Updated: 240903

Jackson J. Cone, PhD

US Citizen, Canadian Permanent Resident

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Education

In Progress	M.S. in Analytics, Georgia Institute of Technology (expected Spring 2025)
2014	Ph.D. in Neuroscience, University of Illinois, Chicago
2008	B.A. in Molecular and Cell Biology, University of California, Berkeley Minor in Public Policy

Current Position

2022-	Assistant Professor, Department of Psychology Member, Hotchkiss Brain Institute
2023-	Canada Research Chair Tier II University of Calgary

Past Positions

2020-2022	Research Assistant Professor, Laboratory of John H.R. Maunsell, Ph.D. University of Chicago
2015-2020	Postdoctoral Scholar, Laboratory of John H.R. Maunsell, Ph.D. University of Chicago
2015-2019	Adjunct Instructor, Department of Liberal Arts School of the Art Institute of Chicago
2009-2014	Graduate Student, Laboratory of Mitchell F. Roitman, Ph.D. University of Illinois, Chicago Thesis*: "The Hunger Hormone Ghrelin Dynamically Tunes Phasic Mesolimbic Signals Underlying Food-Directed Behaviors"*
2007-2009	Staff Research Associate, Laboratory of Patricia H. Janak, Ph.D. University of California, San Francisco

Honors, Awards, and Fellowships

2023	Dept. of Psychology Outstanding Supervisor Award
2023-	Canada Research Chair (Tier II) in Computational Behavioural Neuroscience
2016-2019	Arnold and Mabel Beckman Foundation Postdoctoral Fellowship
2015	UIC Outstanding Thesis Award (Life Sciences)
2014	SSIB New Investigator Travel Award
2013-2014	UIC Dean's Scholar Fellowship
2011-2013	Chicago Biomedical Consortium Scholar Award
2011-2013	UIC Center for Clinical and Translational Science Predoctoral Fellowship
2010-2011	Departmental T32 Training Grant in the Neuroscience of Mental Health
2009-2011	UIC Chancellor's Supplemental Research Fellowship

University Teaching

2023-	PSCH 503: Computational Neuroscience, Sole Instructor (Winter Semesters) University of Calgary
2015-2019	Science 3460: Light and Vision, undergraduate, Sole Instructor (8 semesters)
2017-2019	Science 3565: Biotechnology and Society, undergraduate, (4 weeks/semester) School of the Art Institute of Chicago
2014	PSCH 363: Laboratory in Behavioral Neuroscience, Sole Instructor (1 semester) University of Illinois at Chicago

Publications (n = 23; First Author = 8.5; h-index = 18)

Cone JJ, Mitchell AO, Parker RK, Maunsell JHR. Temporal weighting of cortical and subcortical spikes reveals stimulus dependent differences in their contributions to behavior. *Current Biology* (2024*).* PMID: 38640924

Duriez A, Bergerot C, **Cone JJ**, Roitman MF, Gutkin B. Homeostatic reinforcement theory accounts for sodium appetitive state- and taste- dependent dopamine responding. *Nutrients* (2023). PMID: 36839372

Day-Cooney JR, **Cone JJ**, Maunsell JHR. Perceptual weighting of V1 spikes revealed with white noise optogenetic stimulation. *Journal of Neuroscience* (2022). PMID: 35232760

Cone JJ, Bade ML, Masse NY, Page, EA, Maunsell JHR. Mice preferentially use increases in cerebral cortex spiking to detect changes in visual stimuli. *Journal of Neuroscience* (2020). PMID: 32917791

Ryczko D, Grätsch S, Alpert MH, **Cone JJ**, Kasemir J, Ruthe A, Beauséjour P-A, Auclair F, Alford S, Roitman MF, Dubuc R. Descending dopaminergic inputs to reticulospinal neurons promote locomotor movements. *Journal of Neuroscience* (2020). PMID: 32998974

Cone JJ, Scantlen MD, Histed MH, Maunsell JHR. Different inhibitory interneuron cell classes make distinct contributions to visual perception. *eNeuro* (2019). PMID: 30868104

Cone JJ, Ni AM, Ghose K, Maunsell JHR. Electrical Microstimulation of Visual Cerebral Cortex Elevates Psychophysical Detection Thresholds. *eNeuro* (2018). PMID: 30406199

Cone JJ, Fortin SM, McHenry JA, Stuber GD, McCutcheon JE, Roitman MR. Physiological state gates acquisition and expression of mesolimbic reward prediction errors. *Proceedings of the National Academy of Sciences* (2016). PMID: 26831116

Ryczko D, **Cone JJ**, Alpert MH, Goetz L, Auclair F, Dubé C, Parent M, Roitman MF, Alford S, Dubuc R. Descending dopamine pathway conserved from vertebrates to mammals. *Proceedings of the National Academy of Sciences* (2016). PMID: 27071118

