HILARY BARTH, PH.D.

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ACADEMIC APPOINTMENTS

Professor, Department of Psychology, Wesleyan University	2019-
Associate Professor, Department of Psychology, Wesleyan University	2012-2019
Assistant Professor, Department of Psychology, Wesleyan University	2005-2012
Research Associate, Department of Psychology, Harvard University	2004-2005
Visiting Assistant Professor, Department of Psychology, Wellesley College	2004-2005
Postdoctoral Fellow, Department of Psychology, Harvard University	2002-2004

EDUCATION

Postdoctoral training, Laboratory for Developmental Studies Department of Psychology, Harvard University	2002-2005
Ph.D. in Cognitive Neuroscience Department of Brain & Cognitive Sciences, MIT	1996-2002
A.B. *magna cum laude* in Psychology, Neural/Behavioral Sciences concentration Department of Psychology, Bryn Mawr College	1992-1996

EXTERNAL FUNDING

Major grants

- Co-PI, NSF DRL 2607517 (STEM K-12) $736,381 total — 2026-2029
  Understanding and reducing left digit bias in numerical magnitude judgments
  (with PI A.L. Patalano, Wesleyan)
- PI, NSF DRL 1920445 (ECR: CORE) $1,091,303 total — 2019-2025
  Digit dependence in numerical magnitude judgments
  (with Co-PI A.L. Patalano, Wesleyan)
- PI, NSF DRL 1561214 (ECR: CORE) $1,101,456 total to Wesleyan — 2016-2022
  Collaborative proposal: Foundations of quantitative thought: Number, space, time, and probability (with Co-PIs A.L. Patalano, Wesleyan, & S. Cordes, BC)
- PI, NSF CAREER Award DRL 0950252 (REAL) $761,005 total — 2010-2016
  Magnitude biases in mathematical cognition, learning, & development

Smaller grants and fellowships

- National Living Laboratory Partner Stipend ($3000 direct) — 2015-2016
- National Living Laboratory Educational Assistance ($1000 direct) — 2015-2016
- National Living Laboratory Stipend ($3000 direct) — 2014-2015
- National Living Laboratory Stipend ($300 direct) — 2013-2014
- Mattel Philanthropic Programs Play Research Grant ($18,500 direct) — 2011-2012
  Understanding the power of play (with A. Shusterman & E. Slusser, Wesleyan)
- Mellon Faculty Career Enhancement Summer Stipend Grant ($7,500 direct) — 2006
- Postdoctoral Fellowship, National Academy of Education/Spencer Foundation ($50,000 direct) — 2003-2004
- Graduate Fellowship, Clare Booth Luce Program for Women in STEM ($25,000 direct) — 1998-1999

PUBLICATIONS – Under review or under revision

*Undergraduate students in italics, *BA/MA students in italics & starred*

PUBLICATIONS – Book chapters

• Krajcsi, A., **Barth, H.**, Devlin, D., Dubinkina, N., & Patalano, A. (2026, in press). Symbolic number processing. In F. Sella (Ed.), *Handbook of Mathematical Cognition.*

• Mordkoff, J. T., & **Barth, H**. (2001). Using pre-pulse inhibition to study attentional capture: a warning about pre-pulse correlations. In C. Folk and B. Gibson (Eds.), *Attraction, Distraction, and Action: Multiple Perspectives on Attentional Capture* (pp.177-190). Amsterdam: Elsevier.

PUBLICATIONS – Peer-reviewed empirical journal articles

*Undergraduate students in italics, *BA/MA students in italics & starred*

• Alia, N., Kayton, K., *Mittal, P*., **Barth, H.** & Patalano, A.L. (2026, in press). Influence of benchmarks on the left digit effect in number line estimation. *Canadian Journal of Experimental Psychology.*

• Kayton, K., Rutkowski, B., Vaidya, L., **Barth, H.** & Patalano, A.L. (2026, in press). Reliability of the left digit effect in number line estimation. *Journal of Numerical Cognition.*

• Kim, E., Rutkowski, B., Vaidya, L., *Bourassa, C*., *Defeo, A., Delgado, S., Dima, J., Fabian, A., Fung, M., Hammond, S., Hauser, E., Hsu, R., Hu, J., Litts, C., Matrician, E., Pan, E., Pordy, J., Soans, S., Sridhara, S., Walters, I., Wolk, A.,* & **Barth, H.** (2026). Special days for one group inform children about both mentioned and unmentioned groups. *Journal of Experimental Child Psychology 266,* 106484.

• Kim, E., *Soans, S*., Patalano, A.L., & **Barth, H.** (2026). Context matters: "Left digit effects" can arise for digits that are not leftmost. *Quarterly Journal of Experimental Psychology 79(7), 1732-1740.*

• **Barth, H**., Vaidya, L., Rutkowski, B., Kim, E., *Bourassa, C*., *Fabian, A*., Eisen, S., Zax., A., Williams, K., & Patalano, A.L. (2025). Left digit bias in children's and adults' paper-and-pencil number line estimation. *Memory & Cognition 53,* 2217-2236.

• Kayton, K., *Fischer, G*., **Barth, H**., & Patalano, A. L. (2024). The left digit effect in an unbounded number line task. *Psychonomic Bulletin & Review 31,* 2313-2322.

• *Gwiazda, G*., Kayton, K., Alia, N., *Bondhus, C*., **Barth, H**., & Patalano, A.L. (2023). Does instructional intervention reduce the left digit effect in number line estimation? *Quarterly Journal of Experimental Psychology*.

• Williams, K., *Bradley, K.,* Xing, C., **Barth, H**., & Patalano, A.L. (2023). Potential moderators of the left digit effect in numerical estimation. *Journal of Numerical Cognition 9*(3), 433-451.

