

## JORDAN P. HAMM

[jhamm1@gsu.edu](mailto:jhamm1@gsu.edu)

### CURRENT POSITION

2018- current      Assistant Professor  
Neuroscience Institute  
College of Arts and Sciences  
Georgia State University

### EDUCATION and TRAINING

2008    B.A.            University of Georgia, Philosophy  
2010    M.S.            University of Georgia, Psychology  
2013    Ph.D.            University of Georgia, Neuroscience  
Mentor: Brett A. Clementz, Ph.D.  
2014 – 2018      Postdoctoral Research Fellow  
Columbia University  
Department of Biological Sciences  
Mentor: Rafael Yuste, M.D., Ph.D.

### RESEARCH

#### FUNDING

##### Current:

2022-27      “Circuits for deviance detection in V1”, National Institutes of Health.  
R01EY033950, **PI: J.P. Hamm.** Co-I: D.S. Peterka (Columbia University) (5  
years; \$250,000 per year direct).  
2021-26      “Sex differences in microglia-neuron-circuit interactions in adolescence”,  
National Institutes of Health. R01MH128176, **PI: J.P. Hamm.** Co-I: J. Stern, A.  
Murphy (5 years; \$250,000 per year direct)  
2022-24      “Transcriptomic Profiling of a Novel Subtype of Cortical Neurons Selective for  
Sensory Prediction Errors”, Brain and Behavior Research Foundation (BBRF)  
Young Investigator Grant (NARSAD). 30149, **PI: J.P. Hamm** (2 years; \$35,000  
per year, direct). *In NCE period.*  
2023-28      “Providing New Insight Into Adolescent Dendritic Development”.  
R01MH132586. P.I.: M. Grubisha **Co-I: J.P. Hamm.** (5 years; \$75,000 per year  
direct)  
2021-26      “Inverse neurovascular coupling in the hypothalamus and its role in positive  
feedback regulation of vasopressin neurons in health and disease”, National

Institutes of Health. R01HL162575, PI: J. Stern, A. **Co-I: J.P. Hamm.** (5 years; \$6,000 per year direct)

Pending:

Aug 2023 “The adolescent development of top-down feedback for visual processing”. F31 NRSA fellowship. F31EY036279 Submitted Aug 2023, reviewed Nov 2023 (Percentile score: 2.0)., P.I.: A.M. Rader. Mentor: **J.P. Hamm.** Co-mentor: N.G. Forger

**Completed:**

External:

2014-17 “Two-photon analysis of circuit-level mechanisms of schizophrenia biomarkers”, National Institutes of Health. F32MH106265, **PI: J.P. Hamm.** Mentor: R. Yuste. Co-sponsors: D. Javitt, J. Gordon. (3 years. \$53,000 per year direct)

2017-21 “Fronto-sensory circuit mechanisms of perceptual novelty processing”, National Institutes of Health. K99/R00MH115082, **PI: J.P. Hamm.** Sponsor: R. Yuste. Consultants: A. Churchland; J. Gogos (5 years; \$100,000-\$250,000 per year total)

2019-23 “Mapping the role of basal forebrain projections to visual cortex in novelty processing”, Whitehall Foundation. 2019-05-443, **PI: J.P. Hamm** (years; \$75,000 per year total)

2019-23 “Large-scale monitoring of circuits for adaptation and novelty detection in primary visual cortex”, National Institutes of Health. F32MH125445, PI: J.M. Ross (Hamm lab postdoc), **Mentor: J.P. Hamm;** Co-sponsors: H.E. Albers, Y. Molkov (3 years; \$71,000 per year direct)

Internal:

2021-21 “Adolescent and sex-specific effects of cortical microglia hyperactivation on biomarkers of schizophrenia” Seed grant, Center for Neuroinflammation and Cardiometabolic Diseases, Georgia State University. PI: J.P. Hamm (\$15,000 Direct)

2020-21 “Parallel studies of novelty-processing circuits in humans and mice”, Brains and Behavior seed grant, Georgia State University. PI: J.P. Hamm; Co-PI: J. Malins; V. Calhoun (\$30,000 Direct)

**AWARDS**

2022 Dean’s Early Career Award, Georgia State University  
2018 American College of Neuropsychopharmacology (ACNP) Travel Award  
2018 Gordon Research Conference Travel Award for “Thalamocortical Interactions”  
2017 International Congress on Schizophrenia Research (ICOSR) Young Investigator award  
2013 Herbert Zimmer Award, University of Georgia  
2010-12 Paul D. Coverdell Franklin Foundation Fellowship in Neuroimaging  
2008 Travel Award, University of Georgia

## PUBLICATIONS

(peer-reviewed journal articles)

\***Hamm** as corresponding author..

