

Stephanie M. Groman, Ph.D.

Curriculum Vitae
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University of Chicago
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EDUCATION

2013	Ph.D.	Department of Psychology, University of California, Los Angeles
2012	M.A.	Department of Psychology, University of California, Los Angeles
2005	B.S.	Department of Psychology, University of California, Los Angeles

PROFESSIONAL APPOINTMENTS

2023 – Present	Assistant Professor Department of Anesthesia and Critical Care	University of Chicago
2021 – 2023	Assistant Professor Department of Neuroscience	University of Minnesota, Twin Cities
2021 – Present	Adjunct Assistant Professor Department of Psychiatry	Yale University
2016 – 2020	Associate Research Scientist Department of Psychiatry	Yale University
2013 – 2016:	Post-doctoral Fellow Department of Psychiatry Advisor: Dr. Jane R. Taylor	Yale University

PROFESSIONAL MEMBERSHIPS

2022 – Present	Associate Member, American College of Neuropsychopharmacology
2022 – Present	Member, Masonic Institute for the Developing Brain
2021 – Present	Faculty, Graduate Program in Neuroscience, University of Minnesota Faculty, Molecular Pharmacology and Therapeutics Graduate Program, University of Minnesota
2020 – Present	Member, Yale/NIDA Neuroproteomics Center
2019 – Present	Member, Society for Biological Psychiatry
2007 – Present	Member, Society for Neuroscience

PUBLICATIONS

Empirical Data Papers

- Suthaharan P., Thompson S.L., Rossi-Goldthorpe R.A., Rudebeck P.H., Walton M.E., Chakraborty S., Noonan M., Mitchell A.S., Costa V.D., Murray E.A., Mathys C.D., **Groman S.M.**, Taylor J.R., Corlett P.R., and Chang S.W.C. Lesions to the mediodorsal thalamus but not the orbitofrontal cortex enhance volatility beliefs linked to paranoia. Submitted to *Current Biology*.
- Moin Afshar N., Cinotti F., Martin D., Khamassi M., Calu D.J., Taylor J.R., and **Groman S.M.** (2022) Conserved reward-mediated, reinforcement-learning mechanisms in Pavlovian and instrumental tasks. *Journal of Neuroscience*.43(3):458-471.
- Asch R.H., Pothula S., Toyonaga T., Fowles K., **Groman S.M.**, Garcia-Millan R., DiLeone R.J., Taylor J.R., and Esterlis I. (2022) Examining sex differences in responses to footshock stress and the role of metabotropic glutamate receptor 5: an [18F]FPEB and positron emission tomography study in rats. *Neuropsychopharmacology*. 48(3):489-497.
- Villiamma P., Casby J., and **Groman S.M.** (2022) Adolescent reinforcement-learning trajectories predict cocaine-taking behaviors in adult rats. *Psychopharmacology*. 239(9):2885-2901.
- Young J., Barback C.V., Stolz L.A., **Groman S.M.**, Vera D.R., Hoh C., Kotta K.K., Minassian A., Powell S.B., and Brody A.L. (2022) MicroPET evidence for a hypersensitive inflammatory profile in gp120 mouse model of HIV. *Psychiatry Research: Neuroimaging*. Epub ahead of print.
- Rossano S., Toyonaga T., Berg E., Lorence I., Fowles K., Nabulsi N., Ropchan J., Li S., Ye Y., Felchner Z., Kukis D., Huang Y., Benveniste H., Tarantal A.F., **Groman S.M.**, and Carson R.E. (2022) Imaging the Fetal Nonhuman Primate Brain with SV2A Positron Emission Tomography (PET). *European Journal of Nuclear Medicine and Molecular Imaging*. Epub ahead of print.
- Suthaharan P., Reed E.J., Leptourgos P., Kenny J.D., Uddenberg S., Mathys C.D., Litman L., Robinson J., Moss A.J., Taylor J.R., **Groman S.M.**, and Corlett P.R. (2021) Paranoia and belief updating during the COVID-19 crisis. *Nature Human Behavior*. Epub ahead of print.
- Gianessi C.A., **Groman S.M.**, and Taylor J.R. (2021) The effects of fatty acid amide hydrolase inhibition and monacylglycerol lipase inhibition on habit formation in mice. *European Journal of Neuroscience*. 55(4):922-938.
- Moin Afshar M.A.*, Keip A.J.*, Taylor J.R., Lee D., and **Groman S.M.** (2020) Adolescent-related changes in reinforcement learning and decision making in the rat. *Journal of Neuroscience*. 40(30):5857-5870. * indicates equal author contribution.
- Groman S.M.**, Hillmer A., Liu H., Fowles K., Holden D., Morris E.D., Lee D., and Taylor J.R. (2020) Dysregulation of decision-making related to mGluR5, but not D₃ receptor, availability following cocaine self-administration in rats. *Biological Psychiatry*. 88(10): 777-787.
- Bond C.W., Foscue E., **Groman S.M.**, Trinko J.R., Taylor J.R., and DiLeone R.J. (2020) Medial nucleus accumbens projections to the ventral tegmental area control food consumption. *Journal of Neuroscience*. 40(24): 4727-4738.
- Groman S.M.**, Hillmer A., Liu H., Fowles K., Holden D., Morris E.D., Lee D., and Taylor J.R. (2020) Midbrain D₃ receptor availability predicts escalation in cocaine self-administration. *Biological Psychiatry*. 88(10): 767-776.
- Reed E.J., Uddenberg S., Mathys C.D., Taylor J.R., **Groman S.M.**, and Corlett P.R. (2020) Expecting the unexpected: the paranoid style of belief updating across species. *eLIFE*. May 26 2020: e56345.
- Groman S.M.**, Keistler, C., Keip A., Hammarlund E., DiLeone R.J., Piitenger C., Lee D.,

