Curriculum Vitae

Connor G. Gallimore, Ph.D.

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Education

Aug 2019— May 2025	**Ph.D.**	Doctoral Program in Neuroscience Georgia State University Advisor: Jordan P. Hamm, Ph.D.
Jul 2020— Aug 2020	**Cert**	Three-week intensive online computational neuroscience program Neuromatch Academy (Online)
Aug 2013— May 2017	**B.S.**	Psychology, Chemistry & Neuroscience minors University of North Carolina at Chapel Hill

Employment

Jul 2025— Present
Research Scientist II
Nathan S. Kline Institute for Psychiatric Research, Orangeburg, NY
Supervisor: Dr. Jordan P. Hamm
Continued research on predictive processing mechanisms in mammalian sensory cortices.

Aug 2019— May 2025
PhD Candidate
Georgia State University, Atlanta, GA
Advisor: Dr. Jordan P. Hamm
Doctoral research on rodent visual cortical circuit processing of sensory context in states of excitatory receptor dysfunction.

Jul 2017— Aug 2019
Research Specialist
Emory University, Atlanta, GA
Supervisor: Dr. Samuel J. Sober
Led a project to implement fiber photometry for real-time measurement of neural population activity in behaving songbirds.

Jun 2016— Jun 2017
Undergraduate Research Assistant
UNC-CH, Chapel Hill, NC
Supervisor: Drs. Regina M. Carelli and Seth W. Hurley
Investigated neural mechanisms encoding aversive/hedonic experiences in a preclinical model of cocaine-induced natural reward devaluation.

Feb 2015— May 2016
Undergraduate Research Assistant
UNC-CH, Chapel Hill, NC
Supervisor: Dr. Sylvia A. Frazier-Bowers
Investigated relationship of parathyroid hormone 1 receptor mutations with primary failure of eruption phenotypes found in human teeth.

Publications

1. Rader Groves, A. M., **Gallimore C. G.**, Hamm J. P. (2024). Modern methods for unraveling cell- and circuit-level mechanisms of neurophysiological biomarkers in psychiatry. In: Javitt, D.C., McPartland, J.C. (eds) Neurophysiologic Biomarkers in Neuropsychiatric Disorders. *Advances in Neurobiology, 40*. Springer, Cham. 10.1007/978-3-031-69491-2_7
2. **Gallimore C. G.***, Walton C.*, Nugent R., Fradkin M., Poppell L., Schreiber C., Coco C., Grober M., Carlson B., Dove A. D. M., Black M. P. (2024). A longitudinal behavioral analysis of aquarium whale sharks (*Rhincodon typus*): insights into anticipatory cues, individual variation, and social interaction. *Frontiers in Marine Science, 11*, 1-15. 10.3389/fmars.2024.1418002
3. Bastos G., Holmes J. T., Ross J. M., Rader A. M., **Gallimore C. G.**, Wargo J. A., Peterka D. S., Hamm J. P. (2023). Top-down input modulates visual context processing through an interneuron-specific circuit. *Cell Reports, 42(9)*, 113-133. 10.1016/j.celrep.2023.113133
4. **Gallimore C. G.**, Ricci D. A., Hamm J. P. (2023). Spatiotemporal dynamics across visual cortical laminae support a predictive coding framework for interpreting mismatch negativity. *Cerebral Cortex, 33(15)*, 9417-9428. 10.1093/cercor/bhad215
5. Van Derveer A. B., Bastos G., Ferrell A. D., **Gallimore C. G.**, Greene M. L., Holmes J., Kubricka V., Ross J. M., Hamm J. P. (2021). A role for somatostatin-positive interneurons in neuro-oscillatory and information processing deficits in schizophrenia. *Schizophrenia Bulletin, 45(5)*, 1385-1398. 10.1093/schbul/sbaa184