1. Bastos, B., Holmes, J., Ross, J.M., Rader, A.M., Gallimore, C.G., Wargo, J.A., Peterka, D.S., **Hamm, J.P.\***. Top-down input modulates visual context processing through an interneuron-specific circuit. *Cell Reports*. 42: 133133- DOI: [10.1016/j.celrep.2023.113133](https://doi.org/10.1016/j.celrep.2023.113133)
2. Van Derveer, A., Ross, J.M., \***Hamm, J.P.** (2023) Robust multisensory deviance detection in the mouse parietal associative area. *Current Biology*. 33(18): 3969-3976 DOI: [10.1016/j.cub.2023.08.002](https://doi.org/10.1016/j.cub.2023.08.002)
3. Gallimore, C.G., Ricci, D., \***Hamm, J.P.** (2023) Spatiotemporal dynamics across a neocortical column support a predictive coding framework for interpreting visual mismatch responses. *Cerebral Cortex*. 33(15): 9417–9428. DOI: [10.1093/cercor/bhad215](https://doi.org/10.1093/cercor/bhad215)
4. Huang, L., Parker, D.A., Ethridge L.E., **Hamm, J.P.**, Keedy, S.S., Tamminga, C.A., Pearlson, G.D., Keshavan. M.S., Hill, S.K., Sweeney, J.A., McDowell, J.E., Clementz, B.A., (2023) Double dissociation between P300 components and task switch error type in healthy but not psychosis participants. *Schizophrenia Research*. 261: 161-169. DOI: [10.1016/j.schres.2023.09.025](https://doi.org/10.1016/j.schres.2023.09.025)
5. Roy, R.K., Althammer, F., Seymour, J.A., Du, W., Biancardi, V.C., **Hamm, J.P.**, Filosa, J.A., Brown, C.H., Stern, J.E. (2021) Inverse neurovascular coupling contributes to positive feedback excitation of vasopressin neurons during a systemic homeostatic challenge. *Cell Reports*. DOI: [10.1016/j.celrep.2021.109925](https://doi.org/10.1016/j.celrep.2021.109925)
6. \***Hamm, J.P.**, Shymkiv, Y., Han, S., Yang, W. Yuste, R. Cortical ensembles selective for context. (2021). *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*. 118(14):e2026179118. DOI: [10.1073/pnas.2026179118](https://doi.org/10.1073/pnas.2026179118).
7. Van Derveer, A.B, Bastos, G, Ferrell. A.D., Gallimore, C.G., Greene, M.L., Holmes, J.T., Kubricka, V., Ross, J.M., \***Hamm, J.P.** (2020) A role for somatostatin-positive interneurons in neuro-oscillatory and information processing deficits in schizophrenia. *Schizophrenia Bulletin*. DOI: [10.1093/schbul/sbaa184](https://doi.org/10.1093/schbul/sbaa184)
8. Wenzel, M., \***Hamm, J.P.** (2020) Identification and quantification of neuronal ensembles in optical imaging experiments. *Journal of Neuroscience Methods*. 351, 109046. DOI: [10.1016/j.jneumeth.2020.109046](https://doi.org/10.1016/j.jneumeth.2020.109046)
9. Ross, J.M., \***Hamm, J.P.** (2020) Cortical Microcircuit Mechanisms of Mismatch Negativity and Its Underlying Subcomponents. *Front Neural Circuits*. 14:13. DOI: [10.3389/fncir.2020.00013](https://doi.org/10.3389/fncir.2020.00013)

10. Zhou ZC, Huang WA, Yu Y, Negahbani, E., Stitt, I.M., Alexander, M.L., **Hamm, J.P.**, Kato, H.K., Fröhlich, F. (2020). Stimulus-specific regulation of visual oddball differentiation in posterior parietal cortex. *Scientific Reports*. 10(1):13973. DOI: [10.1038/s41598-020-70448-6](https://doi.org/10.1038/s41598-020-70448-6)
11. **\*Hamm, J.P.**, Shymkiv, Y., Gogos, J.A., Yuste, R. (2020). Aberrant cortical ensembles and schizophrenia-like sensory phenotypes in *setd1a* mice. *Biological Psychiatry*. 88(3):215-223. DOI: [10.1016/j.biopsych.2020.01.004](https://doi.org/10.1016/j.biopsych.2020.01.004)
12. Wenzel, M., **Hamm, J.P.**, Peterka, D.S., Yuste, R. (2019) Acute focal seizures start as local synchronizations of neuronal ensembles. *Journal of Neuroscience*. 39(43):8562-75. DOI: [10.1523/JNEUROSCI.3176-18.2019](https://doi.org/10.1523/JNEUROSCI.3176-18.2019)
13. Bobilev, A.M., Hudgens-Haney, M.E., **Hamm, J.P.**, Oliver, W.T., McDowell, J.E., Lauderdale, J.D., Clementz, B.A (2019) Early and late auditory information processing show opposing deviations in aniridia. *Brain Research*. 1720:146307. DOI: [10.1016/j.brainres.2019.146307](https://doi.org/10.1016/j.brainres.2019.146307)
14. Parker, D.P., **Hamm, J.P.**, McDowell, J.E., Keedy, S.K., Gershon, E.S., Ivleva, E.I., Pearlson, G.D., Keshavan, M.S., Tamminga, C. A., Sweeney, J.A., Clementz, B.A (2019) Auditory steady-state EEG response across the schizo-bipolar spectrum. *Schizophrenia Research*. 209: 218-226. DOI: [10.1016/j.schres.2019.04.014](https://doi.org/10.1016/j.schres.2019.04.014)
15. Jayant, K., Wenzel, M., Bando, Y., **Hamm, J.P.**, Owen, J.S., Sahin, O., Shepard, K.L., Yuste, R. (2019). Targeted intracellular recordings from deep-layer cortical neurons *in vivo*. *Cell Reports*. 26 (1): 266-278. DOI: [10.1016/j.celrep.2018.12.019](https://doi.org/10.1016/j.celrep.2018.12.019)
16. Agetsuma, M., **Hamm, J.P.**, Tao, K., Fujisawa, S., Yuste, R. (2018) Parvalbumin-positive interneurons regulate neuronal ensembles in visual cortex. *Cerebral Cortex*. 28(5):1831-45. DOI: [10.1093/cercor/bhx169](https://doi.org/10.1093/cercor/bhx169).
17. **\*Hamm, J.P.**, Peterka, D.S., Gogos, J.A., Yuste, R. (2017) Altered cortical ensembles in mouse models of schizophrenia. *Neuron*. 94, 1, 153–167. DOI: [10.1016/j.neuron.2017.03.019](https://doi.org/10.1016/j.neuron.2017.03.019).
18. Wenzel, M., **Hamm, J.P.**, Peterka, D.S., Yuste, R. (2017) Reliable and elastic propagation of cortical seizures *in vivo*. *Cell Reports*. 27;19 (13): 2681-2693. DOI: [10.1016/j.celrep.2017.05.090](https://doi.org/10.1016/j.celrep.2017.05.090).
19. **\*Hamm, J.P.**, Yuste, R. (2016). Somatostatin Interneurons Control a Key Component of Mismatch Negativity in Mouse Visual Cortex. *Cell Reports*. 16, 407–420. DOI: [10.1016/j.celrep.2016.06.037](https://doi.org/10.1016/j.celrep.2016.06.037).
20. Clementz, B.A., Sweeney, J.A., **Hamm, J.P.**, Ivleva, E.I., Ethridge, L.E., Pearlson, G.D., Keshavan, M.S., Tamminga, C.A. (2016). Identification of Distinct Psychosis Biotypes Using Brain-Based Biomarkers. *American Journal of Psychiatry*. 173(4):373-84. DOI: [10.1176/appi.ajp.2015.14091200](https://doi.org/10.1176/appi.ajp.2015.14091200).

