MICHAEL PAUL SADDORIS

Department of Psychology & Neuroscience
University of Colorado, Boulder
Wilderness Place, Rm 134
2860 Wilderness Pl, Boulder CO 80304
Tel: 303-735-2927
E-mail: michael.saddoris@colorado.edu

EDUCATION

Johns Hopkins University, Baltimore, MD *2008*
Ph.D., Psychological and Brain Sciences
Mentor: Professor Michela Gallagher

Brown University, Providence, RI *1999*
Sc.B., Cognitive Neuroscience (with honors)
Advisor: Professor Rebecca D. Burwell

PROFESSIONAL EXPERIENCE

University of Colorado, Boulder, CO *present*
Assistant Professor
Department of Psychology & Neuroscience

University of North Carolina, Chapel Hill, NC *2008 – 2014*
Postdoctoral Fellow
Department of Psychology
Mentor: Dr. Regina M. Carelli

Johns Hopkins University, Baltimore, MD 2002 – 2007
Graduate Research Student
Psychological and Brain Sciences
Mentor: Dr. Michela Gallagher

Johns Hopkins University, Baltimore, MD 2000 – 2002
Senior Laboratory Coordinator
Psychological and Brain Sciences
Supervisor: Dr. Geoffrey Schoenbaum

Brown University, Providence, RI 1999 – 2000
Laboratory Technician
Supervisor: Dr. Rebecca Burwell

EXTERNAL RESEARCH SUPPORT

ACTIVE

PI, National Institute on Drug Abuse PHS R01 [DA044980], "*Reversing cocaine-induced impairments in the NAc with controllable stressors*"

Total Direct Costs: $1,371,664

Award Period: 10/1/18 – 9/30/23

Investigating how neural adaptations acquired after experience with controllable stressors may mitigate or reverse neural and behavioral deficits in rats with a history of cocaine abuse

PI, National Institute on Drug Abuse PHS R21 [DA045952], "*Effects of psychostimulant exposure on in vivo adenosine signaling during learning*"

Total Direct Costs: $275,000

Award Period: 4/1/19 – 3/31/20

Characterizing *in vivo* signaling of adenosine in drug-naïve and psychostimulant-experienced rats in motivated learning tasks

PI, Whitehall Foundation, "*Distinct prefrontal-accumbal sub-circuits encode risk-reward decisions*"

Total Direct Costs: $225,000

Award Period: 7/1/18 – 6/30/21

Using a real-time and adaptive risk decision task to assess D1 and D2 cell specific contributions to choice behavior

PI, Brain & Behavior Research Foundation NARSAD Young Investigator, "*Rescuing learning-related deficits in chronically drug-experienced animals*"

Total Direct Costs: $70,000

Award Period: 1/15/18 – 1/14/20

Studies investigating how experience with a controllable stressor can mitigate cognitive deficits associated with repeated psychostimulant self-administration.

Mentor, Beckman Scholars Fellowship (awarded to Logan Thrasher Collins), "*Cellular connectome reconstruction using antibody-conjugated gold nanorods to enhance X-ray microtomographic imaging*"

Total Direct Costs: $5,000

Award Period: 2018-2019

National undergraduate award to support outstanding independent research in promising individuals. Direct costs awarded to the lab to support Mr. Collins's research efforts. *Note: additional stipend to student associated with award not included here.*

COMPLETED

PI, National Institute on Drug Abuse PHS, K99/R00 Pathway to Independence Award [DA035322], "*Mechanisms of Higher-Order Learning in the NAc Impaired by Cocaine Exposure*"

Total Direct Costs: $953,337

Award Period: 2013-2017

This study employs behavioral assays to assess persistent neuroplastic changes in learning-based circuits following abstinence from chronic drug self-administration using electrophysiology, voltammetry and optogenetics.

PI, National Institute on Drug Abuse PHS, Supplement [DA035322], "*Research Supplements to Promote Diversity in Health-Related Research*"

Total Direct Costs: $50,451

Award Period: 2016-2017

This supplement provides training for a predoctoral student related to the research aims of the parent R00 grant.

