

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



💡 RESEARCH EXPERIENCE

Current
2022

- **Graduate Research Assistant**
Massachusetts Institute of Technology 📍 Massachusetts, USA
 - Designed and built behavioral setup for synchronized behavior and physiology recordings
 - Designed experiments and collected terabyte datasets to study hunger, sleep, and torpor in mice

2021
2018

- **Technical Associate**
Massachusetts Institute of Technology 📍 Massachusetts, USA
 - Provided technical support for lab procedures (surgeries, wet lab, colony management)
 - Designed continuous home cage monitoring system for movement, temperature, and food intake

2018
2016

- **Graduate Research Assistant**
University of Massachusetts Amherst 📍 Massachusetts, USA
 - Designed experiments and collected data to study maternal behavior in rats

2015
2013

- **Undergraduate Researcher**
University of Buenos Aires 📍 Buenos Aires, ARG
 - Tested a novel device to measure escape responses in crabs
 - Designed experiments and collected data to study learning and memory mechanisms



🎸 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.

🌐 LANGUAGES

Spanish (native)
English (bilingual)
Portuguese (intermediate)

</> PROGRAMMING

R
Python
Matlab
git / GitHub

💻 DATA ANALYSIS

Data visualization (ggplot2, seaborn)
Linear models (GLM, GLMM)
Machine Learning (sklearn)
Image Processing (opencv)

📘 LITERATE CODING

Quarto
Rmarkdown
LaTeX

- **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-1 α 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

- 2022 ● **Teaching Assistant: Statistics for Brain and Computer Sciences**
Massachusetts Institute of Technology  Massachusetts, USA
• Taught statistics recitation lectures.
- 2018 ● **Teaching Assistant: Methods of Inquiry in Psychology**
University of Massachusetts Amherst  Massachusetts, USA
• Taught statistics recitation lectures.
- 2017 ● **Instructor of Record: Animal Behavior**
University of Massachusetts Amherst  Massachusetts, USA
• Selected topics in animal behavior and designed curriculum.
• Taught weekly seminars in animal behavior for 40 students
• CITRL associate

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-1 α 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
 - 2018 ● **Long-term memory induced by two training trials in the crab *Neohelice granulata***
Federation of European Neuroscience Societies
 - Ojea Ramos S., Andina M., Feld M
 - 2015 ● **Two-trial long-term memory in the crab *Neohelice granulata***
Argentinean Society of Neuroscience Research
 - Andina M., Romano A., Feld M
 - 2013 ● **Measuring crab's memory: improving conditioning**
Argentinean Society of Neuroscience Research
 - Andina M., (...), Romano A., Feld M.
- 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 ● **IBRO-LARC**
Talleres Open Source
 - Secured \$5,000 to organize open-hardware workshop in Latin America.  <https://tallerneurolatam.netlify.app/>
- 2021 ● **Presidential Fellowship**
Massachusetts Institute of Technology
 - Secured \$43,000 to fund my PhD research
- 2017 ● **College of Natural Sciences Fellowship**
University of Massachusetts Amherst
 - Awarded fellowship to design and teach a first year seminar class
- 2016 ● **Neuroscience and Behavior Program Fellowship**
University of Massachusetts Amherst
 - Secured \$27,000 to fund my MSc research

2015

- **Young ISN Neurochemistry**

University of Buenos Aires

- Secured travel funding to present my Undergraduate Research at a conference

Complete award list in [this archive](#).

MENTORING

2025

- **Matthew Alkire**

Massachusetts Institute of Technology

- Stereotaxic and abdominal surgery. Experimental design.

2025

- **Jenna Raffael**

Massachusetts Institute of Technology

- Stereotaxic and abdominal surgery. Basic laboratory techniques in rodents.

2022

- **Penelope Herrero**

Massachusetts Institute of Technology

- Open Hardware design and fabrication

2021

- **John Eastman**

Massachusetts Institute of Technology

- FedWatcher. Open Software & Hardware design and fabrication

2018

- **Idil Tuncali**

University of Massachusetts Amherst

- Statistics, R programming, and Analysis of Ultrasonic Vocalizations

2017

- **Nneka Southwell**

University of Massachusetts Amherst

- Basic laboratory techniques in rodents

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 Philanthropy Advisory Fellowship

 Massachusetts, USA

- bit.ly/PAF-2019-MLA

SERVICE

2023

- **Team member**

Open Neuroscience

- Repository of open-source neuroscience tools
- <https://open-neuroscience.com/>

2021	● Co-founder and team member Talleres Open Source • Organization of workshops for Open Source tools in Neuroscience. • ↗ https://talleresos.netlify.app/
2020	
2018	● NSB Seminar Committee University of Massachusetts Amherst • Organization of invited Faculty weekly talks
2016	
2018	● NSB Mentoring Committee. University of Massachusetts Amherst • Organization of first year graduate student activities and mentoring events
2017	

💻 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](#).

I have a strong commitment towards using and developing open source tools.

↳ SELECTED DATA SCIENCE WRITING

2020	● Queen's Gambit ↗ https://matiasandina.com/posts/2021-02-07-queens-gambit/
2019	● Birthday Meritocracy ↗ https://matiasandina.com/posts/2019-05-09-birthday-meritocracy/

I love to visualize data. I post my visualizations and insights in my personal blog¹