

**Karin Harman James**  
**Professor**  
**Psychological and Brain Sciences**

Curriculum Vitae

**Contact Information**

Department of Psychological and Brain Sciences, Indiana University  
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<http://www.indiana.edu/~canlab/home.html>

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**Education**

2001-2004: Vanderbilt University, Post-Doctoral Fellow  
1998-2001: University of Western Ontario, Doctor of Philosophy (Psychology)  
1996-1998: University of Western Ontario, Master of Arts (Psychology)  
1993-1996: University of Toronto, Bachelor of Science (Psychology)  
1987-1991: University of Toronto, Bachelor of Arts (History)

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**Research Support (active)****External:**Clinical and Translational Science Institute

Modern diffusion-weighted MRI protocol for early profiling and detection of reading disabilities in preschool children.

Co-Principal Investigators: James, K.H. & Pestilli, F.  
\$10,000

National Science Foundation. 064707-00002B (2014-2018)

The role of gesture in word learning: Collaborative Research.

Co-Principal Investigators: James, K.H. & Goldin-Meadow, S. (University of Chicago)

Direct costs: \$519,659

Effort: 15%

National Science Foundation (number pending)

Harnessing gesture and action to improve pre-algebra Instruction.

Role: fMRI consultant

Effort: 10%

National Institutes of Health NIH/NICHHD 2T32HD007475-21 (2015–2020)

NIH Training Grant: Integrative study of developmental process.

Role: Co-Principal Investigator (Principal Investigator: Linda Smith)  
 Effort: Supervisory as needed, run the weekly seminar for grant

**Internal:**

Emerging Areas of Research (EAR) Initiative, COAS Indiana University

Learning: Brains, Machines and Children

Role: Co-PI

2017-2020

Amount: \$3,000,000

Johnson Center for Innovative & Translational Research Pilot Grant, Indiana University

MR-Safe Electronic Tablet for use in Functional MRI

Role: PI

2017

Amount: \$25,000

Social Science Research Commons Grant, Indiana University

Efficacy of Two Reading Interventions: A Randomized Control Trial with a Mixed-Method Evaluation

Role: Co-PI

Amount: \$15,000

Faculty Research Support Program

Interaction between sensory and motor processes in the brain.

Co-Principal Investigators: Hannah Block, Karin James, Aina Puce

\$22,281

Indiana University Imaging Research Facility Pilot Program

Neuroimaging studies of the effects of writing on early mathematical understanding.

Principal Investigator: James, K.H.

Amount: \$15,000

Effects of active learning on word meaning.

Principal Investigator: James, K.H.

Amount: \$6,000

Gesture processing in pre-school children.

Principal Investigator: James, K.H.

Amount: \$20,000

The development of writing systems in the pre-school brain.

Principal Investigator: James, K.H.

Amount: \$20,000

**Past and Pending Support:**

National Institutes of Health (NIH)/NICHD (2008-2014) R01 HD057077

The role of action in the development of visual object recognition.

Principal Investigator: James, K.H.

Direct costs: \$1,150,000  
Effort: 30%

National Science Foundation BCS-1422329 (2010-2015)

IGERT Training Grant: The Dynamics of Brain-Body-Environment Systems in Behavior and Cognition.

Role: Co-Principal Investigator (PI: Randolph Beer)

Effort: Supervisory as needed (graduate students)

National Science Foundation (pending)

The effects of handwriting on early literacy skills.

Principal Investigator: James, K.H.

Direct Costs: TBD

Submitted: December, 2015

National Institute of Health (pending)

Visual-motor Experience Changes the Neural Processing of Symbols During Development.

Principal Investigator: James, K.H.

Direct Costs: TBD

Submitted: June, 2015

Institute for Education Sciences (pending)

The effects of handwriting on emergent literacy skills in children from low- and higher-income households.

Principal Investigator: James, K.H.

Direct Costs: TBD

Submitted: August 5, 2015

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**Provisional Patents**

“Electronic tablet for use in functional MRI,” US Patent Application No. 62/370, 372, filed August 3, 2016, (Sturgeon, J., Shroyer, A., Vinci-Booher, S., & James, K.H., applicants).