PI, (R.M. Carelli, Advisor), National Institute on Drug Abuse, National Research Service Award (NRSA) Individual Postdoctoral Fellowship F32 [DA028156], "*Rapid dopamine release in nucleus accumbens in Pavlovian-to-Instrumental Transfer*,"

Total Direct Costs: $156,570

Award Period: 2010-2013

The goal of this study was to develop motivated learning tasks to assess the specific role of phasic dopamine release in generating higher-order associations, and how these signals affect nucleus accumbens neural activity in cocaine-experienced and drug-naïve rats

PI, (M. Gallagher, Advisor), National Science Foundation Graduate Fellowship Award, "*Using compartmentalized in situ hybridization (catFiSH) to study the neural circuits of associative learning*," (2004-2007)

The goal of this study was to assess how connected limbic circuits coordinate activity to give rise to associative representations of anticipated outcomes

<u>PENDING</u>

CO-PI, National Institute on Drug Abuse PHS R21 [DA045952], "*Monitoring real-time adenosine release in the NAc with fast-scan cyclic voltammetry*,"

Associated Investigator: Ryan Bachtell (CU Boulder)

Total Direct Costs: $275,000

Award Period: 2019-2021

Status: Overall impact: 30; recommended for funding by program officer, pending council review in October 2018)

Using *in vivo* methods to assess real-time adenosine release dynamics in behaving rats, and assessing differences in this signal between drug-naïve and cocaine-experienced populations

CO-I, National Institute on Mental Health PHS R01 [MH115947], "*Circadian regulation of prefrontal cortex-dependent emotional memories*"

Associated Investigator: Bob Spencer (CU Boulder)

Total Direct Costs: $1,250,000

Award Period: 2019-2024

Status: Scored 5th Percentile; awaiting Council decision on funding recommendation

Using electrophysiological and optogenetic methods to identify how selective prefrontal-amygdala circuits that mediate fear extinction functionally differ by time of day

SCIENTIFIC AWARDS

American College of Neuropsychopharmacology Travel Fellow award (2016-8)
Winter Conference on Brain Research Travel Fellow award (2015)
National Science Foundation Graduate Research Fellowship, JHU (2004 – 2007)
Krieger School of Arts and Sciences Graduate Fellowship, JHU (2001 – 2002)
ScB with honors for undergraduate thesis, Brown University (1999)

PROFESSIONAL & ACADEMIC SERVICES

Journal Review (ad hoc):

Nature Reviews Neuroscience; Neuropsychopharmacology; Biological Psychiatry; Proceeding of the National Academy of Sciences; Neuroscience; Journal of Neuroscience; Frontiers in Psychiatry; Behavioral Neuroscience; PLoS One; Behavioural Brain Sciences; Neurobiology of Learning and Memory; European Journal of Neuropsychopharmacology; Journal of Cognitive Neuroscience; Cerebral Cortex; Cognitive, Affective & Behavioral Neuroscience; ACS Chemical Neuroscience

University of Colorado Psychology & Neuroscience Department Committees

Undergraduate Neuroscience Education	*2014-present*
Faculty Merit Committee	*2015-present*
Undergraduate Latin Honors Committee	*2016-present*
Neuroscience Club Faculty Sponsor	*2016-present*
PUEC Committee for all Instructors [*ad hoc*]	*2018*
Behavioral Neuroscience Graduate Admissions (Chair)	*2014-2016*
Neuroscience / Integrative Physiology Faculty Search [*ad hoc*]	*2015-2016*

Organizational Service

National/Research

Co-Advisor for CU Boulder chapter of the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)	2018-*present*
Invited Session Moderator for Gordon Research Seminar (Newry, ME)	2017
Faculty Mentor for Travel Fellows (WCBR: Big Sky, MT)	2017
Panel organizer: Winter Conference on Brain Research (Breckenridge, CO)	2016

University / Departmental

Neuroscience Retreat Organizer	2017
Neuroscience Research Day Organizer	2014-2016

TEACHING EXPERIENCE

University of Colorado Boulder

Instructor: Neural Circuits of Learning & Decision Making (NRSC 4085/5085) *2016-present*
Instructor: Advances in Neuroscience (NRSC 6100) *2018-present*
Instructor: Behavioral Neuroscience (PSYC/NRSC 4052) *2015*
Guest lecturer: Scientific Skills Development (NRSC 6602) 2015

University of North Carolina at Chapel Hill

Lecturer: Research Seminar in Experimental Psychology 2010-2011
Instructor: Biological Foundations of Psychology *2008*