21. Hayrynen, L.K., **Hamm, J.P.**, Sponheim, S.R., Clementz, B.A. (2016) Frequency-specific disruptions of neuronal oscillations reveal aberrant auditory processing in schizophrenia. *Psychophysiology*. 53(6):786-95. DOI: [10.1111/psyp.12635](https://doi.org/10.1111/psyp.12635).
22. Mokhtari, M., Narayanan, B., **Hamm, J.P.**, Soh, P., Calhoun, V.D., Rúaño, G., Kocherla, M., Windemuth, A., Clementz, B.A., Tamminga, C.A., Sweeney, J.A., Keshavan, M.S., Pearlson, G.D. (2015) Multivariate Genetic Correlates of the Auditory Paired Stimuli-Based P2 Event-Related Potential in the Psychosis Dimension From the BSNIP Study. *Schizophrenia Bulletin*. 42(3):851-62. DOI: [10.1093/schbul/sbv147](https://doi.org/10.1093/schbul/sbv147).
23. Carrillo-Reid L., Miller J.E., **Hamm, J.P.**, Jackson J., Yuste, R. (2015). Endogenous Sequential Cortical Activity Evoked by Visual Stimuli. *Journal of Neuroscience*. 35(23):8813-28. DOI: [10.1523/JNEUROSCI.5214-14.2015](https://doi.org/10.1523/JNEUROSCI.5214-14.2015).
24. **Hamm, J.P.**, Oliver, W.T., Hudgens-Haney, M., Bobilev, A., McDowell, J.E., Buckley, P.F., Clementz, B.A. (2015). Stimulus Train Duration but Not Attention Moderates  $\gamma$ -band Entrainment Abnormalities in Schizophrenia. *Schizophrenia Research*. 165(1):97-102. DOI: [10.1016/j.schres.2015.02.016](https://doi.org/10.1016/j.schres.2015.02.016).
25. Ethridge, L.E., **Hamm, J.P.**, Pearlson, G.D., Tamminga, C.A., Sweeney, J.A., Keshavan, M.S., Clementz, B.A. (2015). Event-related Potential and Time-frequency Endophenotypes for Schizophrenia and Psychotic Bipolar Disorder. *Biological Psychiatry*. 77(2):127-36. DOI: [10.1016/j.biopsych.2014.03.032](https://doi.org/10.1016/j.biopsych.2014.03.032).
26. **Hamm, J.P.**, Ethridge, L.E., Boutros, N.N., Keshavan, M.S., Sweeney, J.A., Pearlson, G.D., Tamminga, C.A., Clementz, B.A. (2014). Diagnostic Specificity and Familiarity of Early versus Late Evoked Potentials to Auditory Paired-Stimuli across the Schizophrenia-Bipolar Psychosis Spectrum. *Psychophysiology*. 51(4):348-57. DOI: [10.1111/psyp.12185](https://doi.org/10.1111/psyp.12185).
27. **Hamm, J.P.**, Ethridge L.E., Shapiro J.R., Pearlson, G.D., Tamminga, C.A., Sweeney, J.A., Keshavan, M.S., Thaker, G., Clementz, B.A. (2013). Family History of Psychosis Moderates Early Auditory Cortical Response Abnormalities in Non-psychotic Bipolar Disorder. *Bipolar Disorders*. 15(7):774-86. DOI: [10.1111/bdi.12110](https://doi.org/10.1111/bdi.12110).
28. Ivleva, E.I., Moates, A.F., **Hamm, J.P.**, Bernstein, I.H., Cole, D., Clementz B.A., Thaker, G., Tamminga C.A. (2013). Smooth Pursuit Eye Tracking, Prepulse Inhibition, and Auditory ERP Endophenotypes across the Schizophrenia - Bipolar Disorder Psychosis Dimension. *Schizophrenia Bulletin*. 40(3):642-52. DOI: [10.1093/schbul/sbt047](https://doi.org/10.1093/schbul/sbt047).
29. Hudgens-Haney, M.E., **Hamm, J.P.**, Goodie, A.S., Krusemark, E.A., McDowell, J.E., Clementz, B.A. (2013). Neural Correlates of the Impact of Control on Decision Making in Pathological Gamblers. *Biological Psychology*. 92(2):365-72. DOI: [10.1016/j.biopsycho.2012.11.015](https://doi.org/10.1016/j.biopsycho.2012.11.015).
30. **Hamm, J.P.**, Sabatinelli, D., Clementz, B.A. (2012) Alpha Oscillations and the Control of Voluntary Saccadic Behavior. *Experimental Brain Research*. 221(2): 123-128. DOI: [10.1007/s00221-012-3167-8](https://doi.org/10.1007/s00221-012-3167-8).

