Justin M. Moscarello, PhD

Assistant Professor
Department of Psychological & Brain Sciences
Institute for Neuroscience
Texas A&M University
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Education & Training

DEGREES

2010 **PhD Psychology**
University of California, Santa Barbara

2003 **BA Physical Anthropology**
UCSB

HONORS & AWARDS

2011-14 Ruth L. Kirchstein National Research Service Award (postdoctoral)

2009 Harry J. Carlisle Award for Outstanding Graduate Student

2008-09 Ruth L. Kirchstein National Research Service Award (predoctoral)

2007 Dean's Fellowship

2006 Advanced to PhD candidate with distinction

2003 Graduated magna cum laude and with distinction in major

2002-03 Dean's Honor List

THESIS & DISSERTATION

2010 Doctoral Dissertation
Title: The role of the medial prefrontal cortex and nucleus accumbens in motivation and reinforcement

2003 Undergraduate Honors Thesis
Title: The nature/nurture question is answered by heredity-environment interactions

Positions & Employment

FACULTY

2017-present **Assistant Professor**
Department of Psychological & Brain Sciences
Institute for Neuroscience
Texas A&M University

RESEARCH

2014-16 **Senior Research Scientist**
Center for Neural Science, New York University

2010-14 **Postdoctoral Fellow**
Mentor: Professor Joseph LeDoux
Center for Neural Science, NYU

2004-10 **Graduate Student Researcher**
Mentor: Professor Aaron Ettenberg
Department of Psychological & Brain Science, UCSB

2003-04 **Laboratory Technician**
Ettenberg Lab, Department of Psychological & Brain Science, UCSB

TEACHING

2018-present **Instructor**
Department of Psychological & Brain Sciences, TAMU
Course: Neuroscience of Learning and Memory (PSYC/NRSC 332, TAMU)
Developed syllabi and all course materials, delivered all lectures.

2008-09 **Instructor**
Department of Psychological & Brain Science, UCSB
Course: Psychopharmacology of Drugs of Abuse
Developed syllabi and all course materials, delivered all lectures.

2004-09 **Laboratory Instructor**
Department of Psychological & Brain Science, UCSB
Courses: Neuroanatomy, Neuroendocrinology, Methods in Biopsychology, Animal Learning
Lead lab exercises, graded papers and exams, delivered guest lectures

2004-09 **Teaching Assistant**
Department of Psychological & Brain Science, UCSB
Courses: Neural Development, Neuropharmacology, Introduction to Biopsychology, Motivation, Cognition, Psychopathology
Graded papers and exams, delivered guest lectures, lead discussion sections.

SERVICE

2017-present **BCN Area Representative, Graduate Studies & Admissions Committee**
TAMU

2017-18 **Secretary, GLBTQ Professional Network**
TAMU

2006-09 **Graduate Student Member of IACUC**
UCSB

Research Funding

2018-19 **NARSAD Young Investigator Award**
Brain & Behavior Foundation
Title: Neural Mechanisms of Resilience
Total Award: $70,000
Role: PI

2011-14 **Postdoctoral National Research Service Award (NRSA)**
National Institute of Mental Health (F32MH094061)
Title: The role of medial prefrontal cortex in active avoidance behavior
Total award: $155, 466
Role: PI

2008-09 **Predoctoral National Research Service Award (NRSA)**
National Institute on Drug Abuse (F31DA024505)
Title: Dopamine terminal regions interact as a function of motivation & reinforcement
Total award: $63, 399
Role: PI

2007 **Dean's Fellowship**
College of Letters & Sciences, UCSB
Total award: $15,000

Invited Talks & Symposia

2018 **Association for Psychological Science Annual Conference**
Title: When brain systems compete: prefrontal mechanisms resolve between conflicting defensive behaviors
Type: Symposium

2017 **Department of Psychology, University of Texas**
Title: Neural pathways of active avoidance behavior.
Type: Seminar

2017 **Department of Neuroscience and Experimental Therapeutics, Texas A&M**
Title: Neural pathways of active avoidance behavior.
Type: Seminar

