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CURRENT POSITION

Icahn School of Medicine at Mount Sinai

Postdoctoral Fellow

Advisor: Peter Rudebeck, D.Phil

Project: Circuit mechanisms of reinforcement learning in macaques

Techniques: Electrophysiology, reinforcement learning, data-constrained RNN analysis, chemogenetics

New York, NY

beginning April 1, 2024

EDUCATION

Icahn School of Medicine at Mount Sinai

PhD Neuroscience

Advisor: Peter Rudebeck, D.Phil

Thesis: A comparative analysis of amygdala anatomy and physiology in mice, macaques, and man

New York, NY

February 27, 2024

Mercer University

BS Neuroscience, BA Latin; *summa cum laude*

Advisors: Katherine Northcutt, PhD & Achim Kopp, PhD

Macon, GA

May, 2019

PUBLICATIONS

Zeisler, Z., Rudebeck, P.H. 2025

Evolutionary road to primate prefrontal cortex, in *The Evolution of Nervous Systems*, 3rd edition, Volume 3, *The Evolution of Nervous Systems in Nonhuman Primates*, E. A. Murray and S. P. Wise, eds.

Zeisler, Z., Love, M., Rutishauser, U., Stoll, F.M., Rudebeck, P.H. 2025

Consistent hierarchies of single-neuron timescales in mice, macaques, and humans. *Journal of Neuroscience*. 45 (19) e2155242025.

Zeisler, Z., Heslin, K.A., Stoll, F.M., Hof, P.R., Clem, R.L., Rudebeck, P.H. 2024

Comparative basolateral amygdala connectomics reveals dissociable single-neuron projection patterns to frontal cortex in macaques and mice. *Current Biology* 34:14, 3249-3257.E3.

Zeisler, Z., London, L., Janssen, W.G., Fredericks, J.M., Elorette, C., Fujimoto, A., Zhan, H., 2023

Russ, B.E., Hof, P.R., Clem, R.L., Stoll, F.M., Rudebeck, P.H. Single basolateral amygdala neurons in macaques exhibit distinct connectional motifs with frontal cortex. *Neuron* 111, 3307-3320.

INVITED TALKS

New York Memory Hub Conference

September 26, 2025, New York, NY

Zeisler, Z., Stoll, F.M., London, L., Folloni, D., Rudebeck, P.H. The neural circuits and mechanisms of short-term memory during reward learning.

Janelia Mechanistic Cognitive Neuroscience Junior Scientist Workshop March 2-7, 2025, Ashburn, VA
Zeisler, Z., Folloni, D., Stoll, F.M., Rudebeck, P.H. Circuit mechanisms of bottom-up influences on reversal learning in macaques.

Friedman Brain Institute Annual Retreat. May 12, 2023, New York, NY
Zeisler, Z., Heslin, K., Clem, R., Rudebeck, P.H. A comparative analysis of amygdala neuron branching in macaques and mice.

Neuro RECEPTR, Rutgers University, Brain Health Institute. April 27-28, 2023, New Brunswick, NJ
Zeisler, Z., London, L., Janssen, W.G., Fredericks, J.M., Elorette, C., Fujimoto, A., Zhan, H., Russ, B.E., Hof, P.R., Clem, R.L., Stoll, F.M., Rudebeck, P.H. High-throughput sequencing of macaque basolateral amygdala projections reveals dissociable connectional motifs with frontal cortex.

UCLA Science Outreach Symposium November 10, 2022, Los Angeles, CA
Zeisler, Z., Loo, H. Project SHORT: Diversifying STEM through one-on-one mentorship.

AWARDS AND HONORS

Cajal Club: Krieg Cortical Scholar 2025

POSTER PRESENTATIONS

Computational and Systems Neuroscience (COSYNE) March 27-April 1, 2025, Montreal, Quebec
Zeisler, Z., Stoll, F.M., Folloni, D., Perich, M.G., Rudebeck, P.H. Neural circuit mechanisms of bottom-up reward learning.

From Neuroscience to Artificially Intelligent Systems Sept. 28-Oct. 2, 2024, Cold Spring Harbour, NY
Zeisler, Z., Stoll, F.M., Rudebeck, P.H. Neural dynamics supporting affective reward learning

Winter Conference on Brain Research Jan. 27-Feb. 2, 2024, Breckenridge, CO
Zeisler, Z., Heslin, K., Clem, R.L., Rudebeck, P.H. The comparative organization of single amygdala neuron projection patterns to frontal cortex and striatum in macaques and mice

Society for Neuroscience November 11-15, 2023, Washington, DC
Zeisler, Z., Minxha, J., Rutishauser, U., Stoll, F.M., Rudebeck, P.H. Conserved hierarchies of single-unit timescales in frontal and limbic regions in mice, macaques, and humans.