Johns Hopkins University

Instructor: Laboratory Analysis of Psychological Data 2006 – 2007
Instructor: Neuromodulatory Action in the Brain 2005

ADVISING EXPERIENCE

Doctoral Student Mentor

Katherine Stansfield (CU Boulder: Neuroscience) 2015- *present*
Flo Bercum (CU Boulder: Neuroscience) 2016- *present*
Kayla Siletti (CU Boulder: Neuroscience) 2016- *present*

Graduate Committees

PhD Committee Member

Sam Dolzani (Advisor: Steven Maier; CU Boulder) 2016-2018
PhD, Neuroscience, January, 2018
Jessica Mollick (Advisor: Randy O'Reilly; CU Boulder) 2015-2017
PhD, Psychology & Neuroscience, November 2017
Dan Corral (Advisor: Matt Jones; CU Boulder) 2015-2017
PhD, Psychology, June 2017
Ethan Guthman (Advisor: Diego Restrepo; Anschutz School of Medicine) 2016- *present*
In progress
James Foster (Advisor: Matt Jones; CU Boulder) 2018- *present*
In progress

Comprehensive Review Committee

Zach Smith (Advisor: D. Barth; CU Boulder) 2017-2018
Kyle Brown (Advisor: Ryan Bachtell; CU Boulder) 2017-2018
Flo Bercum [***Chair***] (Advisor: Saddoris; CU Boulder) 2016-2018

Nick Haynes (Advisor: Ryan Bachtell; CU Boulder) 2016-2017
Jessica Mollick (Advisor: Randy O'Reilly; CU Boulder) 2015
Sam Dolzani (Advisor: Steven Maier; CU Boulder) 2015

Second-Year Project / Masters Committee

Kayla Siletti [***Chair***] (Advisor: Saddoris; CU Boulder) 2016-2018
Kate Stansfield [***Chair***] (Advisor: Saddoris; CU Boulder) 2015-2018
Jayme Temple (Advisor: Donaldson; CU Boulder) 2016-2018
Zach Smith (Advisor: D. Barth; CU Boulder) 2015-2017
Kyle Brown (Advisor: Ryan Bachtell; CU Boulder) 2016-2017
Flo Bercum [***Chair***]: (Advisors: Michael Saddoris; CU Boulder) 2016
Nick Haynes (Advisor: Ryan Bachtell; CU Boulder) 2014-2016

Undergraduate Independent Study Mentor

Logan Collins (2018) "s*tructural connectomic mapping using antibody-conjugated gold nanorods and X-ray microtomography*." CU Boulder, Psych & Neuro.

Mancy Shah (2018) "*Optical stimulation midbrain dopamine neurons drives self-administration in cocaine-experienced rats, but fails to elicit phasic neural encoding in nucleus accumbens shell*." CU Boulder, Psych & Neuro.

Marty Payne (2016) "*The influence of altered activity of BLA afferents following cocaine self-administration on NAc neural encoding*." CU Boulder, Psych & Neuro

Katie Cording (2015) "*Using retrograde tracers in the nucleus accumbens core and shell to illustrate anatomical and functional distinctions in reward learning*." CU Boulder, Psych & Neuro

Sponsored Undergraduate Fellowship Mentor

Logan Thrasher Collins (2018-9) "*Cellular connectome reconstruction using antibody-conjugated gold nanorods to enhance X-ray microtomographic imaging*" CU Boulder; Beckman Scholars Foundation

Alexandra Montgomery (2018) "*Effects of stress on cocaine intake and relapse*" CU Boulder; Undergraduate Research Opportunity Program (UROP)

Jessica Rea (2017-8) "*Characterizing neural activity in the nucleus accumbens mediating optogenetic self-administration of dopamine afferents*" CU Boulder; Biological Sciences Initiative (BSI) / HHMI

Alexandra Montgomery (2017) "*Identifying neural pathways underlying stress controllability and addiction*" CU Boulder; Undergraduate Research Opportunity Program (UROP)

Marty Payne (2016) "*Designing and testing microdrives for chronic in-vivo recordings*." CU Boulder; Undergraduate Research Opportunity Program (UROP)

Marty Payne (2016) "*Tools for dynamically sampling encoding patterns from genetically-identified neural populations*." CU Boulder; Biological Sciences Initiative (BSI) / HHMI