• Patalano, A.L., Kayton, K., & **Barth, H.** (2023). Modeling the left digit effect in adult number line estimation. *Cognition*, *230*, Article 105257.

• Kayton, K., Williams, K., *Stenbaek, C*., *Gwiazda, G*., *Bondhus, C*., *Green, J*., *Fischer, G*., **Barth, H.**, & Patalano, A.L. (2022). Summary accuracy feedback and the left digit effect in number line estimation. *Memory & Cognition 50*, 1789-1803.

• Patalano, A.L., Williams, K., *Weeks, G.*, Kayton, K., & **Barth, H.** (2022). The left digit effect in a complex judgment task: Evaluating hypothetical college applicants. *Journal of Behavioral Decision Making* 35, e2247.

• Williams, K., Zax, A., Patalano, A.L., & **Barth, H.** (2022). Left digit effects in numerical estimation across development. *Journal of Cognition & Development 23*, 188-209.

• Xing, C., Zax., A., Taggart, J., Bass, I., *George, E.,* & **Barth, H**. (2021). Numerical estimation strategies are correlated with math ability in school-age children. *Cognitive Development 60*, 101089.

• **Brew, K., Clark, T.*, *Feingold-Link, J.,* & **Barth, H.** (2021). Do demand characteristics contribute to minimal ingroup preferences? *Journal of Experimental Child Psychology 204,* 105043.

• Savelkouls, S., Williams, K., & **Barth, H.** (2020). Linguistic inversion and numerical estimation. *Journal of Numerical Cognition 6.*

• Williams, K., *Paul, J.*, Zax, A., **Barth, H.**, & Patalano, A.L. (2020). Number line estimation and standardized test performance: The left digit effect does not predict SAT math score. *Brain & Behavior 10, e01877.*

• Williams, K., Zax, A., **Reichelson, S.,* Patalano, A.L., & **Barth, H.** (2020). Developmental change in partition dependent resource allocation behavior. *Memory & Cognition 48, 1007-1014*.

• Patalano, A.L., Zax., A., Williams, K., *Mathias, L.*, Cordes, S., & **Barth, H**. (2020). Intuitive symbolic magnitude estimation and decision making under risk in adults. *Cognitive Psychology 118*, 101273.

• Xing, C., Williams, K., *Hom, J., Kandlur, M., Owoyemi, P., Paul, J., Shackney, E., Alexander, R.*, & **Barth, H**. (2020). Partition dependence in financial aid distribution to income categories: An experimental replication and extension. *PLOSone 15*, e0231135

• Zax, A., Williams, K., Patalano, A.L., Slusser, E.B., Cordes, S., & **Barth, H.** (2019). What do biased estimates tell us about cognitive processing? Spatial judgments as proportion estimation. *Journal of Cognition and Development 20,* 702-728.

• Zax, A., Slusser, E.B., & **Barth, H.** (2019). Spontaneous partitioning and proportion estimation in children's numerical judgments. *Journal of Experimental Child Psychology, 185*, 71-94.

• Xing, C., *Paul, J.*, Zax, A., Cordes, S., **Barth, H.**, & Patalano, A.L. (2019). Probability-range effects on probability distortion in a gambling task. *Acta Psychologica 197*, 39-51.

• **Reichelson, S.*, Zax, A., Patalano, A.L., & **Barth, H.** (2019). Partition dependence in development: Are children's decisions shaped by the arbitrary grouping of options? *Quarterly Journal of Experimental Psychology 72,* 1029-1036.

• *Lai, M*., Zax, A., & **Barth, H.** (2018). Digit identity influences numerical estimation in children and adults. *Developmental Science 21*, e12657.

• **Reichelson, S*., Zax, A., Bass, I., Patalano, A.L., & **Barth, H**. (2018). Partition dependence in consumer choice: Perceptual groupings do not reliably shape decisions. *Psychonomic Bulletin & Review 25*, 1178-1183.

• Slusser, E.B., & **Barth, H.** (2017). Intuitive proportion judgment in number-line estimation: Converging evidence from multiple tasks. *Journal of Experimental Child Psychology 162*, 181-198.

• McCrink, K., Shafto, P., & **Barth, H.** (2017). The relationship between non-symbolic multiplication and division in childhood. *Quarterly Journal of Experimental Psychology 70,* 686-702.

• **Barth, H**., Slusser, E.B., *Kanjlia, S., Garcia, J.*, Taggart, J., & Chase, E. (2016). How feedback improves children's numerical estimation. *Psychonomic Bulletin & Review 23*, 1198-1205.

• Schug, M.G., Shusterman, A., **Barth, H.**, & Patalano, A.L. (2016). Early group bias in the Faroe Islands: Cross-cultural variation in children's group-based reasoning**.** *Quarterly Journal of Experimental Psychology 69*, 1741-1751.

• Patalano, A.L., *Saltiel, J., Machlin, L.*, & **Barth, H**. (2015). The role of numeracy and approximate number system acuity in predicting value and probability distortion. *Psychonomic Bulletin & Review 22,* 1820-1829.

• **Barth, H.**, *Lesser, E.*, Taggart, J., & Slusser, E.B. (2015). Spatial estimation: A non-Bayesian alternative. *Developmental Science 18*, 853-862.

• **Barth, H.**, **Bhandari, K., Garcia, J., MacDonald, K*., & Chase, E. (2014). Preschoolers trust novel members of accurate speakers' groups and judge them favorably. *Quarterly Journal of Experimental Psychology 67,* 872-883.

• *MacDonald, K*., Schug, M.G., Chase, E., & **Barth, H.** (2013). My people, right or wrong? Minimal group membership disrupts preschoolers' selective trust. *Cognitive Development 28*, 247-259.