Abstracts & Poster Presentations

† Presenting author

* Equal contribution and first authorship

1. **Gallimore C. G.***, Walton C.*†, Nugent R., Fradkin M., Poppell L., Schreiber C., Coco C., Grober M., Carlson B., Dove A. D. M., Black M. P. A longitudinal behavioral analysis of aquarium whale sharks (*Rhincodon typus*): insights into anticipatory cues, individual variation, and social interaction. *Society for Integrative and Comparative Biology* (Poster); Jan 6, 2025; Atlanta, GA, USA
2. Abraham J. D.†, **Gallimore C. G.**, Hamm J. P. Ultra high-density in vivo electrophysiology for sensory processing paradigms. *Georgia State University Brains & Behavior Retreat* (Poster); May 9, 2024; Atlanta, GA, USA
3. **Gallimore C. G.**†, Ross J. M., Hamm J. P. Local V1 NMDA receptor blockade alters visual mismatch responses and augments prefrontal-V1 synchrony. *Society for Neuroscience Conference* (Poster); Nov 11-15, 2023; Washington, D.C., USA
4. Rader A. M.†, Sutton T. J., **Gallimore C. G.**, Ross J. M., Sweet R. A., Grubisha M. J., Hamm J. P. Perturbing the dendritic arbor in adolescence impairs long-range cortical synchrony and predictive processing. *Dendrites: Molecules, Structure and Function Gordon Research Conference* (Poster); Mar 28, 2023; Barga, Italy
5. **Gallimore C. G.**†, Tracey E., Black M. A quantitative analysis pipeline for virtually-administered iCollege course materials. *Graduate Conference for Research, Scholarship, and Creative Activity* (Poster); Nov 11, 2022; Atlanta, GA, USA
6. Rader A. M.†, Ferrell A. D., **Gallimore C. G.**, Sutton T., Sweet R., Grubisha M., Hamm J. P. Adolescent over-reductions in dendrites produce schizophrenia-like context processing in a genetic mouse model. *Graduate Conference for Research, Scholarship, and Creative Activity* (Poster); Nov 11, 2022; Atlanta, GA, USA

7. Ricci D. A.†, **Gallimore C. G.**, Hamm J. P. A novel framework for tracking stimulus-specific behavior changes within a visual oddball paradigm. *Graduate Conference for Research, Scholarship, and Creative Activity* (Poster); Nov 11, 2022; Atlanta, GA, USA
8. Bastos G.†, Holmes J., Ross J. M., Rader A. M., **Gallimore C. G.**, Hamm J. P. Top-down synchrony at theta band drives VIP interneurons to allow prediction error generation in visual cortex. *Cold Spring Harbor Laboratory Neuronal Circuits Conference* (Poster); Mar 16-19, 2022; Cold Spring Harbor, NY, USA
9. **Gallimore C. G.**†, Hamm J. P. A sensory oddball paradigm evokes rhythmic signatures across neocortical layers consistent with predictive coding. *Cold Spring Harbor Laboratory Neuronal Circuits Conference* (Poster); Mar 16-19, 2022; Cold Spring Harbor, NY, USA
10. Hamm J. P.†, Bastos G., Holmes J., **Gallimore C. G.**, Ferrell A. D., Ross J. M. Long-range synchronization in the alpha-band differentially engages VIP and SST interneurons in visual cortex to support novelty detection during an oddball paradigm. *American College of Neuropsychopharmacology* (Poster); Dec 5-8, 2021; San Juan, PR
11. Van Derveer A. B.†, **Gallimore C. G.**, Hamm J. P. Deviance-detection to multisensory mismatch in posterior parietal cortex of mice. *Society for Neuroscience Conference* (Poster, virtual); Nov 8-11, 2021
12. **Gallimore C. G.**†, Hamm J. P. Local field potential signatures of context-specific processing in the mouse cortical column during visual oddball. *Society for Neuroscience Conference* (Poster, virtual); Nov 8-11, 2021
13. **Gallimore C. G.**†, Ross J. M., Holmes J. T., Ferrell A. D., Hamm J. P. Visual cortical cell-type and local field responses for contextual processing. *Georgia State University Brains & Behavior Retreat* (Poster, virtual); May 20, 2021
14. **Gallimore C. G.**†, Holmes J. T., Ross J. M., Ferrell A. D., Hamm J. P. Differential responding of cortical cell-types for novelty detection. *Society for Neuroscience Global Connectome Conference* (Poster, virtual); Jan 11, 2021
15. Bastos G.†, **Gallimore C. G.**, Hamm J. P. Frequency-specific driving of frontal cortical feedback differentially engages V1 microcircuits. *Society for Neuroscience Global Connectome Conference* (Poster, virtual); Jan 12, 2021
16. Ross J. M., Bastos G., Ferrell A. D., **Gallimore C. G.**, Holmes J., Hamm J. P.† Three non-overlapping cortical interneuron subtypes relate to distinct EEG biomarkers in Neuropsychiatry. *American College of Neuropsychopharmacology* (Poster); Dec 5-8, 2020
17. Wood A. N.†, Saravanan V., Jacob A. L., **Gallimore C. G.**, Hercules D., Sober S. J. Dopaminergic contributions of vocal learning. *Basal Ganglia Gordon Research Conference* (Poster); Mar 11-15, 2018; Ventura, CA, USA

Honors & Awards

2023 Kenneth W. and Georganne F. Honeycutt Fellowship, *Georgia State University*
Merit-based supplement to GSU neuroscience doctoral students who've demonstrated a high degree of graduate achievement

2023 Outstanding Graduate Student Teaching Award, *Georgia State University*
Recognizes graduate trainees demonstrating excellence in teaching in the neuroscience undergraduate program

2020 Trainee Professional Development Award, *Society for Neuroscience*
Recognizes excellence in research and scientific merit by undergraduates, graduate students, and postdoctoral fellows.