Makenzie Kummer (2015) "*Neuronal activity in the basolateral amydgala during a higher-order learning task*." CU Boulder; Undergraduate Research Assistant Program (URAP)

Undergraduate Honors Thesis Advisor

Joel Ayers (2017) "*Persistent electrophysiological identity of neurons in the nucleus accumbens shell following chemogenetic manipulation across Pavlovian first-order conditioning*." CU Boulder, Neuroscience; *cum laude*

Robert Edmiston (2013) "*Disruption of dopamine signaling for Pavlovian cues in the nucleus accumbens core in rats with a history of cocaine self-administration*" UNC Chapel Hill, Psychology

Alice M. Stamatakis (2010) "*Neural encoding in nucleus accumbens core and shell are differentially altered in a Pavlovian-to-Instrumental Transfer task following self-administered cocaine*." UNC Chapel Hill, Psychology

Undergraduate Presentations

Mancy Shah (2018) "*Optical stimulation midbrain dopamine neurons drives self-administration in cocaine-experienced rats, but fails to elicit phasic neural encoding in nucleus accumbens shell*" Rocky Mountain Research Neuroscience Group meeting, CU School of Medicine Program, Anschutz Medical Campus, Denver, CO (awarded symposium presentation)

Mancy Shah (2018) "*Optical stimulation midbrain dopamine neurons drives self-administration in cocaine-experienced rats, but fails to elicit phasic neural encoding in nucleus accumbens shell*" Undergraduate Research Day, CU Boulder.

Jessica Rea (2018) "*Characterizing neural activity in the nucleus accumbens mediating optogenetic self-administration of dopamine afferents*" BSI Presentation Day, CU Boulder.

Joel Ayers (2017) "*Persistent electrophysiological identity of neurons in the nucleus accumbens shell following chemogenetic manipulation across Pavlovian first-order conditioning*." Undergraduate Research Day, CU Boulder

Marty Payne (2016) "*Designing and testing microdrives for chronic in-vivo recordings*." Undergraduate Research Day, CU Boulder

Nicole Brown (2016) "*Changes in conditioned approach behavior after abstinence from cocaine self-administration*." Undergraduate Research Day, CU Boulder

PUBLICATIONS

(N = 32, Google Scholar Citations: 3155, H Index: 22, i10-index: 26) *Last revised: 12/18/18*

Google Scholar: https://scholar.google.com/citations?user=7UHHqEoAAAAJ&hl=en
PubMed: https://www.ncbi.nlm.nih.gov/pubmed/?term=saddoris+mp

Notes:
** indicates authors contributed equally to the work*
‡ senior/corresponding author as CU Boulder faculty

Published Research

[1] **Saddoris, M.P.**‡**,** Siletti, K.A., Stansfield, K.J., & Bercum, M.F. (2018). *Heterogeneous dopamine signals support distinct features of motivated actions: Implications for learning and addiction.* Learning & Memory, 25 (9), 416-424.

[2] **Saddoris, M.P**.‡, Sugam, J.A., & Carelli, R.M. (2017). *Prior cocaine experience impairs normal phasic dopamine signals of reward value in accumbens shell.* Neuropsychopharmacology, 42(3), 766-73. Citations/year: 6.7

[3] Sackett, D.A., **Saddoris, M.P.**, & Carelli, R.M. (2107). *Rapid dopamine signaling in the nucleus accumbens shell uniquely encodes but does not mediate magnitude-based decision making*. eNeuro. Citations/year: 3.2

[4] **Saddoris, M.P**.‡ (2016) *Terminal dopamine release kinetics in the accumbens core and shell are distinctly altered following withdrawal from cocaine self-administration.* eNeuro. Citations/year: 1.0

[5] Dolzani, S.D., Baratta, M.V., Amat, J., Agster, K., **Saddoris, M.P.**, Watkins, L. & Maier, S.F. (2016). *Activation of a habenulo-raphe circuit is critical for the behavioral and neurochemical consequences of uncontrollable stress.* eNeuro. Citations/year: 4.2

[6] Agster, K.L., Thomás Pereira, I., **Saddoris, M.P.,** and Burwell, R.D. (2016). *Subcortical connections of the perirhinal, postrhinal, and entorhinal cortices of the rat. II. Efferents.* Hippocampus. Citations/year: 7.3

