

Miriam Hauptman
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Employment

2026-present **Postdoctoral Researcher, Stanford University**
Advisor: Dr. Cory Shain

Education

2026 **Ph.D., Psychological & Brain Sciences, Johns Hopkins University**
Advisor: Dr. Marina Bedny

2023 **M.A., Psychological & Brain Sciences, Johns Hopkins University**
Advisor: Dr. Marina Bedny

2019 **B.S., Cognitive & Brain Sciences/German Language & Literature, Tufts University**
Highest thesis honors, summa cum laude
Advisors: Dr. Ariel Goldberg, Dr. Saskia Stoessel

Journal publications

1. **Hauptman, M.**, & Bedny, M. (2025). Animacy semantic network supports causal inferences about illness. *eLife*, 13:RP101944. <https://doi.org/10.7554/eLife.101944.3>
2. Lai, M. C. H., Abrams, E., Bou Dargham, S., Fallon, J., Goldman, E., **Hauptman, M.**, Parrish, A., Phillips, S., Reinoso, A., & Pylkkänen, L. (2025). Developmental changes in auditory evoked responses at different levels of linguistic processing: An MEG study. *Neuropsychologia*, 109219. <https://doi.org/10.1016/j.neuropsychologia.2025.109219>
3. **Hauptman, M.***, Elli, G.*, Pant, R., & Bedny, M. (2025). Neural specialization for ‘visual’ concepts emerges in the absence of vision. *Cognition*, 257, 106058. <https://doi.org/10.1016/j.cognition.2024.106058>
4. **Hauptman, M.**, Liu, Y.-F., & Bedny, M. (2024). Built to adapt: Mechanisms of cognitive flexibility in the human brain. *Annual Review of Developmental Psychology*, 6. <https://doi.org/10.1146/annurev-devpsych-120621-042108>
5. Goldman, E., Bou-Dargham, S., Lai, M., Guda, A., Fallon, J., **Hauptman, M.**, Reinoso, R., Phillips, S., Abrams, E., Parrish, A., & Pylkkänen, L. (2023). MEG correlates of speech planning in simple vs. interactive picture naming in children and adults. *PLoS ONE*, 18(10), e0292316. <https://doi.org/10.1371/journal.pone.0292316>
6. **Hauptman, M.**, Blank, I., & Fedorenko, E. (2023). Non-literal language processing is jointly supported by the language and Theory of Mind networks: Evidence from a novel meta-analytic fMRI approach. *Cortex*, 162, 96-114. <https://doi.org/10.1101/2022.03.08.481056>
7. **Hauptman, M.***, Blanco-Elorrieta, E.*, & Pylkkänen, L. (2022). Inflection across categories: Tracking abstract morphological inflection in language production with MEG. *Cerebral Cortex*, 32(8), 1721-1736. <https://doi.org/10.1093/cercor/bhab309>

Manuscripts

1. **Hauptman, M.**, & Bedny, M. (submitted). Expertise modifies neural responses to causal inference during language comprehension.
2. **Hauptman, M.**, Keil, S.+, Landau, B., & Bedny, M. (in prep). Learning from language is mediated by causal intuitive theories.

3. **Hauptman, M.***, Elli, G.*, Lane, C., & Bedny, M. (in prep). Cowboys, princesses, and priests: Representation of person nouns in the animacy semantic network.
4. **Hauptman, M.**, & Bedny, M. (in prep). Lost cause: The neuroscience of causal knowledge.
5. Akshi, **Hauptman, M.**, Sampson, M., Cheng, Q., & Bedny, M. (in prep). Form-invariant and language-specific ASL verb representations in the LMTG.

