

Heidi A. Baumgartner, Ph.D.

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Research & Employment

- 2021 — Stanford University — Center for the Study of Language and Information
Research Scholar; ManyBabies Executive Director
Supervisor: Michael C. Frank
- 2023 — MIT — Open Encyclopedia of Cognitive Science
Managing Editor
- 2014 — 2017 Brown University — Cognitive, Linguistic, & Psychological Sciences
Postdoctoral Research Associate
Primary Investigator: Dima Amso
- 2008 — 2014 University of California, Davis — Center for Mind and Brain/Psychology
Graduate Student Researcher
Primary Investigator: Lisa M. Oakes
- 2006 — 2008 Stanford University School of Medicine — Psychiatry & Behavioral Sciences
Research Assistant/Senior Research Asst./Asst. Lab Manager
Primary Investigator: Allan L. Reiss
- 2003 — 2005 Stanford University — Department of Psychology
Research Assistant/Asst. Lab Manager
Primary Investigator: Anne Fernald

Education

- 2014 University of California, Davis
Ph.D. in Psychology
Dissertation: “Understanding the Role of Non-Contrastive Variability in Word Learning and Visual Attention in Infancy”
Advisor: Lisa M. Oakes
Committee members: Steven J. Luck, Katie Graf Estes
- 2010 University of California, Davis
M.A. in Psychology
- 2005 Stanford University
B.A. in Psychology, with Honors
Thesis advisor: Anne Fernald

Preprints

- Singh, L., Barokova, M., Bazhydai, M., **Baumgartner, H. A.**, ..., Frank, M. C. (2024, May 24). *Tools of the Trade: A guide to sociodemographic reporting for researchers, reviewers, and editors*. Journal of Cognition and Development.
- Kosie, J.E., Zettersten, M., Abu-Zhaya, R., Amso, D.A., Babineau, M., **Baumgartner, H.A.**, ..., & Lew-Williams, C. (2023, Sep 17). *ManyBabies 5: A large-scale investigation of the proposed shift from familiarity preference to novelty preference in infant looking time*. PsyArXiv. <https://doi.org/10.31234/osf.io/ck3vd>
- Visser, I., Geambasu, A., **Baumgartner, H.A.**, Bergmann, C., ..., Soderstrom, M., & Levelt, C.C. (2022, Sep 12). *ManyBabies 3: A multi-lab study of algebraic rule learning*. PsyArXiv. <https://doi.org/10.31234/osf.io/aex7v>
- Amso, D., Govindarajan, L., Gupta, P., Placido, D., **Baumgartner, H.A.**, Lynn, A., Gunther, K., Sharma, T., Veerabadran, V., Thakkar, K., Kim, S.C., & Serre., T. (2021). *Using computational analysis of behavior to discover developmental change in memory-guided attention mechanisms in childhood*. <https://doi.org/10.31234/osf.io/gg4rt>