[7] **Saddoris, M.P**.‡, Wang, X., Sugam, J.A., & Carelli, R.M. (2016). *Cocaine self-administration experience induces pathological phasic accumbens dopamine signals and abnormal incentive behaviors in drug-abstinent rats.* Journal of Neuroscience, 36(1): 235-250. Citations/year: 8.5
- Article chosen for a featured review in Journal of Neuroscience's Journal Club section by Fraser KM & Haight JL (2016). *Diminished dopamine: Timing, neuroanatomy, or drug history?* Journal of Neuroscience, 36(18): 4907-9.

[8] Rodeberg, N.T., Johnson, J.A., Cameron, C.M., **Saddoris, M.P**., Carelli, R.M. & Wightman, R.M. (2015). *Construction of training sets for valid calibration of in vivo cyclic voltammetric data by principal component analysis.* Analytical Chemistry, 87(22): 11484-91. Citations/year: 11.6

[9] **Saddoris, M.P.**[‡], Cacciapaglia, F., Wightman, R.M., & Carelli, R.M. (2015). *Differential dopamine release dynamics in nucleus accumbens core and shell reveals distinct signals for error prediction and incentive motivation.* Journal of Neuroscience, 35(33), 11572-82. Citations/year: 20.0

- Chosen as a featured article in the issues, with additional This Week in The Journal commentary by T. Esch, *Dopamine release patterns differ in accumbal core and shell*, Journal of Neuroscience, 35(33), i.
- **Selected as F1000Prime Recommendation**

[10] **Saddoris, M.P.**[‡]*, Sugam, J.A.*, Stuber, G.D., Witten, I.B., Deisseroth, K. & Carelli, R.M. (2015). *Mesolimbic dopamine dynamically tracks, and is causally linked to, discrete aspects of value-based decision making*. Biological Psychiatry, 77(10), 903-15. Citations/year: 15.1

[11] Cerri, D.H*, **Saddoris, M.P.**[‡]* & Carelli, R.M. (2014). *Nucleus accumbens core neurons encode value-neutral associations but not inferred value during a sensory preconditioning task*. Behavioral Neuroscience. Citations/year: 1.6

[12] West, E.A., **Saddoris, M.P.**, Kerfoot, E.C., & Carelli, R.M. (2014). *Prelimbic and infralimbic cortical regions differentially encode cocaine-associated stimuli and cocaine-seeking before and after abstinence*. European Journal of Neuroscience, 39(11), 1891-902. Citations/year: 6.7

[13] Sugam, J.A.*, **Saddoris, M.P.*** and Carelli, R.M. (2014). *Nucleus accumbens neurons track behavioral preferences and reward outcomes during risky decision making*. Biological Psychiatry, 75(10), 807-16. Citations/year: 5.2

[14] **Saddoris, M.P.**, & Carelli, R.M. (2014). *Cocaine self-administration abolishes associative neural encoding in the nucleus accumbens necessary for higher-order learning*. Biological Psychiatry, 75, 156-64. Citations/year: 5.0

- Featured article with commentary by B.T Saunders & P.H. Janak, *Nucleus accumbens plasticity underlies multifaceted behavioral changes associated with addiction*, BiolPsych, 75, 92-3.

[15] **Saddoris, M.P**., Sugam, J.A., Cacciapaglia, F. & Carelli, R.M. (2013). *Rapid dopamine dynamics in the accumbens core and shell: Learning and action*. Frontiers in Bioscience (Elite Ed.), 5, 273-88. Citations/year: 11.6

[16] Cacciapaglia, F., **Saddoris, M.P**., Wightman, W.M., & Carelli, R.M. (2012). *Differential dopamine release dynamics in the nucleus accumbens core and shell track distinct aspects of goal-directed behavior for sucrose*. Neuropharmacology, 62, 2050-6. Citations/year: 7.4

[17] **Saddoris, M.P.**, Stamatakis, A., & Carelli, R.M. (2011). *Neural correlates of Pavlovian-to-Instrumental transfer in the nucleus accumbens shell are selectively potentiated following cocaine self-administration*. European Journal of Neuroscience, 33, 2274-87. Citations/year: 8.0

- Featured article with commentary by Smith, K.S. (2011) *Neuronal correlates of normal and drug-potentiated Pavlovian-instrumental transfer* [Commentary on Saddoris et al.], European Journal of Neuroscience, 33, 2273-4.