Peer-reviewed conference proceedings papers

1. **Hauptman, M.**, Keil, S., Landau, B., & Bedny, M. (2025). Learning visual appearance from language is mediated by causal intuitive theories. *Proceedings of the 47th Annual Meeting of the Cognitive Science Society*. <https://escholarship.org/uc/item/7cr4t81h>
2. **Hauptman, M.**, & Bedny, M. (2024). Causal inferencing relies on domain-specific systems: Evidence from illness causality. *Proceedings of the 46th Annual Meeting of the Cognitive Science Society*. <https://escholarship.org/uc/item/1nd044x4#main>

Presentations

1. Kim, M., **Hauptman, M.**, & Liu, S. (2026). Shared neural representations of causal interactions across social and physical domains (poster). *52nd Annual Meeting of the Society for Philosophy and Psychology*, Baltimore, MD.
2. **Hauptman, M.**, Elli, G., Lane, C., Pant, R., & Bedny, M. (2025). The neural basis of language about animates (poster). *17th Annual Meeting of the Society for the Neurobiology of Language*, Washington DC.
3. Akshi, **Hauptman, M.**, Sampson, M., Cheng, Q., & Bedny, M. (2025). Multivariate fMRI uncovers form-invariant and language-specific ASL verb representations in Deaf signers (poster). *17th Annual Meeting of the Society for the Neurobiology of Language*, Washington DC.
4. **Hauptman, M.**, Keil, S., Landau, B., & Bedny, M. (2025). Learning visual appearance from language is mediated by causal intuitive theories (poster). *47th Annual Meeting of the Cognitive Science Society*, San Francisco, CA.
5. Kim, M., **Hauptman, M.**, & Liu, S. (2025). Pushing people: the neural basis of social interaction perception (poster). *47th Annual Meeting of the Cognitive Science Society*, San Francisco, CA.
6. **Hauptman, M.**, & Bedny, M. (2025). Neural signatures of expertise in semantic causal knowledge (submitted talk and poster). *Association for Psychological Science*, Washington DC.
7. **Hauptman, M.**, & Bedny, M. (2025). Amodal living thing network is sensitive to causal information (poster). *Workshop on Concepts, Actions, and Objects*, Trento, Italy.
8. **Hauptman, M.**, & Bedny, M. (2025). Causal knowledge is embedded in semantic networks (data blitz talk and poster). *32nd Annual Meeting of the Cognitive Neuroscience Society*, Boston, MA.
9. **Hauptman, M.**, Keil, S., Landau, B., & Bedny, M. (2024). People infer object appearance from communicative and aesthetic intent (poster). *65th Annual Meeting of the Psychonomic Society*, New York, NY.
10. Akshi, **Hauptman, M.**, Sampson, M., Cheng, Q., & Bedny, M. (2024). Fronto-temporal language network highly selective for sign language relative to action semantics, regardless of iconicity (poster). *16th Annual Meeting of the Society for the Neurobiology of Language*, Brisbane, Australia.
11. **Hauptman, M.**, Elli, G., Pant, R., & Bedny, M. (2024). Causal inferencing relies on domain-specific systems: Evidence from illness causality (poster). *46th Annual Meeting of the Cognitive Science Society*, Rotterdam, Netherlands.
12. **Hauptman, M.**, Elli, G., Pant, R., & Bedny, M. (2023). Neural specialization for living things does not require visual experience (poster). *15th Annual Meeting of the Society for the Neurobiology of Language*, Marseille, France.

13. **Hauptman, M.**, & Bedny, M. (2023). Causal inferences are supported by domain-specific semantic networks, not the language network (poster). *15th Annual Meeting of the Society for the Neurobiology of Language*, Marseille, France.
14. **Hauptman, M.**, Blank, I., & Fedorenko, E. (2021). Non-literal language processing is jointly supported by the language and Theory of Mind networks (data blitz talk and poster). *28th Annual Meeting of the Cognitive Neuroscience Society*, presented virtually due to COVID-19.
15. **Hauptman, M.**, Abrams, E., Phillips, S., Parrish, A., Geguera, R., & Pylkkänen, L. (2020). Investigating the spatiotemporal dynamics of speech production in children (poster). *12th Annual Meeting of the Society for the Neurobiology of Language*, presented virtually due to COVID-19.
16. **Hauptman, M.***, Blanco-Elorrieta, E.*, & Pylkkänen, L. (2020). Planning production across morphological contexts, semantic content and syntactic categories (poster). *12th Annual Meeting of the Society for the Neurobiology of Language*, presented virtually due to COVID-19.
17. **Hauptman, M.***, Blanco-Elorrieta, E.*, & Pylkkänen, L. (2020). Planning production: Morphological, semantic and syntactic representations (poster). *27th Annual Meeting of the Cognitive Neuroscience Society*, presented virtually due to COVID-19.
18. Ziegler, J., **Hauptman, M.**, Snedeker, J., & Fedorenko, E. (2018). The neural encoding of thematic roles (poster). *25th Annual Meeting of the Cognitive Neuroscience Society*, Boston, MA.