31. **Hamm, J.P.**, Dyckman, K.A., McDowell, J.E., Clementz, B.A. (2012) Pre-cue Fronto-Occipital Alpha Phase and Distributed Cortical Oscillations Predict Failures of Cognitive Control. *Journal of Neuroscience*. 32(20):7034-41. DOI: [10.1523/JNEUROSCI.5198-11.2012](https://doi.org/10.1523/JNEUROSCI.5198-11.2012).
32. **Hamm, J.P.**, Gilmore, C.S., Clementz, B.A. (2012) Augmented Gamma Band Auditory Steady-State Responses: Support for NMDA Hypofunction in Schizophrenia. *Schizophrenia Research*. 138(1): 1-7. DOI: [10.1016/j.schres.2012.04.003](https://doi.org/10.1016/j.schres.2012.04.003).
33. Ethridge, L.E., **Hamm, J.P.**, Shapiro, J.R., Summerfelt, A.T., Keedy, S.K., Stevens, M.C., Pearlson, G., Tamminga, C.A., Boutros, N.N., Sweeney, J.A., Keshavan, M.S., Thaker, G., Clementz, B.A. (2012). Neural Activations During Auditory Oddball Processing Discriminating Schizophrenia and Psychotic Bipolar Disorder. *Biological Psychiatry*. 72(9):766-74. DOI: [10.1016/j.biopsych.2012.03.034](https://doi.org/10.1016/j.biopsych.2012.03.034).
34. **Hamm J.P.**, Ethridge L.E., Shapiro J.R., Stevens M.C., Boutros N.N., Pearlson, G., Tamminga, C.A., Boutros, N.N., Sweeney, J.A., Keshavan, M.S., Thaker, G., Clementz, B.A. (2012) Spatiotemporal and Frequency Domain Analysis of Auditory Paired Stimuli Processing in Schizophrenia and Psychotic Bipolar Disorder. *Psychophysiology*. 49(4):522-30. DOI: [10.1111/j.1469-8986.2011.01327.x](https://doi.org/10.1111/j.1469-8986.2011.01327.x).
35. **Hamm, J.P.**, Gilmore, C.S., Picchetti, N, Sponheim, S.R., and Clementz, B.A. (2011). Abnormalities of Neuronal Oscillations and Temporal Integration to Low and High Frequency Auditory Stimulation in Schizophrenia. *Biological Psychiatry*. 69(10):989-96. DOI: [10.1016/j.biopsych.2010.11.021](https://doi.org/10.1016/j.biopsych.2010.11.021).
36. **Hamm, J.P.**, Dyckman, K.A., Ethridge, L.E, McDowell, J.E., and Clementz, B.A. (2010). Preparatory activations across a distributed cortical network determine express saccade production. *Journal of Neuroscience*. 30(21):7350-7. DOI: [10.1523/JNEUROSCI.0785-10.2010](https://doi.org/10.1523/JNEUROSCI.0785-10.2010).

## BOOK CHAPTERS

Rader, A.M., Gallimore, C.G., **Hamm, J.P.** \* (in press). Modern methods for unraveling cell- and circuit-level mechanisms of neurophysiological biomarkers in psychiatry. In Editors Javitt, D.J, and McPartland, J., *Neurophysiologic Biomarkers in Neuropsychiatric Disorders: Etiologic and Treatment Considerations* Springer Nature.

**Hamm, J.P.** \* (in press). Analyzing Functional Neuronal Ensembles in a Between-Subjects Paradigm. Editor Carrillo-Reid, L.A., *NEUROMETHODS: Identification, characterization, and manipulation of neuronal ensembles* Springer Nature.