2020 Brains & Behavior Fellowship, *Georgia State University*
Awards stipend and travel funding to graduate students researching neuroscience

2019 Second Century Initiative (2CI) Doctoral Fellowship, *Georgia State University*
Awards stipend and travel funding to graduate students contributing to the field of cardiometabolic and inflammatory disease

2015 Sue and Richard Farrington Scholarship,
Recognizes outstanding brotherhood and service demonstrated by a member of the UNC Lambda Chi Alpha chapter

2013 George Foster Hankins Scholarship, *Wake Forest University*
Scholarship for North Carolina residents based on financial need

Seminars

2025 **Gallimore C. G.**† *Patterns of laminar engagement during visual mismatch processing.* Dissertation defense, Georgia State University, Atlanta, GA

2025 **Gallimore C. G.**† *Rigorous and reproducible dissertation writing with Git + LaTeX.* Methods Journal Club, Georgia State University, Atlanta, GA

2025 **Gallimore C. G.**† *Visual cortical spiking in a rodent missense mutation model of schizophrenia.* Neuroscience Institute Breakfast Lecture, Georgia State University, Atlanta, GA

2023 **Gallimore C. G.**† *Local V1 NMDA receptor blockade alters visual mismatch responses and augments prefrontal-V1 synchrony.* Neuroscience Institute Breakfast Lecture, Georgia State University, Atlanta, GA

2022 **Gallimore C. G.**† *Non-parametric methods for clustered and hierarchically organized data.* Data Analysis Club, Georgia State University, Atlanta, GA

2021 **Gallimore C. G.**† *Mesoscale response profiles within and between V1 layers for deviance detection.* Neuroscience Institute Breakfast Lecture, Georgia State University, Atlanta, GA

Outreach & Mentorship

Dec 2020—Mar 2022 **Exhibit Coordinator**
Atlanta Brain Bee, Greater Atlanta Area

- Recruited GSU and Emory University graduate scientists to make outreach videos about their lab's research, serving as educational resources to Brain Bee competitors
- Helped organize a virtual format to publish these resources for public access; culminated in a YouTube channel sharing exhibits and interviews with graduate scientists

Sep 2017—Dec 2024 **Volunteer Visiting Speaker**
Atlanta Brain Awareness Campaign, Greater Atlanta Area

- Developed presentations for elementary school classes answering student-inspired questions about neuroscience, displayed local

ACSfN lending library teaching brains (maintained by Emory and GSU) as educational resources

- Schools visited: Level Creek Elementary (9/17-9/18), C.A. Roberts and Boyd Elementary (2/20-3/20), Trip Grayson Elementary STEM night (2/24), Beacon Hill Middle School (12/24)

Aug 2018—Jan 2019

Project Mentor
First® Lego League, Decatur, GA

- Educated fourth and fifth grade primary school students about the process of solving complicated problems in science through programming a small robot to complete tasks
- Culminated in local and regional competitions where our students competed with other *FLL* teams based on consistent robot performance

Feb 2015—Aug 2017

Camp Counselor
Camp Kesem UNC-CH, Chapel Hill, NC

- Volunteer counselor and Empowerment Program Leader at week-long camp for children who've been affected by a parent's cancer (4 sessions in total; back-to-back weeks in 2016)
- Collaborated with Director and Program Coordinators to design a ceremony facilitating a safe and empathic environment for a child to share personal experiences with cancer, if they chose to do so

Service & Affiliations

Mar 2024—Aug 2024

B&B Summer Scholars Leadership Team Member
Georgia State University, Atlanta, GA

- Helped organize and lead a summer-long series of professional development workshops for undergraduates in the Summer Scholars program, culminating in a research symposium to showcase their work

Jun 2023—Jun 2024

Neuroscience Graduate Student Association President
Georgia State University, Atlanta, GA

- Organized internal student body social events and incoming student recruitment; advocate for student issues and progressive departmental policy change

Aug 2018—May 2019

Data Science for Scientists ATL
Emory University, Atlanta, GA

- Workshops, meetings, and seminars pertaining to data science research methods and applications of data science to biological research

Jul 2017—
Jul 2019

Dopamine Journal Club
Emory University, Atlanta, GA

- Weekly discussions of scientific literature amongst faculty, grad students, and post-docs on cortico-basal ganglia-thalamic and midbrain dopaminergic brain circuitry

Feb 2016—
Feb 2017

Judicial Board Jury Member
Inter-Fraternity Council (UNC-CH), Chapel Hill, NC

- Represented Lambda Chi Alpha in conduct hearings regarding IFC violations alleged against campus fraternities, participated in decision-making process for issuing sanctions