*=equal contribution, += mentee

Invited talks

2026	Blind people's explanations for object color Concepts and Cognition Lab (Lombrozo), Princeton University
2026	The neural basis of causal inference during language comprehension CLiMB Lab (Shain), Stanford University
2026	Language, concepts, and experience Penn MindCORE
2026	The neuroscience of causal knowledge Chen Lab/Honey Lab, Johns Hopkins University
2026	Learning visual knowledge from language is mediated by causal intuitive theories Causality in Cognition Lab (Gerstenberg), Stanford University
2025	The neuroscience of causal knowledge Early Childhood Cognition Lab (Schulz) & SaxeLab (Saxe), MIT
2025	Learning visual knowledge from language is mediated by causal intuitive theories Computational Cognitive Science Lab (Tenenbaum), MIT
2024	Causal inference relies on domain-specific neural substrates Baltimore Brain Series, National Institute on Drug Abuse (NIDA)
2023	The neural basis of causal reasoning in language: Evidence from illness reasoning Neulab (Blanco-Elorrieta), New York University
2017	The neural encoding of linguistic meaning (presentation given with Jayden Ziegler) Language Learning Lab (Hartshorne), Boston College

Awards

2026	Robert S. Waldrop Senior Investigator Award, Department of Psychological & Brain Sciences, Johns Hopkins University
2026	AAAS Catalyzing Advocacy in Science and Engineering (CASE) workshop
2026	Diverse Intelligences Fellow, Natural and Artificial Minds (NAM) workshop at Princeton University

2025	Mary D. Ainsworth Award, Department of Psychological & Brain Sciences, Johns Hopkins University
2024	Walter L. Clark Scholar Award, Department of Psychological & Brain Sciences, Johns Hopkins University
2022	Special Conference Travel Award, Department of Psychological & Brain Sciences, Johns Hopkins University
2022	Howard Hughes Medical Institute Award, Genetics & Neurobiology of Language summer course, Cold Spring Harbor Laboratory
2022	Inclusive Assessment of Multi-Modal Multilinguals summer course, National Science Foundation
2021	National Science Foundation Graduate Research Fellowship Honorable Mention
2019	William Howell Reed Prize in German, Tufts Department of International Literary and Cultural Studies
2018	Rhodes Scholarship National Finalist
2018	Class of 1921 Leonard Carmichael Prize Scholarship, Tufts Department of Psychology
2018	Phi Beta Kappa
2016	Tufts University Career Center Summer Internship Grant
2015	National Merit Scholar

Service and outreach

2021-2025	Mentor, Student Advocacy Workshop Series at Western High School, Baltimore, MD Bimonthly program connecting students at an all-girls' public high school with local advocacy initiatives • 2024-2025: Group leader • Taught students how to conduct literature reviews on social justice topics of their choice, perform informational interviews with experts, and present their ideas to their principal and Baltimore City Council members.
2022-2024	Scientist pen-pal, Letters to a Pre-Scientist Connects middle and high school students in Title V schools with STEM professionals via snail mail
2021-2026	Class representative, Graduate Steering Committee, JHU Psychological & Brain Sciences
2018-2026	Tufts alumni interviewer, undergraduate admissions