## INVITED SEMINARS

(last 5 years, *scheduled future talks in italics*)

**Hamm, J.P.**, “A cortical circuit for visual mismatch responses” Keynote speaker for the *Mismatch Negativity International Conference (MMN2024) in Salamanca, Spain, September 2024*

*Hamm, J.P. invited speaker for Neuroscience Institute Seminar Series at the University of Tennessee Health Science Center, Apr 2<sup>nd</sup>, 2024*

**Hamm, J.P.**, “Cell and circuit mechanisms of visual context processing in health and disease”  
Talk given for the Frontiers in Neuroscience Seminar, Emory University, Atlanta, G.A..  
Nov 17<sup>th</sup>, 2023

**Hamm, J.P.**, “Cell and circuit mechanisms of visual context processing in health and disease”  
Talk given at New York University Psychiatry Research Rounds, New York, NY October  
13<sup>th</sup>, 2023

**Hamm, J.P.**, “Cell and circuit mechanisms of visual context processing in health and disease”  
Talk given for Nathan Kline Institute Center for Biomedical Imaging and  
Neuromodulation, Orangeburg, NY October 2<sup>nd</sup>, 2023

**Hamm, J.P.**, “Cell and circuit mechanisms for context processing in primary visual cortex” Talk  
given to the Atlanta Vision Research Community at Emory University Eye Clinic,  
Atlanta, GA September 19<sup>th</sup>, 2023

**Hamm, J.P.**, “Cortical integration of sensory stimuli in context: cells, circuits, oscillations, and  
neuropathology” Talk given at Columbia University, New York, NY April 19<sup>th</sup>, 2023

**Hamm, J.P.**, “Cortical circuits for predictive processing” Talk given at University of Illinois  
Chicago, Chicago, IL March 2<sup>nd</sup>, 2023

**Hamm, J.P.**, “Cortical circuits for predictive processing in the mouse visual system” Talk given  
at Vanderbilt University, Nashville, TN June 3<sup>rd</sup>, 2022

**Hamm, J.P.**, “Cortical circuits for predictive processing and novelty detection in the visual  
system” Talk given for the Frontiers in Neuroscience Seminar, Emory University,  
Atlanta, G.A.. Oct 15<sup>th</sup>, 2021

**Hamm, J.P.**, “Circuits for sensory prediction error in visual cortex” Talk given for the  
Symposium on Hierarchical Processing in the Cerebral Cortex, USCD/Salk/Scripps, San  
Diego, C.A.. July 10<sup>th</sup>, 2021

**Hamm, J.P.**, “Integrating stimuli in context in the cerebral cortex: cells, circuits, and  
oscillations.” Talk given for the Neuroscience Seminar Series, University of Georgia,  
Athens, GA. May 6<sup>th</sup> 2021

**Hamm, J.P.**, “Novel Inroads to the Neuropathology of Schizophrenia Through Optical  
Interrogation of Neural Circuits.” Talk given for the Center for Diagnostics and  
Therapeutics, Georgia State University, Atlanta, GA, Nov 17<sup>th</sup> 2020

**Hamm, J.P.**, “Cortical subnetworks encode sensory context” Talk given at University of  
Pittsburgh, Pittsburgh, PA. Dec 7<sup>th</sup> 2018

## CONFERENCE PRESENTATIONS

last 5 years. #presenting author. *Talks in italics.*

- West, C.L., Duran, A., Nadeem, S., Van Leeuwen, N., **Hamm J.P.**<sup>#</sup>. (2023). Altered Belief Updating and Visual Prediction Error in Psychedelics Users. Poster presented at 2023 American College of Neuropsychopharmacology (ACNP) meeting, Tampa, F.L., USA
- Gallimore C.G.<sup>#</sup>, Ross J.M., **Hamm J.P.** (2023). Local V1 NMDA receptor blockade alters visual mismatch responses and augments prefrontal-V1 synchrony. Poster presented at 2023 Society for Neuroscience (SfN) Conference, Washington, D.C., USA
- Rader, A.M.<sup>#</sup>, Sutton, T.J., Ross, J.M., Sweet, R.A., Grubisha, M.J., **Hamm, J.P.** (2023). Schizophrenia-relevant mutation produces region-dependent dendritic remodeling. Poster presented at 2023 Society for Neuroscience (SfN) Conference, Washington, D.C.
- Ricci, D.A.<sup>#</sup>, Rader, A.M., West, C.L., Dalwai, H.S., Sutton, T.J., Wargo, J.A., Bastos, G., Pahl, J., Ross, J.M., **Hamm, J.P.** (2023). Adolescent microglial contribution to mature frontovisual circuitry for visual context processing. Poster presented at 2023 Society for Neuroscience (SfN) Conference, Washington, D.C.
- West, C.L.<sup>#</sup>, Duran, A., Nadeem, S., Van Leeuwen, N., **Hamm, J.P.** (2023). Atypical belief updating and novelty detection in psychedelic users during saccadic planning task. Poster presented at 2023 Society for Neuroscience (SfN) Conference, Washington, D.C.
- Ross, J.M. <sup>#</sup>, Robinson, M.L., **Hamm, J.P.** (2023) Sex-specific development of cortical circuits supporting sensory context processing. Poster presented at 2023 Society for Neuroscience (SfN) Conference, Washington, DC.
- Bastos, G. <sup>#</sup>, Holmes, J.T., Ross, J.M., Rader, A.M., Gallimore, C.G, **Hamm, J.P.** (2023). Prefrontal modulation of primary visual cortex is frequency and cell specific during context processing. Poster presented at 2023 Gordon Research Conference on Modulation of Neural Circuits and Behavior, Les Diablerets, VD, Switzerland
- Rader, A.M. <sup>#</sup>, Sutton, T.J., Ross, J.M., Sweet, R.A., Grubisha, M.J., **Hamm, J.P.** (2023). Perturbing the dendritic arbor in adolescence impairs long-range cortical synchrony and predictive processing. Poster presented at 2023 Gordon Research Conference on Dendrites, Barga, Italy.
- Ross, J.M., Rader, A.M., **Hamm. J.P.** <sup>#</sup> (2022). Adolescent development of cortical circuits for predictive coding is sex-dependent and relates to maturation of prefrontal cortex. Poster presented at 2022 American College of Neuropsychopharmacology (ACNP) meeting.
- Ross, J.M.<sup>#</sup>, **Hamm, J.P.** (2022). Sensory prediction error in cortical circuits develops across adolescence in a sex-specific manner. Poster presented at 2022 Society for Neuroscience (SfN) Conference, San Diego, CA.
- Bastos, G. <sup>#</sup>, Holmes, J.T., Rader, A.M., **Hamm, J.P.** (2022). Pre-frontal influence in context processing in early visual cortex in mice. Poster presented at 2022 Society for Neuroscience (SfN) Conference, San Diego, CA.