Publications

- Singh, L., Barokova, M., **Baumgartner, H.A.**, ..., & Frank, M.C. (2024). A unified approach to demographic data collection for research with young children across diverse cultures. *Developmental Psychology*, 60(2), 211-227. <https://doi.org/10.1037/dev0001623>
- Baumgartner, H.A.**, Alessandroni, N., Byers-Heinlein, K., Frank, M.C., Hamlin, J.K., Soderstrom, M., Voelkel, J.G., Willer, R., Yuen, F., & Coles, N.A. (2023). How to build up big team science: A practical guide for large-scale collaborations. *Royal Society Open Science*. 10(6), 230235. <https://doi.org/10.1098/rsos.230235>
- Coles, N.A., DeBruine, L.M., Azevedo, F., **Baumgartner, H.A.**, & Frank, M.C. (2023). 'Big team' science challenges us to reconsider authorship. *Nature Human Behaviour*, 7, 665-667. <https://doi.org/10.1038/s41562-023-01572-2>
- Werchan, D.M., **Baumgartner, H.A.**, Lewkowicz, D.J., & Amso, D. (2018). The origins of cortical multisensory dynamics: Evidence from human infants. *Developmental Cognitive Neuroscience*, 34, 75-81. <https://doi.org/10.1016/j.dcn.2018.07.002>
- Oakes, L.M., **Baumgartner, H.A.**, Kanjlia, S., & Luck, S.J. (2017). An eye tracking investigation of color-location binding in infants' visual short-term memory. *Infancy*, 22, 584-607. <https://doi.org/10.1111/infa.12184>
- Baumgartner, H.A.** & Oakes, L.M. (2013). Investigating the relation between infants' manual activity with objects and their perception of dynamic events. *Infancy*, 18, 983-1006. <https://doi.org/10.1111/infa.12009>
- Oakes, L.M., **Baumgartner, H.A.**, Barrett, F.S., Messenger, I.M., & Luck, S.J. (2013). Developmental changes in visual short-term memory in infancy: Evidence from eye-tracking. *Frontiers in Psychology: Developmental Psychology*, 4. <https://doi.org/10.3389/fpsyg.2013.00697>
- Owen, E.R., **Baumgartner, H.A.**, & Rivera, S.M. (2013). Using infrared eye-tracking to explore ordinal numerical processing in toddlers with Fragile X Syndrome. *Journal of Neurodevelopmental Disorders*, 5(1):1. <https://doi.org/10.1186/1866-1955-5-1>

- Oakes, L.M. & **Baumgartner, H.A.** (2012). Manual object exploration and learning about object features in human infants. *Proceedings of the 2012 IEEE International Conference on Development and Learning and Epigenetic Robotics*, 1-6. <https://doi.org/10.1109/DevLrn.2012.6400819>
- Baumgartner, H.A.** & Oakes, L.M. (2011). Infants' developing sensitivity to object function: Attention to features and feature correlations. *Journal of Cognition and Development*, 12, 275-298. <https://doi.org/10.1080/15248372.2010.542217>
- Aye, T., Reiss, A.L., Kesler, S., Hoang, S., Drobny, J., Park, Y., Schleifer, K., **Baumgartner, H.**, Wilson, D.M., & Buckingham, B.A. (2011). The feasibility of detecting neuropsychologic and neuroanatomic effects of Type 1 Diabetes in young children. *Diabetes Care*, 34, 1458-1462. <https://doi.org/10.2337/dc10-2164>
- Ment, L., Kesler, S., Vohr, B., Katz, K.H., **Baumgartner, H.**, Schneider, K.C., Delancy, S., Silbereis, J., Duncan, C.C., Constable, R.T., Makuch, R.W., & Reiss, A.L. (2009). Longitudinal brain volume changes in preterm and term control subjects during late childhood and adolescence. *Pediatrics*, 123, 503-511. <https://doi.org/10.1542/peds.2008-0025>
- Thorpe, K., **Baumgartner, H.**, & Fernald, A. (2006). Children's developing ability to interpret adjective-noun combinations. In *Proceedings of the 30th Annual Boston University Conference on Language Development*, 30, 631-642.