• Slusser, E.B., *Santiago, R.T.*, & **Barth, H.** (2013). Developmental change in numerical estimation. *Journal of Experimental Psychology: General 142*, 193-208.

• Schug, M.G., Shusterman, A., **Barth, H.**, & Patalano, A.L. (2013). Minimal group membership influences children's responses to novel experiences with group members. *Developmental Science 16*, 47-55.

• Sullivan, J., & **Barth, H.** (2012). Active (not passive) spatial imagery primes temporal judgments. *Quarterly Journal of Experimental Psychology 65*, 1101-1109.

• Sullivan, J., Juhasz, B., Slattery, T., & **Barth, H.** (2011). Adults' number-line estimation strategies: evidence from eye movements. *Psychonomic Bulletin and Review 18*, 557-563.

• Anderson, B.L., O'Vari, J., & **Barth, H.** (2011). Non-Bayesian contour synthesis. *Current Biology 21*, 492-496.

• **Barth, H.** & *Paladino, A.M.* (2011). The development of numerical estimation: Evidence against a representational shift. *Developmental Science 14*, 125-135.

• **Bhandari, K.,* & **Barth, H.** (2010). Show *or* tell: Testimony is sufficient to induce the curse of knowledge in three- and four-year-olds. *Quarterly Journal of Experimental Psychology 63*, 209-215.

• **Barth, H**., *Starr, A.B*, & *Sullivan, J*. (2009). Children's mappings of large number words to numerical magnitudes. *Cognitive Development 24*, 248-264.

• **Barth, H**., Baron, A., Spelke, E.S., & Carey, S. (2009). Children's multiplicative transformations of discrete and continuous quantities. *Journal of Experimental Child Psychology 103*, 441-454.

• **Barth, H**. (2008). Judgments of discrete and continuous quantity: An illusory Stroop effect. *Cognition 109*, 251-266.

• **Barth, H**., Beckmann, L., & Spelke, E.S. (2008). Nonsymbolic, approximate arithmetic in children: Evidence for abstract addition prior to instruction. *Developmental Psychology 44*, 1466-1477.

• Cappelletti, M., **Barth, H.**, Fregni, F., Spelke, E.S., & Pascual-Leone, A. (2007). rTMS over the intraparietal sulcus disrupts numerosity processing. *Experimental Brain Research 179*, 631-642.

• **Barth, H**., La Mont, K., Lipton, J., Dehaene, S., Kanwisher, N., & Spelke, E.S. (2006). Non-symbolic arithmetic in adults and young children. *Cognition 98*, 199-222.

• **Barth, H**., La Mont, K., Lipton, J., & Spelke, E.S. (2005). Abstract number and arithmetic in preschool children. *Proceedings of the National Academy of Sciences 102*, 14116-14121.

• **Barth, H**., Kanwisher, N., & Spelke, E.S. (2003). The construction of large number representations in adults. *Cognition 86*, 201-221.

• Anderson, B.L., & **Barth, H.C.** (1999). Motion-based mechanisms of illusory contour formation. *Neuron 24*, 433-441.

PUBLICATIONS – Other (commentaries, reports)

*Undergraduate students in italics, *BA/MA students in italics & starred*

• **Barth, H.**, & Shusterman, A. (2021). Numerical cognition needs more and better distinctions, not fewer. Commentary on Clarke & Beck. *Behavioral & Brain Sciences, 44.*

• **Barth, H.**, Cordes, S., & Patalano, A.L. (2018). Suboptimality in perceptual decision making and beyond. Commentary on Rahnev & Denison. *Behavioral & Brain Sciences, 41*.

• Slusser, E.B., Shusterman, A., & **Barth, H.** (2012). Understanding the power of play. Final research report to Mattel Corporation.

• **Barth, H.**, Slusser, E.B., Cohen, D., & *Paladino, A.M*. (2011). A sense of proportion: Commentary on Opfer, Siegler, & Young. *Developmental Science 14*, 1205-1206.

• **Barth, H.** (2008). Do mental magnitudes form part of the foundation for natural number concepts? Don't count them out yet. Commentary on Rips, Asmuth, & Bloomfield. *Behavioral & Brain Sciences, 31*, 644-645.

PROFESSIONAL CONFERENCE PRESENTATIONS

*Undergraduate students in italics, *BA/MA students in italics & starred*

Barth, H., *Bourassa, C*., *Fabian, A.,* Kim, E., *Matrician, E.,* Rutkowski, B., & *Sridhara, S.* (2026). Social inferences from special days. Meeting of the Cognitive Development Society (CDS).

Bourassa, C., *Fabian, A.,* Kim, E., Rutkowski, B., Patalano, A.L., & **Barth, H**. (2026). Both electronic and paper-based number line tasks show strong left digit bias in children and adults. Meeting of the Cognitive Development Society (CDS).

Hornburg, C., Colbert, M., Rutkowski, B., Patalano, A.L., & **Barth, H**. (2026). Associations between left digit bias in children's number line placements and math/verbal abilities. Meeting of the Cognitive Development Society (CDS).

Campos, D., Matrician, E., Dezelic, M., & **Barth, H**. (2026). Modeling strategy use in number line estimation by children and adults across formats. Annual Meeting of the Eastern Psychological Association (EPA).

Barth, H., Rutkowski, B., *Hauser, E., Walters, I., Bourassa, C., Dima, J., Fabian, A., Fung, M., Matrician, E., Pan, E., & Sridhara, S.* (2025). Effects of active and passive spatial primes on an ambiguous temporal question. Annual Meeting of the Eastern Psychological Association (EPA).