[18] **Saddoris, M.P**., Holland, P.C. & Gallagher, M. (2009). *Associatively learned representations of taste outcomes activate taste-encoding neural ensembles in gustatory cortex*. Journal of Neuroscience, 29, 15386-96. Citations/year: 4.7

[19] Schoenbaum, G., **Saddoris, M.P.,** & Stalnaker, T.A. (2007). *Reconciling the roles of orbitofrontal cortex in reversal learning and the encoding of outcome expectancies*. Annals of the New York Academy of Sciences, 1121, 320-35. Citations/year: 13.3

[20] Schoenbaum, G., Setlow, B., **Saddoris, M.P**., & Gallagher, M. (2006). *Encoding changes in orbitofrontal cortex in reversal-impaired aged rats*. Journal of Neurophysiology, 95, 1509-17. Citations/year: 6.0

[21] McDannald, M.A.*, **Saddoris, M.P.***, Gallagher, M., & Holland, P.C. (2005). *Lesions of orbitofrontal cortex impair rats' differential outcome expectancy learning but not CS-potentiated feeding*. Journal of Neuroscience, 25, 4626-32. Citations/year: 5.4

[22] **Saddoris, M.P**., Gallagher, M., & Schoenbaum, G. (2005). *Rapid encoding of predicted outcome in basolateral amygdala depends upon input from orbitofrontal cortex*. Neuron, 46, 321-31. Citations/year: 15.1

[23] Pickens, C.L.*, **Saddoris, M.P***., Gallagher, M., & Holland, P.C. (2005). *Orbitofrontal lesions impair use of cue-outcome associations in a devaluation task*. Behavioral Neuroscience, 119, 317-22. Citations/year: 10.5

[24] Burwell, R.D., **Saddoris, M.P**., Bucci, D.J., & Wiig, K.A. (2004). *Corticohippocampal contributions to spatial and contextual learning*. Journal of Neuroscience, 24, 3826-36. Citations/year: 14.2

[25] Schoenbaum, G., Ramus, S.J., Shaham, Y. **Saddoris, M.P**., & Setlow, B. (2004). *Cocaine-experienced rats exhibit learning deficits in a task sensitive to orbitofrontal cortex lesions*. European Journal of Neuroscience, 19, 1997-2002. Citations/year: 12.3

[26] Pickens, C.L, **Saddoris, M.P**., Setlow, B., Gallagher, M., Holland, P.C., & Schoenbaum, G. (2003). *Different roles for orbitofrontal cortex and basolateral amygdala in a reinforcer devaluation task*. Journal of Neuroscience, 23, 11078-84. Citations/year: 26.3

[27] Schoenbaum, G., Setlow, B., **Saddoris, M.P**., & Gallagher, M. (2003). *Encoding of predicted outcome and acquired value in orbitofrontal cortex during cue sampling depends upon input from basolateral amygdala*. Neuron, 38, 855-67. Citations/year: 29.1

[28] Schoenbaum, G., Setlow, B., Nugent, S., **Saddoris, M.P**., & Gallagher, M. (2003). *Lesions of the orbitofrontal cortex and basolateral amygala disrupt acquisition of odor-guided discriminations and reversals*. Learning and Memory, 10, 129-40. Citations/year: 17.7

[29] Schoenbaum, G., Nugent, S., **Saddoris, M.P**. & Gallagher, M. (2002). *Teaching old rats new tricks: Age-related impairments in olfactory reversal learning*. Neurobiology of Aging, 23(4), 555-64. Citations/year: 6.9

[30] Bucci, D.J., **Saddoris, M.P**., & Burwell, R.D. (2002). *Contextual fear discrimination is impaired by damage to postrhinal or perirhinal cortex*. Behavioral Neuroscience, 116(3), 479-88. Citations/year: 5.5

[31] Schoenbaum, G., Nugent, S., **Saddoris, M.P**. & Setlow, B. (2002). *Orbitofrontal lesions in rats impair reversal, not acquisition, of go, no-go odor discriminations*. NeuroReport, 13(6), 885-90. Citations/year: 17.5

Peer-Reviewed Book Chapters:

[1] Burwell, R.D., Bucci, D.J., Wiig, K.A., **Saddoris, M.P**., & Sanborn, M.R. (2002). Experimental lesions of the parahippocampal region in rats. In: *The Parahippocampal Region: Organization and Role in Cognitive Functions*. (M.P. Witter and F.G. Wouterlood, eds.). Oxford University Press: Oxford, UK.