2017 **Winter Conference on Neural Plasticity, Grenada**
Title: Avoidance learning recruits a PFC-nucleus reuniens pathway to suppress conditioned freezing
Type: Symposium

2016 **Department of Psychology, NYU**
Title: The associative structure of active avoidance memory in rat
Type: Seminar

2016 **Pavlovian Society Meeting, Jersey City, NJ**
Title: Investigating the associative structure of active avoidance memory
Type: Symposium

2016 **Department of Psychology, Texas A&M**
Title: Mastering fear: the neural substrates of signaled active avoidance behavior.
Type: Job talk

2015 **Society for Neuroscience, Washington DC**
Title: Active avoidance recruits a prefrontal-hippocampal circuit for the suppression of innate defensive reactions.
Type: Nanosymposium

Publications

PEER-REVIEWED PAPERS

Moscarello JM, Maren S (2018) Flexibility in the face of fear: hippocampal-prefrontal regulation of fear and avoidance. *Current Opinion in Behavioral Sciences,* 19: 44-49.

Moscarello JM, Hartley CA (2017) Agency and the calibration of motivated behavior. *Trends in Cognitive Science*. 21(10): 725-735.

Boeke E, **Moscarello JM**, LeDoux JE, Phelps E, Hartley C (2017) Active avoidance: neural mechanisms and attenuation of Pavlovian conditioned responding. *Journal of Neuroscience*, 37(18): 4808-18.

LeDoux JE*****, **Moscarello J***, Sears R, Campese V (2017) The birth, death, and resurrection of avoidance: a reconceptualization of a troubled paradigm. *Molecular Psychiatry*, 22: 24-36.
******denotes shared 1st authorship*

Ramirez F*****, **Moscarello JM***, LeDoux JE, Sears RM (2015) Active avoidance requires a serial basal to nucleus accumbens circuit. *Journal of Neuroscience*, 35(8): 3470-77.
******denotes shared 1st authorship*

Campese V, Gonzaga R, **Moscarello JM**, LeDoux JE (2015) Modulation of instrumental responding by a conditioned threat stimulus requires lateral and basal amygdala. *Frontiers in Behavioral Neuroscience,* 9: 1-10.

Galatzer-Levy IR, **Moscarello JM,** Blessing EM, Klein J, Cain CK, LeDoux JE (2014) Heterogeneity in signaled active avoidance: substantive and methodological relevance of diversity in instrumental defensive responses. *Frontiers in Systems Neuroscience*, 8: 1-12.

Moscarello JM, LeDoux JE (2013) Active avoidance learning requires prefrontal suppression of amygdala mediated defensive reactions. *Journal of Neuroscience*, 33: 3815-23.

Moscarello JM, LeDoux JE (2013) The contribution of the amygdala to aversive and appetitive Pavlovian learning processes. *Emotion Review*, 5: 248-53.

Martinez RCR, Gupta N, Lazaro-Munoz G, Sears RM, Kim S, **Moscarello JM**, LeDoux JE, Cain CK (2013) Active vs. reactive threat responding is associated with differential c-Fos expression in specific regions of the amygdala and prefrontal cortex. *Learning & Memory*, 20: 446-52.

Moscarello JM, Ben-Shahar O, Ettenberg A (2010) External incentives and internal states guide goal-directed behavior via the differential recruitment of the nucleus accumbens and medial prefrontal cortex. *Neuroscience*, 170: 468-77.

Moscarello JM, Ben-Shahar O, Ettenberg A (2009) Effects of food deprivation on goal-directed behavior, spontaneous locomotion, and c-Fos immunoreactivity in the amygdala. *Behavioural Brain Research*, 197: 9-15.

Guzman D, **Moscarello JM**, Ettenberg A (2009) The effects of medial prefrontal cortex infusions of cocaine in a runway model of drug self-administration: evidence for reinforcing but not anxiogenic effects. *European Journal of Pharmacology*, 605: 117-22.