Chase KA, **Cone JJ**, Rosen C, Sharma R. The value of Interleukin 6 as a peripheral diagnostic marker in schizophrenia. *BMC Psychiatry* (2016). PMID: 27206977

Cone JJ, Roitman JD, Roitman MF. Ghrelin regulates phasic mesolimbic signaling evoked by food-predictive stimuli. *Journal of Neurochemistry* (2015). PMID: 25708523

Fortin SM, **Cone JJ**, Ng-Evans S, McCutcheon JE, Roitman MF. Sampling phasic dopamine signaling with fast-scan cyclic voltammetry in awake-behaving rats. *Current Protocols in Neuroscience* (2015). PMID: 25559005

Mietlicki-Baase EG, Reiner DJ, **Cone JJ**, Olivos DR, McGrath LE, Zimmer DJ, Roitman MF, Hayes MR. Amylin modulates the mesolimbic dopamine system to control energy balance. *Neuropsychopharmacology* (2015). PMID: 25035079

Cone JJ, McCutcheon JE, Roitman MF. Ghrelin acts as an interface between physiological state and phasic dopamine signaling. *Journal of Neuroscience* (2014). PMID: 24695709

Koranda J, **Cone JJ**, McGehee DS, Roitman MF, Beeler JA, Zhaung X. Nicotinic receptors regulate the dynamic range of dopamine release in vivo. *Journal of Neurophysiology* (2014). PMID: 24089398

McCutcheon JE, **Cone JJ**, Sinon CG, Fortin SM, Kantak PA, Witten IB, Deisseroth K, Stuber GD, Roitman MF. Optical suppression of drug-evoked phasic dopamine release. *Frontiers in Neural Circuits* (2014). PMID: 25278845

Cone JJ, Chartoff EH, Potter DN, Ebner SR, Roitman MF. Prolonged high-fat diet reduces dopamine reuptake without altering DAT gene expression. *PLoS One* (2013). PMID: 23516454

Ryczko D, Grätsch S, Auclair F, Dubé C, Bergeron S, Alpert MH, **Cone JJ**, Roitman M, Alford S, Dubuc R. Forebrain dopamine neurons project down to a brainstem region controlling locomotion. *Proceedings of the National Academy of Sciences* (2013). PMID: 23918379

Brown HD, McCutcheon JE, **Cone JJ**, Ragozzino ME, Roitman MF. Primary food reward and reward predictive stimuli evoke different patterns of phasic dopamine signaling throughout the striatum. *European Journal of Neuroscience* (2011). PMID: 22122410

Tye KM*, **Cone JJ***, Schairer W, and Janak PH. Amygdala neural encoding of the absence of reward during extinction. *Journal of Neuroscience* (2010). PMID: 20053894 ***Co-first author.**

Roitman MF, Wescott S, **Cone JJ**, McLane MP, Wolfe HR. Trodusquemine (MSI-1436) reduces acute food intake without affecting dopamine transporter activity. *Pharmacology, Biochemistry and Behavior* (2010). PMID: 20478327

Tye KM, Tye LD, **Cone JJ**, Hekkelman EF, Janak PH, and Bonci AB. Methylphenidate facilitates learning-induced amygdala plasticity. *Nature Neuroscience* (2010). PMID: 20208527

Chaudrhi N, Sahuque LL, **Cone JJ**, and Janak PH. Reinstated ethanol-seeking in rats is modulated by environmental context and requires the nucleus accumbens core. *European Journal of Neuroscience* (2008). PMID: 19046372

Invited Talks

2022 Neurosci 4S03 Undergraduate Honors Neuroscience Seminar, McMaster University
2023 Computational Neuroscience Seminar Series, University of Calgary
2023 University of Calgary Data Science Day
2024 University of Chicago, Systems Neuroscience Seminar
2024 University of Sherbrooke, “From Sensation to Action” symposium
2024 University of Victoria, Division of Medical Sciences

Conference Presentations

2018 University of Chicago T32 Training Grant Retreat
2014 Society for the Study of Ingestive Behavior **Awarded New Investigator Travel Award**
2013 Chicago Chapter of the Society for Neuroscience Annual Meeting
2010, 2011 Society for the Study of Ingestive Behavior

Ongoing Education

2021 *Leadership Excellence and Development (LEAD)*
University of Chicago myChoice and Booth School of Business mini-course
2020 *Neuropixels Training Course*
University College London Short Course
2016 *Imaging Structure and Function in the Nervous System*
Cold Spring Harbor Laboratory Summer Course

Supervision and Training of Laboratory Personnel

Graduate Students

2024- Jamie Sanson, MSc student in Psychology
2023- Bert Kwon, MSc student in Psychology
2023- Kiana Kazeminejad, MSc student in Biomedical Engineering
2023- Amira Fadl, MSc student in Biomedical Engineering

