MATIAS LEANDRO ANDINA

EDUCATION

Current | 2021
PhD. Student, Neuroscience
Massachusetts Institute of Technology
Massachusetts, USA

2018 | 2016
MSc., Neuroscience
University of Massachusetts Amherst
Massachusetts, USA

2015 | 2010
Biology Degree
University of Buenos Aires
Buenos Aires, ARG

SKILLS

Biological Domain Expertise
Rodent behavior, thermoregulation, energy balance, neural circuits.

Experimental Design
Skilled at evaluating scientific evidence, hypothesis generation and designing relevant experiments.

Quantitative Analysis
R (tidyverse, GLMMs), Python (numpy/polars/pandas, scikit-learn), signal processing, time-series, behavioral analysis.

Machine Learning
Automated sleep/behavior state scoring with a custom ML pipeline. Achieved ~150x speedup per electrode (5h → 2min) and ~1500x throughput boost across multi-electrode sessions, enabling full-cohort analysis within minutes rather than days.

Experimental & Technical
Rodent surgery (stereotaxic, abdominal), telemetry systems, sensor integration, open hardware design.

Tool-building
R/Python package development and pipelines, documentation, reproducible workflows, Git/GitHub.

Project Management
Managed multi-device experiments and analysis pipelines involving hundreds of mice per project. Mentored 10+ trainees.

SELECTED PUBLICATIONS

2025
IL-1R1-positive dorsal raphe neurons drive self-imposed social withdrawal in sickness
Cell https://doi.org/10.1016/j.cell.2025.10.040
• L Yang, ML Andina, M Witkowski, H King, I Wickersham, JR Huh, GB Choi

2021

Two spaced training trials induce associative ERK-dependent long term memory in Neohelice granulata.

Behavioral Brain Research. https://doi.org/10.1016/j.bbr.2021.113132

• Ojea Ramos S., Andina M., Romano A., Feld, M

2020

Interleukin-17a restores sociability in several mouse models for neurodevelopmental disorders.

Nature. https://doi.org/10.1038/s41586-019-1843-6

• Reed M.D., Yim Y.S., (…), Andina M., (…), Huh J.R., Choi G.B.

Complete publication list at Google Scholar.

TEACHING EXPERIENCE

2023 | 2016

Instructor of Record and Teaching Assistant roles in neuroscience and statistics.

Full teaching list

SELECTED CONFERENCES

2025

IL-1R1-positive dorsal raphe neurons drive self-imposed social withdrawal in sickness

Society For Neuroscience

• L Yang, ML Andina, M Witkowski, H King, I Wickersham, JR Huh, GB Choi

2019

Interleukin-17a restores sociability in several mouse models for neurodevelopmental disorders.

Society For Neuroscience

• Reed M.D., Yim Y.S., (…), Andina M., (…), Huh J.R., Choi G.B

Complete conference list in this archive.

SELECTED AWARDS

2024 | 2022

Picower Neurological Disorder Research Fund

Massachusetts Institute of Technology

• Secured $75,000 to lead a collaborative research effort

2021

Arete Fellowship

Massachusetts Institute of Technology

• Participated on weekly seminars in Effective Altruism discussion panel

2021

Presidential Fellowship

Massachusetts Institute of Technology

• Secured $43,000 to fund my PhD research

Complete award list in this archive.

MENTORING

Current | 2017

Mentoring Undergraduates and Technicians

• 8 years of mentoring students and technicians across experimental design, open-source hardware/software (FedWatcher), R/Python analysis, and rodent surgical methods. Experienced in onboarding, training, and supporting junior researchers across projects of varying technical complexity.

SELECTED TALKS & INVITED LECTURES

2021

Building a user-driven database of open neuroscience projects

Organisation for Human Brain Mapping

• bit.ly/OHBM-21-MLA

2019

Data Visualization

Harvard Philantrophy Advisory Fellowship

Massachusetts, USA

• bit.ly/PAF-2019-MLA

SOFTWARE DEVELOPMENT

FedWatcher

Open-source Python tool enabling real-time closed-loop communication with FED3 behavioral devices. Used to automate feeding, fasting, and stimulus-delivery paradigms in rodent experiments. https://github.com/matiasandina/FEDWatcher

uid

R package for preprocessing, cleaning, and analyzing high-resolution telemetry data (temperature, activity) from rodent monitoring systems. Includes data QC, interpolation, artifact removal, and downsampling. https://github.com/matiasandina/uid

nobrainr

R package providing fast visualization tools for Mouse Allen Brain Atlas plate drawing, useful for figure preparation and exploratory analysis. https://github.com/matiasandina/nobrainr

Complete List of Software at Github.

Last updated on 2025-12-03.