# Mahsa Moaddab

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Publications: 15 Citations: 458 h-index: 10

## Education

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| 2014 | PhD, University of Otago, Dunedin, New Zealand |
| 2009 | MSc, Shahed University, Tehran, Iran |
| 2005 | BSc, Bu-Ali Sina University, Hamedan, Iran |

## Positions

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|---|---|
| 2016- | Postdoctoral Fellow, Department of Psychology and Neuroscience, Boston College, USA |
| 2014-2016 | Postdoctoral Fellow, Department of Cellular and Molecular Pharmacology, Rosalind Franklin University of Medicine and Science, USA |
| 2010-2014 | Graduate Student, University of Otago, New Zealand |

## Awards & Activities

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|---|---|
| 2023 | Brain Behavior Quantification and Synchronization Workshop, USA |
| 2015 | Runner-up Winner, Great Lakes Chapter ASPET/Poster Session, USA |
| | Basal Ganglia Structure and Function/3rd Workshop, USA |
| 2012 | Runner-up Winner, Division of Health Sciences Research Forum/Poster Session, New Zealand |
| | Outstanding Poster, Medical Sciences Congress/Journal of Neuroendocrinology, Poster Session, New Zealand |
| | Neurophysiology of Magnocellular and Parvocellular Neurons/3rd Workshop, USA |
| 2010 | PhD Scholarship, University of Otago, New Zealand |
| 2009 | IBRO-APRC, Associate School of Neuroscience, Thailand |
| | IBRO-APRC, Associate School of Neuroscience, Malaysia |

## Travel Grants

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|---|---|
| 2021 | Boston College Postdoctoral Association Knowledge Dissemination Program (KDP), USA |
| 2020 | Boston College Postdoctoral Association Knowledge Dissemination Program (KDP), USA |
| | Boston College Trainee Research, Education, and Travel (TREAT), USA |
| 2019 | Boston College Postdoctoral Association Knowledge Dissemination Program (KDP), USA |
| 2018 | Boston College Postdoctoral Association Knowledge Dissemination Program (KDP), USA |
| 2013 | Maurice and Phyllis Paykel Trust (MPPT), New Zealand |
| | Center for Neuroendocrinology (CNE), New Zealand |
| | Brain Health Research Center (BHRC), New Zealand |
| 2012 | British Society for Neuroendocrinology (BSN), UK |
| 2009 | Federation of Asian and Oceania Neuroscience Societies (FAONS)/3rd Symposium, Thailand |
| | Japan Neuroscience Society (JNS)/32nd Annual Meeting, Japan |

## Publications

**Moaddab M**, Qian S, Boyce JB, Gordon NT, DuBois AM, Fitzpatrick AC, Zheng K, McDannald MA (2025). Paraventricular thalamic inputs to the ventral pallidum shape reward seeking during threat and fear responding in extinction. *Behavioral Neuroscience* 139 (6) 255-266.

Williams DC, Chu A, Gordon NT, DuBois AM, Qian S, Valvo G, Shen S, Boyce JB, Fitzpatrick AC, **Moaddab M**, Russell EL, Counsman LH, McDannald MA (2025). Ethograms predict visual fear conditioning status in rats. *eLife* 13:e102782.

Ray MH, **Moaddab M**, McDannald MA (2022). Threat and bidirectional valence signaling in the nucleus accumbens core. *Journal of Neuroscience* 42 (5) 817-833.

**Moaddab M** and McDannald MA (2021). Retrorubral field is a hub for diverse threat and aversive outcome signals. *Current Biology* 31 (10) 2099-2110.

**Moaddab M**, Ray MH, McDannald MA (2021). Ventral pallidum neurons dynamically signal relative threat. *Communications Biology* 4 (43) 1-14.

Strickland JA**,** Dileo AD**, Moaddab M**, Ray MH, Walker RA, Wright KM, McDannald MA (2021). Foot shock facilitates reward seeking in an experience-dependent manner. *Behavioural Brain Research* 399 (112974).

**Moaddab M**, Wright KM, McDannald MA (2020). Early adolescent adversity alters periaqueductal gray/dorsal raphe threat responding in adult female rats. *Scientific Reports* 10 (1): 1-17.

**Moaddab M**, Mangone E, Ray MH, McDannald MA (2017). Adolescent alcohol drinking renders adult drinking BLA-dependent: BLA hyper-activity as contributor to comorbid alcohol use disorder and anxiety disorders. *Brain Sciences* 7 (11): 151.