- and Taylor J.R. (2019) Orbitofrontal circuits make distinct contributions to flexible decision-making. *Neuron*. 103(4):734-746.
- Gianessi C., **Groman S.M.**, Thompson S.L., Jiang M., van der Stelt M., and Taylor J.R. (2019) Endocannabinoid contributions to alcohol habits and motivation: relevance to treatment. *Addiction Biology*. 25(3).
- Groman S.M.**, Massi B., Mathias S.R., Lee D., and Taylor J.R. (2019) Model-free and model-based influences in addiction. *Biological Psychiatry*. 85(11): 936-945.
- Groman S.M.**, Massi B., Mathias S., Curry D., Lee D., and Taylor J.R. (2019) Neurochemical and behavioral dissections of decision-making in a rodent multi-stage task. *Journal of Neuroscience*. 39(2): 295-306.
- Gianessi C., **Groman S.M.**, and Taylor J.R. (2018) Bidirectional modulation of food habit expression by the endocannabinoid system. *European Journal of Neuroscience*. 49(12):1610-1622.
- Groman S.M.**, Rich K.M., Smith N.J., Lee D., and Taylor J.R. (2017) Chronic exposure to methamphetamine disrupts reinforcement-based decision-making in rats. *Neuropsychopharmacology*. 43(4): 770-780.
- Rapanelli M., Frick L.R., Xu M., **Groman S.M.**, Jindachomthong K., Kamamaki N., Tanahira C., Taylor J.R., and Pittenger C. (2017) Targeted interneuron depletion in the dorsal striatum produces autism-like behavioral abnormalities in male but not female mice. *Biological Psychiatry*. 82(3): 194-203.
- Kaneko G., Sanganahalli B.G., **Groman S.M.**, Wang H., Coman D., Rao J., Herman P., Jiang L., Rich K., de Graaf R.A., Taylor J.R., and Hyder F. (2016) Hypofrontality and posterior hyperactivity observed in early schizophrenia: Multi-modal characterizations by imaging and behavior. *Biological Psychiatry*. 81(6): 503-513.
- Groman S.M.**, Smith N.J., Petrulli J.R., Massi B., Chen L., Ropchan J., Huang Y., Lee D., Morris E.D., and Taylor J.R. (2016) Dopamine D3 receptor availability is associated with inflexible decision making. *Journal of Neuroscience*. 36(25):6732-41.
- Elsworth J.D., Jentsch J.D., **Groman S.M.**, Roth R.H., Redmond D.E., and Leranath C. (2015) Low circulating levels of bisphenol-A induce cognitive deficits and loss of asymmetric spine synapses in the dorsolateral prefrontal cortex and hippocampus of adult male monkeys. *Journal of Comparative Neurology*, 523(8): 1248-57.
- Groman S.M.**, James A.S., Seu E., Tran S., Clark T.A., Harpster S.N., Crawford M., Burtner J., Feiler K., Roth R.H., Elsworth J.D., London E.D., and Jentsch J.D. (2014) In the blink of an eye: Relating positive-feedback sensitivity to striatal dopamine D2 receptors through blink rate. *Journal of Neuroscience*, 34(43):14443-54.
- Elsworth J.D., **Groman S.M.**, Jentsch J.D., Leranath C. Redmond D.E., and Roth R.H. (2014) Primate phencyclidine (PCP) model of schizophrenia: sex-specific effect on cognition, spine synapse number and dopamine turnover in dorsolateral prefrontal cortex. *International Journal of Neuropsychopharmacology*. 18(6).
- Seu, E.* **Groman S.M.***, Arnold, A.P., and Jentsch J.D. (2014) Sex chromosome complement influences reward sensitivity in mice. *Genes, Brain and Behavior*, 13(6):527-34. * indicates equal author contribution.
- Groman S.M.***, Morales A.M.* , Lee B., London E.D., and Jentsch J.D. (2013) Methamphetamine-induced increases in putamen gray matter associate with inhibitory control. *Psychopharmacology*, 229(3):527-38. * indicates equal author contribution.
- Jarcho J.M., Feier N.A., Bert A., Labus J.A., Lee M., Stains J., Ebrat B., **Groman S.M.**, Tillisch K., Brody A.L., London E.D., Mandelkern M.A., and Mayer E.A. (2013) Diminished neurokinin-1 receptor availability in patients with two forms of chronic visceral pain. *Pain*, 154(7):987-96.

