knock-in mice. *European Journal of Neuroscience*
68. Schmidt, H.D., G.R. Sangrey, S.B. Darnell, R.L. Schassburger, J.-H.J. Cha, **R.C. Pierce** and G. Sadri-Vakili (2012). Increased BDNF expression in the ventral tegmental area during cocaine abstinence is associated with increased histone acetylation at BDNF exon I-containing promoters. *Journal of Neurochemistry* 120:202-209.
67. Iris Chen, Y.I., K. Famous, H. Xu, J.-K. Choi, J. Mandeville, H.D. Schmidt, **R.C. Pierce** and B.G. Jenkins (2011). Cocaine self-administration leads to alterations in limbic and motor circuitry. *European Journal of Neuroscience* 34:800-815.
66. Yee, J., K.R. Famous, T.J. Hopkins, M.C. McMullen, **R.C. Pierce** and H.D. Schmidt (2011). Muscarinic acetylcholine receptors in the nucleus accumbens core and shell contribute to cocaine priming-induced reinstatement of drug seeking. *European Journal of Pharmacology* 650:596-604.
65. Briand, L., F.M. Vassoler, **R.C. Pierce**, R. Valentino, J. Blendy (2010). Ventral tegmental area afferents in stress-induced reinstatement: The role of CREB. *Journal of Neuroscience* 30:16149-16159.
64. Sadri-Vakili, G., V. Kumaresan, H.D. Schmidt, K.R. Famous, P. Chawla, F.M. Vassoler, R.P. Overland, E. Xia, C.E. Bass, E.F. Terwilliger, **R.C. Pierce** and J.-H.J. Cha (2010). Cocaine-induced chromatin remodeling increases brain-derived neurotrophic factor transcription in the rat medial prefrontal cortex, which alters the reinforcing efficacy of cocaine. *Journal of Neuroscience* 30:11735-11744.
63. **Pierce, R.C.** and L.J.M.J. Vanderschuren (2010). Kicking the habit: The neural basis of ingrained behaviors in cocaine addiction. *Neuroscience and Biobehavioral Reviews* 35:212-219. PMID: PMC2903634
62. Schmidt, H.D. and **R.C. Pierce** (2010). Cocaine-induced neuroadaptations in glutamate transmission: Potential therapeutic targets for craving and addiction. *Annals of the New York Academy of Sciences* 1187:35-75.
61. Vanderschuren, L.J.M.J. and **R.C. Pierce** (2010). Sensitization processes in drug addiction. *Behavioral Neuroscience of Drug Addiction*, D.W. Self and J.K. Staley (Eds.). *Current Topics in Behavioral Neurosciences* 3:179-195.
60. Schmidt, H.D., F.R. Famous and **R.C. Pierce** (2009). The limbic circuitry underlying cocaine seeking encompasses the PPTg/LDT. *European Journal of Neuroscience* 30:1358-1369. PMID: PMC2875792
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14. **Pierce, R.C.**, A.J. Clemens, L.A. Shapiro and G.V. Rebec (1994). Repeated treatment with ascorbate or haloperidol, but not clozapine, elevates extracellular ascorbate in the neostriatum of freely moving rats. *Psychopharmacology* 116:103-109.
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12. Rebec, G.V. and **R.C. Pierce** (1994). A vitamin as neuromodulator: ascorbate release into the extracellular fluid of the brain regulates dopaminergic and glutamatergic transmission. *Progress in Neurobiology* 43:537-565.
11. **Pierce, R.C.** and G.V. Rebec (1993). Intraneostriatal administration of glutamate antagonists increases behavioral activation and decreases neostriatal ascorbate via nondopaminergic mechanisms. *Journal of Neuroscience* 13:4272-4280.
10. Rebec, G.V., P.E. Langley, **R.C. Pierce**, Z. Wang and B.A. Heidenreich (1993). A simple micromanipulator for multiple uses in freely moving rats: electrophysiology, voltammetry, and simultaneous intracerebral infusions. *Journal of Neuroscience Methods* 47:53-59.



9. **Pierce, R.C.**, Miller, D.W., D.B. Reising and G.V. Rebec (1992). Unilateral neostriatal kainate, but not 6-OHDA, lesions block dopamine agonist-induced ascorbate release in the neostriatum of freely-moving rats. *Brain Research* 597:138-143.
8. **Pierce, R.C.** and G.V. Rebec (1992). Dopamine-, NMDA-, and sigma-receptor antagonists exert differential effects on neostriatal ascorbate and DOPAC in awake, behaving rats. *Brain Research* 579:59-66.
7. Yount, S.E., M.E. Kraft, **R.C. Pierce**, P.E. Langley and G.V. Rebec (1991). Acute and long-term amphetamine treatments alter extracellular ascorbate in neostriatum but not nucleus accumbens of freely moving rats. *Life Sciences* 49:1237-1244.
6. **Pierce, R.C.**, J.K. Rowlett, M.T. Bardo and G.V. Rebec (1991). Chronic ascorbate potentiates the effects of chronic haloperidol on behavioral supersensitivity but not D2 dopamine receptor binding. *Neuroscience* 45:373-378.
5. **Pierce, R.C.** and G.V. Rebec (1990). Stimulation of both D-1 and D-2 dopamine receptors increases behavioral activation and ascorbate release in the neostriatum of freely moving rats. *European Journal of Pharmacology* 191:295-302.
4. Bardo, M.T., S.L. Bowling and **R.C. Pierce** (1990). Changes in locomotion and dopamine neurotransmission following amphetamine, haloperidol, and exposure to novel environmental stimuli. *Psychopharmacology* 101:338-343.
3. **Pierce, R.C.**, C.A. Crawford, A.J. Nonneman, B.A. Mattingly and M.T. Bardo (1990). Effect of forebrain dopamine depletion on novelty-induced place preference behavior in rats. *Pharmacology, Biochemistry and Behavior* 36:321-325.
2. Neisewander, J.L., **R.C. Pierce** and M.T. Bardo (1990). Naloxone enhances the expression of morphine-induced conditioned place preference. *Psychopharmacology* 100:201-205.
1. Bardo, M.T., J.L. Neisewander and **R.C. Pierce** (1989). Novelty-induced place preference behavior in rats: Effects of opiate and dopaminergic drugs. *Pharmacology, Biochemistry and Behavior* 32:683-689.

