

Joseph Colantonio, Ph.D.

Curriculum Vitae

Updated May 13th, 2026

Employment

- Assistant Adjunct Professor, College of Education**
University of Northern Iowa, Cedar Falls, IA *June 2026 – Present*
- Assistant Adjunct Professor, Department of Psychology**
University of Northern Iowa, Cedar Falls, IA *January 2026 – Present*
- Visiting Scholar, Graduate School of Education**
Harvard University, Cambridge, MA *January 2026 – Present*
- Postdoctoral Research Fellow, Graduate School of Education**
Harvard University, Cambridge, MA *August 2023 – January 2026*
Principal Investigator: Elizabeth Bonawitz

Education

- PhD in Psychology, Concentration in Cognition & Development** 2023
Rutgers University, Newark, NJ USA
Thesis: Bayesian Models of Children’s Belief Revision, Pupillary-Surprise Response, and Executive Function When Generating Predictions in Science Learning
- M.A. in Psychology** 2021
Rutgers University, Newark, NJ USA
- Non-Degree Graduate Student** 2018
Rutgers University, Newark, NJ USA
- B.A. in Applied Mathematics, Summa Cum Laude** 2016
Minors in Physics & Psychology
Jointly from Rutgers University and New Jersey Institute of Technology, Newark, NJ USA

Publications & Manuscripts

Asterisk () notes joint first-authorship & equal contribution*

In Review / In Prep

Holstein, E., Theobald, M., **Colantonio, J.**, Bonawitz, E., & Brod, G. (in review). Does generating predictions promote complex, conceptual change?.

Published

Colantonio, J., Bass, I., Rafetseder, E., Mackey, A., & Bonawitz, E. (2025, *in press*).
Computational Approaches Reveal Developmental Shifts in Exploratory Play. Preprint repository available at https://osf.io/agyju/?view_only=62c27a0372474e93a0f5a7c05ceaaafb5.

- *Park, A., *Colantonio, J., Reyes, L. D., Sharp, S., Bonawitz, E., & Mackey, A. (2025, *in press*). Question asking practice fosters curiosity in young children. *NPJ science of learning*, 11(1), 2.
- Brod, G., Holstein, E., Weindorf, L., Colantonio, J., Bonawitz, E., & Theobald, M. (2025). Do it Yourself: Discerning the Effects of Self-Directed Activity on Concept Learning. Preprint repository available at <https://osf.io/ktxdv/metadata/osf>.
- Bass, I., Colantonio, J., Aboody, R., Wong, M., Ullman, T., & Bonawitz, E. (2025). Children's sensitivity to automatic behavior relates to pedagogical reasoning and Theory of Mind. *Frontiers in Developmental Psychology*, 3, 1574528.
- Colantonio, J., Bascandziev, I., Theobald, M., Brod, G., & Bonawitz, E. (2024). Predicting Learning: Understanding the Role of Executive Functions in Children's Belief Revision Using Bayesian Models. *Topics in Cognitive Science*.
- Theobald, M., Colantonio, J., Bascandziev, I., Bonawitz, E., & Brod, G. (2024). Do reflection prompts promote children's conflict monitoring and revision of misconceptions?. *Child Development*, 95(4), e253-e269.
- Colantonio, J., Bascandziev, I., Theobald, M., Brod, G., & Bonawitz, E. (2023). Seeing the Error in My “Bayes”: A Quantified Degree of Belief Change Correlates with Children’s Pupillary Surprise Responses Following Explicit Predictions. *Entropy*, 25(2), 211.
- Colantonio, J., Bascandziev, I., Theobald, M., Brod, G. and Bonawitz, E. (2022) Priors, Progressions, and Predictions in Science Learning: Theory-Based Bayesian Models of Children’s Revising Beliefs of Water Displacement. *IEEE Transactions on Cognitive and Developmental Systems*.
- *Colantonio, J., *Durkin, K., Caglar, L. R., Shafto, P., & Bonawitz, E. (2021). The intentional selection assumption. *Frontiers in psychology*, 12, 569275.
- Kominsky, J. F., Begus, K., Bass, I., Colantonio, J., Leonard, J. A., Mackey, A. P., & Bonawitz, E. (2021). Organizing the methodological toolbox: Lessons learned from implementing developmental methods online. *Frontiers in Psychology*, 12, 702710.
- Persaud, K., Bass, I., Colantonio, J., Macias, C., & Bonawitz, E. (2020). Opportunities and challenges integrating resource-rational analysis with developmental perspectives. *Behavioral and Brain Sciences*, 43.

Refereed Conference Proceedings

- *Colantonio, J., *Park, A., Reyes, L. D., Sharp, S., Koepp, A. E., Bonawitz, E., & Mackey, A. (2025). Question asking practice fosters curiosity in young children. [Paper, Talk]. American Educational Research Association (AERA), Denver, Colorado, USA.
- Colantonio, J., & Bonawitz, E. (2018) Awesome play: Awe increases preschoolers exploration and discovery. In Kalish, C., Rau, M., Zhu, J., & Rogers, T.T. (Eds.) *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Madison, WI: Cognitive Science Society.

