

Alyssa J. Kersey, Ph.D.

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EDUCATION

- 2018 **Ph.D., University of Rochester**
Brain & Cognitive Sciences
Dissertation: *“Developmental continuity in the neural representations of number.”*
Committee: Jessica Cantlon (advisor), Brad Mahon, Dick Aslin, Patrick Davies (chair)
- 2016 **M.A., University of Rochester**
Brain & Cognitive Sciences
Committee: Jessica Cantlon (advisor), Brad Mahon, Dick Aslin
- 2013 **B.S., Highest Distinction & Honors, Indiana University**
Psychology; Neuroscience Certificate
Honors Thesis: *“The role of motor experience in the development of a visual network for cursive letters in 6- to 7-year-old children.”*
Committee: Karin James (advisor), Sharlene Newman, Dan Kennedy
- 2011 **Study Abroad, University of Salamanca**
Cursos Internacionales Study Abroad Summer Program

RESEARCH EXPERIENCE

- 2018 – Present **Post-Doctoral Research Scholar, University of Chicago**
Goldin-Meadow Lab (PI: Susan Goldin-Meadow)
- 2013 – 2018 **Graduate Research Assistant, University of Rochester**
Concepts, Objects, and Actions Lab (PIs: Jessica Cantlon and Brad Mahon)
- 2009 – 2013 **Undergraduate Research Assistant, Indiana University**
Cognition and Action Neuroimaging Lab (PI: Karin James)
- 2009 – 2013 **STARS Scholar, Indiana University**
Science, Technology, And Research Scholars Program (Director: Preston Garraghty)

AWARDS, SCHOLARSHIPS, AND RECOGNITION

- 2018 Elizabeth Munsterberg Koppitz Fellowship, American Psychological Foundation
(declined award to pursue postdoctoral study)
- 2018 Graduate Student Award, Cognitive Neuroscience Society
- 2017 Trainee Professional Development Award, Society for Neuroscience
- 2016 Early Career Award, Flux Congress & Jacobs Foundation
- 2016 Conference Travel Award, Graduate Student Association, University of Rochester
- 2015 Donald M. and Janet C. Bernard Fellowship for PhD Students in Engineering and Science, University of Rochester
- 2015 NIMH Summer Institute in Cognitive Neuroscience Fellowship, UCSB
- 2014 – 2017 National Science Foundation (NSF) Graduate Research Fellowship
- 2013 Outstanding Honors Thesis Award, Psychological & Brain Sciences, IU
- 2013 James A. Dinsmoor Award for Outstanding Undergraduate Research, Psychological & Brain Sciences, IU
- 2013 College of Arts & Sciences Excellence Award, STARS Symposium, IU
- 2012 Phi Beta Kappa
- 2012 STARS Summer Stipend, IU
- 2011 Edward L. Hutton International Experience Program Scholarship, IU
- 2011 Psi Chi

2010	Phi Eta Sigma/Alpha Lambda Delta Honorary Societies
2010 – 2013	Indiana University Founders Scholar
2009 – 2013	Indiana University Dean's List
2009 – 2013	Indiana University Distinction Scholarship
2009 – 2013	Indiana University Hutton Honors College Merit Scholarship
2009 – 2013	Indiana University Hutton Honors College

PUBLICATIONS

Kersey, A. J., Braham, E. J., Csumitta, K. D., Libertus, M. E., & Cantlon, J. F. (2018). No intrinsic gender differences in children's earliest numerical abilities. *npj Science of Learning*, 3, 12. doi: 10.1038/s41539-018-0028-7

James, K. H. & **Kersey, A. J.** (2018). Dorsal stream function in the young child: An fMRI investigation of visually-guided action. *Developmental Science*, 21 (2), e12546. doi: 10.1111/desc.12546

Kersey, A. J. & Cantlon, J. F. (2017). Neural tuning to numerosity relates to perceptual tuning in 3- to 6-year-old children. *Journal of Neuroscience*, 37 (3), 512-522. doi: 10.1523/JNEUROSCI.0065-16.2017