**Books Edited**

1. **Pierce, R.C.** and P.J. Kenny (in press) *Addiction*. Cold Spring Harbor Press.
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**Other Publications**

4. **Pierce, R.C.** (2003). *Drugs of Abuse. Informational brochure published by Sigma-RBI.*
  3. **Pierce, R.C.** and P.W. Kalivas (1994). The role of nucleus accumbens dopamine and excitatory amino acids in the expression of cocaine-induced behavioral sensitization in rats. *Behavioural Pharmacology* 5:108.
  2. **Pierce, R.C.**, Z. Wang, B.A. Heidenreich, P.E. Langley and G.V. Rebec (1992). An easily-fabricated electrode holder for recordings from awake, behaving animals. *Kopf Carrier* 32:1-5.
  1. **Pierce, R.C.** and G.V. Rebec (1991). In vivo voltammetry in freely moving rats: Effects of dopamine agonists and neuroleptics on neostriatal ascorbate. *Current Separations* 10:94-95.
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**Book Chapters:**

3. Famous, K.R. and **R.C. Pierce**. (2008). The role of nucleus accumbens glutamate in cocaine craving and addiction. In: H.N. David (Ed.) *The Nucleus Accumbens: Neurotransmitters & Related Behaviours*.
  2. **Pierce, R.C.** and P.W. Kalivas (1997, revised 2007). Locomotor behavior. In: J. Crawley (Ed.) *Current Protocols in Neuroscience*.
  1. Rebec, G.V., **R.C. Pierce**, and E.A. Kiyatkin (1997). Modulation of glutamate-induced excitation of striatal neurons by dopamine iontophoresis in awake, unrestrained rats. *The Basal Ganglia V*.
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## Invited Seminars:

- April 13, 2012 Departments of Physiology and Cell Biology, *Pontificia Univerisidad Catolica de Chile*, Santiago, Chile
- December 22, 2011 Center for Substance Abuse Research, *Temple University School of Medicine*, Philadelphia, PA
- May 2, 2011 NIDA's Neuroscience Consortium Cutting Edge Symposium, *NIDA*, Rockville, MD
- April 21, 2011 Department of Pharmacology, *Mt. Sinai School of Medicine*, New York, NY
- November 4, 2010 Department of Neurology & Neuroscience, *Weill Cornell Medical College*, New York, NY
- September 16, 2010 Department of Physiology and Pharmacology, *Wake Forest University School of Medicine*, Winston-Salem, NC
- June 23, 2010 Department of Pharmacology, *Penn State College of Medicine*, Hershey PA
- March 30, 2010 Department of Neuroscience, *Univ. of Connecticut Health Center*, West Hartford, CT
- April 29, 2009 Department of Pharmacology, *University of Memphis*, Memphis TN
- February 24, 2009 Division of Intramural Research, *Addiction Research Center*, Baltimore, MD.
- April 30, 2008 Department of Pharmacology, *Rosalind Franklin University*, Chicago, IL
- April 9, 2008 Department of Pharmacology, *Temple University*, Philadelphia, PA
- March 25, 2008 Department of Neuroscience, *University of Bordeaux 2*, France
- March 13, 2008 Department of Pharmacology, *Free University of Amsterdam*, the Netherlands
- March 12, 2008 Rudolf Magnus Institute, *University of Utrecht*, the Netherlands
- Dec. 4, 2007 Department of Biomedical Sciences, *Marquette University*, Milwaukee, WI
- Sept. 27, 2007 Department of Psychiatry, *University of Pennsylvania*, Philadelphia, PA
- May 2, 2007 Depts. of Psychiatry & Neuroscience, *Einstein Medical College*, Bronx, NY
- March 22, 2007 Ernest Gallo Clinic and Research Center, *University of California*, San Francisco, Emeryville, CA
- August 24, 2006 Division of Clinical Pharmacology, *Vanderbilt University*, Nashville, TN
- February 25, 2005 Psychology Department, *Boston College*, Boston, MA
- May 18, 2004 Psychiatry Department, *Harvard Medical School (McLean Hospital)*, Boston, MA
- May 17, 2004 Neuroscience Department, *Brown University*, Providence, RI.
- February 27, 2004 Program in Neural Science, *Indiana University*, Bloomington, IN
- February 19, 2003 Department of Pharmacology and Experimental Therapeutics, *Tufts University Health Sciences Campus*, Boston, MA.
- October 18, 2002 Department of Physiology and Neuroscience, *Medical University of South Carolina*, Charleston, SC.
- June 3, 2002 Department of Pharmacology, *University of New England School of Osteopathic Medicine*, Biddeford, ME.
- February 8, 2002 Department of Pathology, *Boston University School of Medicine*, Boston, MA.
- January 9, 2002 Division of Intramural Research, *Addiction Research Center*, Baltimore, MD.
- April 9, 2001 Department of Psychiatry, *Yale University School of Medicine*, New Haven, CT.
- March 29, 2001 Department of Pharmacology, *Northeastern University*, Boston, MA.
- February 1, 2001 Department of Psychiatry (Grand Rounds), *Boston University School of Medicine*, Boston, MA.
- December 20, 2000 Department of Neuroscience, *Tufts University Health Sciences Campus*, Boston, MA.
- October 20, 2000 Department of Anatomy and Neurobiology, *Boston University School of Medicine*, Boston, MA.

October 13, 1999	Department of Pharmacology and Experimental Therapeutics, <i>Tufts University Health Sciences Campus</i> , Boston, MA.
February 13, 1998	Psychology Department, <i>Boston University</i> , Boston, MA.
May 16, 1997	Psychology Department, <i>Barnard College</i> , New York, NY.
April 18, 1997	Pharmacology Department, <i>University of Minnesota</i> , Duluth, MN.
January 30, 1997	Behavioral Pharmacology Section, <i>Schering-Plough Inc.</i> , Kenilworth, NJ.
October 11, 1996	Yerkes Regional Primate Center, <i>Emory University</i> , Atlanta, GA.
March 15, 1996	Psychology Department, <i>University of Illinois</i> , Champagne-Urbana, IL.
February 8, 1996	Psychology Department, <i>University of Wisconsin</i> , Milwaukee, WI.
December 1, 1995	Psychology Department, <i>State University of New York at Binghamton</i> .
February 3, 1995	Psychology Department, <i>University of Delaware</i> , Newark, DE.