Bourassa, C., *Fabian, A.,* Kim, E., *Defeo, A., Delgado, S., Fung, M., Hammond, S., Hauser, E., Hsu, R., Hu, J., Litts, C., Matrician, E., Pan, E., Pordy, J., Soans, S., Sridhara, S.,* Vaidya, L.*, Wolk, A., Dima, J.,* Rutkowski, B., *&* **Barth, H**. (2024). Children's inferences from statements about opportunities for novel groups. Meeting of the Psychonomic Society.

Kayton, K., Alia, N., *Green, J.*, **Barth, H.,** & Patalano, A.L. (2024). Decrease in the left digit effect across adulthood. Meeting of the Psychonomic Society.

Kim, E., *Pordy, J., Pan, E., Hauser, E., Fung, M., Sridhara, S., Soans, S., Wolk, A., Hu, J., Hammond, S., Defeo, A.,* Vaidya, L., *Litts, C., Hsu, R.,* & **Barth, H.** (2024). What do children learn from statements about opportunities for novel social groups? Meeting of the Cognitive Development Society (CDS).

Pan, E., Sridhara, S., Greene, Z., Kim, E., *Pordy, J., Fung, M., Defeo, A., Matrician, E., Bourassa, C.,* & **Barth, H.** (2024). Space/time metaphors: A multi-year replication and extension. Annual Meeting of the Eastern Psychological Association (EPA).

Kim, E., *Soans, S., Fung, M., Hauser, E., Hu, J., Pan, E., Pordy, J., Sridhara, S., Wolk, A.,* Patalano, A.L. & **Barth, H.** (2023). Context matters: "Left digit effects" aren't really left digit effects. Annual Meeting of the Psychonomic Society.

Alia, N, Kayton, K., *Mittal, P*., **Barth, H.,** & Patalano, A.L. (2023). Influence of labeled versus unlabeled benchmarks on the left digit effect in number line estimation. Annual Meeting of the Psychonomic Society.

Patalano, A.L., Kayton, K., & **Barth, H.** (2023). Modeling the left digit effect in number line estimation. International Convention of Psychological Science (ICPS).

Delgado, S., Hammond, S., Hsu, R., Hu, J., Litts, C., Pordy, J., Soans, S., Vaidya, L., *Wolk, A*., Patalano, A.L. & **Barth, H.** (2022). The influence of leading zeros on left digit effects in number line estimation. Annual Meeting of the Psychonomic Society.

Gwiazda, G., Bondhus, C., Kayton, K., **Barth, H.**, & Patalano, A.L. (2022). Telling people about the left digit effect in number line estimation does not reduce the effect. Annual Meeting of the Psychonomic Society.

Kayton, K., *Mittal, P.,* **Barth, H.**, & Patalano, A.L. (2022). The influence of benchmarks on the left digit effect in number line estimation. Annual Meeting of the Psychonomic Society.

Patalano, A.L., Kayton, K., *Fischer, G.,* **Barth, H.** (2022). The left digit effect in an unbounded number line task. Annual Meeting of the Psychonomic Society.

Vaidya, L., *Barragan, L., Delgado, S., Hammond, S., Litts, Montano, C., Newman, E., Ohiomah, S. A., Wolk, A*., Eisen, S., Patalano, A.L. & **Barth, H.** (2021). Left digit effects in atypical number line estimation. Annual Meeting of the Psychonomic Society. Virtual conference due to COVID-19.

Bondhus, C., Gwiazda, G., Williams, K., Kayton, K., **Barth, H**., & Patalano, A.L. (2021). Trial-based predictors of the left digit effect in number line estimation. Annual Meeting of the Psychonomic Society. Virtual conference due to COVID-19.

Vaidya, L., Kayton, K., **Barth, H**., & Patalano, A.L. (2021). Test-retest reliability of the left digit effect in number line estimation. Annual Meeting of the Psychonomic Society. Virtual conference due to COVID-19.

Gwiazda, G., Bondhus, C., Kayton, K., **Barth, H**., & Patalano, A.L. (2021). Telling people about the left digit effect in number line estimation does not reduce the effect. Annual Meeting of the Association for Psychological Science (APS). Virtual conference due to COVID-19.

Williams, K., Kayton, K., *Stenbaek, C., Green, J., Fischer, G.,* **Barth, H**., & Patalano, A.L. (2021). Competitive summary feedback improves number line estimation accuracy but does not reduce the left digit effect. Annual Meeting of the Association for Psychological Science (APS). Virtual conference due to COVID-19.

Vaidya, L., Eisen, S., *Barragan, L., Montano, C., Ohiomah, S. A., Wolk, A*., Patalano, A.L. & **Barth, H.** (2021). Left digit effect in atypical number line estimation. Biennial Meeting of the Society for Research in Child Development (SRCD). Virtual conference due to COVID-19.

Stenbaek, C., Williams, K., & **Barth, H.,** Patalano, A.L. (2020). Summary accuracy feedback does not reduce the left digit effect in number line estimation. Annual Meeting of the Psychonomic Society. Virtual conference due to COVID-19.

Weeks, G., Williams, K., **Barth, H.**, & Patalano, A.L. (2020). The left digit effect in a complex judgment task: Evaluating hypothetical college applicants. Annual Meeting of the Psychonomic Society. Virtual conference due to COVID-19.

Hildebrandt, L., **Barth, H.**, Patalano, A.L., & Cordes, S. (2020). Central tendency effects in children's and adults' magnitude estimates. Annual Meeting of the Psychonomic Society. Virtual conference due to COVID-19.

Vasquez, K., Williams, K., Patalano, A.L., & **Barth, H.** (2020)**.** Partition dependence in preschool years: Evidence from a single-choice task. Annual Meeting of the Eastern Psychological Association. Virtual conference due to COVID-19.

**Barth, H., ***_Brew, K., Clark, T., & Feingold-Link, J_. (2019). Do demand characteristics play a role in the minimal ingroup paradigm? Talk presented at the Annual Meeting of the Psychonomic Society.