Kersey, A. J. & Cantlon, J. F. (2017). Primitive concepts of number and the developing human brain. *Language Learning and Development*, 13 (2), 191-214. doi: 10.1080/15475441.2016.1264878

Kersey, A. J. & Emberson, L. L. (2017). Tracing trajectories of audiovisual learning in the infant brain. *Developmental Science*, 20 (6), e12480. doi: 10.1111/desc.12480

Kersey, A. J., Clark, T. S., Lussier, C. A., Mahon, B. Z., & Cantlon, J. F. (2016). Development of tool representations in the dorsal and ventral visual object processing pathways. *Cerebral Cortex*, 26 (7), 3135-3145. doi: 10.1093/cercor/bhv140

Kersey, A. J. & James, K. H. (2013). Brain activation patterns resulting from learning letter forms through active self-production and passive observation in young children. *Front. Psychol*, 4:567 doi: 10.3389/fpsyg.2013.00567

MANUSCRIPTS IN PREPARATION AND UNDER REVIEW

Kersey, A. J., Wakim, K., Li, R., & Cantlon, J. F. (in revision). Developing, mature, and unique functions of the child's brain in reading and mathematics.

Kersey, A. J., Csumitta, K. D., & Cantlon, J. F. (under review). Gender similarities in the brain during mathematics development.

Kersey, A. J. & Cantlon, J. F. (under review). Emergence of counting in the brains of 3- to 5-year-old children.

Kersey, A. J., ... Cantlon, J. F., Mahon, B. Z. (in preparation). Recovery and neural reorganization of reading in a 13-year-old patient following resection of left inferior temporal cortex.

RESEARCH TALKS

* denotes undergraduate mentee

Kersey, A. J. & Cantlon, J. F. (2017). Children's neural representations of count words emerge from numerosity representations in parietal cortex. Presented at the Society for Neuroscience Annual Meeting, Nanosymposium on Cognitive Development and Numerical Cognition, Washington D.C.

- Kersey, A. J.** (2017). Developmental continuity in the neural representation of numerical sets, words, and symbols. Presented at the Department of Brain & Cognitive Sciences Lunch Talk Series, University of Rochester, Rochester, NY.
- Kersey, A. J.,** Wakim, K., Li, R., & Cantlon, J. F. (2016). Neural patterns of reading and mathematics development from controlled versus naturalistic stimuli. Presented at the Flux Congress Annual Meeting, Science of Learning Symposium, St. Louis, MO.
***Only 3 abstracts selected for symposium talk presentations*
- Kersey, A. J.** (2016). Neural tuning to numerosity in 3- to 6-year-old children. Presented at the Department of Brain & Cognitive Sciences Lunch Talk Series, University of Rochester, Rochester, NY.
- *Csumitta, K., **Kersey, A. J.**, & Cantlon, J. F. (2016). Origins of gender differences in mathematics. Presented by K. Csumitta at the University of Rochester Undergraduate Research Exposition, Rochester, NY.
- *Adulley, K., **Kersey, A. J.**, & Cantlon, J. F. (2016). Gender differences in numerical processing in young children. Presented by K. Adulley at the 17th Annual National McNair Undergraduate Research Conference. University of Maryland, College Park, Maryland.
- Kersey, A. J.** & Cantlon, J. F. (2015). Neural tuning to numerosity in 3- to 6-year-old children predicts numerical development. Presented at the Cognitive Development Society Biennial Meeting, Columbus, OH.
***Only 20 selected oral paper presentations*
- James, K.H. & **Kersey, A.** (2011). Dorsal stream function in the 4-6 year old child: Assessing the neural correlates of the posting task using fMRI. Presented by K. H. James at the Society for Research in Child Development. Montreal, PQ.