- Rader, A.M. #, Ferrell, A.D., Gallimore, C.G, Sutton, T.J., Sweet, R.A., Grubisha, M.J., **Hamm, J.P.** (2022). Reduced predictive processing mimics schizophrenia-like deficits in a genetic model of adolescent dendrite loss. Poster presented at 2022 Society for Neuroscience (SfN) Conference, San Diego, CA.
- Van Derveer, A.B. #, **Hamm, J.P.** (2022). Evidence of a Multisensory Predictive Coding Ensemble in Mammalian Posterior Parietal Cortex. Poster presented at 2022 Society for Neuroscience (SfN) Conference, San Diego, CA.
- Hamm, J.P.** # (2022). *Cortical microcircuit mechanisms of mismatch negativity and its underlying subcomponents. Invited talk for symposium at the 9<sup>th</sup> meeting for mismatch negativity research, MMN2022, Fukushima Medical University, Japan, Sept 22<sup>nd</sup> 2022.*
- Hamm, J.P.** # (2022). *Adolescent development of top-down circuits for bottom-up novelty detection. Invited talk for symposium at NEURO2022, 45<sup>th</sup> annual meeting for the Japan Neuroscience Society, Okinawa, Japan, July 2<sup>nd</sup> 2022.*
- Bastos, G#, Holmes, J.T., Gallimore, C.G., Ross, J.M., **Hamm, J.P.** (2022). Cell-Type and Frequency-Specific Circuit for Mismatch Negativity in Mice. Poster presented at 2022 Society for Biological Psychiatry Conference (SOBP), New Orleans, LA, May 2022.
- Ferrell, A.D. #, Rader, A.M., Nisseau-Bey, Z., Sweet, R.A., Grubisha, M.J., **Hamm, J.P.** (2022). Mutations in Kalrn Disrupt Gamma-Band Oscillations in the Auditory Cortex of Adult Mice. Poster presented at 2022 Society for Biological Psychiatry Conference (SOBP), New Orleans, LA, May 2022.
- Rader, A.M. #, Ferrell, A.D., Sweet, R.A., Grubisha, M.J., **Hamm, J.P.** (2022). Kalrn Mutation Identified in Individuals with Schizophrenia Recapitulates Disease-relevant Neuro-oscillatory Aberrations in the Mouse Visual and Prefrontal Cortices. Poster presented at 2022 Society for Biological Psychiatry Conference (SOBP), New Orleans, LA, May 2022.
- Gallimore, C.G. #, **Hamm, J.P.** (2022). A sensory oddball paradigm evokes rhythmic signatures across neocortical layers consistent with predictive coding Poster presented at 2022 Cold Spring Harbor Laboratory Conference on Neural Circuits (CSHL), Cold Spring Harbor, N.Y. March 2022.
- Gallimore, C.G. #, **Hamm, J.P.** (2021). Local field potential signatures of context-specific processing in the mouse cortical column during visual oddball. Poster presented at 2021 Society for Neuroscience (SfN) Conference, virtual.
- Bastos, G. #, Holmes, J.T., Rader, A.M., **Hamm, J.P.** (2021). Chemogenetic suppression of VIP interneurons disrupts top-down alpha-band synchrony during visual oddball paradigm. Poster presented at 2021 Society for Neuroscience (SfN) Conference, virtual.
- Ross, J.M. # & **Hamm, J.P.** (2021). Characterizing the development of sensory prediction error in cortical circuits. Poster presented at 2021 Society for Neuroscience (SfN) Conference, virtual.