### Professional Meetings: Program Organization and Invited Presentations

- Pierce, R.C.** (participant), M. Lynch (organizer), J. Rutter, L. Bierut, P. Kenny, J. Stitzel. *CPDD satellite meeting: Fundamental genetics in drug abuse and addiction*. Hollywood, FL (June, 2011).
- Pierce, R.C.** (participant), C. O'Brien (organizer), G. Koob, P. Piazza, T. Crowley. The impact of animals on the definition of addiction. *Winter Conference on Brain Research, 43<sup>rd</sup> Annual Meeting*; Keystone, CO (January, 2011).
- Pierce, R.C.** (participant), James McCutcheon (organizer), C. Bellone, K. Szumlinski. Metabotropic glutamate receptor regulation of AMPA receptors in addiction: From physiology to behavior. *Winter Conference on Brain Research, 43<sup>rd</sup> Annual Meeting*; Keystone, CO (January, 2011).
- Pierce, R.C.** (participant). U.S.-Netherlands workshop on binational research collaboration on drug abuse and addiction. Washington, D.C. (October 2009).
- Pierce, R.C.** (participant), T. De Vries (organizer), R. LaLumiere, M. Wolf, S. Spijker. Too much excitement? Role of glutamate signaling in relapse to drug seeking. *Winter Conference on Brain Research, 42<sup>nd</sup> Annual Meeting*; Copper Mountain, CO (January, 2009).
- Pierce, R.C.** (participant), J. McGinty (organizer), G. Snyder, D. Sibley. Under construction: Phospho-bridges integrate dopamine and glutamate signaling in the striatal cytoskeleton. *Winter Conference on Brain Research, 42<sup>nd</sup> Annual Meeting*; Copper Mountain, CO (January, 2009).
- Pierce, R.C.** (presentation of Jacob P. Waletzky Memorial Lecture); Introduction by NIDA Director Nora D. Volkow; Co-chairs: Catharine Sasek and Rita Liu; CaMKII: a biochemical bridge linking accumbens dopamine and glutamate systems in cocaine seeking. *Frontiers in Addiction Research: 2008 NIDA Mini-Convention*; Washington, DC (November, 2008).
- Pierce, R.C.** (organizer and participant), C. Colvis (co-organizer), G. Sadri-Vakili, A. West, C. Ferris. Epigenetics of cocaine addiction. *Winter Conference on Brain Research, 40<sup>th</sup> Annual Meeting*; Snowmass, CO (January, 2007).
- Pierce, R.C.** (organizer), P. Mermelstein, H. Schmidt, A. Rajadhyaksha, X.-T. Hu. Psychostimulants, L-type calcium channels and the 'Yin and Yang' of PKA signaling in the nucleus accumbens. *Winter Conference on Brain Research, 39<sup>th</sup> Annual Meeting*; Steamboat, CO (January, 2006).
- Pierce, R.C.** (speaker). Neuropsychopharmacology of aggression and addiction. *European Journal of Pharmacology Spring Meeting*; Ziest, The Netherlands (June, 2005).
- Pierce, R.C.** (chair and participant), A.M. Brady (co-chair), S. Totterdell, S. Floresco, J. Parkinson, M. Andrzejewski. Dopamine-glutamate interactions in the nucleus accumbens: from anatomy and physiology to behavior. *Society for Neuroscience, 34<sup>th</sup> Annual Meeting*; San Diego, CA (October, 2004).
- Pierce, R.C.** (participant), W.A. Carlezon (organizer). Psychopharmacology Social. *Society for Neuroscience, 34<sup>th</sup> Annual Meeting*; San Diego, CA (October, 2004).
- Pierce, R.C.** (co-organizer and participant), M. Lynch (co-organizer), D. Self, P. DiCiano, K. McFarland. Nucleus accumbens glutamate and addiction: Axis of evil or coalition against craving? *Winter Conference on Brain Research, 37<sup>th</sup> Annual Meeting*; Copper Mountain, CO (January, 2004).

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- Pierce, R.C.** (organizer), W. Carlezon, C. Kornetsky, K. Miczek, M. Picciotto, G. Rebec, T. Robinson, J. Stewart, B. Yamamoto. Psychopharmacology Social. *Society for Neuroscience, 33<sup>rd</sup> Annual Meeting*; New Orleans, LA (November, 2004).
- Pierce, R.C.** (organizer), L. Porrino, K. Miczek, S. Deadwyler, G. Koob, C. Kornetsky, M. Adler, S. Izenwasser, E. Unterwald, O McNeil, C. Walsh. Current perspectives on drug abuse research: a symposium in honor of Conan Kornetsky, Ph.D. (BUSM; 10 October 2003).
- Pierce, R.C.** (participant), K. Szumlinski (co-organizer and participant), P. Kalivas (co-organizer and discussant), W. Carlezon, D. Self. It's what's on the inside that counts: role of intracellular signaling and scaffolding proteins in addiction. *College on Problems of Drug Dependence, 65<sup>th</sup> Annual Meeting*; Bal Harbour, FL (June, 2003).
- Pierce, R.C.** (participant), G. Lin (conference organizer). Stem cells – opportunities for drug abuse research. Baltimore, MD (February, 2003).
- Pierce, R.C.** (participant), P. O'Donnell (organizer), G. Hanson, K. Anstrom, W. Carlezon, K. Frantz, M. Laruelle, M. Picciotto. Town meeting in Sandy, UT. Drug abuse – morality versus medicine: a proper perspective. *Winter Conference on Brain Research, 36<sup>th</sup> Annual Meeting*; Sandy, UT (January, 2003).
- Pierce, R.C.** (symposium organizer and participant) J.K. Rowlett, R. See, F. Weiss. Anatomical and pharmacological determinants of relapse to cocaine-seeking behavior. *Winter Conference on Brain Research, 35<sup>th</sup> Annual Meeting*; Snowmass Village, CO (January, 2002).
- Pierce, R.C.** (participant), W. Carlezon (organizer and participant), B. Catterall, C. Konradi. No bones about it: Roles for calcium in the acute and chronic actions of drugs of abuse. *Winter Conference on Brain Research, 35<sup>th</sup> Annual Meeting*; Snowmass Village, CO (January, 2002).
- Pierce, R.C.** (organizer), K. Seroogy, A. Altar, J. Taylor, C. Flores. Neurotrophic factor-induced dopaminergic plasticity in animal models of Parkinson's disease and drug addiction. *Winter Conference on Brain Research, 34<sup>th</sup> Annual Meeting*; Steamboat Springs, CO (January, 2001).
- Pierce, R.C.** (participant), K. Neve (organizer), A. Janowsky, K. Merchant, V. Watts. Psychostimulant-induced sensitization: behavioral and cellular models. *Winter Conference on Brain Research, 33<sup>rd</sup> Annual Meeting*; Breckenridge, CO (January, 2000).
- Pierce, R.C.** (participant), A. Kelley (organizer), B. Everitt, F. White. Selective changes in dopaminergic transmission in the shell of the nucleus accumbens associated with exposure to novel stimuli and behavioral sensitization to cocaine. *Annual Meeting of the American College of Neuropsychopharmacology*; San Juan, Puerto Rico (December, 1995).
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## Papers Presented at Professional Meetings