Conference Presentations

- Baumgartner, H.A.** (Oct, 2023). *Closing Remarks*. Big Team Science Conference, virtual.
- Baumgartner, H.A.**, Coles, N.C. & Yuen, F. (July, 2023). *Challenges of Implementing Big Team Science*. Panel held at the INSciTS 2023 Annual Conference, Bethesda, MD.
- DiazGranados, D., Banava, S., **Baumgartner, H.A.**, Delgado Arias, S., & Fehr, C. (July, 2023). *Diversity, Equity, and Inclusion in Science Teams*. Panel held at the INSciTS 2023 Annual Conference, Bethesda, MD.
- Alessandrini, N., Altschul, D., **Baumgartner, H.A.**, Espinosa, J.H., Miller, R., Petkov, C., Prétôt, L., & Visser, I. (Oct, 2022). *ManyManys Hackathon: Developing opportunities for cross-network collaboration*. Hackathon held at the Big Team Science Conference, virtual.
- Hall, K.L., Salazar Campo, M., Contractor, N., Vogel, A.L., & **Baumgartner, H.A.** (Aug, 2022). *Team Science 101*. Workshop at the International Network of the Science of Team Science annual meeting, virtual.
- Baumgartner, H.A.** & Zhou, G., on behalf of the ManyBabies Consortium. (July, 2022). *ManyBabies: How we got here and where we're going*. Poster presented at the International Conference on Infant Studies biennial meeting, Ottawa, ONT.
- Baumgartner, H.A.**, Kline Struhl, M., Byers-Heinlein, K., Chuey, A., Coles, N.A., Dillon, M., Gilmore, R., Lew-Williams, C., Sheskin, M., Soska, K., & Frank, M.C. (April, 2022). *Big Team Science for Studying Small People*. Pre-conference workshop at the Cognitive Development Society biennial meeting, Madison, WI.
- Werchan, D.M., **Baumgartner, H.A.**, Martino, R., Lewkowicz, D. & Amso, D. (April, 2017). *Unisensory and Multisensory Processing in Cortex*. Poster presented at the Society for Research in Child Development biennial meeting, Austin, TX.

Baumgartner, H.A., Werchan, D., Lewkowicz, D.J., & Amso, D. (September, 2016). *Cortical plasticity and specialization in response to multimodal events in infancy*. Poster presented at the 4th Annual Flux Congress, St. Louis, MO.

Baumgartner, H.A. & Amso, D. (May, 2016). *Interactions between visual attention and memory in infancy*. Poster presented at the International Conference on Infant Studies biennial meeting, New Orleans, LA.

Baumgartner, H.A., Haas, S., Ackerman, L., Kirkham, N., & Amso, D. (May, 2016). *The development of object-based attention in infancy*. Poster presented at the International Conference on Infant Studies biennial meeting, New Orleans, LA.

Baumgartner, H.A. & Oakes, L.M. (March, 2015). *Examining the relation between word learning and visual attention in 12-month-old infants*. Poster presented at the Society for Research in Child Development biennial meeting, Philadelphia, PA.

Harrison, M.H., **Baumgartner, H.A.**, Luck, S.J., & Oakes, L.M. (March, 2015). *Individuation cues enhance visual-short-term memory at 6 months of age*. Poster presented at the Society for Research in Child Development biennial meeting, Philadelphia, PA.

Baumgartner, H.A. & Oakes, L.M. (October, 2013). *The effect of task-irrelevant variability on visual search in infancy*. Poster presented at the Cognitive Development Society biennial meeting, Memphis, TN.

Baumgartner, H.A. & Oakes, L.M. (April, 2013). *Infants' attention to relations between features in dynamic events*. Poster presented at the Society for Research in Child Development biennial meeting, Seattle, WA.

Kanjlia, S., **Baumgartner, H.A.**, Luck, S.J., & Oakes, L.M. (April, 2013). *Feature binding in infants' visual short-term memory*. Poster presented at the Society for Research in Child Development biennial meeting, Seattle, WA.

Baumgartner, H.A., Barrett, F.S., Luck, S.J., & Oakes, L.M. (August, 2012). *Color-location binding in infants' visual short-term memory*. Talk presented at the Bay Area Memory Meeting, Davis, CA.

Baumgartner, H.A., Luck, S.J., & Oakes, L.M. (June, 2012). *Color-location binding in infants' visual short-term memory*. Poster presented at the International Conference on Infant Studies biennial meeting, Minneapolis, MN.

Baumgartner, H.A. (May, 2011). *Infants' learning of action-label associations: The role of variability*. Talk presented at the UC Davis Psychology Conference, Davis, CA.

Baumgartner, H.A., Millhoff, C., Graf Estes, K., & Oakes, L.M. (April, 2011). *Infants' learning of action-label associations: The role of variability*. Poster presented at the Society for Research in Child Development biennial meeting, Montreal, Canada.

Baumgartner, H.A., Millhoff, C., Graf Estes, K., & Oakes, L.M. (August, 2010). *Variability facilitates learning of relations between words and actions*. Poster presented at the International Conference on Development and Learning, Ann Arbor, MI.