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**Peer Reviewed Research Publications**

Students directly advised in *italics*. Senior author listed first or last.

**Articles currently under peer review:**

*Wakefield, E.M., Congdon, E., Novack, M., Goldin-Meadow, S. & James, K.H.* (under revision). Learning math by hand: The neural effects of gesture-based instruction in 8-year-old children.

*Munoz-Rubke, F., Kafadar, K. & James, K.H.* (under revision). Word meaning differs in degree and not kind: An action scale captures the continuous nature of noun and verb learning.

## In press or published peer reviewed articles (46):

### 2017:

**James, K.H.** (in press). The importance of handwriting experience on the development of the literate brain. To appear in *Current Directions in Psychological Science*.

Munoz-Rubke, F., Kafadar, K., & **James, K.H.** (2017). A new statistical model for analyzing rating scale data pertaining to word meaning. *Psychological Research*. doi:10.1007/s00426-017-0864-8

**James, K.H. & Kersey, A.** (2017). Dorsal stream function in the young child: an fMRI investigation of visually guided action. *Developmental Science* Dev Sci. 2017;00:e12546. <https://doi.org/10.1111/desc.12546>

### 2016:

**James, K.H., Vinci-Booher, S. & Munoz-Rabke, F.** (in press). Sensorimotor learning and brain plasticity. In *The Handbook of Multimodal-Multisensory Interfaces*: ACM Books, Morgan Clayfield. USA.

Jao, R.J., James, T.W., & **James, K.H.** (2016). Crossmodal enhancement in the LOC for visuohaptic object recognition over development. *Neuropsychologia*, 77, 76-89. doi: 10.1016/j.neuropsychologia.2015.08.008.

\*Li, J.X., **James K.H.** (2016). Handwriting generates variable visual input to facilitate symbol learning. *Journal of Experimental Psychology: General*. 145(3):298-313. doi:10.1037/xge0000134.

\* American Psychological Association Spotlight paper, May, 2016

Vinci-Booher, S., James, T.W., & **James, K.H.** (2016). Visual-motor functional connectivity in preschool children emerges after handwriting experience. *Trends in Neuroscience and Education*. 5(3).107-120. doi.org/10.1016/j.tine.2016.07.006

Vinci-Booher, S., & **James, K.H.** (2016). Neural Substrates of Sensorimotor Processes: Letter Writing and Letter Perception. *Journal of Neurophysiology*, 115(1), 1-4. doi: 10.1152/jn.01042.2014

### 2015:

Latinus, M., Love, S.A., Rossi, A., Parada, F.J., Huang, L., Conty L, George, N., **James, K.H.**, Puce, A. (2015). Social decisions affect neural activity to perceived dynamic gaze. *Social Cognitive & Affective Neuroscience* 10(11), 1557-1567. doi:10.1093/scan/nsv049 PMID: 25925272

Wakefield, E.M. & **James, K.H.** (2015). Effects of learning with gesture on children's understanding of a new language concept. *Developmental Psychology* 51(8), 1105-1114. doi:10.1037/a0039471

**James, K.H., Jao, R.J. & Berninger, V.** (2015). The development of multi-leveled writing

brain systems: brain lessons for writing instruction. In MacArthur, C. A., Graham, S., & Fitzgerald, J. (Eds.), *Handbook of writing research, 2<sup>nd</sup> edition*. New York: Guilford.

#### 2014:

**James, K.H.**, Jones, S.S., Swain, S., *Pereira, A.*, & Smith, L.B. (2014). Some views are better than others: Evidence for a visual bias in object views self-generated by toddlers. *Developmental Science*, 17(3), 338-351. doi:10.1111/desc.12124 NIHMS 518867.

