

Jonnathan Singh Alvarado, Ph.D.

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Education

Postdoc, Neurobiology, Harvard University	2021-Current
Ph.D., Neurobiology, Duke University	2014-2021
B.S., Microbiology, University of Florida	2009-2013
B.S., Microbiology, Universidad de Costa Rica	2008-2009

Research Experience

Postdoctoral Fellow Dr. Mark Andermann, Harvard Medical School	2021-Current
Graduate Student, Duke University Dr. Richard Mooney, Department of Neurobiology	2014-2021
Research Assistant, Duke University Dr. Cagla Eroglu, Department of Cell Biology	2013-2014
Undergraduate Researcher, University of Florida Dr. Stephanie Karst, Department of Virology	2012-2013
Undergraduate Researcher, University of Florida Dr. Brent Reynolds, Department of Cancer Biology	2011-2012

Publications

Transient cAMP production drives rapid and sustained spiking in brainstem parabrachial neurons to suppress feeding. **Singh Alvarado J***, Lutas A*, Madara JC, Isaac J, Lommer C, Massengill C, Andermann ML. *Neuron*. 2023.

Divergent projections from Locus Coeruleus to the cortico-basal ganglia system and ventral tegmental area of the zebra finch. **Singh Alvarado J***, Hatfield J*, Mooney R. *Journal of Comparative Neurology*. 2022.

Neural dynamics underlying birdsong practice and performance. **Singh Alvarado J**, Goffinet J, Michael V, Liberti W, Hatfield J, Gardner T, Pearson J, & Mooney R. *Nature*. 2021.

Building Opportunities and Overtures in Science and Technology: Establishing an Early Intervention, Multi-level, Continuous STEM Pathway Program. Garcia J, Gibson R, Breslav A, **Singh Alvarado J**, Seas A, Maduka A, et al. *Journal of STEM Outreach*. 2021.

MIN1PIPE: A Miniscope 1-Photon-Based Calcium Imaging Signal Extraction Pipeline. Lu J, Li C, **Singh Alvarado J**, Zhe Charles Zhou, Flavio Fröhlich, Mooney R, Wang, F. *Cell Rep*. 2018.

Expressing mutant huntingtin in the songbird basal ganglia disrupts cortico-basal ganglia networks and vocal sequences. Tanaka M, **Singh Alvarado J**, Murugan M, and Mooney R. *Proc. Natl. Acad. Sci. USA*. 2016.

Astrocytes refine cortical connectivity at dendritic spines. Risher WC, Patel S, Kim IH, Uezu A, Pilaz LJ, **Singh Alvarado J**, Calhan OY, Silver DL, Stevens B, Soderling SH, and Eroglu C. *eLife*. 2014.

Rapid Golgi Analysis Method for Efficient and Unbiased Classification of Dendritic Spines. Risher WC, Ustunkaya T, **Singh Alvarado J**, Eroglu C. *PLoS ONE*. 2014.

Selected talks

Special Seminar – University of Pittsburgh & Carnegie Mellon University	2024
SFN Minisymposium – Peripheral mechanisms of energy & metabolism	2023
Special Seminar - Champalimaud Centre for the Unknown	2023
Endocrinology Division Meeting – BIDMC	2022
Joint Lab Meeting – Carnegie Mellon University Systems Club	2022
COSYNE 2021 (6% of abstracts selected)	2021
Special Seminar – Columbia University	2021
Virtual Dopamine Conference (ViDA)	2021
University of Washington and Allen Institute Neuromodulation Club	2020
Neuromodulation Gordon Research Conference	2019
Duke University Brown Bag Seminars	2018
Duke Institute for Brain Sciences Symposium	2017
Dept. of Cell & Molecular Biology Seminar	2017
Duke Distinguished Donor weekend	2017
Duke TEDx	2016

Fellowships and Awards

Harvard Brain Initiative Postdoctoral Pioneer Award	2024
Harvard mind, brain, and behavior (MBB) postdoctoral fellowship	2022-2024
Graduate student training enhancement grant (GSTEG) awardee	2019
Simons Foundation Neuromodulation GRC - Outstanding Talk Award	2019
Cold Spring Harbor Laboratories - Neural data science course	2019
Duke Institute for Brain Sciences Symposium – Best Talk	2017
Ruth K. Broad Research Fellowship	2016
Biosciences Collaborative for Research Engagement (BioCoRe) Scholar	2015
Latin American & Caribbean Scholarship (4-year scholarship)	2009-2013

Leadership

HPREP mentor

2024-Present

Lecturer and hands-on project coordinator for STEM outreach program HPREP at Harvard.

NeuroLaunchpad

2021-2022

Created and received funding for trainee-centered nationwide seminar series to give exposure to burgeoning scientists resulting in over 1000 unique viewers.

BOOST Coach

2014-2021

Developed year-long STEM-based research programs and hands-on learning curriculums for low-income middle and high school students.

Committee for Reimagining Doctoral Education at Duke

2018-2020

One of three Duke graduate students selected to serve. Met monthly with group composed of 30 faculty members, Duke's provost, and research training Dean. Constructed a strategic plan for restructuring and improving doctoral education at Duke.

Other Service

2014-2021

Neurobiology Diversity and Inclusion taskforce, Neurobiology Steering Committee, Deans Mentoring award committee, Gordon G Hammes mentoring award committee, Faculty advancement committee, Alfred P Sloan Scholars committee.

Rex Scholar

2016-2017

Assisted in developing software and virtual lectures to be widely distributed in NC public schools.

TECHO - Costa Rica NGO

2007-2011

Directed teams of volunteers in the construction of emergency transitional homes for families in need.