**Moaddab M**, Dabrowska J (2017). Oxytocin receptor neurotransmission in the dorsolateral bed nucleus of the stria terminalis facilitates the acquisition of cued fear in the fear-potentiated startle paradigm in rats. *Neuropharmacology* 121: 130-139*.*

Dabrowska J, Martinon D, **Moaddab M**, Rainnie DG (2016). Targeting corticotropin-releasing factor (CRF) projections from the oval nucleus of the BNST using cell-type specific neuronal tracing studies in mouse and rat brain. *Journal of Neuroendocrinology* 28 (12)*.*

**Moaddab M**, Hyland BI, Brown CH (2015). Oxytocin excites nucleus accumbens shell neurons in vivo. *Molecular and Cellular Neuroscience* 68: 323-330*.*

**Moaddab M**, Hyland BI, Brown CH (2015). Oxytocin enhances the expression of morphine-induced conditioned place preference in rats. *Psychoneuroendocrinology* 53: 159-169*.*

Brown CH, Han SY, **Moaddab M**, Scott V, Schwenke DO (2014). Peptidergic control of oxytocin and vasopressin neurons and its role in reproductive and hypertension-associated plasticity. *Neurophysiology of Neuroendocrine Neurons* 63-84.

**Moaddab M**, Kermani M, Azizi P, Haghparast A (2013). Functional interaction between the shell sub-region of the nucleus accumbens and the ventral tegmental area in response to morphine: an electrophysiological study. *Basic and Clinical Neuroscience* 4 (2): 159-168.

Haghparast A, **Moaddab M**, Ebrahimzadeh M, Kermani M (2012). Effects of reversible inactivation of the ventral tegmental area on the firing rate of neurons in the shell sub-region of the nucleus accumbens and on morphine-induced conditioned place preference in the rat. *Koomesh* 13 (2): 189-200.

**Moaddab M**, Haghparast A, Hassanpour-Ezatti M (2009). Effects of reversible inactivation of the ventral tegmental area on the acquisition and expression of morphine-induced conditioned place preference in the rat. *Behavioural Brain Research* 198 (2): 466-71.

## Conferences

**Moaddab M** and McDannald MA. Prelimbic cortex firing dynamics during probabilistic fear discrimination. *The 54th Annual Meeting of the Society for Neuroscience, 15-19 Nov 2025, San Diego, CA, USA.* (Poster presentation)

**Moaddab M**, Qian S, Boyce JB, Gordon NT, DuBois AM, Fitzpatrick AC, and McDannald MA. Ventral pallidum-defined pathways modulate fear-related behavior during threat discrimination. *The 52nd Annual Meeting of the Society for Neuroscience, 11-15 Nov 2023, Washington, DC, USA.* (Poster presentation)

**Moaddab M**, Qian S, Boyce JB, Gordon NT, DuBois AM, Fitzpatrick AC, and McDannald MA. Ventral pallidum-defined pathways modulate fear-related behavior during threat discrimination. *The Pavlovian Society Annual Meeting, 21-23 Sep 2023, Austin, TX, USA.* (Poster presentation)

**Moaddab M**, Ray MH, and McDannald MA. Responding to predicted and surprising foot shock outcome in ventral pallidum and nucleus accumbens core. *The 54th Winter Conference on Brain Research, 30 Jan-4 Feb 2022, Colorado, CO, USA.* (Poster presentation)

**Moaddab M**, Ray MH, and McDannald MA. Responding to predicted and surprising foot shock outcome in ventral pallidum and nucleus accumbens core. *The 50th Annual Meeting of the Society for Neuroscience, 8-11 Nov 2021, Virtual.* (Poster presentation)

**Moaddab M**, Ray MH, and McDannald MA. Responding to predicted and surprising foot shock outcome in ventral pallidum and nucleus accumbens core. *The Pavlovian Society Annual Meeting, Sep 30- Oct 2 2021, Ann Arbor, MI, USA.* (Poster presentation)

**Moaddab M**, Ray MH, and McDannald MA. Ventral pallidum neurons dynamically signal relative threat. *The Society for Neuroscience Global Connectome, 11-13 Jan 2021, Virtual,* (Poster presentation)

**Moaddab M.** *Boston Area Neuroscience Group, 5 Nov 2020, Virtual.*

**Moaddab M**. *Cannabis in a Changing Brain Symposium, 16 Sep 2020, Virtual*.

**Moaddab M**. *The Pavlovian Society Annual Meeting, 10-11 Sep 2020, Virtual*.

**Moaddab M**, Ray MH, and McDannald MA. Ventral pallidum neurons signal relative threat. *The 53rd Winter Conference on Brain Research, 25-30 Jan 2020, Montana, MT, USA*. (Oral presentation)

**Moaddab M**, Wright KM, and McDannald MA. Early adolescent adversity inflates periaqueductal gray/dorsal raphe cue responding but diminishes threat signaling in female adult rats. *Boston Area Neuroscience Group, 7 Nov 2019, Boston, MA, USA*. (Poster presentation)

**Moaddab M**, Wright KM, and McDannald MA. Early adolescent adversity inflates periaqueductal gray/dorsal raphe cue responding but diminishes threat signaling in female adult rats. *The 49th Annual Meeting of the Society for Neuroscience, 19-23 Oct 2019, Chicago, IL, USA*. (Poster presentation)

