

Garrett J. Blair, PhDgarrett.blair@nyu.edu || garrettjblair.com**Education**

2011-2015
 University of California, Irvine
 B.S. Cognitive Science, *Summa Cum Laude*
 B.A. Spanish Literature & Culture, *Cum Laude*

2015-2021
 University of California, Los Angeles
 Ph.D. in Psychology
Behavioral Neuroscience, major
 Advisor: Dr. Hugh T. Blair (*no relation*)

Dissertation title: *Calcium Imaging of Cortical and Hippocampal Neurons During Learning and Decision Making*

Research Summary

My research interests primarily focus on the neural basis of behaviors (navigation, learning, and decision-making) using population imaging, primarily in the hippocampus and prefrontal cortex of rats (see Blair *et al.* 2023, Hart *et al.* 2020, and Schuette *et al.* 2020). Pursuit of this research has also led to co-authored papers on the development of novel calcium imaging devices (Guo *et al.* 2023) and computational approaches to real-time closed-loop calcium imaging (Chen *et al.* 2023a, 2023b, 2020). Current postdoctoral research with Dr. André Fenton (NYU) aims to understand hippocampal-prefrontal interactions during cognitive control and disease models of schizophrenia.

Publications**ORCID, Google Scholar**

- Blair GJ**, Guo C, Wang S, Fanselow MS, Golshani P, Aharoni D, Blair HT. (2023) Hippocampal place cell remapping occurs with memory storage of aversive experiences. *eLife* 12. doi:10.7554/elife.80661
- Guo C*, **Blair GJ***, Sehgal M, Jimka FNS, Bellafard A, Silva AJ, Golshani P, Basso MA, Blair HT, Aharoni D. (2023) Miniscope-LFOV: A large-field-of-view, single-cell-resolution, miniature microscope for wired and wire-free imaging of neural dynamics in freely behaving animals. *Sci Adv* 9:eadg3918. doi:10.1126/sciadv.adg3918
- Chen Z, **Blair GJ**, Guo C, Zhou J, Romero-Sosa J-L, Izquierdo A, Golshani P, Cong J, Aharoni D, Blair HT. (2023b) A hardware system for real-time decoding of in vivo calcium imaging data. *eLife* 12. doi:10.7554/elife.78344
- Chen Z, **Blair GJ**, Cao C, Zhou J, Aharoni D, Golshani P, Blair HT, Cong J. (2023a) FPGA-Based In-Vivo Calcium Image Decoding for Closed-Loop Feedback Applications. *IEEE TBCS* PP:1–11. doi:10.1109/tbcas.2023.3268130
- Chen Z, **Blair GJ**, Blair HT, Cong J. 2020. BLINK: bit-sparse LSTM inference kernel enabling efficient calcium trace extraction for neurofeedback devices. *Proc ACM IEEE ISLPED* 217–222. doi:10.1145/3370748.3406552
- Hart EE*, **Blair GJ***, O'Dell TJ, Blair HT, Izquierdo A. (2020) Chemogenetic modulation and single-photon calcium imaging in anterior cingulate cortex reveal a mechanism for effort-based decisions. *J Neurosci* 40:JN-RM-2548-19. doi:10.1523/jneurosci.2548-19.2020
- Schuette PJ, Reis FMCV, Maesta-Pereira S, Chakerian M, Torossian A, **Blair GJ**, Wang W, Blair HT, Fanselow MS, Kao JC, Adhikari A. (2020) Long-term characterization of hippocampal remapping during contextual fear acquisition and extinction. *J Neurosci* 40:8329–8342. doi:10.1523/jneurosci.1022-20.2020
- Blair GJ**, Wright C, Chubb C, Sun P, Sperling G. (2015) Disc Size Supports Top-Down, Selective Attention in a Task Requiring Integration across Multiple Target. *J Vision* 15:897. doi:10.1167/15.12.897

*denotes co-first authors

Honors, Fellowships, Awards

- NIMH F32 National Research Service Award [#1F32MH135680-01](#) (*in progress*) 11/2023 – 11/2026
- Invited speaker: Knierim lab, Johns Hopkins University 11/2018
- UCLA Graduate Research Summer Mentorship award Summer 2017
- UCLA Graduate Division fellowship 09/2016 – 06/2017
- UCLA Brain Research Institute Graduate Student Travel Award 2016
- UCLA-PKU Joint Research Institute Award (7th cohort, [link](#)) Summer 2016
- UCLA Alumni Fellowship 2015
- UC Irvine Undergraduate Research Opportunities Program fellowship 2015
- UC Irvine Dean's Honor List 2011 – 2015
- UC Irvine Campuswide Honors Program 2011 – 2015

Memberships and Outreach

- New York Academy of Sciences member 2022 – present
- SfN New York Chapter "*BraiNY*" - mentor 2023
- UCLA Brain Awareness Week 2018 – 2021
- Society for Neuroscience member 2016 – present
- Vision Science Society member 2015

Conference Presentations

Society for Neuroscience international conferences - 2016, 2018, 2022, 2023, San Diego or D.C.

UCI International Conference on Learning and Memory - 2018, Huntington Beach, CA

Vision Science Society conference - 2015, St. Pete's Beach, FL

Advanced Training courses

- NYU Science Communication workshop w/ NY Times editor Virginia Hughes New York, NY – 11/2023
- Simon's Institute, CCN - Calcium Imaging Analysis workshop New York, NY – 06/2022
- Neuroscience School of Advanced Study - Learning and Memory course Venice, Italy – 09/2019
- Miniscope CNMF-E analysis workshop UCLA, CA – 04/2018

<u>Mentorship</u>	<i>Name</i>	<i>Mentored activity</i>	<i>Current location</i>
	Hannah Smith	NYU - undergraduate thesis research, 2022-2023	Accepted to grad school
	Adrienne Cheung	NYU - summer undergraduate research program, 2023	Wellesley College, MA
	Umair Khan	UCLA - undergraduate researcher, 2019	PhD candidate, Mt. Sinai
	Shiyun Wang	UCLA - undergraduate thesis research, 2019-2020	PhD candidate, UCLA
	Shushanna Samvelian	UCLA - undergraduate researcher, 2017-2020	Medical student, SLU

Additional

- Fluent in [Spanish](#)
- [Programming Languages](#): MATLAB (10+ years), Python (4 years), HTML (2 years)
- [TA'd 6 undergraduate courses](#) during graduate school (primarily neuroscience labs) with very high review feedback. 301 students taught, 8.4±0.98 (n=184 reviews, mean and standard deviation) on 0-9 scale. 115/184 students rated 9/9. I've made all teaching reviews available [here](#) on my website.