Baumgartner, H.A., Karapetyan, A., Ellis, A.E., & Oakes, L.M. (March, 2010). *Infants' visual short-term memory for faces*. Poster presented at the International Conference on Infant Studies biennial meeting, Baltimore, MD.

Hurley, K.B., **Baumgartner, H.A.**, & Oakes, L.M. (October, 2009). *Studies of infant cognition using the continuous novelty preference task*. Poster presented at the Cognitive Development Society biennial meeting, San Antonio, TX.

Invited Talks

2024 May	Bay Area Open Science Group
2024 May	Stanford Maternal & Child Health Research Institute – Seminar
2024 Apr	Stanford University – ReproducibiliTea meeting
2024 Feb	NIH/NINDS Office of Neural Exposome and Toxicology – Team Science Workshop
2023 Oct	Catalyzing Open Science: Charting the path forward at Concordia University
2023 June	NIH Brain Initiative – U19 Consortium Annual Meeting
2023 Apr	International Network for the Science of Team Science (INSciTS) – Panel
2022 Nov	Stanford University – Symbolic Systems Forum
2014 May	Brown University – Cognition Seminar, Department of Cognitive, Linguistic, & Psychological Sciences
2014 Jan	Indiana University – Developmental Seminar, Department of Psychology

Honors and Awards

2013–2014	Provost's Dissertation Year Fellowship in the Arts, Humanities, and Social Sciences, UC Davis
2013–2014	UCD & Humanities Graduate Research Award, UC Davis
2013	Dukes Travel Award, UC Davis
2012	Paper of Excellence award, IEEE Conference on Development and Learning and Epigenetic Robotics
2012	Psychology Department Research Fellowship, UC Davis
2011	Outstanding Presentation Award, UC Davis Psychology Conference
2005	Psychology Departmental Honors, Stanford University
2004–2005	Major Research Grant recipient, Stanford University
2004	Summer Research College funding recipient, Stanford University

Teaching Training

2016	Sheridan Center for Teaching and Learning workshops <i>Teaching for the First Time, Teaching Portfolios</i>
2016 Fall	Teaching at Teaching-Intensive Institutions workshop, UMass Boston
2016 Fall	Orientation to Teaching at Brown
2014 Winter	The Teaching of Psychology, UC Davis

Seminar devoted to course design and lecture development

Teaching Experience

Brown University

2016 Fall Teaching Fellow, Lab in Developmental Psychology

University of California, Davis

2014 Spring Co-Instructor, Introduction to Psychology

2013 Summer Guest Lecturer, Infant Development

2012 Fall Teaching Assistant and Guest Lecturer, Introduction to Psychology

2011 Spring Teaching Assistant, Language and Cognition

2009 Spring Teaching Assistant, Developmental Psychology

Additional Qualifications

Methodological experience

Behavioral: eye tracking, preferential looking & habituation, face-to-face, observational

Neuroscience: sMRI & fMRI, fNIRS

Relevant software proficiency

Behavioral Coding: Datavyu, Noldus Observer, iCoder (assisted with development and testing at Stanford's Center for Infant Studies)

Data organization/cleaning/analysis: RStudio, Matlab, Python, SQL

Statistics: SPSS, R

Stimulus Presentation: E-Prime, Habit, Matlab, SMI Experiment Center & BeGaze

Design/Presentation: Adobe Creative Cloud (Illustrator, Photoshop, Premiere), PowerPoint, Keynote, Google Slides, Wix (website design and management)

Organization/Communication: Google Workspace, Microsoft Teams, Slack, GitHub, Airtable, Mendeley

Memberships & Service

Professional memberships: Cognitive Development Society (CDS), International Congress on Infant Studies (ICIS)

Ad hoc reviewer: NSF, Behavioral Neuroscience, Cognitive Development, Infancy, PCI

Committee: HELIOS Open

Psychology Representative, Graduate Student Association, University of California, Davis
Volunteer, Second Harvest Food Bank of Silicon Valley