**Moaddab M**, Jeon H, and McDannald MA. Fear and reward intersect in the ventral pallidum. *The 48th Annual Meeting of the Society for Neuroscience, 3-7 Nov 2018, San Diego, CA, USA*. (Poster presentation)

**Moaddab M**. *The 47th Annual Meeting of the Society for Neuroscience, 11-15 Nov 2017, Washington, DC, USA.*

**Moaddab M** and Dabrowska J. The effects of oxytocin in the bed nucleus of stria terminalis (BNST) on anxiety and fear. *The 46th Annual Meeting of the Society for Neuroscience, 12-16 Nov 2016, San Diego, CA, USA*. (Poster presentation)

**Moaddab M** and Dabrowska J. Oxytocin in the BNST reduces acoustic startle response – possible role of PKCδ neurons. *The Annual Meeting of the Chicago Society for Neuroscience, 8 April 2016, Chicago, IL, USA*. (Poster presentation)

**Moaddab M** and Dabrowska J. The effects of oxytocin within the bed nucleus of the stria terminalis on anxiety-like behavior. *The 45th Annual Meeting of the Society for Neuroscience, 17-21 Oct 2015, Chicago, IL, USA.* (Poster presentation)

**Moaddab M**, Hyland BI, and Brown CH. Chronic morphine decreases oxytocin-induced excitation of nucleus accumbens shell neurons. *The 28th Great Lakes Chapter ASPET Annual Meeting, 26 June 2015, Chicago, IL, USA*. (Poster presentation)

**Moaddab M**. *The Annual Meeting of the Chicago Society for Neuroscience, 20 March 2015, Chicago, IL, USA*.

**Moaddab M**, Hyland BI, and Brown CH. Prior morphine exposure blocks oxytocin excitation of nucleus accumbens shell neurons. *The 43rd Annual Meeting of the Society for Neuroscience, 9-13 Nov 2013, San Diego, CA, USA*. (Poster presentation)

**Moaddab M**, Hyland BI, and Brown CH. Intracerebroventricular administration of oxytocin enhances nucleus accumbens shell neuronal activity in morphine-naive but not morphine-treated rats. *New Zealand Medical Sciences Congress, 26-28 Aug 2013, Queenstown, New Zealand*. (Oral presentation)

**Moaddab M**, Hyland BI, and Brown CH. Central oxytocin enhances morphine-induced conditioned place preference in the rat. *The 42nd Annual Meeting of the Society for Neuroscience, 13-17 Oct 2012, New Orleans, LA, USA*. (Poster presentation)

**Moaddab M**, Hyland BI, and Brown CH. Intra-nucleus accumbens oxytocin administration enhances morphine-induced conditioned place preference in the rat. *New Zealand Medical Sciences Congress, 27-29 Aug 2012, Queenstown, New Zealand*. (Poster presentation)

**Moaddab M**, Azizi P, Hassanpour-Ezatti M, and Haghparast A. Effects of reversible inactivation of the ventral tegmental area on the expression of morphine-induced conditioned place preference in the rat. *The 32nd Annual Meeting of the Japan Neuroscience Society, 16-18 Sep 2009, Nagoya, Japan*. (Poster presentation)

Azizi P, **Moaddab M**, Hassanpour-Ezatti M, and Haghparast A. Effects of CB1 receptor antagonist within the nucleus accumbens on the expression of morphine-induced conditioned place preference in morphine-sensitized rats. *The 32nd Annual Meeting of the Japan Neuroscience Society, 16-18 Sep 2009, Nagoya, Japan.* (Poster presentation)

**Moaddab M**, Azizi P, Hassanpour-Ezatti M, and Haghparast A. Effects of reversible inactivation of the ventral tegmental area on the acquisition of morphine-induced conditioned place preference in the rat. *The 3rd Federation of Asian and Oceania Neuroscience Societies symposium, 18-20 May 2009, Bangkok, Thailand*. (Poster presentation)

Azizi P, **Moaddab M**, Hassanpour-Ezatti M, and Haghparast A. The CB1 receptor antagonist within the nucleus accumbens reduced the acquisition of morphine-induced conditioned place preference morphine-sensitized rats. *The 3rd Federation of Asian and Oceania Neuroscience Societies symposium, 18-20 May 2009, Bangkok, Thailand*. (Poster presentation)

## Skills

***Electrophysiology***: Electrode and driver construction
***Surgery***: Intracranial infusions, Guide cannula implants, Microdrivable electrode implants
***Behavior Testing***: Animal handling, Conditioned place preference, Acoustic startle, Forced swim, Stress procedures, Pavlovian fear conditioning, In vivo extracellular recording
***Histology***: Cryostat and microtome slicing, Immunohistochemistry, Light and fluorescence microscopy
***Software***: Spike 2, MedPC IV, Plexon OmniPlex®, Offline Sorter™, ZEISS ZEN, Olympus FV10i, EndNote, GraphPad Prism, Adobe Illustrator, Photoshop, Inkscape, Matlab
***Languages***: English and Persian

## Referees

**Prof Michael A. McDannald**

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