- Pavel I. Ortinski, Fair M. Vassoler, Gregory C. Carlson and R. Christopher Pierce. Temporally dependent changes in cocaine-induced synaptic plasticity in the nucleus accumbens shell are reversed by d1-like dopamine receptor stimulation. *European Behavioural Pharmacology Society, 14<sup>th</sup> Biennial Meeting*; Amsterdam, Netherlands (September, 2011).
- F.M. Vassoler, S.L. White, P. I. Ortinski, M.D. Alter, G.Sadri-Vakili and R.C. Pierce. Trans-generational epigenetic transmission of a cocaine-resistance phenotype. *European Behavioural Pharmacology Society, 14<sup>th</sup> Biennial Meeting*; Amsterdam, Netherlands (September, 2011).
- Ortinski, P.I., F.M. Vassoler, G.C. Carlson and **R.C. Pierce**. Temporally dependent changes in cocaine-induced synaptic plasticity in the nucleus accumbens shell are reversed by D1-like dopamine receptor stimulation. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Vassoler, F.M., S.L. White, P.I. Ortinski, G. Sadri-Vakili and **R.C. Pierce**. Paternal transmission of a cocaine resistance phenotype. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Kimmey, B., L.A. Briand, R.L. Huganir and **R.C. Pierce**. The role of glutamate receptor interacting protein (GRIP) within the nucleus accumbens in the reinstatement of cocaine seeking. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Schmidt, H.D., R. Schassburger, T.J. Hopkins and **R.C. Pierce**. mGluR1/5 and D2 dopamine receptor stimulation promotes cocaine seeking via PKC-induced modulation of AMPA receptor trafficking in the nucleus accumbens. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- White, S.L., F.M. Vassoler, J.A. Moron-Concepcion, Schmidt, H.D. and **R.C. Pierce**. Reversal of CaMKII-mediated phosphorylation of GluA1 subunits in the dorsolateral striatum associated with the reinstatement of cocaine seeking. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Akay, C., M. Cooper, A. Odeleye, M.G. White, S. Cross, D.R. Cook, F.M. Vassoler, P.J. Gannon, A.M. Buch, M. Pena, D. LaMorte, E.S. Anderson, M. Christofidou-Solomidou, K.A. Lindl, **R.C. Pierce**, D.L. Kolson and K.L. Jordan-Sciutto. Antiretroviral drugs induce oxidative stress and neuronal death in the central nervous system. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Pierce, R.C.**, White, S.L., P.I. Ortinski, G. Sadri-Vakili and F.M. Vassoler. Trans-generational epigenetic transmission of a cocaine resistance phenotype. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Briand, L.A. F.S. Lee, J.A. Blendy and **R.C. Pierce**. A genetic variant of brain-derived neurotrophic factor (BDNF) leads to enhanced extinction of appetitive responding. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Schassburger, R., T.J. Hopkins, **R.C. Pierce**, J.A. Blendy and H.D. Schmidt. Systemic administration of an acetylcholinesterase inhibitor attenuates nicotine reinforcement and the reinstatement of nicotine-seeking behavior in rats. *Society for Neuroscience, 41<sup>st</sup> Annual Meeting*; Washington, DC (November, 2011).
- Pierce, R.C.**, H.D. Schmidt, S.L. White, J.A. Petko, W. Berrettini and R. Levenson. Cocaine self-administration increases neuronal calcium sensor-1 (NCS-1) levels selectively in the nucleus accumbens core. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- Schassburger, R.L., H.D. Schmidt, T.J. Hopkins, M.E. McMullen and **R.C. Pierce**. Administration of a protein kinase C inhibitor into the nucleus accumbens core or shell attenuates cocaine priming-induced reinstatement of drug seeking. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- White, S.L., H.D. Schmidt and **R.C. Pierce**. Identifying the mechanisms underlying GluR1 subunit trafficking in the nucleus accumbens during cocaine reinstatement. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- Schmidt, H.D., R.L. Schassburger, V. Kumaresan, J.-H.J. Cha, **R.C. Pierce** and G. Sadri-Vakili. Examination of the epigenetic mechanisms underlying the increase in VTA BDNF transcription associated with the incubation of cocaine craving. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).