POSTER PRESENTATIONS

* denotes undergraduate mentee

- Kersey, A. J.,** *Csumitta, K. D., & Cantlon, J. F. (2018) No gender differences in neural processing of mathematics in early childhood. **Poster**** presented at the Cognitive Neuroscience Society Annual Meeting, Boston, MA.
***Selected for a Graduate Student Award Poster Presentation*
- Kersey, A. J.** & Cantlon, J. C. (2017). Functional overlap between numerosity and count word representations in the developing brain. **Poster** presented at the Cognitive Development Society Biennial Meeting, Portland, OR.
- *Csumitta, K. D., **Kersey, A. J.**, Libertus, M., & Cantlon, J. F. (2017). No gender differences in children's core numerical processing abilities. **Poster** presented by K. D. Csumitta at the University of Rochester Undergraduate Research Expo, Rochester, NY.
- Kersey, A. J.** & Cantlon, J. F. (2017). Neural representations of numerosity support the acquisition of counting in preschool children. **Poster** presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.
- Emberson, L. L. & **Kersey, A. J.** (2016). Tracing trajectories of audiovisual learning in the infant brain. **Poster** presented by L. L. Emberson at the Flux Congress Annual Meeting, St. Louis, MO.
- Kersey, A. J.** & Cantlon, J. F. (2016). Functional networks of counting acquisition in preschool children. **Poster** presented at the Cognitive Neuroscience Society Annual Meeting, New York, NY.

- *Yurkovic, J. R., **Kersey, A. J.**, & Cantlon, J. F. (2015). Dissociable contributions of working memory and numerical cognition to math achievement in 3- to 5-year-old children. **Poster** presented by J. R. Yurkovic at the University of Rochester Undergraduate Research Expo, Rochester, NY.
- Kersey, A. J.** & Cantlon, J. F. (2015). Distinct neural circuitry underlying numerical development in 4- to 6-year-old children. **Poster** presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.
- Kersey, A. J.** & James, K. H. (2013). The neural mechanisms underlying handwriting: Effects of sensorimotor experience. **Poster** presented at the UCLA Psychology Undergraduate Research Conference, Los Angeles, CA.
- Kersey, A. J.** & James, K. H. (2013). The neural mechanisms underlying handwriting: Effects of sensorimotor experience. **Poster** presented at the J.R. Kantor Undergraduate Banquet, Bloomington, IN.
- Kersey, A. J.** & James, K. H. (2013). The neural mechanisms underlying handwriting: Effects of sensorimotor experience. **Poster** presented at the STARS Research Symposium, Bloomington, IN.
- Kersey, A. J.** & James K. H. (2012). The role of motor experience in the development of distinct visual networks for cursive letters in 6-7 year olds. **Poster** presented at the STARS Fall Reception, Bloomington, IN.
- Kersey, A. J.** & James K. H. (2012). The role of motor experience in the development of distinct visual networks for cursive letters in 6-7 year olds. **Poster** presented at the STARS Research Symposium, Bloomington, IN.
- James, K.H. & **Kersey, A. J.** (2011). Dorsal stream function in 4-6 year old children: Assessing the neural correlates of the 'posting' task using fMRI. **Poster** presented at the Hutton Honors College Research Symposium & Fair, Bloomington, IN.
- James, K.H. & **Kersey, A. J.** (2011). Dorsal stream function in 4-6 year old children: Assessing the neural correlates of the 'posting' task using fMRI. **Poster** presented at the STARS Research Symposium, Bloomington, IN.
- James, K.H. & **Kersey, A. J.** (2011). Dorsal stream function in 4-6 year old children: Assessing the neural correlates of the 'posting' task using fMRI. **Poster** presented at the 13th Annual Women in Science Research Conference, Bloomington, IN.