Williams, K., Xing, C., & **Barth, H.** (2019). Endpoint reversal and digit dependence in numerical estimation. Annual Meeting of the Psychonomic Society.

Bradley, K., Williams, K., **Barth, H.**, & Patalano, A.L. (2019). Accuracy feedback does not reduce the left digit effect in number line estimation. Annual Meeting of the Psychonomic Society.

Williams, K., Zax, A., *Charles, S.*, & **Barth, H.** (2019). The role of digit identity in 5- to 8-year-olds' numerical estimates. Biennial Meeting of the Cognitive Development Society (CDS).

Hildebrandt, L., **Barth, H.**, Patalano, A.L., & Cordes, S. (2019). Context effects in children's numerical and temporal estimation. Biennial Meeting of the Cognitive Development Society (CDS).

*****_Brew, K., Clark, T., Feingold-Link, J_., & **Barth, H.** (2019). Do demand characteristics contribute to minimal ingroup bias? Biennial Meeting of the Cognitive Development Society (CDS).

Barth, H. (2019). Digit dependence in numerical estimation. Talk presented as part of symposium on typical and atypical numerical estimation. Annual Meeting of the Mathematical Cognition and Learning Society (MCLS).

Xing, C., Williams, K., & **Barth, H.** (2019). Endpoint reversal and digit dependence in numerical estimation. Annual Meeting of the Mathematical Cognition and Learning Society (MCLS).

Savelkouls, S., Williams, K., & **Barth, H.** (2019). Linguistic influences on number line estimation: Digit identity and inversion effects. Annual Meeting of the Mathematical Cognition and Learning Society (MCLS).

Williams, K., Xing, C., *Clark, T., Bhandari, E*., & **Barth, H.** (2019). Gender differences in digit dependence in numerical estimation. Biennial Meeting of the Society for Research in Child Development (SRCD).

Xing, C., Zax, A., *George, E*., Taggart, J., Bass, I., & **Barth, H.** (2019). Numerical estimation strategies are correlated with math ability in school-age children. Biennial Meeting of the Society for Research in Child Development (SRCD).

Chelmow, J., & **Barth, H.** (2019). How do preschoolers replicate proportions? Annual Meeting of the Eastern Psychological Association.

Xing, C., Williams, K., *Hom, J., Kandlur, M., Owoyemi, P., Paul, J., Shackney, E., Peters, R.*, & **Barth, H**. (2019). Partition dependence in financial aid resource allocations. Annual Meeting of the Eastern Psychological Association.

Barth, H. (2018). Leftmost digits strongly influence numerical estimates. Talk presented at the Annual Meeting of the Psychonomic Society.

Xing, C., Zax, A., *Paul, J*., Cordes, S., **Barth, H.**, & Patalano, A. (2018). Reevaluating the role of context in probability distortion. Poster presented at the Annual Meeting of the Psychonomic Society.

Paul, J., Williams, K., Zax, A., Patalano, A., & **Barth, H.** (2018). Individual differences in number line estimation performance: The left digit effect and standardized test scores. Poster presented at the Annual Meeting of the Psychonomic Society.

Reichelson, S.,* Zax, A., Williams, K., Patalano, A., & **Barth, H. (2018). Partition dependence in children's and adults' resource allocation decisions. Poster presented at the Annual Meeting of the Psychonomic Society.

Barth, H., Cordes, S., & Patalano, A.L. (2018). When do behavioral data provide evidence of Bayesian cognitive processing? Talk presented at Psychonomics International meeting, Amsterdam, NL.

Xing, C., Zax, A., *Paul, J*., Cordes, S., **Barth, H.**, & Patalano, A. (2017). The role of context and numeracy in probability distortion. Poster presented at the 58th Annual Meeting of the Psychonomic Society.

Zax, A., *Lai, M.*, & **Barth, H.** (2017). Digit identity strongly influences numerical estimates in adults and children. Meeting of the Cognitive Development Society.

Xing, C., Zax, A., *George, E*., Taggart, J., Bass, I., & **Barth, H.** (2017). Proportion estimation strategy in number line estimation and non-verbal numerical acuity correlate with math ability in 6- to 8-year-olds. Meeting of the Cognitive Development Society.

Hom, J., Kandlur, M., Owoyemi, P., Paul, J., Shackney, E., Peters, R., & **Barth, H.** (2017). Partition dependence in financial aid distribution to income categories. Annual Meeting of the New England Psychological Association (NEPA).

Barth, H. (2017). Do Bayesian cognitive processes create our biased estimates? Talk presented as part of the *Spatial Cognition Across Development* Paper Session at the Biennial Meeting of the Society for Research in Child Development (SRCD).

Zax, A., Slusser, E.B., & **Barth, H.** (2017). Quantitative models of proportion estimation explain numerical estimation with and without anchors. Poster presented at the Biennial Meeting of the Society for Research in Child Development (SRCD).

Lai, M., Zax, A., & **Barth, H.** (2017). Do holistic number representations form adults' and children's numerical estimates? Poster presented at the Biennial Meeting of the Society for Research in Child Development (SRCD).

Reichelson, S.,* Zax, A., Bass, I., Patalano, A., & **Barth, H. (2017). Partition dependence in children's and adults' decision making. Poster presented at the Biennial Meeting of the Society for Research in Child Development (SRCD).

Barth, H. (2016). Do biases in quantity judgments reveal optimal cognitive processing? Annual Meeting of the Psychonomic Society.

Reichelson, S.,* **Barth, H., Bass, I., Zax, A., & Patalano, A. (2016). Does the arbitrary grouping of physical options influence children's and adults' choices? Meeting of the Psychonomic Society.