Presentations

Invited Presentations & Lectures

- Colantonio, J.** (*forthcoming*; June, 2026) “*Cognitive Development & Machine Learning of Curiosity & Social Reasoning in Naturalistic Contexts*” Invited Departmental Lecture for School of Management. Guangzhou, Guangdong province, China.
- Colantonio, J.,** Bascandziev, I., Theobald, M., Brod, G. and Bonawitz, E. (March 4th, 2024) “*Predictive Potentials & Explaining Events: Neural Correlates and Learning Mechanisms of Prediction and Explanation Prompts in Early Childhood Science Learning*,” Invited Presentation for Laboratory for Developmental Studies Seminar. Psychology Department, Harvard University, Cambridge, MA.
- Colantonio, J.,** Bascandziev, I., Theobald, M., Brod, G. and Bonawitz, E. (March 6th, 2023) “*The Power of Prediction: Understanding Children’s Mental Models, Surprise, and Executive Function for Revision of Water Displacement Beliefs*,” Invited Presentation for Laboratory for Developmental Studies Seminar. Psychology Department, Harvard University, Cambridge, MA.
- Colantonio, J.** Invited Guest Presentation for graduate course “*Behavioral Methods in Developmental Learning Research*”. (April 6th, 2023) Harvard Graduate School of Education, Harvard University, Cambridge, MA.
- Colantonio, J.** Invited Guest Presentation for graduate course “*Behavioral Methods in Developmental Learning Research*”. (March 9th, 2023) Harvard Graduate School of Education, Harvard University, Cambridge, MA.

Conference Talks

- Colantonio, J.,** Park, A., Delgado Reyes, L., Sharp, S., Koepp, A. E., Bonawitz, E. and Mackey, A. (2025) “*Question asking practice fosters curiosity in young children.*,” Session paper presented at the American Educational Research Association (AERA), Denver, Colorado, USA)
- Colantonio, J.,** Park, A., Delgado Reyes, L., Sharp, S., Bonawitz, E. and Mackey, A. (2022) “*Science Training That Encourages Question Asking Increases Young Children’s Valuation of New Information*,” Symposium paper presented at the Association for Psychological Science, Illinois, USA.)
- Colantonio, J.,** Bascandziev, I., Theobald, M., Brod, G. and Bonawitz, E. (2022) “*Theory-Based Bayesian Models of Elementary School Children’s Belief Revision Pupillary Surprise during Science Learning*,” Symposium paper presented at the Cognitive Development Society, Wisconsin, USA.)
- Colantonio, J.,** Bascandziev, I., Theobald, M., Brod, G. and Bonawitz, E. (2021) “*Theory-Based Bayesian Models of Elementary School Children’s Pupillary Surprise*,” Symposium paper presented at Society for Research in Child Development, Wisconsin, USA. Conference held virtually due to COVID-19)
- Colantonio, J.,** Sharp, S., Mackey, A., and Bonawitz, E. (2021) “*Promoting Question Asking to Foster Curiosity: An Intervention Study*,” Symposium paper presented at Society for Research in Child Development, Wisconsin, USA. Conference held virtually due to COVID-19)

- Colantonio, J.**, and Bonawitz, E. (2019) “*Affecting play: Awe increases preschooler’s exploration and discovery*,” Lightning Talk presented at the Curiosity, Explanation, Exploration Workshop, Princeton, New Jersey, USA.
- Colantonio, J.**, Walden, Z., Dehron, T., and Bonawitz, E. (2019) “*When Innovators Succeed: Empowerment Strategies Increase Preschoolers’ Exploration*,” Speed Talk presented at the Play and Learning Conference, Newark, USA.
- Colantonio, J.**, and Bonawitz, E. (2019) “*Affecting play: Awe increases preschooler’s exploration and discovery*,” Talk presented at the Society for Research in Child Development, Baltimore, Maryland, USA.
- Colantonio, J.**, and Bonawitz, E. (2018) “*Affecting play: Awe increases preschooler’s exploration and discovery*,” Talk presented at the Society for Philosophy and Psychology, Ann Arbor, Michigan, USA.
- K. Blacker, **Colantonio, J.**, LoBue, V., and Bonawitz, E. (2017) “*Reasoning about the process of illness transmission improves preschoolers’ later avoidance of sick individuals*,” Talk presented at the Society for Research in Child Development., Austin, Texas, USA.