**James, K.H.**, Jones, S.S., Smith, L.B., & Swain, S.N. (2014). Young Children's Self-Generated Object Views and Object Recognition. *Journal of Cognition and Development: Official Journal of the Cognitive Development Society*, 15(3), 393-401. doi.org/10.1080/15248372.2012.749481

*Jao, R.J.*, James, T.W., & **James, K. H.** (2014). Multisensory convergence of visual and haptic object preference across development. *Neuropsychologia*, 56, 381-392. doi.org/10.1016/j.neuropsychologia.2014.02.009 NIHMS 573317

Smith, L.B., *Street, S.*, Jones, S.S., & **James, K.H.** (2014). Using the axis of elongation to align shapes: Developmental changes between 18 and 24 months of age. *Journal of Experimental Child Psychology*, 123, 15-35. doi: 10.1016/j.jecp.2014.01.009 NIHMS 577438

#### 2013:

*Butler, A.J.*, & **James, K.H.** (2013). Active learning of novel sound-producing objects: Motor reactivation and enhancement of visuo-motor connectivity. *Journal of Cognitive Neuroscience*, 25, 203-218. doi:10.1162/jocn\_a\_00284

*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. *Frontiers in Psychology*, 4(567), 10-3389. doi:10.3389/fpsyg.2013.00567 NIHMS 629654.

James, T.W.\* & **James, K.H.\*** (2013). Expert individuation of objects increases activation in the fusiform face area of children. *NeuroImage*, 67, 182-192. doi: 10.1016/j.neuroimage.2012.11.007 \* equal author contribution

*Wakefield, E.M.* James, T.W. & **James, K.H.** (2013). The neural correlates of gesture processing across human development, *Cognitive Neuropsychology*, 30, 58-76. doi:10.1080/02643294.2013.794777

#### 2012:

\***James, K.H.** & *Engelhardt, L.* (2012). The effects of handwriting experience on functional brain development in pre-literate children. *Trends in Neuroscience and Education*, 1, 32-42. doi.org/10.1016/j.tine.2012.08.001 NIHMS 629881

\*most cited article for that year for that journal.

Motz, B.A., **James, K.H.** & Busey, T.A. (2012). The lateralizer: A tool for students to explore the divided brain. *Advances in Physiology Education*, 36(3).

doi: 10.1152/advan.00060.2012

### 2011:

**Wakefield, E.M. & James, K.H.** (2011). Effects of sensori-motor learning on melody processing across development. *Cognition, Brain & Behavior*, 15(4), 505-534. NIHMS 629890.

**James, K.H. & Bose, P.** (2011). Self-generated actions during learning objects and sounds create sensori-motor systems in the developing brain. *Cognition, Brain & Behavior*, 15(4), 485-503. NIHMS 629882.

**Butler, A.J. & James, K.H.** (2011). Cross-modal versus within-modal recall: Differences in behavioral and brain responses. *Behavioral Brain Research*, 224, 387-396. doi:10.1016/j.bbr.2011.06.017

**Butler, A.J., James, T.W. & James, K.H.** (2011). Enhanced multisensory integration and motor reactivation after active motor learning of audiovisual associations. *Journal of Cognitive Neuroscience*, 23(11), 3515-3528. doi:10.1162/jocn\_a\_00015

**James, T.W., VanDerKlok, R.M., Stevenson, R.A., & Harman James, K.** (2011). Multisensory perception of action in posterior temporal cortex. *Neuropsychologia*, 49, 108-114. doi:10.1016/j.neuropsychologia.2010.10.030

**James, T.W., Stevenson, R.A., Kim, S., VanDerKlok, R.M & James, K.H.** (2011). Shape from sound: Evidence for a shape operator in the lateral occipital cortex. *Neuropsychologia*, 49, 1807-1815. doi:10.1016/j.neuropsychologia.2010.10.030

**James, K.H., & Swain, S.N.** (2011). Only self-generated actions create sensori-motor systems in the developing brain. *Developmental Science*, 14(4), 673-687. doi: 10.1111/j.1467-7687.2010.01011.x NIHMS 629884.

### 2010:

**Butler, A.J. & James, K.H.** (2010). The neural correlates of attempting to suppress negative versus neutral memories. *Cognitive and Affective Behavioral Neuroscience*, 10, 182-194. doi:10.3758/CABN.10.2.182

**Street, S., James, K.H., Jones, S. & Smith, L.B.** (2010). Vision for action in toddlers: The posting task. *Child Development*, 82(6), 2083-2094. doi:10.1111/j.14678624.2011.01655.x NIHMS 321290.

