Hannah Small

Curriculum Vitae

Cognitive Science Department
Johns Hopkins University
✉ *hsmall2@jhu.edu*

Education

2021–present **PhD, Cognitive Science**, *Johns Hopkins University*, Baltimore, MD.
Concentration in Computational Cognitive Science, Advisor: Dr. Leyla Isik

2014-2018 **Bachelor of Science, Biology (with Honors)**, *University of Richmond*, Richmond, VA.
Computer Science minor, Phi Beta Kappa, Major GPA: 4.00/4.00, Overall GPA: 3.94/4.00

Publications

Conference Proceedings

2025 **Hannah Small**, H. Lee Masson, S.H. Mostofsky, and L. Isik. Vision and language representations in multimodal ai models and human social brain regions during natural movie viewing. In *Proceedings of UniReps: the Second Workshop on Unifying Representations in Neural Models*, Proceedings of Machine Learning Research. PMLR, 2025.

Journal Articles

2025 **Hannah Small**, H. Lee Masson, E. Wodka, S. Mostofsky, and L. Isik. Ubiquitous cortical sensitivity to visual information during naturalistic, audiovisual movie viewing, September 2025. Preprint, submitted.

2025 C. Casto, **Hannah Small**, M. Poliak, G. Tuckute, B. Lipkin, A. D'Mello, and E. Fedorenko. The cerebellar components of the human language network. 2025. Preprint, in press.

2024 O. Ozernov-Palchik, A.M. O'Brien, E. Lee, H. Richardson, R. Romeo, B. Lipkin, **Hannah Small**, J. Capella, A. Nieto-Castañón, R. Saxe, J. D. E. Gabrieli, and E. Fedorenko. Precision fMRI reveals that the language network exhibits adult-like left-hemispheric lateralization by 4 years of age, June 2024. Preprint, in press.

2022 G. Tuckute, A. Paunov, H. Kean, **Hannah Small**, Z. Mineroff, I. Blank, and E. Fedorenko. Frontal language areas do not emerge in the absence of temporal language areas: A case study of an individual born without a left temporal lobe. *Neuropsychologia*, volume 169, page 108184, 2022.

2022 B. Lipkin, G. Tuckute, J. Affourtit, **Hannah Small**, Z. Mineroff, H. Kean, O. Jouravlev, L. Rakocevic, B. Pritchett, M. Siegelman, C. Hoeflin, A. Pongos, I. A. Blank, M. K. Struhl, A. Ivanova, S. Shannon, A. Sathe, M. Hoffmann, A. Nieto-Castañón, and E. Fedorenko. Probabilistic atlas for the language network based on precision fmri data from >800 individuals. *Scientific Data*, volume 9, page 529. Nature Publishing Group, 2022.

2022 J. Hu*, **Hannah Small***, H. Kean, A. Takahashi, L. Zekelman, D. Kleinman, E. Ryan, A. Nieto-Castañón, V. Ferreira, and E. Fedorenko. Precision fmri reveals that the language-selective network supports both phrase-structure building and lexical access during language production. *Cerebral Cortex,*, pages 1–21, 2022.

2018 A. Corbin, **Hannah Small**, L.M. Boland, and C. Villalba-Galea. A *Xenopus* oocyte model system to study action potentials. *Journal of General Physiology*, volume 150, pages 1583–1593, 2018.

Presentations

Talks

2025 Ubiquitous sensitivity to visual information during naturalistic movie viewing, MIT, EvLab, December 2025

2025 The brain basis of multimodal social perception, Carnegie Mellon University, Wehbe Lab, November 2025

2025 Ubiquitous vision predictivity during naturalistic movie viewing, Georgia Tech, Language, Intelligence & Thought (LIT) Lab, October 2025

2025 *Selected talk*: The brain basis of multimodal social perception, Johns Hopkins University, Data Science and AI Institute Human Alignment of AI Symposium, April 2025

2025 Social visual and language processing along the superior temporal sulcus during a naturalistic movie, Johns Hopkins University, OneNeuro Initiative Student Seminars, March 2025

2024 *Invited talk*: Social visual and language processing during a naturalistic movie, Ohio State University, Neuroimaging Workshop, October 2024

2024 *Invited talk*: An investigation into simultaneous visual and linguistic processing during a naturalistic movie, Kennedy Krieger Institute, Center for Neurodevelopmental and Imaging Research, September 2024

Posters

2025 **Hannah Small**, H. Lee Masson, E. Wodka, S.H. Mostofsky, and L. Isik. High-level visual information underlies social and language processing in the superior temporal sulcus during natural movie viewing. In *Vision Sciences Society*, 2025.

2024 **Hannah Small**, H. Lee Masson, E. Wodka, S.H. Mostofsky, and L. Isik. Social regions support both visual and linguistic representations during processing of a naturalistic movie. In *Cognitive Computational Neuroscience*, 2024.