Posters

- Colantonio, J.**, Theobald, M., Bascandzief, I., Brod, G. and Bonawitz, E. (2023) “*The Power of Prediction: Understanding Children’s Mental Models, Surprise, and Executive Function for Revision of Water Displacement Beliefs*,” Poster session presented at the 49th Annual Meeting of the Society for Philosophy and Psychology, Pittsburgh, Pennsylvania, USA.
- Colantonio, J.**, Bascandzief, I., Theobald, M., Brod, G. and Bonawitz, E. (2020) “*Modeling pupillary surprise response in elementary school children with theory-based Bayesian models*,” Poster session presented at the 42nd Annual Conference of the Cognitive Science Society, Toronto, Canada. (Conference held virtually due to COVID-19)
- Colantonio, J.**, Walden, Z., Dehron, T., and Bonawitz, E. (2019) “*When Innovators Succeed: Empowerment Strategies Increase Preschoolers’ Exploration*,” Poster session presented at the 10th Biennial Meeting of the Cognitive Development Society, Kentucky, USA.
- Colantonio, J.**, Walden, Z., Dehron, T., and Bonawitz, E. (2018) “*When Innovators Succeed: Empowerment Strategies Increase Preschoolers’ Exploration*,” Poster session presented at the Guided Playful Workshop of the 41st Annual Conference of the Cognitive Science Society, Montreal, Canada.
- Colantonio, J.**, and Bonawitz, E. (2018) “*Awesome play: Awe increases preschooler’s exploration and discovery*,” in Proceedings of the 40th Annual Conference of the Cognitive Science Society. Madison, Wisconsin, USA.
- Durkin, K., **Colantonio, J.**, Caglar, L., Bonawitz, E., and Shafto, P. (2017) “*Why are these my options? Roles of social inferences in choice behavior*,” Poster session presented at the 10th Biennial Meeting of the Cognitive Development Society, Portland, Oregon, USA.

Durkin, K., Colantonio, J., Caglar, L., Bonawitz, E., and Shafto, P. (2017) “*Why are these my options? Roles of social inferences in choice behavior,*” Poster session presented at the 43rd Annual Meeting of the Society for Philosophy and Psychology, Baltimore, Maryland, USA.

Teaching Experience

Assistant Adjunct Professor	January 2026 - Present
B.A. Courses: <i>Developmental Psychology</i> Department of Psychology, University of Northern Iowa	
Workshop Teaching Fellow	May 2023
Workshop: <i>Computational Cognitive Models of Learning and Development</i> Topics Led: Bayesian Modeling, Probabilistic Modeling, Causal Inference <i>Organizers:</i> Elizabeth Bonawitz, Kimele Persaud, Tomer Ullman Harvard University, Cambridge, MA	
Teaching Fellow	Fall 2021
M.A. Course: <i>Curiosity and Creativity in Learning and Development</i> Graduate School of Education, Harvard University, Cambridge, MA	
Graduate Teaching Assistant	2020 – 2022
B.A. Courses: <i>Statistical Methods for the Cognitive and Behavioral Sciences, Research Methods for the Cognitive and Behavioral Sciences</i> Psychology Department, Rutgers-Newark	
Course Coadjutant	2020 – 2021
B.A. Courses: <i>Developmental Psychology, Psychology of Language</i> Psychology Department, Rutgers-Newark	
Peer-led Instructional Team Leader	2015 – 2016
B.A. Courses: <i>Calculus I, Calculus II, Linear Algebra, Computers & Programming I, Programming II</i> Garden State-Louis Stokes Alliance for Minority Participation, Rutgers-Newark	
Teaching Apprentice	2014
B.A. Course: <i>Precalculus</i> <i>Advisor:</i> William Keigher, Mathematics Department, Rutgers-Newark	

Mentorship

Harvard University

Master’s Students (Current & Alumni)

Chihuiye (Hedy) Chen	Jin (Jean) Li Lim	Yuhan Shi
Anna Taylor	Xi (Nadia) Wang	Isminur Yilar
Jenna Weinhofer	Yihan Shi	Iris Jeffries
Evelyn Li	Xiao (Zoe) Feng	Yiran Du

Graduate Student Travel Award <i>Society for Philosophy and Psychology</i>	2018, 2023
Post-Baccalaureate Research Experience Program Grant <i>Rutgers University-Newark</i>	2016 - 2018
Charles Pine Award - Mathematics & Physical Sciences <i>Rutgers University-Newark</i>	2016
Dean's List <i>Rutgers University-Newark</i>	2012 - 2016
Undergraduate Biomedical Research Support Grant <i>National Institutes of Health</i>	2015 - 2016
Dan and Lisa DiFilippo Endowed Scholarship <i>Rutgers University-Newark</i>	2015 - 2016
Phi Beta Kappa <i>Rutgers University-Newark</i>	2015
Garden State-Louis Stokes Alliance for Minority Participation <i>Rutgers University-Newark</i>	2014
Arthur B. Newman Honors College Scholarship <i>Rutgers University-Newark</i>	2013 - 2016

News & Social Media

Child Trends News Service - Positive Parenting News Network <i>The Power of Awe Sparks Learning</i>	2020
Child & Family Blog <i>A New Idea For Early Learning In Pre-Schoolers: Inspire Them With Awe</i>	2019

Skills & Tools

Programming Languages

Python (pandas, statsmodels, scipy, rpy2), R (brms, lme), HTML (CSS, JavaScript)

Computational Modeling & Machine Learning

Bayesian Learning Models, Classification, Markov Decision Models, Optimization & MLE, Clustering, Cognitive Modeling, Data Visualization

Research & Analysis

Experimental Design, Causal Inference Study, Multi-method Studies, Mixed Methods, OSF & AsPredicted (Preregistration), Project Lead & Management, Team Management, SPSS, Qualtrics, Adobe Photoshop