Barth, H. (2016). Research toys as educational tools. Presentation for/participation in workshop "Live from the Living Lab: Tools to maximize parent engagement," organized by the National Living Laboratory Initiative, Association for Children's Museums InterActivity Conference, 2016.

Reichelson, S.,* **Barth, H., Bass, I., Taggart, J., Zax, A., *Lesser, E*., & Patalano, A. (2016). Does the arbitrary grouping of physical options influence children's and adults' choices? Meeting of the Eastern Psychological Association.

Barth, H., *Lesser, E.*, Taggart, J., Slusser, E.B., Bass, I., *Reichelson, S*., & *Schwab, A*. (2015). Intuitive proportional reasoning and development in spatial memory. Conference abstract, Meeting of the Cognitive Development Society.

Barth, H., *Lesser, E.*, Taggart, J., Bass, I., & Slusser, E.B. (2015). A non-Bayesian explanation of adults' and children's biased spatial estimates. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Roberts, J., Taggart, J., Bass, I., **& Barth, H**. (2015). Minimal group membership and children's ideas of fairness and equality. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Barth, H., Taggart, J., Bass, I., & *George, E.* (2015). Links between lab-based measures of numerical competence and TEMA scores. Conference abstract, National Council of Teachers of Mathematics (NCTM) Research Conference.

Barth, H., *Lesser, E.*, Taggart, J., Bass, I., & Slusser, E.B. (2015). Non-Bayesian explanations of spatial bias. Conference abstract, International Convention of Psychological Science (ICPS).

Roberts, J., Taggart, J., **& Barth, H**. (2014). Influence of minimal group membership on children's ideas of equality. Conference abstract, Annual Meeting of the Eastern Psychological Association.

Barth, H. (2014). Novel explanations of developmental change in numerical estimation. Discussion session, National Council of Teachers of Mathematics (NCTM) Research Conference.

McCrink, K., **Barth, H**. (2013). Non-symbolic multiplication, division and inversion in young children. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Slusser, E., Chase, E., Berkowitz, T., *George, E., Swee, M., Cho, D.,* **Barth, H**., & Shusterman, A. (2013). The power of play: Promoting preschoolers' social and numerical development through independent play with toys. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Barth, H., *George, E.,* & Taggart, J. (2013). An investigation of numerical estimation, numerical acuity, and math ability. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Patalano, A., **Barth, H**., *Saltiel, J., Kaplan, L., & Machlin, L.* (2012). Individual probability weighting patterns over time and across probability formats. Conference abstract, Meeting of the Society for Judgment and Decision Making.

Barth, H. (2011). Proportional reasoning in number-line estimation. Symposium: *New perspectives on developmental change in numerical estimation*, Meeting of the Cognitive Development Society.

Barth, H., *Kanjlia, S.,* Slusser, E., *Garcia, J*., & Chase, E. (2011). Proportional reasoning and children's number-line estimation: The role of feedback. Conference abstgract, Meeting of the Cognitive Development Society.

Slusser, E., *Borden, A., Seiden, M.,* **Barth, H**., & Shusterman, A. (2011). Drawing comparisons across children's performance on numerical and proportion estimation tasks. Conference abstract, Meeting of the Cognitive Development Society.

Barth, H., *Garcia, J.,* Slusser, E., *MacDonald, K*., *Acheampong, A., Kanjlia, S.,* & *Santiago, R*. (2011). Proportional reasoning shapes children's number-line estimates. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Slusser, E., *MacDonald, K*., & **Barth, H**. (2011). Converging evidence for a proportion-judgment account of numerical estimation: evaluating performance on two types of number-line tasks. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

MacDonald, K., Schug, M.G., & **Barth, H**. (2011). My people, right or wrong? Minimal group membership disrupts children's selective trust in testimony. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Schug, M.G., Shusterman, A., **Barth, H.**, & Patalano, A. (2011). Early group bias and cultural context: minimal group membership influences information processing in two societies.
Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Slusser, E., *Garcia, J., MacDonald, K*., *Acheampong, A., Kanjlia, S.,* & *Santiago, R*., & **Barth, H**. (2011). Number-line estimation tasks reflect reasoning about proportionality and numerical magnitude. Conference abstract, Meeting of the Jean Piaget Society.

Slusser, E., *Garcia, J., MacDonald, K*., *Acheampong, A., Kanjlia, S.,* & *Santiago, R*., & **Barth, H**. (2011). Evidence that proportion-judgment models explicate children's performance on number-line estimation tasks. Conference abstract, Meeting of the Eastern Psychological Association.

Barth, H., *Paladino, A*., & *Sullivan, J*. (2009). Developmental continuity in numerical estimation: A proportion-judgment account. Conference abstract, Annual Meeting of the Psychonomic Society.

Barth, H., *Paladino, A*., & *Sullivan, J*. (2009). Developmental continuity in numerical estimation. Conference abstract, Meeting of the Cognitive Development Society.

Schug, M.G., Patalano, A., **Barth, H.**, Shusterman, A., *Herrig, E*., & *MacDonald, K*. (2009). Group bias, statistical reasoning, and social judgments. Conference abstract, Meeting of the Cognitive Development Society.

Schug, M.G., Patalano, A., **Barth, H**., & Shusterman, A. (2009). Group bias, prosocial behavior, and social judgments in early childhood. Conference abstract, Meeting of the Human Behavior and Evolution Society (HBES).

Bhandari, K.,* & **Barth, H. (2009). Acquiring knowledge from others: preschoolers' use of testimony. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Sullivan, J., MacDonald, K., Paladino, A., & **Barth, H**. (2009). Children's mappings of number words to large numerosities. Conference abstract, Meeting of the Society for Research in Child Development (SRCD).

Barth, H. (2007). Judging discrete and continuous quantity: In large sets, number counts. Annual Meeting of the Psychonomic Society.