- Groman S.M.**, James A.S., Seu E., Crawford M.A., Harpster S., and Jentsch J.D. (2013) Monoamine levels within the orbitofrontal cortex and putamen interact to predict reversal learning performance. *Biological Psychiatry*. 73(8):756-62.
- Groman S.M.***, Lee B.*, Seu E., James A.S., Feiler K., London E.D., and Jentsch J.D. (2012) Dysregulation of D2-Mediated dopamine transmission in monkeys after chronic escalating methamphetamine exposure. *Journal of Neuroscience*., 32:5843-52. * indicates equal author contribution.
- Elsworth J.D., **Groman S.M.**, Jentsch J.D., Valles R., Shahid M., Wong E. Martson H., and Roth R.H. (2011) Asenapine effects on cognitive and monoamine dysfunction elicited by subchronic phencyclidine administration. *Neuropharmacology*. 62:1442-52.
- Groman S.M.**, Lee B., London E.D., Mandelkern M., James A.S., Feiler K., Rivera R., Dahlbom M., Sossi V., Vandervoort E., and Jentsch J.D. (2011) Dorsal striatal D2-like receptor availability co-varies with sensitivity to positive reinforcement during discrimination learning. *Journal of Neuroscience*., 20:7291-7299.
- Jentsch, J.D., Woods, J.A., **Groman, S.M.**, and Seu, E. (2010) Behavioral characteristics and neural mechanisms mediating performance in a rodent version of the Balloon Analogue Risk Task. *Neuropsychopharmacology*. 35:1797-806.
- James A.S.* , **Groman S.M.***, Seu E., Jorgensen M., Fairbanks L.A. and Jentsch J.D. (2007) Dimensions of impulsivity are associated with poor spatial working memory performance in monkeys. *Journal of Neuroscience*., 27: 14358-64. * indicates equal author contribution.
- Lee B., **Groman S.M.**, London E.D. and Jentsch, J.D. (2007) Dopamine D2/D3 receptors play a specific role in the reversal of a learned visual discrimination in monkeys. *Neuropsychopharmacology*., 32: 2125-2134.

Review Articles

- Groman S.M.**, Thompson S.L., Lee D., and Taylor J.R. (2021) Reinforcement learning detuned in addiction: integrative and translational approaches. *Trends in Neuroscience*. 45(2):96-105.
- Groman S.M.**, Lee D., and Taylor J.R. (2021) Unlocking the reinforcement-learning circuits of the orbitofrontal cortex. *Behavioral Neuroscience*, 135(2): 120-128.
- Feeney E.J., **Groman S.M.**, Taylor J.R., and Corlett P.R. (2017) Explaining delusions: reducing uncertainty through basic and computational neuroscience. *Schizophrenia Bulletin*, 43(2): 263-272.
- Voon V., Reiter A., Sebold M., and **Groman S.** (2017) Model-based control in dimensional psychiatry. *Biological Psychiatry*. 82: 391-400.
- Jentsch J.D., Ashenurst J.R., Cervantes M.C., **Groman S.M.**, James A.S., and Pennington Z.T. (2014) Dissecting impulsivity and its relationships to drug addictions. *Annals of the New York Academy of Sciences*, 1327(1):1-26.
- Groman, S.M.** and Jentsch, J.D. (2013) Identifying the molecular basis of inhibitory control deficits in addictions: Neuroimaging in non-human primates. *Current Opinion on Neurobiology*, 23(4):625-31.
- Dean, A.K., **Groman, S.M.**, Morales, A.M., and London, E.D. (2012) An evaluation of evidence that methamphetamine abuse causes cognitive decline in humans. *Neuropsychopharmacology*. 38:259-74.
- Groman, S.M.** and Jentsch, J.D. (2011) Cognitive control and the D2-like receptor: A dimensional understanding of addiction. *Anxiety and Depression*. 32:5843-52.
- Groman, S.M.**, James, A.S., and Jentsch, J.D. (2008) Poor response inhibition: At the nexus between substance abuse and attention deficit/hyperactivity disorder. *Neuroscience and Biobehavioral Reviews*. 33:690-8.

Invited Commentaries

Groman, S.M. (2020) Astrocytic activation to restore goal-directed behaviors. *Biological Psychiatry*. 88(10): 744-745.