PRESENTATIONS & POSTERS

2019 Invited colloquium speaker, University of Colorado Denver

2018 Poster presentation (presenter), *Differential encoding in prefrontal and accumbal neurons during a continuously updating risk-based decision making task*. Society for Neuroscience, San Diego, CA

Poster presentation (presenter), *Prefrontal and striatal contributions to decision making in a dynamically-updating risk/reward task*. ACNP, Hollywood, FL

Poster presentation (senior author), *Stressor controllability alters the severity of cocaine-induced encoding deficits in accumbal neurons for reward-predictive cues*. Society for Neuroscience Annual Meeting, San Diego, CA.

Poster presentation (senior author), *Optical stimulation midbrain dopamine neurons drives self-administration in cocaine-experienced rats, but fails to elicit phasic neural encoding in nucleus accumbens shell*. Society for Neuroscience Annual Meeting, San Diego, CA.

Poster presentation (co-author), *Diurnal examination of infralimbic prefrontal cortex neuronal activity: Encoding of distinct behaviors relevant to conditioned fear extinction learning*. Society for Neuroscience Annual Meeting, San Diego, CA.

Poster presentation (co-author), *During fear extinction in the adult male rat, freezing onset and offset are encoded by distinct subpopulations of infralimbic prefrontal cortex neurons*. Stress Neurobiology Workshop, Banff, Canada.

2017 Invited panelist/speaker, Winter Conference on Brain Research, Big Sky, MT

Invited symposium panelist and moderator, Gordon Research Seminar: Frontiers in Catecholamine Function from Synapses to Disease.

Poster presentation (senior author), *Distinct cue encoding in the nucleus accumbens shell is associated reward relevant behavior in rats: Implications for cocaine addiction*. NIDA Diversity Supplement Workshop, Bethesda, MD.

2016 Presenter and Travel Award Winner, American College of Neuropsychopharmacology (ACNP), Hollywood, FL

Panel Organizer: "Behavioral Insights into Neural Circuits for Addiction and Cognitive Function", Winter Conference on Brain Research, Breckenridge, CO

Panelist and speaker, Winter Conference on Brain Research, Breckenridge, CO
Invited panelist/speaker, Pavlovian Society, Jersey City, NJ
Invited speaker, Affective Brownbag Seminar, University of Colorado, Boulder, CO
Poster presentation (presenter), *Signaling kinetics of stimulated dopamine release in the nucleus accumbens core and shell are differentially altered following abstinence from cocaine self-administration in behaving rats*. Society for Neuroscience, San Diego, CA
Poster presentation (presenter), *Signaling kinetics of stimulated dopamine release in the nucleus accumbens core and shell are differentially altered following abstinence from cocaine self-administration in behaving rats*. ACNP, Hollywood, FL
Poster presentation (senior author), *Altered encoding of motivational stimuli in the basolateral and central amygdala in cocaine-experienced rats*. Society for Neuroscience, San Diego, CA

2015 Invited seminar speaker, CU School of Medicine Program, Anschutz Medical Campus, Denver, CO
Invited symposium panelist and speaker, Winter Conference on Brain Research, Big Sky, MT
Invited symposium panelist and moderator, Gordon Research Seminar: Frontiers in Catecholamine Function from Synapses to Disease, Newry, ME
Invited speaker, Behavioral Neuroscience seminar, University of Colorado, Boulder, CO
Invited panelist and speaker, Rocky Mountain Regional Neuroscience Group, Anschutz Medical Campus, Denver, CO

2014 Invited symposium panelist and speaker, Monitoring Molecules in Neuroscience, Los Angeles, CA
Invited speaker, CLPS, Brown University, Providence, RI
Invited speaker, Psychological & Brain Sciences, Dartmouth College, Hanover, NH
Invited panelist and speaker, Front Range Neuroscience Group, Anschutz Medical Campus, Denver, CO
Poster presentation, *Cocaine self-administration experience biases rats towards sign-tracking behavior in a subsequent Pavlovian task*. Society for Neuroscience, Washington, DC.