**James, K.H.** (2010). Sensori-motor experience leads to changes in visual processing in the developing brain. *Developmental Science*, 13(2), 279-288. doi:10.1111/j.1467-7687.2009.00883.x NIHMS 629888.

**James, K.H. & Mauoene, J.** (2010). Auditory verb perception recruits motor systems in the developing brain: an fMRI investigation. *Developmental Science*, 12(6), F26-F34. doi:10.1111/j.1467-7687.2009.00919.x

Periera, A.F., **James, K.H.**, Jones, S.S. & Smith, L.B. (2010). Early biases and developmental changes in self-generated object views. *Journal of Vision*, 10(11): 22. doi: 10.1167/10.11.22 NIHMS 273211.

### 2009:

**James, K.H.** & Gauthier, I. (2009). When writing impairs reading: Letter perception's susceptibility to motor interference. *Journal of Experimental Psychology: General*, 138, 416-43. doi:10.1037/a0015836

**James, K.H.** & Atwood, T. (2009). The role of sensorimotor learning in the perception of letter-like forms: Tracking the causes of neural specialization for letters. *Cognitive Neuropsychology*, 26(1), 91-110. doi:10.1080/02643290802425914

Wong, A C-N, Jobard, G., James, T.W., **James, K.H.**, Gauthier, I. (2009). Expertise with characters in alphabetic and non-alphabetic writing system engage the same occipito-temporal area. *Cognitive Neuropsychology*, 26, 111-127.

**James, K.H.**, Wong, C-N, Jobard, G. (2009). The case for letter expertise. *Perceptual Expertise: Bridging Brain and Behavior*, Gauthier, I, Bub, D. & Tarr, M.J. (Eds.) Oxford University Press. doi:10.1093/acprof:oso/9780195309607.003.0011

### 2008+

Foss, A. H, Altschuler, E.L. & **James, K.H.** (2007). Neural correlates of the Pythagorean ratio rules. *Neuroreport*, 18, 1521-1525. doi:10.1093/acprof:oso/9780195309607.001.0001

**James, K.H.** & Gauthier, I. (2006). Letter processing automatically recruits a sensory-motor brain network. *Neuropsychologia*, 44, 2937-2949. doi:10.1016/j.neuropsychologia.2006.06.026

**James, K.H.**, James, T.W., Jobard, G., Wong, C-N., & Gauthier, I (2005). Letter processing in the visual system: Different activation patterns for single letters and strings. *Cognitive, Affective and Behavioral Neuroscience*, 5(4), 452-466. doi: 10.3758/cabn.5.4.452

James, T.W., Humphrey, G.K., **James, K.H.** & Goodale, M.A. (2005) Do visual and tactile object representations share the same neural substrate? M.A. Heller and S. Ballesteros (Eds.), *Touch and blindness: psychology and neuroscience*. Mahwah, NJ: Lawrence Erlbaum.

**James, K.H.**, Humphrey, G.K., Vilis, T., Baddour, R., Corrie, B. & Goodale, M.A. (2002). "Active" and "passive" learning of three-dimensional object structure within an immersive virtual reality environment. *Behavioral Research Methods, Instruments and Computers*, 34(3), 383-390. doi:10.3758/BF03195466

**James, K.H.**, Humphrey, G.K. & Goodale, M.A. (2001). Manipulating and Recognizing Virtual Objects: Where the Action Is. *Canadian Journal of Experimental Psychology*, 55(2), 111-120. doi:10.1037/h0087358

**Harman, K.L.**, Humphrey, G.K. & Goodale, M.A. (1999). Active manual control of object views facilitates visual recognition. *Current Biology*, 9 (22), 1315-1318. doi:10.1016/S0960-9822(00)80053-6

**Harman, K.L.** & Humphrey, G.K. (1999). Encoding 'regular' and 'random' sequences of views of novel, three-dimensional objects. *Perception*, 28, 601-615. doi:10.1068/p2924

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### **Invited Oral Presentations**

**James, K.H.** (2015). How handwriting experience changes visual letter processing in the pre-literate brain. Peabody College, Vanderbilt University. Nashville, TN.