Groman, S.M. (2019) Investigating the computational underpinnings of addiction. *Neuropsychopharmacology*. 44 (13): 2149-2150.

Book Chapters

Groman S.M. The neurobiology of impulsive decision making and reinforcement learning in non-human animals. *Recent advances in research on impulsivity and impulsive behaviors*. Edited by Harriet De Wit and J. David Jentsch. Published by Springer, 2020.

Jentsch J.D., **Groman S.M.**, James A.S., Seu E. Monoaminergic regulation of cognitive control in laboratory animals. *Inhibitory Control and Drug Abuse Prevention: From Research to Translation*. Edited by Michael Bardo, Elaine Fishbein and Richard Milich. Published by Springer, 2011.

Original Papers in Preparation

Groman S.M., Carlyle B., Wilson R., Nairn A., and Taylor J.R. Protein targets mediating addiction susceptibility in rats. *In preparation*.

Groman S.M., Suthaharan P., Feeney E., Corlett P., and Taylor J.R. Model-based correlates of state space learning in a probabilistic reversal learning task. *In preparation*.

Keip A.J., Moin Afshar N., Taylor J.R., and **Groman S.M.** Drug-induced disruptions in negative outcome updating are related to compulsive drug taking. *In preparation*.

Moin Afshar N.*, Keip A.J.*, Trinko R.J., DiLeone R.J., and **Groman S.M.** Dietary restriction of Vitamin D during perinatal development disrupts adolescent decision making. *In preparation*. * indicates equal author contribution.

Moin Afshar N., Keip A.J., Lee D., Taylor J.R., and **Groman S.M.** Proteomic correlates of adolescent decision making in the rat. *In preparation*.

AWARDS AND HONORS

- 2017** Winter Conference on Brain Research Travel Fellowship - Travel award to attend and present at the WCBR 2018 conference (\$1,000) – Yale University
- 2015** American College of Neuropsychopharmacology Travel Award – Travel award to attend the ACNP conference (\$2,000) – Yale University
Early Career Investigator Award - Travel award to attend the College on Problems of Drug Dependence conference (\$1,000) – Yale University
- 2013** UCLA Psychology Department Joseph A. Gengerelli Award for Dissertation of the Year (\$500) - UCLA
- 2012** Travel Award to attend the International Behavioral Neuroscience Society conference (\$1,000)
Samuel Eiduson Student Lectureship Award (\$500) - UCLA
NIDA Director's Travel Award to attend the College on Problems of Drug Dependence conference (\$1,000) - UCLA
Scholarship to attend the Cold Spring's Harbor Laboratory Summer Course "Cellular Biology of Addiction" (\$1,900) - UCLA
UCLA BRI/Semel Institute Neuroscience Graduate Student Travel Award (\$500) - UCLA
APF/COGDOP Clarence J. Rosecrans Scholarship (\$2,000) – UCLA
American Psychology Association Dissertation Research Award (\$1,000), UCLA
- 2011** Travel Award to attend the National Institute of Drug Abuse mini-convention "Frontiers in Addiction Research" (\$750) - UCLA

- 2010** Charles Drew Substance Abuse - Best Student Speaker Award - UCLA
2009 Brain, Behavior and Chemistry: Translational Research in Addiction Travel Award (\$550) - UCLA
Brain, Behavior and Chemistry: Best Student Oral Presentation (\$100) - UCLA
BRI/Semel Institute Neuroscience Graduate Student Travel Award (\$500) - UCLA

GRANTS AND FELLOWSHIPS

Current funding

- R01 MH129320 09/15/22-07/30/27
Circuit-level neurodevelopmental trajectories of decision-making computations
Role: PI (MPI: Saunders)
Annual total costs: \$685,479
- R01 DA043443 05/01/21-04/30/26
Individual differences and cocaine effects on decision choice in rat
Role: PI (UChicago Subaward)
Annual total costs: \$40,000
- U01 DA051977 09/30/20-07/31/25
Genomic mechanisms of decision-making and opioid use trajectories in the rat
Role: PI (MPI: DiLeone)
Annual total costs: \$450,000
- K01 DA048126 07/1/20-6/30/25
Molecular mechanisms of susceptibility to drug use
Role: PI
Annual total costs: \$160,000
- R21 MH120615 07/01/19-5/29/21 (NCE)
Identification of a non-invasive neuroimaging biomarker of prenatal synaptic development
Role: PI (MPI: Scheinost)
Annual total costs: \$137,500

Pending funding

- R01 DA057953 (Resubmission) 12/01/23-11/30/28
Investigating the adolescent critical period in decision-making and drug use susceptibility
Role: PI
Pending SRG Review