TEACHING EXPERIENCE

Guest Lectures:

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| Spring 2018 | <i>"Concept acquisition in the developing brain."</i>
Development of Mind and Brain, University of Rochester (C. Kidd) |
| Fall 2017 | <i>Workshop on analyzing fMRI data in BrainVoyager</i>
Lab in Cognitive Neuroscience, University of Rochester (B. Mahon) |
| Summer 2017 | <i>"Thinking and language"</i>
Introduction to Psychology, University of Rochester (J. Coe) |
| Spring 2017 | <i>"A developmental cognitive neuroscience approach to studying numerical cognition."</i>
Cognitive Neuroscience Graduate Seminar, University of Rochester (R. Raizada) |
| Spring 2016 | <i>"fMRI as a tool for exploring cognitive development."</i>
Language Acquisition, University of Rochester (C. Kumurada) |

- Fall 2015 *“Working with data: Descriptive statistics in Excel and R.”*
Undergraduate Research in Cognitive Science, UR (J. Cantlon & R. Haefner)
- Fall 2015 *“Neural tuning to numerosity in 3- to 6-year-old children”*
Lab in Cognitive Neuroscience, University of Rochester (B. Mahon & R. Miller)
- Fall 2015 *“Data Measurement: The subtraction method and stimulus programming.”*
Undergraduate Research in Cognitive Science, UR (J. Cantlon & R. Haefner)
- Spring 2015 *“fMRI as a tool for exploring cognitive development.”*
Language Acquisition, University of Rochester (C. Kumurada)
**Top ranked guest lecture for the class
- Fall 2012 *“Considerations and applications of fMRI studies with children.”*
Introductory Psychology I, Indiana University (J. Craig)

Graduate Teaching Assistant (University of Rochester):

- Spring 2017 Development of Mind and Brain (C. Kidd)
- Fall 2015 Neural Foundations of Behavior (Taught weekly recitation sessions, K. Davis)
- Spring 2015 Neural Foundations of Behavior (Taught weekly recitation sessions, K. Davis)

Undergraduate Teaching Assistant (Indiana University):

- Fall 2012 Introductory Psychology I (J. Craig)
- Spring 2012 Assistant to the Introductory Psychology Coordinator
- Fall 2011 General Introductory Psychology, Honors (E. M. Wakefield)
- Spring 2011 Introductory Psychology I (P. Summers)
- Spring 2011 Undergraduate Teaching Internship Course

UNDERGRADUATE MENTORSHIP

Students Supervised (University of Rochester):

- 2018 Carolyn Gershman (Independent Study), Sam Haber (Independent Study)
- 2017 – 2018 Joseph Fong (Independent Study), Amanda O'Donnell
- 2016 – 2018 Adina Levitt
- 2016 – 2017 Rebecca Lawrence
- 2016 (fall) CAOs Lab Undergraduate Neuroimaging Journal Club (5 undergraduates)
- 2016 (summer) Jessica Occhiogrosso
- 2016 (summer) Hetince Zhao (Independent Study)
- 2015 – 2017 Kelsey Csumitta (Honors Thesis, Independent Study)
- 2015, 2017 Kelvin Adulley (McNair Summer Scholar)
- 2015 – 2018 Gillian Schwartz
- 2014 – 2015 Matt Mullen (Honors Thesis), Julia Yurkovic (Honors Thesis)

Mentored Honors Theses & Post-Grad Placement:

- Csumitta (2017) *“No gender differences in children’s core numerical processing abilities.”*
Post-Grad: NIMH Research Fellow
- Mullen (2015) *“Spatial and numerical processing in STEM Experts.”*
Post-Grad: PhD program in Neuroscience, Northwestern University
- Yurkovic (2015) *“The dissociable contributions of working memory and numerical cognition to math achievement in 3- to 5-year-old children.”*
Post-Grad: Emory Research Fellowship at Marcus Autism Center

Mentee Research Awards:

- 2017 Postbaccalaureate Intramural Research Training Award
(NIH Office of Intramural Training & Education): Kelsey Csumitta