2024 **Hannah Small**, H. Lee Masson, E. Wodka, S.H. Mostofsky, and L. Isik. From point light displays to rich social narratives: neural representations of visual social processing in the superior temporal sulcus. In *Vision Sciences Society*, 2024.

2024 **Hannah Small**, H. Lee Masson, S.H. Mostofsky, and L. Isik. Vision and language representations in multimodal ai models and human social brain regions during natural movie viewing. In *BRAIN NeuroAI workshop*, 2024.

2023 **Hannah Small** and L. Isik. Lateralization of dynamic social interaction perception. In *Vision Sciences Society*, 2023.

2023 C. Casto, B. Lipkin, **Hannah Small**, A. D'Mello, and E. Fedorenko. A detailed functional characterization of cerebellar language-responsive brain areas. In *Society for the Neurobiology of Language*, 2023.

2022 M. Varkanitsa, A. Billot, **Hannah Small**, I. Falconer, K. Panlilio, N. Jhingan, A. Combs, R. Ryskin, and S. Kiran. Social cognition in aphasia: Preliminary evidence. In *Academy of Aphasia*, 2022.

2022 O. Ozernov-Palchik, A. M. O'Brien, R. Romeo, **Hannah Small**, B. Lipkin, J. Capella, and J.D.E.and E. Fedorenko Gabrieli. A developmental investigation of the language network in the brain. In *Society for the Neurobiology of Language*, 2022.

2020 **Hannah Small**, B. Lipkin, J. Affourtit, A. Pongos, and E. Fedorenko. Differential selectivity of the left and right hemisphere language regions for non-linguistic processing. In *Society for the Neurobiology of Language*, 2020.

2020 J. Affourtit, **Hannah Small**, Z. Mineroff, and E. Fedorenko. In defense of individual-level functional neural markers. In *Society for the Neurobiology of Language*, 2020.

2017 **Hannah Small**, A. Corbin, L.M. Boland, and C. Villalba-Galea. Using excitable oocytes to investigate the role of potassium channels in action potentials. In *Society for Neuroscience*, 2017.

2016 **Hannah Small**, A. Corbin, L.M. Boland, and C. Villalba-Galea. Differential regulation of action potentials by potassium channels. In *Society for Neuroscience*, 2016.

Research Experience

Massachusetts Institute of Technology

July 2019 – June 2021 ***Technical Associate***, *Cambridge, MA*.
Led several projects understanding the representations and underlying computations that are involved in human language ability, including production/comprehension, social cognition, and executive function. Advisor: Dr. Evelina Fedorenko

University of Richmond

May 2015 – May 2018 ***Electrophysiology Research Assistant***, *Richmond, VA*.
Developed a biological model of different potassium ion channel regulation of action potentials. Advisor: Dr. Linda M. Boland

Fellowships & Awards

2025 ***Females of Vision Travel and Networking Award*** to attend Vision Sciences Society conference.

2024 ***National Eye Institute Early Career Scientist Travel Grant*** to attend Vision Sciences Society conference.

2023–2026 ***National Science Foundation Graduate Research Fellowship*** in Cognitive Neuroscience

2021–2024 ***Owen Scholar Fellowship*** awarded for being an exceptional applicant to Cognitive Science department.

2016–2018 ***Beckman Scholar Award*** awarded for quality and creativity of research and potential.

2015 ***HHMI Research Student Grant*** awarded for summer research investigating ion channel properties using electrophysiology.

2014 ***Robins Science Scholar*** awarded for excellence in science to attend University of Richmond on a full scholarship plus room and board.

Academic Honors

2018 **Biology Senior Research Award** Dept. of Biology, University of Richmond, given to the senior with the most outstanding research.

2017 **Phi Beta Kappa** Epsilon chapter

Activities and Service

2025 **Student at the Brains, Minds, and Machines summer course**, Marine Biological Laboratory.

2022–present **Graduate applicant mentor**, Johns Hopkins University.

2022–present **Member, Diversity and Representation Committee**, Johns Hopkins University.

2021–2025 **Co-Lead of PhD Application Mentorship and Climate Committee**, Johns Hopkins University.

2023–2025 **First year graduate student mentor**, Johns Hopkins University.

2017–2018 **Co-Founder of Women in Math and Science Mentoring Group**, University of Richmond.

Teaching

Fall, 2023 **TA: Computational Social Cognition**, Johns Hopkins University, Instructor: Dr. Leyla Isik.

Fall, 2022 **TA: Computational Social Cognition**, Johns Hopkins University, Instructory: Dr. Leyla Isik.

Spring, 2022 **TA: Introduction to Cognitive Neuroscience**, Johns Hopkins University, Instructor: Dr. Michael Bonner.

2015–2016 **Tutor: Integrated Quantitative Sciences**, University of Richmond.

Advising

Current

Feb 2025- **Ishi Jain**, undergraduate.

Feb 2024- **Astrid Jiang**, undergraduate, MA.