Past funding

- P30 DA048742 Center for Neural Circuits in Addiction – Pilot grant 08/01/21-7/31/22
Neurodevelopmental circuits underlying decision-making and addiction susceptibility
Role: PI (MPI: Zimmermann)
Annual total costs: \$35,000
- R21 MH120799 07/01/19-06/31/21
Explaining paranoia: computational modeling of belief updating in the general population
Role: Co-I

Annual total costs: \$137,500

Yale/NIDA Proteomics Pilot Grant (Parent grant: P30 DA 018343) 06/30/19-06/30/21
A 'targeted' approach to identify the proteins underlying the biobehavioral mechanisms
of addiction
Role: PI
Annual total costs: \$7,500

Brain and Behavior Research Foundation Early Investigator Award NCE
Dopamine signaling and decision-making in an animal model of schizophrenia
Role: PI
Annual total costs: \$35,000

Center for the Translational Neuroscience of Alcoholism (CTNA) Pilot Grant (Parent grant: P50
AA 012870)
1/30/16 – 1/29/17
Reinforcement-learning mechanisms in alcohol-taking behaviors
Role: PI
Total costs: \$50,000

T32 Fellowship – Biological Sciences Training Program (Parent grant: MH 014276)
4/1/13-3/30/15
Neurobiology of decision-making in mental illness
Role: Post-doctoral fellow

Consortium for Neuropsychiatric Phenomics pilot project award (Parent grant: P50-
MH077248)
6/08-6/09
Mechanistic studies related to D2-receptor signaling in impulsivity
Role: PI
Total costs: \$20,000

Consortium for Neuropsychiatric Phenomics pilot project award (Parent grant: P50-
MH077248)
6/08-6/09
Assessment of D1 and D2 receptors in the brain and their association with behavioral
phenotypes
Role: Co-PI
Total costs: \$38,800

F31 DA 028812 4/1/10 – 3/31/13
Impulsivity and D2 receptor function: behavioral and PET correlates
Role: PI
Total costs: \$104,328

INVITED TALKS

- 2024** Neurobiology of Drug Addiction Gordon Research Conference. Newry, ME.
2023 Adolescence as a critical developmental period for addiction susceptibility. Toxicology
Seminar Series, University of Illinois Urbana-Champaign.

- Adolescence: a critical period for decision-making and addiction. Decision-making affinity group, University of California, Los Angeles (UCLA).
- 2022** OFC circuits encode distinct reinforcement-learning computations. Winter Conference on Brain Research. Snowmass, Colorado.
Role of Model-Free and Model-Based Reward Learning in Drug Self-Administration. Neurobiology of Drug Addiction Gordon Research Conference. Newry, ME. [Originally scheduled for 2020, but postponed until 2022 because of COVID-19]
- 2021** Model-free and model-based learning is disrupted following methamphetamine self-administration in rats. European Behavioral Pharmacology Society [Virtual].
Neurodevelopmental mechanisms of decision making and role in addiction susceptibility. Rutgers-Princeton Center for Computational Cognitive Neuropsychiatry. [Virtual seminar].
- 2020** Molecular and Neurodevelopmental mechanisms contributing to drug-taking behaviors. American College of Neuropsychopharmacology, Virtual meeting.
Adolescent decision making and potential role in addiction, Cognition, Brain, and Behavior Graduate Seminar, University of New Mexico. [Virtual seminar].
Adolescent decision-making trajectories and potential role in addiction susceptibility, Department of Psychology seminar, Binghamton University. [Virtual seminar].
Neurobiological mechanisms of decision making. Neuroscience Seminar, Washington University in St. Louis [Virtual seminar].
Neural circuits of reinforcement learning and compulsive drug use. International Society for Research on Impulsivity. New York, New York. [Virtual seminar]
Understanding the role of OFC circuits in reinforcement learning and addiction. Division of Substance Abuse Seminar, Veterans Administration Connecticut Health Care System, New Haven, Connecticut.
A biobehavioral approach for elucidating the mechanisms of addiction. Medical Discovery Team on Addiction seminar, University of Minnesota Twin Cities, Minneapolis, Minnesota.
A biobehavioral approach for elucidating the mechanisms of addiction. Learning and Behavior Seminar, University of California, Los Angeles.
A biobehavioral approach for elucidating the mechanisms of addiction. Behavioral Pharmacology Research Unit Addiction Research Seminar, Johns Hopkins University, Baltimore, Maryland.
Decision-making in addiction: dissociating susceptibility from consequence. Mind/Brain Institute, Johns Hopkins University, Baltimore, Maryland.
A biobehavioral approach for elucidating the mechanisms of addiction. University of Texas at Dallas, Dallas, TX.
- 2019** Decision-making in addiction. Neuroscience and Behavior seminar, University of California, Santa Barbara, California.
Insights into the role of orbitofrontal circuits in reinforcement-learning and addiction-relevant mechanisms. Quadrennial meeting on OFC Function. Paris, France.
- 2018** Behavioral and protein correlates of addiction-relevant behaviors. Psychology and Biology Joint Seminar, Hofstra University, New York.
Model-free and model-based influences in addiction-like behaviors in rats. Cosyne, Breckenridge, Colorado.
Identifying novel behavioral and protein biomarkers in addiction-related behaviors. Winter Conference on Brain Research, Whistler, British Columbia, Canada.
- 2017** Disentangling cause from consequence: Understanding the decision-making processes underlying addiction. Society for Biological Psychiatry, San Diego, CA.

