JOSEPH A. COLANTONIO, Ph.D.

colantoniojoseph@gmail.com

website: *https://colantoniolearn.github.io/*   *http://www.linkedin.com/in/josephcolantonio*

CURRENT EMPLOYMENT

Postdoctoral Fellow, Graduate School of Education
Harvard University, Cambridge, MA
Advisor: Elizabeth Bonawitz

August 2023
– present

EDUCATION

PhD in Psychology, Concentration in Cognition & Development
Rutgers University, Newark, NJ USA
Committee: Elizabeth Bonawitz (*Advisor*), Garvin Brod, William Graves,
          Vanessa LoBue, Kimele Persaud
<u>Thesis:</u> *Bayesian Models of Children's Belief Revision, Pupillary-Surprise Response, and Executive Function When Generating Predictions in Science Learning*

2018 – 2023

M.A. in Psychology
Rutgers University, Newark, NJ USA

2018 - 2021

Non-Matriculating Graduate Student in Psychology
Rutgers University, Newark, NJ USA

2016 - 2018

B.A. in Applied Mathematics, *Summa Cum Laude*
Minors in Physics & Psychology
Jointly awarded by Rutgers University and New Jersey Institute of Technology,
Newark, NJ USA

2012 - 2016

FELLOWSHIPS & AWARDS

Dean's Dissertation Completion Fellowship
Rutgers University-Newark

2022 - 2023

Graduate Liaison & Executive Board Member
Psi Chi National Honor Society, Rutgers University-Newark

2020 - 2022

Graduate Research Fellowship Honorable Mention
National Science Foundation

2020

Minority Biomedical Research Support Program
National Institutes of Health

2018 - 2020

Graduate Student Diversity Travel Award
Cognitive Development Society

2019

Graduate Student Travel Award
Society for Philosophy and Psychology

2018, 2023

Post-Baccalaureate Research Experience Program Grant
Rutgers University-Newark

2016 - 2018

Charles Pine Award - Mathematics & Physical Sciences
Rutgers University-Newark

2016

Dean's List *Rutgers University-Newark*	2012 - 2016
Undergraduate Biomedical Research Support Grant *National Institutes of Health*	2015 - 2016
Dan and Lisa DiFilippo Endowed Scholarship *Rutgers University-Newark*	2015 - 2016
Phi Beta Kappa *Rutgers University-Newark*	2015
Garden State-Louis Stokes Alliance for Minority Participation *Rutgers University-Newark*	2014
Arthur B. Newman Honors College Scholarship *Rutgers University-Newark*	2013 - 2016

PUBLICATIONS & MANUSCRIPTS

* notes equal contribution

In Review & In Prep

Colantonio, J., Bass, I., Rafetseder, E., Mackey, A., & Bonawitz, E. (*in review*). Computational Approaches Reveal Developmental Shifts in Exploratory Play.

Brod, G., Holstein, E., Weindorf, L., **Colantonio, J.,** Bonawitz, E., & Theobald, M. (*in review*). Do it Yourself: Discerning the Effects of Self-Directed Activity on Concept Learning.

*Park, A., ***Colantonio, J.,** Reyes, L. D., Sharp, S., Bonawitz, E., & Mackey, A. (*in review*). Question asking practice fosters curiosity in young children.

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

Published & Forthcoming

Bass, I., **Colantonio, J.,** Aboody, R., Wong, M., Ullman, T., & Bonawitz, E. (2025, *in press*) 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., Bascandziev, I., Theobald, M., Brod, G. and Bonawitz, E. "*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. (March 4th, 2024)

Colantonio, J., Bascandziev, I., Theobald, M., Brod, G. and Bonawitz, E. "*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. (March 6th, 2023)

Colantonio, J. Invited Guest Presentation for graduate course "*Behavioral Methods in Developmental Learning Research*". Harvard Graduate School of Education, Harvard University, Cambridge, MA. (April 6th, 2023)

Colantonio, J. Invited Guest Presentation for graduate course "*Behavioral Methods in Developmental Learning Research*". Harvard Graduate School of Education, Harvard University, Cambridge, MA. (March 9th, 2023)

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., Dehrone, 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., Bascandziev, 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., Bascandziev, 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., Dehrone, 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., Dehrone, 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

Teaching Fellow
Workshop: *Computational Cognitive Models of Learning and Development*
Organizers: Elizabeth Bonawitz, Kimele Persaud, Tomer Ullman
Harvard University, Cambridge, MA

May 2023

Teaching Fellow
M.A. Course: *Curiosity and Creativity in Learning and Development*
Graduate School of Education, Harvard University, Cambridge, MA

Fall 2021

Graduate Teaching Assistant
B.A. Courses: *Statistical Methods for the Cognitive and Behavioral Sciences, Research Methods for the Cognitive and Behavioral Sciences*
Psychology Department, Rutgers-Newark

2020 – 2022

Course Coadjutant
B.A. Courses: *Developmental Psychology, Psychology of Language*
Psychology Department, Rutgers-Newark

2020 – 2021

Peer-led Instructional Team Leader
B.A. Courses: *Calculus I, Calculus II, Linear Algebra, Computers & Programming I, Programming II*
Garden State-Louis Stokes Alliance for Minority Participation, Rutgers-Newark

2015 – 2016

Undergraduate Teaching Apprentice
Precalculus
Mathematics Department, Rutgers-Newark

2014

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

Full-Time Undergraduate Interns

Nina Baroin[S]	**Jeeya Patel**[S]	Divya Sundar[S]

Undergraduate Honors Thesis Students

Kate Fourie[M]

Undergraduate Research Assistants

Michael Sheehan[S]	Syeda Abeera Amir[M]
Damla Yesil	Oliwia Zawadzka[M]

Rutgers University-Newark

Undergraduate Honors Thesis Students

Umradha Shievkumar[S]

Undergraduate Research Assistants

Akshaya Sridharan	Bassem Rezkalla	Diksha Patel
Jazmin Carchi	Jillian Brandmaier	Leeza Camilo
Ludeline Jean	Naa Adei Kotey	Parthenia Bogdady
Sarah Hamoud	Srita Chintapalli	Yossy Montecinos

NEWS & SOCIAL MEDIA

Child Trends News Service - Positive Parenting News Network
The Power of Awe Sparks Learning   2020

Child & Family Blog   2019
A New Idea For Early Learning In Pre-Schoolers: Inspire Them With Awe

SKILLS & TOOLS

Programming Languages	CSS, HTML, Javascript, LATEX, Python, R, SQL
Computational Modeling	Bayesian Learning Models, Classification Tools, Markov Decision Models
Development Tools	Adobe Photoshop, Docker, Flask, Git/Github, Heroku Web Services, Jupyter/INotebooks, Qualtrics
Research & Analysis	OSF, SPSS