- Briand, L.A., J.L. Onksen, **R.C. Pierce** and J.A. Blendy. A mouse model of reduced hippocampal neurogenesis exhibits alterations in motivated behavior. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- Ortinski, P.I., Vassoler, F.M., R.L. Schassburger and **R.C. Pierce**. Cocaine self-administration enhances D1 dopamine receptor-mediated potentiation of NMDA receptor currents in principal neurons of the nucleus accumbens shell. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- Espallergues, J., P. Ortinski, M. Johns, F. Tronche, E.S. Deneris, **R.C. Pierce**, S.G. Beck and O. Berton. Optogenetics-based dissection of raphe efferent circuits relevant to depression. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- L.E. Ecke, L.A. Briand, **R.C. Pierce** and J.A. Blendy. Sensitization to stress following prolonged abstinence from cocaine. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- Vassoler, F.M., G.C. Carlson and **R.C. Pierce**. Unraveling the roles of the core and shell of the nucleus accumbens in cocaine reinstatement. *Society for Neuroscience, 40<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2010).
- Briand, L.A., F.M. Vassoler, **R.C. Pierce**, R.J. Valentino and J.A. Blendy. Ventral tegmental afferents in stress-induced reinstatement: The role of CREB. *Insights into the Neurobiology of Addiction*; Arcachon, France (October, 2010).
- Vassoler, F.M., G.C. Carlson and **R.C. Pierce**. Unraveling the roles of the core and shell of the nucleus accumbens in cocaine reinstatement. *Insights into the Neurobiology of Addiction*; Arcachon, France (October, 2010).
- Vassoler, F.M., H.D. Schmidt and **R.C. Pierce**. Examination of the behavioral effects of deep brain stimulation of limbic nuclei in cocaine reinstatement. *Society for Neuroscience, 39<sup>th</sup> Annual Meeting*; Chicago, IL (October, 2009).
- White, S.L., F.M. Vassoler, H.D. Schmidt and **R.C. Pierce**. The role of GABA receptors in the nucleus accumbens core and shell in cocaine priming-induced reinstatement of drug seeking. *Society for Neuroscience, 39<sup>th</sup> Annual Meeting*; Chicago, IL (October, 2009).
- Briand, L.A., H.D. Schmidt, F.M. Vassoler, **R.C. Pierce** and J.A. Blendy. Cocaine self-administration behavior in cAMP response element binding protein (CREB) mutant mice. *Society for Neuroscience, 39<sup>th</sup> Annual Meeting*; Chicago, IL (October, 2009).
- Sadri-Vakili, G., H.D. Schmidt, V. Kumaresan, **R.C. Pierce** and J.-H.J. Cha. Epigenetic regulation of cocaine-induced increased of brain-derived neurotrophic factor in the ventral tegmental area of the rat. *Society for Neuroscience, 38<sup>th</sup> Annual Meeting*; Washington, DC (November, 2008).
- Desbiens, S.C., M.H. Ratner, M.T. Whittaker, K. Kanagarayer, R. Ali, K.R. Famous, H.D. Schmidt, S. Downing, V. Kumaresan, **R.C. Pierce**, T.T. Gibbs and D.H. Farb. Cocaine priming-induced reinstatement of drug seeking is attenuated by pregnanolone hemisuccinate, a negative modulator of glutamate receptor function. *Society for Neuroscience, 38<sup>th</sup> Annual Meeting*; Washington, DC (November, 2008).
- Sadri-Vakili, G., V. Kumaresan, P. Chawla, E. Xia, R.P. Overland, H.D. Schmidt, C.E. Bass, E.F. Terwilliger, **R.C. Pierce** and J.-H.J. Cha. Epigenetic regulation of BDNF in the rat medial prefrontal cortex alters the reinforcing efficacy of cocaine. *Society for Neuroscience, 38<sup>th</sup> Annual Meeting*; Washington, DC (November, 2008).
- Kumaresan, V., G. Sadri-Vakili, J. Yee, M. Yuan, H.D. Schmidt, K.R. Famous, J.-H.J. Cha and **R.C. Pierce**. Metabotropic glutamate receptor 5 (mGluR5) antagonists attenuate reinstatement of cocaine seeking induced by cocaine cues or a cocaine priming injection. *Society for Neuroscience, 38<sup>th</sup> Annual Meeting*; Washington, DC (November, 2008).
- Vassoler, F.M., H.D. Schmidt, M.E. Gerard, K.R. Famous, D.A. Ciraulo, C.M. Knapp, C. Kornetsky and **R.C. Pierce**. Deep brain stimulation of the nucleus accumbens shell or prefrontal cortex attenuates reinstatement of cocaine seeking in rats. *Society for Neuroscience, 38<sup>th</sup> Annual Meeting*; Washington, DC (November, 2008).