- 2016** Corticostriatal mechanisms underlying individual differences in decision-making and addiction. The Brain Conferences: New Insights into Psychiatric Disorders through Computational, Biological, and Developmental Approaches. Copenhagen, Denmark. Uncovering the role of meso-striatal dopamine D2 and D3 receptors in decision-making. Dopamine, Vienna, Austria.
- 2015** Reversal learning is predictive of and affected by cocaine self-administration: Dissecting decision-making processes with computational models. College on Problems of Drug Dependence, Phoenix AZ.
- 2012** Differences in feedback-based learning and prefrontal dopamine utilization are associated with variation in the DRD4 gene. International Behavioral Neuroscience Society, Kailua-Kona, HI.
- 2010** Variation in Striatal D2-like Receptor Availability is Related to Individual Differences in Reversal Learning Performance and Feedback Sensitivity in Monkeys. Charles Drew University of Medicine and Science, Los Angeles, CA.
- 2009** Differences in D2 receptor availability in high and low impulsive monkeys. College on Problems of Drug Dependence, Reno, NV.
Differences in D2 receptor availability and behavioral flexibility as a function of trait impulsivity in monkeys. Behavior, Brain and Chemistry: Translational Research in Addiction, San Antonio, TX.
- 2008** Escalating dose of methamphetamine induces deficits in response inhibition in non-human primates. College on Problems of Drug Dependence, San Juan, Puerto Rico.

CONFERENCE ACTIVITY

Select Papers Presented

- Groman S.M.**, Hill J.K., LaRocco K., Jack M., and Villiamma P. Adolescent decision-making trajectories are altered in environmental and genetic models of addiction susceptibility. American College of Neuropsychopharmacology. (Phoenix, AZ, December 2022).
- LaRocco K., Villiamma P., and **Groman S.M.** Oral oxycodone self-administration is greater in female rats compared to male rats and associated with disruptions in positive-feedback updating. Society for Neuroscience. (San Diego, CA, November 2022).
- Villiamma P., Casby J., and **Groman S.M.** Improvements in decision-making during adolescence predict cocaine-taking behaviors in adulthood. Society for Neuroscience. (San Diego, CA, November 2022).
- Groman S.M.**, Jack M., LaRocco K., and Villiamma P. Social isolation during adolescence disrupts adolescent decision-making trajectories and limbic-cortical circuits. Nano symposium at Society for Neuroscience. (San Diego, CA, November 2022).
- Groman S.M.**, Thompson S.L., Lee D., and Taylor J.R. Model-free and model-based components of reinforcement-learning differentially mediate reversal learning in the rat. Virtual Society for Neuroscience. (Chicago, IL, November 2021)
- Pisupati S., Taylor J.R., Niv Y., and **Groman S.M.** A unified framework for reversal learning based on latent-cause inference. Virtual Society for Neuroscience. (Chicago, IL, November 2021)
- Thompson S.L., **Groman S.M.**, Palm N.W., and Taylor J.R. Investigating the lasting impact of developing germ free on reward learning and motivation in adult male and female mice after conventionalization. Virtual Society for Neuroscience. (Chicago, IL, November 2021)
- Asch R.H., Pothula S., Toyonaga T., Fowles K., **Groman S.M.**, Garcia-Milian R., Lam T.T., and Esterlis I. Increased mGluR5 availability following traumatic stress is associated with greater fear expression in rats: an in vivo FPEB and PET imaging study. American