**James, K.H.** (2015). How handwriting experience changes visual letter processing in the pre-literate brain. *Indiana Association for School Psychologists*. Indianapolis, IN.

**James, K.H.** (2015). (community outreach). What handwriting is important for brain development. *Monroe County Community School Corporation*, Bloomington, IN.

**James, K.H.** (2015). (community outreach). What handwriting is important for brain development. *Women's Institute Unitarian Universalist Church*, Bloomington IN.

**James, K.H.** (2015). How Visual-motor learning changes symbol understanding during development. Johns Hopkins University, *Cognitive Science Colloquium series*. Baltimore, MD.

**James, K.H.** (2015). What Neuroscience tells us about handwriting skill. *School of Neuropsychology Summer Institute*, Dallas, TX.

**James, K.H.** (2015). How Visual-motor Experience Changes the Neural Processing of Symbols During Development. *President's Presentation for the Canadian Society for Brain, Behavior and Cognitive Science*. Ottawa, Ontario.

**James, K.H.** (2015). How Visual-motor Experience Changes the Neural Processing of Symbols During Development. *Midwestern Psychological Association*, Chicago, IL.

**James, K.H.** (2014). Changing brains: How printing effects thinking in pre-school children. *The University Club*, Bloomington, IN.

**James, K.H.** (2014). How Visual-motor Experience Changes Symbol Learning During Development: An Educational Cognitive Neuroscience Perspective. *Indiana University Alumni Association "The Future" series*. Bloomington, IN.

**James, K.H.**, (2013). Educational Neuroscience. *"It takes a Village" Conference*, Ivy Tech Vocational Institute, Bloomington, IN.

**James, K. H.**, & Wakefield, E. M. (May, 2013). Using fMRI with pre-school children to show brain changes associated with learning. *Cognitive Development Neuroscientific Approaches Symposium*, Austin, TX.



**James, K.H.**, (2012) The affect of writing on pre-reading skills: A developmental cognitive neuroscience approach. "Get Ready Iowa" workshop held by *the Development and Learning: From Theory to Application Center*, University of Iowa, Iowa City, IA.

**James, K.H.** (2012). The neural correlates of handwriting and its affect on reading acquisition. *Handwriting in the 21<sup>st</sup> century, Educational Summit*, Washington, D.C.

**James, K.H.** (2011). How printing practice affects letter perception: An educational cognitive neuroscience perspective. *Learning Sciences Department*, Indiana University, Bloomington, IN.

**James, K.H.** (2010). Influences of action on visual perception: A developmental cognitive neuroscience approach. *Optometry Department*, Indiana University Bloomington, IN.

**James, K.H.** (2010). How action experience affects visual and auditory processing in the developing brain. *Cincinnati Children's Hospital Medical Center*, Cincinnati, OH.

**James, K.H.** (2008). The effects of early motor experience on visual cognition: A proposal using fMRI with typically and atypically developing children. *Clinical Science Colloquium series*, Indiana University. Bloomington, IN.

**James, K.H.** (2007). The effects of motor experience on visual processing: a developmental fMRI approach. *Indiana University Program in Neuroscience Annual Retreat*. Bloomington, IN.

**James, K.H.** (2005). Neural changes associated with learning to read. *Sackler Institute*, New York, NY.

#### **Invited Oral Presentations (Conferences)**

Frizell, T., Vinci-Booher, S., Zemlock, D., **James, K.H.**, & Crandall, D.J. (2015). Exploring automated techniques for identifying and scoring children's handwriting samples. *Summer Research Experience for Undergraduates Conference*, Bloomington, IN.

Munoz-Rubke, F., Kafadar, K., & **James, K.H.** (2015). Action is the key to observe the continuum among concrete and abstract words. *Cognitive Neuroscience Society*, San Francisco, CA.

Vinci-Booher, S., James, T.W., & **James, K.H.** (2015). The influence of visual-motor experiences on the development of brain mechanisms subserving letter perception. In E. Wakefield & M. Novack, Comparing the effects of active and passive learning experiences through action and gesture. *Society for Research in Child Development*, Philadelphia, PA.