- Famous, K.R., G. Sadri-Vakili, V. Kumaresan, H.D. Schmidt, J.-H. Cha and **R.C. Pierce**. Increased transcription of CaM-KII in the rat medial prefrontal cortex promotes the reinstatement of cocaine-seeking behavior. *Society for Neuroscience, 37<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2007).
- Sadri-Vakili, G., V. Kumaresan, K.R. Famous, R.P. Overland, E. Xia, H.D. Schmidt, **R.C. Pierce** and J.-H.J. Cha. Epigenetic regulation of cocaine-induced increases of brain-derived neurotrophic factor transcript in the medial prefrontal cortex of the rat. *Society for Neuroscience, 37<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2007).
- Maclaren, F.R., M.E. Gerard, H.D. Schmidt, K.R. Famous, C.M. Knapp, C. Kornetsky and **R.C. Pierce**. Deep brain stimulation of the nucleus accumbens shell attenuates cocaine priming-induced reinstatement of drug seeking in rats. *Society for Neuroscience, 37<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2007).
- Kumaresan, V., K.R. Famous, C. Bass, D.F. Mierke, E. Terwilliger and **R.C. Pierce**. A tale of tails: trafficking of nucleus accumbens shell GluR1- and GluR2- containing AMPA receptors in the reinstatement of cocaine-seeking. *Society for Neuroscience, 37<sup>th</sup> Annual Meeting*; San Diego, CA (November, 2007).
- R.C. Pierce**. Calcium/calmodulin-dependent protein kinase II (CaM-KII): the biochemical bridge linking nucleus accumbens dopamine and glutamate systems in the reinstatement of cocaine seeking. *European Behavioral Pharmacology, 12<sup>th</sup> Biennial Meeting*; Tübingen, Germany (September, 2007).
- Schmidt, H.D. and **R.C. Pierce**. Cooperative activation of D1-like and D2-like dopamine receptors in the nucleus accumbens shell is required for the reinstatement of cocaine-seeking behavior. *Society for Neuroscience, 36<sup>th</sup> Annual Meeting*; Atlanta, GA (November, 2006).
- Sadri-Vakili, G., V. Kumaresan, R.P. Overland, H.D. Schmidt, K.R. Famous **R.C. Pierce** and J.J. Cha. Cocaine self-administration increases brain derived neurotrophic factor mRNA and histone acetylation in the ventral tegmental area and medial prefrontal cortex of the rat. *Society for Neuroscience, 36<sup>th</sup> Annual Meeting*; Atlanta, GA (November, 2006).
- Yee, J., K.R. Famous and **R.C. Pierce**. Systemic administration of the muscarinic cholinergic antagonist scopolamine attenuates cocaine-primed reinstatement of drug seeking. *Society for Neuroscience, 36<sup>th</sup> Annual Meeting*; Atlanta, GA (November, 2006).
- Famous, K.R., V. Kumaresan, G. Sadri-Vakili, H.D. Schmidt, D.F. Mierke, J. Cha and **R.C. Pierce**. Behavioral and molecular evidence that increased glutamate transmission through AMPA receptors in both the core and shell of the nucleus accumbens promotes the reinstatement of cocaine seeking. *Society for Neuroscience, 36<sup>th</sup> Annual Meeting*; Atlanta, GA (November, 2006).
- Ratner, M.H., S. Desbiens, **R.C. Pierce**, T.T. Gibbs and D.H. Farb. Pregnanolone hemisuccinate inhibits reinstatement of cocaine seeking in rats. *Society for Neuroscience, 36<sup>th</sup> Annual Meeting*; Atlanta, GA (November, 2006).
- Kumaresan, V., G. Sadri-Vakili, J. Yee, H.D. Schmidt, K.R. Famous, N. D'Agostini, J. Cha and **R.C. Pierce**. Role of nucleus accumbens metabotropic receptors (mGluR5) in the reinstatement of cocaine seeking. *Society for Neuroscience, 36<sup>th</sup> Annual Meeting*; Atlanta, GA (November, 2006).
- H.D. Schmidt and **R.C. Pierce**. A novel role for the pedunculo-pontine tegmental nucleus in cocaine priming-induced reinstatement of drug seeking. *Society for Neuroscience, 35<sup>th</sup> Annual Meeting*; Washington, DC (November, 2005).
- K.R. Famous and **R.C. Pierce**. Administration of the NMDA antagonist AP-5 into the nucleus accumbens shell reinstates cocaine-seeking behavior. *Society for Neuroscience, 35<sup>th</sup> Annual Meeting*; Washington, DC (November, 2005).
- V. Kumaresan, H.D. Schmidt and **R.C. Pierce**. Effects of cocaine self-administration on the expression of ephrins and their receptors in the core and shell of the nucleus accumbens. *Society for Neuroscience, 35<sup>th</sup> Annual Meeting*; Washington, DC (November, 2005).
- S.M. Anderson, H.D. Schmidt, K.R. Famous, V. Kumaresan and **R.C. Pierce**. Intra-accumbal shell administration of the D1 dopamine receptor antagonist SKF 81297 promotes cocaine seeking by activating L-type calcium channels and calcium/calmodulin-dependent protein kinase II. *Society for Neuroscience, 35<sup>th</sup> Annual Meeting*; Washington, DC (November, 2005).

- S.M. Anderson and **R.C. Pierce**. Systemic administration of the L-type calcium channel antagonist diltiazem attenuates cocaine priming-induced reinstatement. *College on Problems of Drug Dependence, 67<sup>th</sup> Annual Meeting*; Orlando, FL (June, 2005).
- K.R. Famous, H.D. Schmidt and **R.C. Pierce**. Administration of a D1-like agonist into the infralimbic region of the prefrontal cortex reinstates cocaine-seeking behavior. *Society for Neuroscience, 34<sup>th</sup> Annual Meeting*; San Diego, CA (October, 2004).
- S.M. Anderson and **R.C. Pierce**. Systemic administration of the L-type calcium channel antagonist, diltiazem, attenuates cocaine-priming induced reinstatement of drug-seeking behavior. *Society for Neuroscience, 34<sup>th</sup> Annual Meeting*; San Diego, CA (October, 2004).
- H.D. Schmidt and **R.C. Pierce**. Administration of D1-like or D2 dopamine receptor agonists into the nucleus accumbens shell reinstates cocaine-seeking behavior. *Society for Neuroscience, 34<sup>th</sup> Annual Meeting*; San Diego, CA (October, 2004).
- A.A. Bari, **R.C. Pierce** and D. Silva. Microinjection of D1- or D2-dopamine receptor antagonists but not a D3 antagonist into the core or shell of the nucleus accumbens decreases breakpoint on a progressive ratio schedule for intravenous cocaine self-administration. *Society for Neuroscience, 34<sup>th</sup> Annual Meeting*; San Diego, CA (October, 2004).
- S.M. Anderson, A.A. Bari and **R.C. Pierce**. Administration of D2-like dopamine receptor antagonists into the nucleus accumbens shell attenuates cocaine-priming induced reinstatement of drug-seeking behavior. *Society for Neuroscience, 33<sup>rd</sup> Annual Meeting*; New Orleans, LA (October, 2003).
- A.A. Bari and **R.C. Pierce**. Intra-accumbal microinjection of a D1/5 or D2 dopamine receptor antagonist or AMPA antagonist but not a D3 or NMDA receptor antagonist decreases breakpoint on a progressive ratio schedule for intravenous cocaine self-administration. *Society for Neuroscience, 33<sup>rd</sup> Annual Meeting*; New Orleans, LA (October, 2003).
- S.C. Licata, J.M. Dunn and **R.C. Pierce**. Repeated intra-VTA microinjections of the NMDA agonist, ACPD, enhance the subsequent behavioral response to cocaine. *Society for Neuroscience, 33<sup>rd</sup> Annual Meeting*; New Orleans, LA (October, 2003).
- R.C. Pierce** and B.K. Yamamoto. Cocaine-induced neostriatal dopamine depletion in MDMA-pretreated rats. *Society for Neuroscience, 33<sup>rd</sup> Annual Meeting*; New Orleans, LA (October, 2003).
- H.D. Schmidt and **R.C. Pierce**. Intra-accumbal shell administration of the D1-like dopamine receptor agonist, SKF-81297, reinstates drug seeking behavior. *Society for Neuroscience, 33<sup>rd</sup> Annual Meeting*; New Orleans, LA (October, 2003).
- S.C. Licata and **R.C. Pierce**. Calcium/Calmodulin-dependent protein kinase II in the VTA contributes to cocaine-induced behavioral sensitization. *Society for Neuroscience, 32<sup>nd</sup> Annual Meeting*; Orlando, FL (November, 2002).
- S.M. Anderson, A.A. Bari and **R.C. Pierce**. Antagonism of dopamine receptors in the nucleus accumbens shell attenuates cocaine priming-induced reinstatement of drug-seeking behavior. *Society for Neuroscience, 32<sup>nd</sup> Annual Meeting*; Orlando, FL (November, 2002).
- Sadri-Vakili, G., G.C. Janis, T.T. Gibbs, **R.C. Pierce** and D.H. Farb. Pregnenolone sulfate increases dopamine release in the rat striatum. *Society for Neuroscience, 32<sup>nd</sup> Annual Meeting*; Orlando, FL (November, 2002).
- A.A. Bari and **R.C. Pierce**. Intra-accumbal microinjection of selective dopamine receptor antagonists or a MAP kinase inhibitor lowers the breakpoint on a progressive ratio schedule of reinforcement. *Society for Neuroscience, 31<sup>st</sup> Annual Meeting*; San Diego, CA (November, 2001).
- A.Y. Freeman and **R.C. Pierce**. Repeated Cocaine Injections Increase the Number of Neurotrophin-3 Immunoreactive Neurons in the Rat Medial Nucleus Accumbens and Medial Neostriatum. *Society for Neuroscience, 31<sup>st</sup> Annual Meeting*; San Diego, CA (November, 2001).
- S.C. Licata, A.A. Bari and **R.C. Pierce**. The L-type calcium channel antagonist diltiazem attenuates the development of cocaine-induced behavioral sensitization and blocks the reinstatement of cocaine-seeking behavior. *Society for Neuroscience, 31<sup>st</sup> Annual Meeting*; San Diego, CA (November, 2001).