Barth, H., *Ballinger, A., Carrasco, A., Jacobson, R*., & *Tsai, J*. (2007). Children's assessments of volume and number in 3D object arrays. Meeting of the Society for Research in Child Development (SRCD).

Ballinger, A., & **Barth, H**. (2007). Counting, estimation, and approximate nonverbal arithmetic in young children. Annual Meeting of the Society for Research in Child Development (SRCD).

Barth, H., Beckmann, L., & Spelke, E.S. (2006). Adults' and children's assessments of discrete and continuous quantity with nonsolid substances. Meeting of the Vision Sciences Society.

Beckmann, L., **Barth, H**., & Spelke, E.S. (2006). Children's amodal addition and subtraction of large sets. Meeting of the Vision Sciences Society.

Baron, A., **Barth, H**., & Carey, S. (2005). Children's pre-arithmetic representations of multiplication and division. Meeting of the Cognitive Development Society.

Barth, H., Lipton, J., & Spelke, E.S. (2005). Amodal comparison and addition of large non-symbolic sets in preschool children. Meeting of the Society for Research in Child Development (SRCD).

Barth, H. (2005). Arithmetic operations on discrete quantities in children and adults. Symposium entitled "Numerical cognition: the discrete, the continuous, and the relation between them," Meeting of the Society for Research in Child Development (SRCD).

Cappelletti, M., **Barth, H**., Fregni, F., Spelke, E.S., & Pascual-Leone, A. (2005). The role of left intraparietal sulcus in numerical quantity processing: a TMS study. Meeting of the Organization for Human Brain Mapping (HBM).

Barth, H. (2003). Discrete and continuous cues to quantity in large sets of food items. Annual Meeting of the Psychonomic Society.

La Mont, K., **Barth, H**., & Spelke, E.S. (2003). Can representations of large, approximate numerosities support addition in preschool children? Meeting of the Society for Research in Child Development (SRCD).

Barth, H. (2002). Numerical cues dominate simulated foraging in human adults. Workshop on Object Perception, Attention, and Memory (OPAM).

Barth, H., Wojciulik E., Kanwisher, N., & Spelke, E.S. (2001). The involvement of parietal cortex in nonspatial attention and approximate arithmetic. Meeting of the Cognitive Neuroscience Society.

Barth, H., Kanwisher, N., & Spelke, E.S. (2000). Approximate arithmetic with large visual and crossmodal sets. Workshop on Object Perception, Attention, and Memory (OPAM).

Barth, H., Kanwisher, N., & Spelke, E.S. (2000). Non-iterative processes build abstract numerosity representations: evidence from crossmodal comparison. Meeting of the Cognitive Neuroscience Society.

Barth, H., Kanwisher, N., & Spelke, E.S. (1999). Crossmodal comparisons of approximate numerosity. Experimental Psychology Society Conference on Crossmodal Attention and Multisensory Integration, Oxford.

Anderson, B.L., & **Barth, H.** (1999). Inferring object shape from motion. Annual Meeting of the Psychonomic Society.

Anderson, B.L., & **Barth, H.** (1999). Contour synthesis in moving displays. European Conference on Visual Perception (ECVP).

Barth, H., & Anderson, B.L. (1999). Kinetic occlusion: velocity recovers what geometry can't. Talk presented at the Meeting of the Association for Research in Vision and Ophthalmology.

Anderson, B.L., & **Barth, H**. (1999). When enough is not enough: new forms of motion-induced illusory contours. Meeting of the Association for Research in Vision and Ophthalmology.

Barth, H., & Anderson, B.L. (1998). Scale invariance and velocity effects in kinetic illusory contour formation. Meeting of the Association for Research in Vision and Ophthalmology.

Barth, H., Anderson, B.L., & Sinha, P. (1997). Recovering occlusion geometry from moving contours. Meeting of the Association for Research in Vision and Ophthalmology.

Mordkoff, J.T., & **Barth, H**. (1996). Pre-pulse inhibition and internal constraints: effects of tone-tap correlations on the eye-blink startle reflex. Meeting of the Eastern Psychological Association.

COURSES TAUGHT AT WESLEYAN UNIVERSITY

Lecture or Breadth courses	
Developmental Psychology	PSYC 230
Sensation & Perception	PSYC/NS&B 222
Methods courses	
Research Methods in Developmental Psychology	PSYC 207
Research Methods in Psychological Science with Lab	PSYC 212
Lab in Psychological Science	PSYC 124
Seminar or Advanced Laboratory courses	
Practicing Science: Thinking and Writing	PSYC 320
Topics in Cognitive Neuroscience	PSYC/NS&B 335
Numbers in Minds	CHUM/PSYC 336
Mathematical Cognition & Children's Learning	PSYC 337 *(service learning)*
Topics in Cognitive Development	PSYC/NS&B 348
a.k.a. Origins of Knowledge (name change)	
Advanced Research in Cognitive Development	PSYC 384

POSTDOCTORAL FELLOW SUPERVISION

Dr. Sifana Sohail, 2026 - present (co-advisor with Dr. Royette Tavernier)
Dr. Sierra Eisen, 2020 - 2021 (co-advisor with Dr. Anna Shusterman)
Dr. Chenmu (Julia) Xing, 2016 - 2018 (co-advisor with Dr. Andrea Patalano)
Dr. Emily Slusser, 2010 - 2012 (co-advisor with Dr. Anna Shusterman)
Dr. Mariah Schug, 2008 - 2010 (co-advisor with Dr. Andrea Patalano & Dr. Anna Shusterman)