- Van Derveer, A.B. #, Gallimore, C.G., **Hamm, J.P.** (2021). Deviance-detection to multisensory mismatch in posterior parietal cortex of mice. Poster presented at 2021 Society for Neuroscience (SfN) Conference, virtual.
- Rader, A.M. #, Ferrell, A.D. #, Nisseau-Bey, Z., Sweet, R.A., Grubisha, M.J., **Hamm, J.P.** (2021). Schizophrenia-relevant mutation in Kalrn yields neurooscillatory aberrations in mouse sensory cortices. Poster presented at 2021 Society for Neuroscience (SfN) Conference, virtual.
- Hamm, J.P.** #, Bastos, G., Holmes, J., Gallimore, C.G., Ferrell, A., Ross, J.M. (2021). Long-range synchronization in the alpha-band differentially engages VIP and SST interneurons in visual cortex to support novelty detection during an oddball paradigm. Poster presented at 2021 American College of Neuropsychopharmacology (ACNP) meeting in San Juan, Puerto Rico.
- Ross, J.M., **Hamm, J.P.** # (2021), Emergence of Coordinated Neuronal Ensembles Across Adolescence in Neocortical Microcircuits. Talk given in a symposium at 2021 Society for Biological Psychiatry conference, virtual.*
- Bastos, G. #, Gallimore, C.G., **Hamm, J.P.** (2021) Frequency-specific driving of frontal cortical feedback differentially engages V1 microcircuits. Poster presented at 2021 Society for Neuroscience (SFN) global connectome conference, virtual
- Gallimore, C.G. #, Ross, J.M., Holmes, J., Ferrell, A., **Hamm, J.P.** (2021) Differential responses to novel sensory stimuli among cortical neuron subtypes. Poster presented at 2021 Society for Neuroscience (SFN) global connectome conference, virtual
- Ross, J.M., Bastos, B., Ferrell, A., Gallimore, C.G., Holmes, J., **Hamm, J.P.** # (2020) Three non-overlapping cortical interneuron subtypes relate to distinct EEG biomarkers in Neuropsychiatry. Poster presented at 2020 American College of Neuropsychopharmacology (ACNP), virtual.
- Hamm, J.P.** # Aberrant cortical ensembles underlie schizophrenia-like phenotypes in *setd1a* deficiency. Poster presented at 2019 American College of Neuropsychopharmacology (ACNP) meeting in Orlando, FL.
- Van Derveer, A.B. #, Ferrell, A.D., Greene, M.L., Holmes, J.T., Kubricka, V., Ross, J.M., **Hamm, J.P.** (2019) Neuronal ensembles for auditory and visual novelty detection in posterior parietal cortex. Society for Neuroscience conference, Chicago, IL
- Hamm, J.P.** #, Organizer and chair of minisymposium: “Expecting the unexpected: cortical circuits for novelty detection”, Society for Neuroscience conference in Chicago, IL, Oct 2019.*
- Hamm, J.P.** # Three-dimensional calcium imaging of cortical subnetworks encoding novel stimuli. Sculpted Light in the Brain conference, London, UK. June 2019

# TEACHING

## COURSES TAUGHT

2020 - present      **Instructor of record**, Georgia State University  
NEUR 8790- Topics: Modern Methods in Neuroscience (Spring 2024)  
NEUR 4910- Topics: Neurobiology of Schizophrenia (Spring 2023)  
NEUR 8020- Systems Neuroscience (Spring 2020)  
NEUR 8000- Principles of Neuroscience (Fall 2020)  
NEUR 8000- Principles of Neuroscience (Fall 2021)  
NEUR 8020- Systems Neuroscience (Spring 2022)

**Guest lectures**, Georgia State University  
NEUR 6040-Sensation and Perception (Spring 2022)  
    *“Central visual pathways and circuits”*  
NEUR 3020-Scientific Method in Neuroscience (Fall 2023)  
    *“Two-photon microscopy” (3 sections)*

2010 - 2013      **Instructor of record**, University of Georgia  
PSYC 3980- Research design (Fall 2010)  
PSYC 3990- Research methods lab (Fall 2013)

2008 – 2011      **Graduate Teaching Assistant**, University of Georgia  
PSYC 6430 – Applied Regression (Fall 2011)  
PSYC 3230 – Abnormal Psychology (Spring 2009 and Fall 2009)  
PSYC 2101 – Psychology of Adjustment (Fall 2008)

## STUDENTS MENTORED

### Current-postdoctoral trainees:

Dr. Ross, J.M. (2019-current)- Ph.D. in Neuroscience, University of Tennessee Health Science Center, 2019

### Current-graduate students:

Bastos, G. (2020-current). Ph.D. student, Neuroscience, GSU

Gallimore, C.G. (2020-current). Ph.D. student, Neuroscience, GSU

Rader, A. (2021-current). Ph.D. student, Neuroscience, GSU

West, C. (2022-current). Ph.D. student, Neuroscience, GSU (co-mentored)

Sutton, T. (2023-current). M.S. student, Neuroscience, GSU

### Current-undergraduate:

Dalwai, H. (2022-current). Neuroscience Major, GSU

Wargo, J. (2023-current). Neuroscience Major, GSU

Munkombwe, C. (2023-current). Neuroscience Major, GSU

Duran, A. (2023-current). Neuroscience Major, GSU

Robinson, M. (2023-current). Neuroscience Major, GSU

**Dissertation committee member:**

Ghane, M.A. (2020-2022). Ph.D. defended November 2022, Neuroscience.