- W.-K. Park, J.K. Rowlett, R.D. Spealman and **R.C. Pierce**. Cocaine Administered into the Medial Prefrontal Cortex Reinstates Cocaine-Seeking Behavior by Increasing Glutamate and Dopamine Transmission in the Nucleus Accumbens in Rats. *Society for Neuroscience, 31<sup>st</sup> Annual Meeting*; San Diego, CA (November, 2001).
- A.Y. Freeman and **R.C. Pierce**. Localization of TrkB and TrkC receptors in the striatopallidal and striatonigral pathways. *Society for Neuroscience, 30<sup>th</sup> Annual Meeting*; New Orleans, LA (November, 2000).
- Licata, S.C., A.Y. Freeman, A.F. Pierce-Bancroft and **R.C. Pierce**. Repeated stimulation of L-type calcium channels in the ventral tegmental area mimics the initiation of behavioral sensitization to cocaine. *Society for Neuroscience, 30<sup>th</sup> Annual Meeting*; New Orleans, LA (November, 2000).
- Farb, D.H., G. Sadri, D.W. Johnson, G.C. Janis, T.T. Gibbs and **R.C. Pierce**. Inhibition of dopamine release through modulation of excitatory amino acid receptors by a neuroactive steroid. *Society for Neuroscience, 30<sup>th</sup> Annual Meeting*; New Orleans, LA (November, 2000).
- Bari, A.A. and **R.C. Pierce**. Increases in calcium channel mRNA in the ventral tegmental area contribute to behavioral sensitization to cocaine. *Society for Neuroscience, 29<sup>th</sup> Annual Meeting*; Miami, FL (October, 1999).
- Farb, D.H., T.T. Gibbs, S.J. Russek, **R.C. Pierce** and D.W. Johnson. Neurosteroid modulation of glutamate receptors in the CNS: neurochemical, behavioral, and neuroprotective effects. *Boston '99 sponsored by BPS/EBPS*, Boston, MA (September, 1999).
- Pierce, R.C.** The role of the neurotrophins in the initiation of behavioral sensitization to cocaine. *Winter Conference on Brain Research, 32<sup>nd</sup> Annual Meeting*; Snowmass Village, CO (January, 1999).
- Pierce, R.C.**, B. Ghasemzadeh, E.A. Quick, Z.R. Morgan, D. Reeder and P.W. Kalivas. The role of calcium/calmodulin-dependent protein kinase II in behavioral sensitization to cocaine. *Society for Neuroscience, 27<sup>th</sup> Annual Meeting*; Washington, D.C. (October, 1997).
- Cha, X.Y., **Pierce, R.C.**, P.W. Kalivas and S.A. Mackler. NAC-1 is an mRNA increased in the nucleus accumbens after chronic cocaine self-administration. *Society for Neuroscience, 27<sup>th</sup> Annual Meeting*; Washington, D.C. (October, 1997).
- Pierce, R.C.** and P.W. Kalivas. The role of calcium/calmodulin-dependent protein kinase II in behavioral sensitization to cocaine. *College on Problems of Drug Dependence, 59<sup>th</sup> Annual Meeting*; Nashville, TN (June, 1997).
- Pierce, R.C.**, J. Hicks, D. Reeder, Z.R. Morgan and P.W. Kalivas. Bilateral ibotenic acid lesions of the dorsal prefrontal cortex block the expression of behavioral sensitization to cocaine. *Society for Neuroscience, 26<sup>th</sup> Annual Meeting*; Washington, D.C. (November, 1996).
- Cha, X.-Y., **R.C. Pierce**, J.B. Zuckerman, T.R. Kleyman, P.W. Kalivas and S.A. Mackler. Cocaine alters mRNA levels for the Na/K ATPase pump in vivo and in vitro. *Society for Neuroscience, 26<sup>th</sup> Annual Meeting*; Washington, D.C. (November, 1996).
- Pierce, R.C.** and P.W. Kalivas. Repeated intra-VTA administration of the D1 agonist, SKF-38393, induces behavioral and neurochemical sensitization to a subsequent cocaine challenge. *European Behavioral Pharmacology Society, Sixth International Meeting*, Cagliari, Italy (May, 1996).
- Cha, X.-Y., **R.C. Pierce**, P.W. Kalivas and S.A. Mackler. Cocaine-regulated mRNA's in the nucleus accumbens and VTA region of the rat brain. *Society for Neuroscience, 25<sup>th</sup> Annual Meeting*; San Diego, CA (November, 1995).
- Pierce, R.C.** and P.W. Kalivas. The enhanced releasability of nucleus accumbens shell dopamine in rats behaviorally sensitized to cocaine is calcium-dependent. *Society for Neuroscience, 25<sup>th</sup> Annual Meeting*; San Diego, CA (November, 1995).
- Pierce, R.C.** and P.W. Kalivas. The augmented dopamine transmission in the nucleus accumbens shell after daily cocaine is calcium-dependent. *College on Problems in Drug Dependence, 57<sup>th</sup> Annual Meeting*; Scottsdale, AZ (June, 1995).