- College of Neuropsychopharmacology. (San Juan, Puerto Rico, December, 2021).
- Thompson S.L., **Groman S.M.**, Palm N.W., and Taylor J.R. Investigating the effects of germ free status during development on reward learning and motivation in adulthood in mice. Society of Biological Psychiatry (2021 - Virtual conference)
- Rossano S., Toyonaga T., **Groman S.M.**, Li S., Berg E., Huang Y., Tarantal A., and Carson R.E. Fetal imaging of synaptic vesicle glycoprotein 2A using ¹⁸F-SynVesT-1 PET on the primate miniEXPLORER. International Symposium of Functional Neuroreceptor Mapping of the Living Brain (Montreal, Canada, June 2020 - Virtual conference).
- Toyonaga T., Rossano S., Fowles K., Holden D., Naganawa M., Gallezot J., Mulnix T., **Groman S.M.**, and Carson R.E. Synaptogenesis during brain development: A ¹¹C-UCB-J PET study in adolescent rats. Society of Nuclear Medicine and Molecular Imaging (New Orleans, LA, June 2020 – Virtual conference).
- Moin Afshar N., Keip A.J., Lee D., Taylor J.R., and **Groman S.M.** Decision making improves across adolescent development in the rat: Implications for orbitofrontal circuit development. Society of Biological Psychiatry (New York, NY, May 2020).
- Groman S.M.**, Liu H., Hillmer A., Fowles K., Holden D., Esterlis I., Morris E.D., Lee D., and Taylor J.R. Distinct roles of dopamine D3 and mGlu5 receptors in addiction-relevant behaviors in the rat. American College of Neuropsychopharmacology (Orlando, FL, December 2019).
- Moin Afshar N., Keip A.J., Lee D., Taylor J.R., and **Groman S.M.** Decision making improves across adolescent development in the rat: Implications for orbitofrontal circuit development. Quadrennial meeting on OFC Function (Paris, France, November 2019).
- Keip A.J., Taylor J.R. and **Groman S.M.** Unidirectional ablation of orbitofrontal-nucleus accumbens projections decreases sensitivity to negative outcomes in methamphetamine self-administering rats. Society for Neuroscience (Chicago, IL October 2019).
- Groman S.M.**, Keip A.J., DiLeone R.J., Pittenger C.P., Lee D., and Taylor J.R. Orbitofrontal circuits influence multiple reinforcement learning processes. Society for Neuroscience (Chicago, IL October 2019).
- Thompson S.L., **Groman S.M.**, Meyers J.H., Huang G., and Taylor J.R. Role for the gut microbiome in decision-making in mice. Society for Neuroscience (Chicago, IL October 2019).
- Keip A.J., **Groman S.M.**, Carlyl B.C., Wilson R.S., Nairn A.C., and Taylor J.R. Identification of proteins in the orbitofrontal cortex underlying addiction vulnerability and consequence in rats. Neuron Conference at Quinnipiac University (North Haven CT, February 2019).
- Groman S.M.**, Carlyle B.C., Wilson R., Nairn A., and Taylor J.R. Dissociating the signaling mechanisms underlying addiction vulnerability from consequence of drug use. American College of Neuropsychopharmacology (Hollywood FL, December 2018).
- Groman S.M.**, Keistler C.K., and Taylor J.R. Disentangling the role of specific orbitofrontal circuits in decision-making. American College of Neuropsychopharmacology (Palm Springs CA, December 2017).
- Groman S.M.**, Massi B., Mathias S., Lee D., and Taylor J.R. Model-free and model-based reinforcement learning in addiction-related behaviors. Society for Neuroscience (Washington DC, November 2017).
- Groman S.M.**, Keistler C., and Taylor J.R. Uncovering the role of specific orbitofrontal circuits in decision-making. Society of Biological Psychiatry (San Diego, 2017).
- Hare, B.D., **Groman S.M.**, Genessi C.A., Taylor J.R., and Duman R.S. Dissociating the serotonergic and glutamatergic effects of ketamine on attentional performance. Society for Neuroscience. (San Diego, November 2016).
- Taylor J.R., **Groman S.M.**, Massi B., and Lee D. Parsing decision-making vulnerability