M.A. THESIS SUPERVISION

Keera Bhandari ’08, B.A./M.A. student: M.A. in Psychology ’09. M.A. Thesis: *Acquiring knowledge from others: Preschoolers' use of testimony*
Sheri Reichelson ’16, B.A./M.A. student: M.A. in Psychology ‘17 . M.A. Thesis: *Partition dependence in development: How groupings of options influence decision making in children and adults*
Kerry Brew ’18, B.A./M.A. student: M.A. in Psychology ’19. M.A. Thesis: *The minimal group/no-group study: Exploring demand characteristics in the child minimal group paradigm*

UNDERGRADUATE HONORS THESIS SUPERVISION

Ariel Ballinger Starr ’07, B.A. in Psychology and Neuroscience & Behavior
Thesis: *Counting, estimation, and nonsymbolic approximate addition in young children*
Kyle MacDonald ’10, B.A. in Psychology
Thesis: *Group bias in preschoolers’ assessments of speaker reliability*
Martine Seiden ’11, B.A. in Psychology
Thesis: *The proportional reasoning abilities of preschool children*
Shipra Kanjlia ‘12, B.A. in Psychology, Neuroscience & Behavior, and Biology
Thesis: *How feedback improves children’s numerical estimation*
Emilie George ’13, B.A. in Neuroscience & Behavior
Thesis: *An investigation of numerical estimation, numerical acuity, and math ability*
Jillian Roberts ’15, B.A. in Psychology and Sociology
Thesis: *Investigating minimal group bias and equality preference in children’s resource allocation tasks*
Jenny Chelmow ’19, B.A. in Psychology
Thesis: *How do preschoolers estimate proportions?*

UNDERGRADUATE RESEARCH SUPERVISION

Class of 2006: Nick DeWind
Class of 2007: Ariel Ballinger Starr, AnjaLi Carrasco, Sarah Elgart, Margaret Gullick, Lisa Sacerio, Nora Switchenko, Jessica Tsai, Allison Zoromski
Class of 2008: Keera Bhandari, Joseph Feldblum, Rachel Jacobson, Phoebe Jones, Jessica Sullivan, Nicole Gray
Class of 2009: Julie Neuspiel, Annie Paladino
Class of 2010: Elise Herrig, Kyle MacDonald, Jennifer Garcia
Class of 2011: Anima Acheampong, Luci Cassella, Martha Liskow, Martine Seiden
Class of 2012: Adele Borden, Deborah Cho, Kenneth Feder, Shipra Kanjlia, Hannah Monk, Eleanore Pankow, Rachel Santiago, Hao (Felix) Wang
Class of 2013: Isabel Bernstein, Emilie George, Laura Machlin
Class of 2014: Madeline Kidd, Portia Lundie, Jason Saltiel, Amy Toig, Rachel Warner, Adam Watson
Class of 2015: Ellen Lesser, Zoe Feingold, Jillian Roberts, Sonia Zavala
Class of 2016: Aime Arroyo-Ramirez, Ziyue (Zora) Li, Pinzhen (Louise) Lu, Elissa Palmer, Sheri Reichelson, Anna Schwab, Sarah Seo
Class of 2017: Sarah Corner, Jamie Hom, Ilana Ladis, Maxine Lai, Elizabeth Shackney
Class of 2018: Kerry Brew, Jordan Feingold-Link, Meghana Kandlur, Praise Owoyemi, Joanna Paul, Ray Peters Alexander
Class of 2019: Taylar Clark, Taylor Dillon, Steven Fields, Jenny Chelmow, Sofia Kinney
Class of 2020: Esha Bhandari, Sophie Charles, Amanda Fiorentino, Allison Hsu, Maya Layne, Katie Vasquez

Class of 2021: Lauren Barragan, Angelica Cucueco, Carolina Montano, Emily Newman, Sarah Aduke Ohiomah, Tyla Taylor
Class of 2022: Selena Delgado, Sarah Hammond, Rachel Hsu, Courtney Litts, Abby Wolk
Class of 2023: Jinjia (Grace) Hu, Shanthi Soans
Class of 2024: Jessica Pordy, Addie Defeo
Class of 2025: Julia Dima, Emily Hauser, Molly Fung, Ellie Pan
Class of 2026: Cameron Bourassa, Annie Fabian, Elia Matrician, Suchita Sridhara, Imagen Walters
Class of 2027: Deborah Campos, Mia Dezelic, Kimberly Jung, Imogene Ostrom, Issy Simpson, Jamie Sloves
Class of 2028: Emma Blakely, Meredith Feiner, Lucinda Gatsiounis
Class of 2029: Carmen Chao

B.A.-LEVEL STAFF LAB COORDINATOR SUPERVISION

Bethany Rutkowski
Erin Kim
Leah Vaidya
Katherine Williams (Katherine Steele)
Alexandra Zax
Ilona Bass
Jessica Taggart
Elizabeth Chase
Jennifer Garcia (Wesleyan Class of 2010)
Jessica Sullivan (Wesleyan Class of 2008)

INTERNAL RESEARCH SUPPORT: FUNDING/FELLOWSHIPS

Project Grant, Wesleyan University ($3,950 direct)	2025
Project Grant, Wesleyan University ($4,000 direct)	2022
Project Grant, Wesleyan University ($3,500 direct)	2019
Project Grant, Wesleyan University ($2,000 direct)	2018
Project Grant, Wesleyan University ($2,000 direct)	2014
Project Grant, Wesleyan University ($2,500 direct)	2012
Project Grant, Wesleyan University ($2,500 direct)	2011
Project Grant, Wesleyan University ($2,500 direct)	2009
Project Grant, Wesleyan University ($2,500 direct)	2008
Faculty Fellowship, Wesleyan University Center for the Humanities	2008
Project Grant, Wesleyan University ($2,500 direct)	2007
Project Grant, Wesleyan University ($1,500 direct)	2006
Project Grant, Wesleyan University ($1,500 direct)	2005