- Pierce, R.C.** Neurochemical and behavioral techniques for the study of abused drugs: cocaine self-administration, in vivo microdialysis and intracranial drug injections. *1995 Northern Rocky Mountain AALAS Annual Meeting*; Flat Head Lake, MT.
- Rebec, G.V., C.P. Grabner, **R.C. Pierce** and M.T. Bardo. Voltammetry in freely moving rats: Novelty-dependent increases in accumbal dopamine. *Society for Neuroscience, 24<sup>th</sup> Annual Meeting*; Miami, FL (November, 1994).
- Pierce, R.C.**, M. Adams, B. Born, T. Duffy and P.W. Kalivas. The role of nucleus accumbens dopamine and excitatory amino acids in the expression of cocaine-induced behavioral sensitization. *Society for Neuroscience, 24<sup>th</sup> Annual Meeting*; Miami, FL (November, 1994).
- Pierce, R.C.** and P.W. Kalivas. The role of nucleus accumbens dopamine and excitatory amino acids in the expression of cocaine-induced behavioral sensitization. *6<sup>th</sup> International Conference on in vivo Methods*; Seignosse, France (September, 1994).
- Pierce, R.C.** and P.W. Kalivas. The role of nucleus accumbens dopamine and excitatory amino acids in the expression of cocaine-induced behavioral sensitization. *European Behavioral Pharmacology Society, Fifth International Meeting*; Berlin, Germany (September, 1994).
- Pierce, R.C.**, A.J. Clemens, C.P. Grabner and G.V. Rebec. Amphetamine promotes neostriatal ascorbate release via a nigro-thalamo-cortico-neostriatal loop. *Society for Neuroscience, 23<sup>rd</sup> Annual Meeting*; Washington, DC (November, 1993).
- Pierce, R.C.** and G.V. Rebec. Opposing effects of intraneostriatal glutamate agonists and antagonists on neostriatal ascorbate and DOPAC in freely moving rats. *Chicago Chapter of the Society for Neuroscience 1992 Fall Scientific Meeting*; Chicago, IL (December, 1992).
- Clemens, A.J., **R.C. Pierce**, C.P. Grabner, D.K. Geroulis and G.V. Rebec. Differential effects of haloperidol, clozapine, and ascorbate on neostriatal and nucleus accumbens ascorbate and DOPAC as well as behavior. *Chicago Chapter of the Society for Neuroscience 1992 Fall Scientific Meeting*; Chicago, IL (December, 1992).
- Pierce, R.C.**, L.A. Shapiro, A.J. Clemens and G.V. Rebec. Repeated haloperidol and ascorbate treatments increase basal ascorbate but not basal DOPAC in the rat neostriatum. *Society for Neuroscience, 22<sup>nd</sup> Annual Meeting*; Anaheim, CA (October, 1992).
- Rebec, G.V. and **R.C. Pierce**. Ascorbate and dopamine interactions in the neostriatum of awake, behaving rats. *7<sup>th</sup> International Catecholamine Symposium*; Amsterdam, Netherlands (June, 1992).
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- Taylor, M.E., **R.C. Pierce** and G.V. Rebec. In vivo voltammetry in freely moving rats: Dopamine agonists decrease extracellular ascorbate in medial prefrontal cortex. *Society for Neuroscience, 21<sup>st</sup> Annual Meeting*; New Orleans, LA (November, 1991).
- Pierce, R.C.**, P.E. Langley and G.V. Rebec. Intraneostriatal acetylcholine and glutamate, but not amphetamine or dopamine, increase neostriatal ascorbate levels. *Society for Neuroscience, 21<sup>st</sup> Annual Meeting*; New Orleans, LA (November, 1991).
- Miller, D.W., **R.C. Pierce**, D.B. Reising and G.V. Rebec. Unilateral neostriatal kainate, but not 6-OHDA lesions block dopamine agonist-induced ascorbate release in the neostriatum of freely-moving rats. *Society for Neuroscience, 21<sup>st</sup> Annual Meeting*; New Orleans, LA (November, 1991).
- Rowlett, J.K., **R.C. Pierce**, M.T. Bardo and G.V. Rebec. Chronic ascorbate potentiates chronic haloperidol induced behavioral supersensitivity in rats. *Midwestern Psychological Association, 63<sup>rd</sup> Annual Meeting*; Chicago, IL (May, 1991).
- Miller, D.W., **R.C. Pierce** and G.V. Rebec. In vivo voltammetry in freely moving rats: Neostriatal kainic acid lesions inhibit dopamine agonist-induced neostriatal ascorbate release. *Midwestern Psychological Association, 63<sup>rd</sup> Annual Meeting*; Chicago, IL (May, 1991).

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- Rowlett, J.K., **R.C. Pierce**, M.T. Bardo and G.V. Rebec. Alterations in stereotypic behavior and dopamine receptor binding following chronic ascorbate-haloperidol treatment. *Society for Neuroscience, 20<sup>th</sup> Annual Meeting*; St. Louis, MO (October, 1990).
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