Bourahmah, J. (2020-current). Ph.D. defended April 2023, Neuroscience

Moon, D. (2021-current). Ph.D. student, Neuroscience

Donaldson, K. (2022-current). Ph.D. student, Neuroscience

**External Dissertation committee member:**

Shymkiv, Y. (2021-2022). Ph.D. defended December 2022, Neuroscience, Columbia University

**Non-thesis reader:**

Martinez Otiz, G. (2020). M.S. Neuroscience, GSU. Apathy and Striatal Gray Matter Patterns in Schizophrenia and Huntington's Disease

**Past-postdocs:**

Dr. Prael, J.D. (2022-2023)- now Lab Leadership and Service Fellow at the Centers for Disease Control and Prevention (CDC), Atlanta GA.

**Past-students-primary mentor:**

Van Derveer, A. (2019-2023). Ph.D. student, Neuroscience, GSU. Thesis title: "*Multisensory context processing in the cortical hierarchy and the impact of a schizophrenia-relevant gene mutation.*"

Ricci, D. (2022-2023). M.S. student, Neuroscience, GSU. Masters non-thesis: Adolescent microglial contribution to mature frontovisual circuitry for visual context processing.

Holmes, J.T. (2020-2022). M.S. student, Neuroscience, GSU. Masters non-thesis: Chemicogenetic inhibition of VIP interneurons decreases deviance detection in V1.

Holmes, J.T. (2018-2020). B.S. Neuroscience with distinction, GSU. Honors thesis: Neocortical Somatostatin-Positive Interneurons Show Context Dependent Activity in a Classic Visual Oddball Paradigm.

Nsiangani, A.Y.T., (2019-2020). M.S. Biology, GSU. Masters non-thesis: Systems and methods to quantify and improve intrinsic signal imaging of the mouse visual cortex.

Greene, M. (2018-2020). Attending nursing school.

Kubricka, V. (2019-2021). B.S. Neuroscience with distinction, GSU. Attending graduate school for a Masters in Medical Science.

Nisseau-Bey, Z. (2020-2021). B.S. in Neuroscience, GSU. Attending Medical School at Morehouse.

## **SERVICE**

### **Department Service**

Committee Member, Future Faculty Fellow search committee (March 2023 – November 2023).

Committee Chair, Research Facilities Committee. (August 2019 – December 2023).

Committee Member, New full-time lecturer search committee. (March 2021- May 2021).

Committee Member, New tenure-track faculty search committee (September 2019 - May 2020).

Committee Member, Undergraduate Program Committee. (August 2019 – May 2021).

Presenter for the Neuroscience Major at the Honors College Student Mini-fair (2023)

Panelist and recruiter for the GSU Neuroscience Ph.D program at the Society for Neuroscience Conference (2019)

### **University/College Service**

Committee Chair, Brains and Behavior internal grant review panel. (2022, 2023).

Committee Member, Brains and Behavior internal grant review panel. (2019, 2021).

Committee Member, Brains and Behavior graduate fellowship review panel. (2019, 2021).

Committee Member, Internal Grants Peer Review Committee. (January 2022-2025).

Committee Member, Laboratory Safety Committee. (July 2021-Present).

Committee Member, Laboratory Safety Committee: Chemical Safety Subcommittee. (July 2021-Present).

Beckman Scholars Program Applicant Reviewer (2021, 2022, 2023).

Panel Moderator, Scientific Computing Day symposium. (2022).

Poster Judge, GSU Postdoctoral Research symposium. (2022, 2023).

Panel member, GSU panel on “NIH Grants: Tips on Winning NIH Funding”, 2/25/22 (2022).

Ad-hoc committee member, for evaluating CNCD 2CI fellowship candidates (2023)

## **Community**

Advisory Council, Atlanta Chapter of the Society for Neuroscience (2023-26)

## **PROFESSIONAL ACTIVITIES**

### **Professional Organizations:**

**2024-Present:** Associate Member, American College of Neuropsychopharmacology

**2009-Present:** Society for Neuroscience

**2021-Present:** Society for Biological Psychiatry

**Invited Manuscript Peer Reviewer for:** *Nature Neuroscience\**, *Brain\**, *Neuropsychopharmacology\**, *Schizophrenia Bulletin\**, *Schizophrenia Research\**, *Science Advances\**, *Nature Communications\**, *Scientific Reports\**, *Communications Biology\**, *PLOS ONE\**, *NPJ Schizophrenia\**, *Communications Biology\**, *Science*, *Biological Psychiatry*, *Cell Reports*, *Journal of Neuroscience*, *Cerebral Cortex*, *Neuroimage: Clinical*, *Frontiers in Systems Neuroscience*, *Frontiers in Neural Circuits*, *Biological Psychology*, *Psychophysiology*, *International Journal of Psychophysiology*, *European Journal of Neuroscience\**, *Translational Psychiatry*, *Experimental Brain Research*, *Neurobiology of Disease*. (\*reviewed in the past 12 months)

### **Invited Grant Reviewer (external):**

National Institutes of Health- NVBP study section, February 2024;

National Institutes of Health- ZDA1 SXC-N (O1) R study section, June 2023;

National Institutes of Health- ZGM1 TWD-A(PR) study section, March 2023;

Moorfields Eye Charity, University College London, October 2022;

External Grant Reviewer, University of Rochester, June 2022;

National Institutes of Health- NVBP study section, February 2022;