- 2017 National Conference on Undergraduate Research Invited Talk
(Council on Undergraduate Research): Kelsey Csumitta
- 2016 Catherine Block Memorial Award for Scientific Achievement
(University of Rochester): Kelsey Csumitta
- 2016 Dean's Choice Award for Undergraduate Research
(University of Rochester): Kelsey Csumitta
- 2016 17th Annual National McNair Undergraduate Research Conference Invited Talk
(McNair Scholars Research Program): Kelvin Adulley
- 2015 Bilski-Mayer Summer Fellowship for Independent Study
(Brain & Cognitive Sciences, University of Rochester): Kelsey Csumitta
- 2015 Donald J. Cohen Fellowship in Developmental Social Neuroscience
(Marcus Autism Center, Atlanta, GA): Julia Yurkovic
- 2015 Professor's Choice Award for Undergraduate Research
(University of Rochester): Julia Yurkovic

SCIENCE OUTREACH

- 2015 – 2018 **Brain Awareness Week Planning Committee**
Society for Neuroscience, University of Rochester
- 2014 – 2018 **Brain Awareness Week Student Representative**
Society for Neuroscience, University of Rochester
- 2014 – 2018 **Exhibits Volunteer**
Rochester Museum & Science Center, Rochester, NY
- 2013 **Child-Scientist Activity Week Staff**
Department of Psychological and Brain Sciences, Indiana University
- 2012 – 2013 **Volunteer**
WonderLab Museum of Science, Health, & Technology, Bloomington, IN
- 2012 – 2013 **Lab Representative**
Developmental Psychology Farmer's Market Booth, Bloomington, IN
- 2011 **Department of Psychological & Brain Sciences Student Ambassador**
Girl Scout Math and Science Day, Bloomington, IN
- 2010 **Volunteer**
Field Museum, Crown Family PlayLab, Chicago, IL

MEDIA

Nature Partner Journals Science of Learning (2018) – Math Ability is Not Limited by Gender, Behind the Paper: <https://npjscilearncommunity.nature.com/posts/36146-students-ability-to-learn-maths-not-limited-by-gender>

Cognitive Neuroscience Society News (2018) – No gender differences in mathematical processing in early childhood: <https://www.cogneurosociety.org/girls-v-boys-no-gender-differences-neural-processing-math/>

ACADEMIC AND PROFESSIONAL SERVICE

Ad hoc Manuscript Reviewer: *Cerebral Cortex, Cognitive Neuropsychology, Frontiers in Psychology*

- Spring 2017 **Student Organizer of Prospective Graduate Student Interview Weekend**
Department of Brain & Cognitive Sciences, University of Rochester
- 2016 – 2017 **Committee for Workplace Behavior**
Department of Brain & Cognitive Sciences, University of Rochester
- Spring 2016 **Student Co-Organizer of Prospective Graduate Student Interview Weekend**
Department of Brain & Cognitive Sciences, University of Rochester
- Spring 2016 **Panelist for Undergraduate Senior Seminar Graduate School Panel**
Department of Brain & Cognitive Sciences, University of Rochester
- Spring 2015 **APS Student Research Award Reviewer**
Association for Psychological Science
- 2014 – 2015 **Conference Travel Funding Application Reviewer**
Graduate Student Association, University of Rochester
- 2012 – 2013 **Psi Chi Treasurer and Website Manager**
Psi Chi Chapter at Indiana University
- Spring 2012 **Symposium Speaker Selection Committee**
Science, Technology, and Research Scholars, Indiana University
- Spring 2012 **Honors Research Symposium Steering Committee**
Hutton Honors College, Indiana University
- Spring 2012 **Honors Research Symposium Undergraduate Moderator**
Hutton Honors College, Indiana University

SKILLS AND CERTIFICATIONS

Software: Microsoft Office, BrainVoyager, MATLAB, Psychtoolbox, R, SPSS, SuperLab, ELAN, Adobe Illustrator, Adobe Photoshop, Adobe Dreamweaver

Hardware: Comfortable with Mac and Windows

Certifications: MRI Safety Certified

Languages: Conversational Spanish