One-time experiences

2026	Visit to Capitol Hill (congressional offices) to advocate for federal science funding, AAAS CASE workshop
2025	Mentor, Cognitive Science Society mentor program
2025	Visit to Capitol Hill (congressional offices) to advocate for federal science funding, Johns Hopkins Science Policy and Diplomacy Group
2025	Exhibitor/community outreach, Baltimore City Association of the Deaf 5 th Anniversary Gala
2025	Presenter, Johns Hopkins undergraduate Neuroscience Honor Society journal club
2025	PhD student panelist, career development seminar, JHU Psychological & Brain Sciences
2024	Presenter, Psi Chi Honor Society psychology lab tour for Johns Hopkins undergraduates
2024	Graduate school mock interviewer, NSF REU summer program at Johns Hopkins
2024	PhD student panelist, undergraduate student visit, Johns Hopkins Krieger School of Arts & Sciences Diversity Program
2024	Exhibitor/community outreach, Maryland Regional Braille Challenge

2023	Exhibitor/community outreach, Deaf-opia Convention
2022	Exhibitor/community outreach, National Federation of the Blind of Maryland State Convention
2021	One-on-one application mentor and Q&A panelist, JHU Psychological & Brain Sciences, prospective applicant mentorship program
2020	Science demonstrator, PS3 Science Fair
2020	Science demonstrator, Cornelia Connelly Center

Other research experience

2019-2021	Predoctoral research associate/Lab coordinator, Neuroscience of Language Lab at New York University (Drs. Liina Pykkänen and Alec Marantz), New York, NY
2016-2019	Research assistant, EvLab at Massachusetts Institute of Technology (Dr. Evelina Fedorenko), Cambridge, MA
2016-2019	Research assistant, Snedeker Lab at Harvard Laboratory for Developmental Studies (Drs. Jayden Ziegler and Jesse Snedeker), Cambridge, MA
2018	Research assistant, Kognition & Sprache Labor [Cognition & Language Lab] at Eberhard Karls Universität Tübingen (Dr. Barbara Kaup), Tübingen, Germany
2016	Research assistant, Cognition & Development Lab at Washington University in St. Louis (Dr. Lori Markson), St. Louis, MO

Teaching and mentoring

Johns Hopkins University Teaching Academy Certificate of Completion (2025)

- Three-part program emphasizing a combination of training workshops and teaching experience

Guest lectures	“Causal inference in the mind and brain,” Neurobiology of Human Cognition, JHU (2024) “Introduction to fMRI,” Methods for Studying Infant Minds, JHU (2023) “Introduction to music cognition,” Introduction to Psychology, JHU (2023) “Statistical inference in MVPA,” Advanced Research Design & Analysis, JHU (2023) “Introduction to music cognition,” Introduction to Psychology, JHU (2022) • TA challenge: Teach a topic outside of your research focus
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Teaching assistantships	Functional Neuroanatomy (2024) Methods for Studying Infant Minds (2023) Advanced Research Design & Analysis (2023) Introduction to Psychology (2022)
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Undergraduate/post-bac mentees

Clarissa Alfonso (2022-2024)
 Quinton Covington (2024-2026)
 Elizabeth Deng (2023-2026)
 Tess Gallegos (2023-2026)
 Sophia Keil (2023-2026)
 Yanni Larsen (2024-2026)
 Lana Milman (2025-2026)

Other

2016-2019 Head tutor/subject tutor, Tufts Academic Resource Center
Courses tutored: German 1-6, Statistics for Behavioral Science
2015-2016 Corps Member, Jumpstart (AmeriCorps), Boston, MA (300 hours)
Implemented early childhood curriculum promoting language and literacy development

Ad-hoc reviewing

Journals: *Neuropsychologia*, *Psychophysiology*, *Frontiers in Human Neuroscience*, *Scientific Data*
Conferences: *Association for Psychological Science*

Skills

Programming Languages	Python, R, C++
Neuroscientific Methods	fMRI, MEG
Experiment Control Software	PsychoPy, Presentation, PCIBex, Gorilla, Prolific, Meadows Research
Analysis Toolkits	FSL, MNE-python, GingerALE, SPM
Natural Languages	English, German (fluent), ASL (intermediate)