Feb 2016—
Feb 2017

Scholastic Chairman
Lambda Chi Alpha (UNC-CH), Chapel Hill, NC

- Managed funds to incentivize outstanding academic performance; conducted individual meetings with brothers to guide towards university resources and devise improvement plans

Teaching Experience

Georgia State University	**Writing Consultant**	*08/23—05/24*	NEUR 2010, IOR: *Dr. Erica Tracey* Professional Development in Neuroscience
	Graduate TA	*08/24—12/24*	NEUR 3001, IOR: *Dr. Erica Tracey* Principles of Neuroscience II
		08/20—12/23	NEUR 3020, IOR: *Dr. Michael Black* Scientific Method in Neuroscience
		01/22—05/23	NEUR 4920, IOR: *Dr. Erica Tracey* Internship in Neuroscience
		02/21—05/21	NEUR 3000, IOR: *Dr. Joseph Normandin* Principles of Neuroscience I

Highlights

- Helped undergraduate students with professional literacy (e.g. cover letter, CV); conducted mock interviews; offered feedback on scientific and professional writing
- Prepared lectures on descriptive and inferential statistics; introduced undergraduates to programming in MATLAB (Spring 2022-2023)
- Developed a MATLAB-based grading pipeline for online-administered exams (poster presentation above)
- Provided guidance to undergraduate students at a variety of course credit-based internships and honors student projects

Supervisory Roles

10/23—02/25	**Jay Abraham**, BSc — Hamm Lab, Georgia State University
01/23—05/23	**Ruhika Aguru**, BSc — RA, Children's Healthcare of Atlanta (4920)
08/22—05/23	**Nutifafa Ayeke**, BSc — ECG Technician, Grady Hospital (4920)
01/22—05/22	**Benoit Tete**, BSc — Clinical Res. Intern, Accel Neurostudies (4920)
05/21—05/22	**David Ricci**, MSc — Hamm Lab, Georgia State University
05/19—07/19	**Clara Wang**, BSc — Sober Lab, Emory University
01/18—05/18	**Abi Grassler**, BSc — Sober Lab, Emory University

Personal Projects

GSU-CAS-LaTeX

Updated the 20 year-old GSU College of Arts and Sciences LaTeX dissertation template with modern packages, and open-sourced a template for an efficient, version-controlled writing configuration in VS Code.

Tools Used: LaTeX, Git, VS Code, LaTeX Workshop

ATL-book-boxes

Developed an interactive map displaying the locations of over 130 public bookcases in the Greater Atlanta Area alongside domain Child Opportunity Index metrics.

Tools Used: R, Shiny, Leaflet, Git, CSS

donutPlot

Developed a custom plotting function that reproduces the behavior of MATLAB 'pie' and 'donutcharts' with added support for embedding multiple data series in a concentric style.

Tools Used: MATLAB, Git

xcorrDotPlot

Developed a fully vectorized method of producing correlation dot plots in MATLAB, a visualization technique long supported by R and Python but absent in the MATLAB ecosystem.

Tools Used: MATLAB

Co-reviewed Manuscripts

Science, Communications Biology, Cell Reports

Key Skills

Languages:	MATLAB (advanced), R, Python, LaTeX, HTML, CSS, Markdown
Libraries:	EEGLAB, Fieldtrip, Mapping, R Shiny, Leaflet, Tidyverse, Numpy, Pandas, tikz
Platforms:	Adobe Creative Suite (Illustrator, Premiere, Photoshop), Microsoft Office, Git/Github VCS, VS Code, Obsidian, FIJI/ImageJ, SPSS, DataStudio, PASCO Capstone, National Instruments DAQ
Technical:	Experimental and Analytical/Statistical Design, Data Cleaning & Visualization, Time-Series Signals Acquisition & Processing, Geographic Information Systems (GIS), Scientific Writing & Communication, Frontal & Sensory Cortical Circuit Physiology
Personal:	Project Management, Public Speaking, Problem-solving, Adaptability, Teaching, Mentorship
Stereotactic:	Rodents and songbirds — AAV/anatomical tracer injections, acute extitin vivo e-phys, fiber optic/drug infusion cannula implantation, cranial windowing
Histological:	Transcardial perfusion fixation, immunohistochemical labeling, microtomy
Microscopy:	Bright-field, epifluorescence, confocal, extitin vivo 2-photon, and associated image analysis
Molecular:	Micropipetting, DNA precipitation, tissue homogenization, PCR, ExoSAP-it, gel electrophoresis, solution preparation, and spectrophotometry
Animal:	Intramuscular, intraperitoneal, and subcutaneous drug administration; weaning, breeding and genotyping; husbandry and operant box experiments