- factors for addiction from drug-induced dysfunction in rat models. *Addiction in theory*. (London, May 2016).
- Rich K.M., **Groman S.M.**, Frick L.R., Morales A.M., Pittinger C., and Taylor J.R. An escalating dose of methamphetamine impairs reversal-learning performance: a biobehavioral analysis. *NEURON conference*. (Quinnipiac University, February 2016).
- Groman S.M.**, Smith N.J., Petrulli J.R., Chen L., Massi B., Lee D., Morris E.D., and Taylor J.R. Midbrain D3 receptor availability is related to flexible decision-making processes in rats. *Society for Neuroscience*. (Chicago, October 2015).
- Groman S.M.**, Massi B., Chen L., Lee D., and Taylor J.R. Lesions of the orbitofrontal cortex impair model-based learning in a rodent multi-stage decision-making task. *Society of Biological Psychiatry*. (Toronto, Canada, May 2015).
- Groman S.M.**, Chen L., Smith N.J., Lee D., and Taylor J.R. Dorsomedial striatum lesions disrupt the balance between model-free and model-based learning in a multi-stage decision-making task in rats. *Society for Neuroscience*. (Washington D.C., November 2014).
- Groman S.M.**, Magana L.A., Clark T.A., Pennington Z.T., James A.S., and Jentsch J.D. Spontaneous eye blink rates strongly correlate with in vivo imaging-based measures of striatal dopamine D2-like receptors. *Society for Neuroscience*. (San Diego, November 2013).
- Groman S.M.**, Clark T.A., Tran S., Crawford M.A., Harpster S.N., and Jentsch J.D. In vivo measures of dopamine D2-like receptor availability predict individual differences in spontaneous eye blink rates. *Society for Neuroscience*. (New Orleans, October 2012).
- Groman S.M.**, Lee B., Seu E., James A.S., London E.D., Mandelkern M.A., and Jentsch J.D. Escalating exposure to methamphetamine produces persistent alterations in dopaminergic biomarkers and inhibitory control in monkeys. *College on Problems of Drug Dependence*. (Palms Springs, CA, June 2012).
- Groman S.M.**, Burtner J.L., Feiler K., Rivera R., London E.D. and Jentsch J.D. In vivo measures of D2-like, but not D1-like, receptor availability correlate with eye blink rate in monkeys. *European Behavioral Pharmacology Society*. (Amsterdam, Netherlands, August 2011).
- Groman, S.M.**, Lee, B., Mandelkern, M., Dahlbom, M., Feiler, K., Rivera, R., London, E.D., and Jentsch, J.D. Sensitivity to Feedback in Discrimination Learning is Related to D2/D3 Receptor Availability in Monkeys. *Society for Neuroscience*. (San Diego, November 2010).
- Groman, S.M.**, Lee, B., Rivera, R. London, E.D., and Jentsch, J.D. Greater Striatal D2-like Receptor Availability in High Impulsive Non-Human Primates. *Society for Neuroscience*. (Chicago, IL, October 2009).
- Groman, S.M.**, James, A.S., Fairbanks, L.A., Seu, E., and Jentsch, J.D. Behavioral impulsivity is predictive of the reversal, but not acquisition or retention, of a visual discrimination in juvenile vervet monkeys. *Society for Neuroscience*. (Washington DC, November 2008).
- James, A.S., **Groman, S.M.**, Seu, E., Jorgensen, M., Fairbanks, L.A., and Jentsch, J.D. Trait impulsiveness associates with cognitive deficits in non-human primates. *College on Problems of Drug Dependence*. (San Juan, PR, June 2008).
- Lee, B., **Groman, S.M.**, Seu, E., London, E.D., and Jentsch, J.D. Nonhuman primate model for methamphetamine-induced deficits in response inhibition: preliminary report. *Society for Neuroscience*. (San Diego, CA, November 2007).
- Groman, S.M.**, James, A.S., Fairbanks LA and Jentsch JD. High behavioral impulsivity is associated with poor spatial working memory in adolescent vervet monkeys. *Society for Neuroscience*. (San Diego, CA, November 2007).

DEPARTMENTAL TALKS

- 2021** Developing a computational framework to link biology with behavior. Graduate Program in Pharmacology, University of Minnesota.
Developmental decision-making mechanisms underlying drug-use susceptibility. Medical Discovery Team on Addiction, Works in Progress. University of Minnesota.
- 2018** Biobehavioral mechanisms underlying decision making in addiction. Psychiatry Department, Yale University.
- 2016** Reinforcement learning in addiction. Psychiatry Department, Yale University.
- 2015** Identifying the unique contributions of the dopamine D3 receptor in addiction-like behaviors. Psychiatry Department, Yale University
- 2014** Translational techniques for assessing decision-making processes in rats. Psychiatry Department, Yale University.
- 2013** The dopamine D2-like receptor: At the nexus between self-control and addiction. Psychiatry Department, Yale University.
- 2012** Dopamine D2-like Receptors: At the nexus between self-control and addiction. Brain Research Institute, University of California, Los Angeles

TEACHING EXPERIENCE

Course Director

Behavioral Neuroscience Graduate Core Course, University of Minnesota, Department of Neuroscience

Teaching Assistant

Psychobiology, University of California, Los Angeles
Stress and Bodily Disorders, University of California, Los Angeles
Fear and Anxiety, University of California, Los Angeles
Behavioral neuroscience laboratory, University of California, Los Angeles

Guest Lecturer

Drugs of Abuse: Translation Neurobiology, University of California, Los Angeles

PROFESSIONAL ACTIVITIES

Manuscript review

International Journal of Neuropsychopharmacology, Plos One, Drug and Alcohol Dependence, Journal of Neurophysiology, Journal of Neuroscience, Psychopharmacology, Neuropsychopharmacology, Cerebral Cortex, Biological Psychiatry, eLIFE, Addiction Biology

Editorial

Guest Editor for PLOS One collection of papers on the Neuroscience of Reward and Decision-making
Consulting Editor, Behavioral Neuroscience
Review Editor, Frontiers in Psychiatry – Addictive Disorders

Review panels for external funding agencies, foundations, etc.

NIH, NIMH Pathway to Independence Awards (K99/R00), ZMH1ERB, 10/2022
NIH, NIDA Animal Genomics Program (U01 – Clinical Trial Not Allowed), ZDA1IXR,

5/2022, 10/2022, 6/2023, 11/2023