2013 Invited speaker, TAMIN seminar, Texas A&M, College Station, TX
Invited speaker, Psychology & Neuroscience seminar, University of Colorado, Boulder, CO
Invited speaker, Behavioral Neuroscience seminar, University of New Mexico, Albuquerque, NM
Poster presentation, *Real-time dopamine release to food-predictive Pavlovian cues in rats with a history of cocaine self-administration*. Dopamine 2013, Alghero, Sardinia
Poster presentation, Gordon Research Conference on Catecholamines, West Dover, VT
Poster presentation, *Higher-order instrumental performance reveals spatiotemporal heterogeneity in dopamine signaling within the nucleus accumbens*. Pavlovian Society, Austin, TX
Poster presentation, *Cocaine self-administration differentially affects excitatory and inhibitory associative encoding in the nucleus accumbens core and shell*. Society for Neuroscience, San Diego, CA

2012 Poster presentation, *Optogenetic stimulation of dopamine terminals in the nucleus accumbens is sufficient to promote goal-directed behavior*. Society for Neuroscience, New Orleans, LA
Invited speaker, Psychology seminar, Kansas State University, Manhattan, KS

2011 Invited speaker, Neuroscience seminar, Drexel University, Philadelphia, PA
Poster presentation, Gordon Research Conference on Catecholamines, Lewiston, ME
Poster presentation, *Subsecond dopamine release in the nucleus accumbens tracks multiple cue predictions in Pavlovian second-order conditioning*. Society for Neuroscience, Washington, DC

2010 Poster presentation, *Long-term exposure to cocaine self-administration disrupts the behavioral and neural correlates of Pavlovian second-order conditioning in the nucleus accumbens of rats*. Society for Neuroscience, San Diego, CA

2009 Poster presentation, Gordon Research Conference on Catecholamines, Biddeford, ME

Poster presentation, *Complementary neural correlates of Pavlovian-to-instrumental transfer in nucleus accumbens core and shell*, Society for Neuroscience, Chicago, IL

2008 Invited speaker, Psychology seminar, University of North Carolina, Chapel Hill, NC

Poster presentation, *Sensory-specific encoding of associative taste representations requires gustatory cortex*. Winter Conference on Neuroplasticity, St Lucia.

Poster presentation, *Representations of expected taste outcomes reactivate primary sensory taste ensembles in gustatory cortex*. Society for Neuroscience, Washington, DC

2007 Poster presentation, *Gustatory cortex and basolateral amygdala show different patterns of expression for the representations of rewarding taste outcomes using the immediate early genes* Arc *and* Homer1a. Society for Neuroscience, San Diego, CA.

2006 Poster presentation, *Innovation in the assessment of olfactory-based behavior in mice*. Society for Neuroscience, Atlanta, GA.

2005 Poster presentation, *Medial prefrontal cortex lesions enhance response latency differences in a go, no-go task in rats*. Society for Neuroscience , Washington D.C.

2004 Poster presentation, *Lesions of orbitofrontal cortex interfere with differential-outcome expectancy learning but not CS-potentiated feeding of rats*. Society for Neuroscience, San Diego, CA.

Poster presentation, *Psychomotor sensitization to cocaine affects behaviors sensitive to orbitofrontal damage*. Winter Conference on Learning and Memory, Park City, UT.

2003 Poster presentation, *Encoding during learning in basolateral amygdala depends upon input from orbitofrontal cortex*. Society for Neuroscience, New Orleans, LA.

2002 Poster presentation, *Comparison of performance and neural encoding in orbitofrontal cortex during odor discrimination learning in young and aged rats*. Society for Neuroscience, Orlanda, FL.

2001 Poster presentation, *A reexamination of the role of rat orbitofrontal cortex in acquisition and reversal of odor-guided go, no-go discriminations*. Society for Neuroscience, San Diego, CA.

2000 Poster presentation, *Effects of postrhinal/medial entorhinal cortex versus perirhinal/lateral entorhinal cortex lesions on contextual fear discrimination*. Society for Neuroscience, New Orleans, LA.

1999 Poster presentation, *The effects of time-of-day cues on context discrimination*. Society for Neuroscience, Miami, FL.