Moscarello JM, Ben-Shahar O, Ettenberg A (2007) Dynamic interaction between medial prefrontal cortex and nucleus accumbens as a function of both motivational state and reinforcer magnitude. *Brain Research*, 1169: 69-76.

Ben-Shahar O, **Moscarello JM**, Ettenberg A (2006) One hour, but not six hours, of daily access to cocaine results in elevated levels of the dopamine transporter. *Brain Research*, 1095: 148-53.

Ben-Shahar O, **Moscarello JM**, Jacob B, Roarty MP, Ettenberg A (2005) Prolonged daily exposure to IV cocaine results in tolerance to its stimulant effects. *Pharmacology, Biochemistry, & Behavior*, 82: 411-6.

BOOK CHAPTERS

Campese VD, Sears RM, **Moscarello JM**, Diaz-Mataix L, Cain CK, LeDoux JE (2015) The neural foundations of reaction and action in aversive motivation. *Current Topics in Behavioral Neuroscience*, 8: 1-25.

Moscarello JM, LeDoux J (2014) Diverse effects of conditioned threat stimuli on behavior. *Cold Spring Harbor Symposia on Quantitative Biology,* 79: 11-19.

Hartley CA, **Moscarello JM**, Quirk GJ, Phelps EA (2014) The cognitive neuroscience of fear and its control: from animal models to human experience. In: *The Cognitive Neurosciences*. Eds. Gazzaniga MS, Mangun GR. Cambridge: MIT Press.

Conference Presentations

Moscarello JM, LeDoux JE (2013) Instrumental learning alters the assessment of conditioned threats through a hippocampal mechanism. *Gordon Research Conference: Amygdala in Health & Disease*.

Moscarello JM, LeDoux JE (2012) Infralimbic prefrontal cortex suppresses amygdala-mediated fear reactions as a function of active avoidance learning. *2012 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Moscarello JM, LeDoux JE (2011) Opposite effects of ventromedial prefrontal cortex and central amygdala lesions on avoidance learning. *Gordon Research Conference: Amygdala in Health & Disease*.

Moscarello JM, Ben-Shahar O, Ettenberg A (2010) Dopamine antagonism in the medial prefrontal cortex and nucleus accumbens has differential effects on behavior as a function of motivational state and reinforcement schedule. *2010 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Moscarello JM, Ben-Shahar O, Ettenberg A (2009) Inactivation of prelimbic prefrontal cortex and nucleus accumbens core differentially impacts behavior as a function of motivational state and reinforcement schedulee. *2009 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Moscarello JM, Beh-Shahar O, Szumlinski KK, Ettenberg A (2008) The effects of motivational state and food deprivation on glutamate and GABA release in the nucleus accumbens core. *2008 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Moscarello JM, Ben-Shahar O, Ettenberg A (2007) Food presentation to hungry rats produces an immediate increase in DA and delayed reactions in GABA and glutamate within the medial prefrontal cortex. *2007 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Published Abstracts

Ben-Shahar O, **Moscarello JM**, Keeley PW, Heston RN, Joyce MM, Ettenberg A (2005) Dopamine D_2 receptor density in the nucleus accumbens as a function of differential access to cocaine. *2005 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Ben-Shahar O, **Moscarello JM**, Nyffeler M, Jacob B, Brake WG, Cook M, Roarty MP, Ettenberg A (2004) Upregualtion of the dopaminergic transporter in the nucleus accumbens core after 1-hr but not 6-hr of daily access to cocaine. *2004 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Guzman D, **Moscarello JM**, Ettenberg A (2004) Medial prefrontal cortex cocaine administration produces reinforcing but not anxiogenic actions in a runway model of self-administration. *2004 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.

Ben-Shahar O, **Moscarello JM**, Jacob B, Roarty MP, Ettenberg A (2003) Differential lengths of daily exposure to IV cocaine result in different patterns of neuroadaptations. *2003 Abstract Viewer/Itinerary Planner,* Washington DC: Society for Neuroscience.