Undergraduates

2024- Emily Kiddle, BSc Honours in Neuroscience

2024- Adriana Quintero Narvaez, BSc Honours in Psychology (also 2024 PURE Fellow)
2024- Jose Paulo Pereira Junior, BSc student in Software Engineering
2024 Nada Mohamed, BSc student in Computer Science (2024 PURE Fellow)
2023-2024 Jamie Sanson, BSc student in Psychology
2023- Safir Ali, BSc student in Psychology
2022-2024 Faye Arellano, BSc Honours in Psychology

Research Technicians
2022-2024 Georgia Green, University of Chicago Research Technician
2021-2023 Autumn Mitchell, University of Chicago Research Technician
Currently Sociology PhD student at UC Berkeley
2020-2022 Rachel Parker, University of Chicago Research Technician
Currently Biomedical Science PhD Student at Rosalind Franklin University
2018-2021 Morgan Bade, University of Chicago Research Technician
Currently MSTP Student at Emory University
2018 Elizabeth Page, University of Chicago Research Technician
Currently Neurology Resident at The Cleveland Clinic (completed MD in 2022)
2017 Megan Scantlen, Northeastern University Undergraduate Co-Op
Currently Biomedical Sciences PhD Student at University of California, San Francisco

Other Activities

2021-2023 Board Member, West Suburban Temple Har Zion, Oak Park IL
2020 EZRA multi-service center food and hygiene pantry delivery during COVID-19 pandemic
2019-2021 Honeymoon Israel Alumni Leadership Council
2018 University of Chicago Neuroscience Cluster Retreat Planning Committee
2017-2022 Private Real Estate Investor
Purchased and rehabbed 2 historic properties in the Pullman neighborhood of Chicago

Ad Hoc Reviewer

Physiology and Behavior, Neuropharmacology, Transactions on Biomedical Engineering, eNeuro, Scientific Reports

Active Research Support

4/1/2022 – 3/31/2027 NSERC Discovery Grant Role: PI
"Parsing pathways of visual perception"

The goal of this proposal is to identify whether specific output pathways of the primary visual cortex are sufficient for generating percepts that can be used to guide behaviour. $29,000 CAD/year in direct costs. Also received a Discovery Launch Supplement worth $12,500 CAD.

2/3/2023 – 3/31/2026 Canadian Foundation for Innovation John R. Evans Leaders Fund Role: PI
"Signal readout and plasticity for perception and action"

The goal of this proposal is to support acquisition of advanced neuronal recording and perturbation technologies to examine how signals in sensory cerebral cortex support perception and action and how perceptual learning augments these processes. Total project cost = $467,221 CAD.

Completed Research Support

5/1/2021 – 4/30/2023 NIH R21 (NEI) Role: PI

“Probing the timescales of perception with white noise optogenetic inhibition”

The goal of this proposal is to use white noise optogenetic inhibition to determine the periods of activity in visual and visuomotor areas that casually contribute to perception and action. $275,000 USD in direct costs over 2 years. No cost extension through 2024.

Service

Supervisory Committees

2024- Zöe Kruschke, PhD Supervisory Committee (Psychology)
2024- Cayden Murray, MSc Supervisory Committee (Neuroscience)
2024- Farzad Karimi, MSc Supervisory Committee (Physics)
2022-2023 Sakib Khan, MSc Supervisory Committee (Psychology)

Thesis Committees

2024 Anja Rabus, MSc Thesis Committee, Internal Examiner (Physics)
2024 Nadia Khiabanian, MSc Thesis Committee, Internal Examiner (Neuroscience)
2024 Rory Gilliand, MSc Thesis Committee, Neutral Chair (BME)
2024 Julien Rimok, MSc Thesis Committee, Neutral Chair (BME)
2023 Josue Ibarra Molinas, MSc Thesis Committee, Internal Examiner (Physics)
2023 Hansol Ryu, PhD Thesis Committee, Internal Examiner (BME)
2023 Chantelle Magel, PhD Thesis Committee, Neutral Chair (Psychology)
2023 Mahtab Moshirpour, PhD Thesis Committee, Neutral Chair (Psychology)
2023 Milton Camacho, MSc Thesis Committee, Neutral Chair (BME)

Departmental

2024 Hotchkiss Brain Institute PhD Fellowship Adjudicator (Neuroscience)
2024 GAC Awards Adjudicator (Psychology)
2023- Performance Review Committee (Psychology)
2023 GAC Entrance and Killiam Awards Adjudicator (BME, Neuroscience)
2023, 2024 Undergraduate Honours Program Oral Presentation Panelist (Neuroscience)
2023 GAC Awards Adjudicator (BME, Neuroscience)

University

2024 Program Chair, UCalgary Computational Neuroscience Annual Retreat
2023- Life and Environmental Sciences Animal Care Committee Member (LESACC)

National

2024- Associate member, CIHR College of Reviewers
2023 Mentee, Reviewer in Training Program, CIHR (BSC study section)
2023 External Reviewer, NSERC Discovery Grant Program