Society for Neuroscience November 11-15, 2023, Washington, DC
Zeisler, Z., Heslin, K., Clem, R.L., Rudebeck, P.H. The comparative organization of single amygdala neuron projection patterns to frontal cortex and striatum in macaques and mice

Society for Neuroscience November 11-17, 2022, San Diego, CA
Zeisler, Z., London, L., Janssen, W.G., Fredericks, J.M., Elorette, C., Fujimoto, A., Zhan, H., Russ, B.E., Hof, P.R., Clem, R.L., Stoll, F.M., Rudebeck, P.H. High-throughput sequencing of macaque basolateral amygdala projections reveals dissociable connectional motifs with frontal cortex.

Gordon Research Conference – Frontal Cortex August 8-12, 2022, Ventura, CA
Zeisler, Z., Fredericks, J.M., Janssen, W.G., Stoll, F.M., Clem, R.L., Rudebeck, P.H. High-throughput sequencing of macaque basolateral amygdala projections reveals dissociable connectional motifs with frontal cortex.

Friedman Brain Institute Neuroscience Retreat

May 13, 2022, New York, NY

Zeisler, Z., Fredericks, J.M., Janssen, W.G., Clem, R.L., Rudebeck, P.H. Single neurons in macaque basolateral amygdala exhibit distinct patterns of collateral projections.

International Congress of Neuroendocrinology

July 15-18, 2018, Toronto, Ontario

Zeisler, Z., Smith, S., Northcutt, K.N. Sex-specific modulation of juvenile midbrain dopamine expression by perinatal serotonin.

Society for Neuroscience

November 11-15, 2017, Washington, DC

Zeisler, Z., Smith, S., Northcutt, K.N. Perinatal hyperserotonemia influences dopamine expression in the midbrain.

ORAL PRESENTATIONS

Society for Neuroscience

November 15-19, San Diego, CA

Zeisler, Z., Stoll, F.M., London, L., Folloni, D., Perich, M.G., Rudebeck, P.H. Neural circuit mechanisms of bottom-up reward learning. Nanosymposium.

Friedman Brain Institute Cells, Circuits, and Behavior WIP

December 5, 2024, New York, NY

Zeisler, Z., Folloni, D., Stoll, F.M., Rudebeck, P.H. Neural circuit mechanisms of bottom-up reinforcement learning.

Friedman Brain Institute Cells, Circuits, and Behavior WIP

December 1, 2022, New York, NY

Zeisler, Z., London, L., Janssen, W.G., Fredericks, J.M., Elorette, C., Fujimoto, A., Zhan, H., Russ, B.E., Hof, P.R., Clem, R.L., Stoll, F.M., Rudebeck, P.H. High-throughput sequencing of macaque basolateral amygdala projections reveals dissociable connectional motifs with frontal cortex.

Center for Neurotechnology and Behavior Seminar Series

March 15, 2022, New York, NY

Zeisler Z., Stoll, F.M., Love, M., Rudebeck, P.H. Intrinsic timescales reflect neuroanatomical differences across species.

Friedman Brain Institute Cells and Circuits WIP

January 14, 2022, New York, NY

Zeisler, Z., Fredericks, J.M., Janssen, W.G., Stoll, F.M., Clem, R.L., Rudebeck, P.H. The Primate Amygdala: Projections at single-neuron resolution.

OTHER EDUCATION

Flatiron Institute, Center for Computational Neuroscience Software Workshop

February 4-6, 2025

Training in use of open-source Python packages *Pynapple* and *NeMos* to analyze, model, and visualize neural data.

Machine Learning for Large-Scale Neuroscience

October 9, 2021

Workshop attended as part of 2021 CRCNS Meeting.

NeuroMatch Academy

July, 2020 – August, 2020

3-week intensive computational neuroscience training course: Python programming, machine learning, big data; group project working with Human Connectome Project fMRI data

OUTREACH ACTIVITIES

Project SHORT – Director of Outreach

July, 2020 – August, 2023

Assisted with organization and recruitment of students from underrepresented communities to receive *pro bono* admissions consulting for graduate or medical school. Oversaw redesign of website.

MiNDS – Mentoring in Neuroscience Discovery at Sinai

August, 2019 – August, 2023

Annual Brain Fair during Brain Awareness Week; monthly classes at local middle school; other STEM advocacy activities across NYC

TEACHING EXPERIENCE

Icahn School of Medicine

New York, NY

Teaching Assistant, Behavioral and Cognitive Neuroscience (for PhD students)

Spring 2021, 2022

CEYE – Sherman Scholars program

August, 2020, 2021, 2022

MiNDS – Intro neuroscience course for middle school students

August, 2019 – August, 2021

Mercer University

Macon, GA

Lab Teaching Assistant, Intro to Environmental Science

Fall 2018

Lab Teaching Assistant, Intro to Biology I

Spring 2017, Spring 2018

Lab Teaching Assistant, Intro to Biology II

Fall 2017

INSTITUTIONAL SERVICE

Icahn School of Medicine

New York, NY

Neuroscience Graduate Program: Interviews, Panels, Socials

Spring 2020, 2021, 2022, 2023, 2024