Vinci-Booher, S., Engelhardt, L., James, T.W., & **James, K.H.** (2015). Functional connections during letter perception reflect aspects of letter writing. *Cognitive Neuroscience Society*, San Francisco, CA.

Vinci-Booher, S., James, T.W., & **James, K.H.** (2015). Investigating functional connectivity in the developing brain using generalized psychophysiological interactions analysis. *Society for Research in Child Development*, Philadelphia, PA.

Hall, C., Wakefield, E. M., **James, K. H.**, & Goldin-Meadow, S. G. (2015). Learning verbs through action vs. gesture. *Cognitive Development Society*, Columbus, OH.

**James, K.H.** (2015). The development of neural systems that support letter perception: the importance of early handwriting. *Psychonomics Society*. Chicago, IL.

**James, K.H.** (2015). Only self-generated actions create sensori-motor networks in the developing brain. *Society for Research in Child Development*, Philadelphia, PA.

Vinci-Booher, S., James, T.W., & **James, K.H.** (2015). Investigating functional connectivity in the developing brain using generalized psychophysiological interactions analysis. *Society for Research in Child Development*, Philadelphia, PA.

Wakefield, E.M. Goldin-Meadow, S. & **James, K.H.** (2015). Can you show me yocking? Learning novel verbs through producing and observing actions and gestures. *Society for Research in Child Development*, Philadelphia, PA.

Wakefield, E. M., Novack, M., Congdon, E., Goldin-Meadow, S., & **James, K.H.** (2014). Understanding the Neural Effects of Learning with Gesture: Does gesture help learners because it is grounded in action? *International Society of Gesture Studies*, San Diego, CA.

**James, K.H.**, (2013). Using functional Magnetic Resonance Imaging techniques to probe learning mechanisms in young children. *Cognitive Development Society*, Memphis, TN.

**James, K.H.** (2013). Manual actions on objects are driven by visual biases in 18-24-month-old children. *Society for Research in Child Development*, Seattle, WA.

**James, K.H.**, James, T.W., & Swain, S.N. (2012). The neural correlates of object expertise in the young child. *Cognitive Neuroscience Society*, Chicago, IL.

Wakefield, E. M., & **James, K.H.** (July, 2012). Changes in iconic and metaphoric gesture processing across development. *International Society for Gesture Studies*, Lund, Sweden.

**James, K.H.** & Engelhardt, L. (2011) Visual object processing as a function of active experience in preschool children. *Cognitive Development Society*, Philadelphia, PA.

**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. *Society for Research in Child Development*, Montreal, PQ.

**James, K.H.** (2010). The emergence of sensorimotor representations in the developing brain during language processing. *Cognitive Neuroscience Society*, Montreal, PQ.

**Butler, A. & James, K.H.** (2009). Cued retrieval of novel auditory or visual stimuli activates modality specific cortices regardless of correct performance. *Cognitive Neuroscience Society*, San Francisco, CA.\*

\*received the “graduate student presents” award at annual meeting.

**James, K.H. & Mahoune, J.** (2009). Neural correlates of verb processing in the developing brain. *Society for Research in Child Development*, Denver, CO.

**Wakefield, E. M., & James, K. H.** (2009). The effects of sensori-motor learning on melody processing. *Society for Music Perception and Cognition*, Indianapolis, IN.

**James K.H., Butler, A. & Mueller, S.** (2008). Active learning of objects recruits a sensori-motor network upon visual presentation. *Vision Sciences Society*, Naples, FL.

**James, K.H. & Augustine, E.** (2007). The effects of Motor Experience on Visual Processing: an fMRI approach. *Society for Research in Child Development*, Boston, MA.

**Altschluler, E.L., Foss, A.H. & James, K.H.** (2007). Neural correlates of the Pythagorean ratio rules. *Society for Neuroscience*, San Diego, CA.

**Schneider, B., DeLong, J., Wyatte, D., James, K.H., Busey, T.** (2007). The neural correlates of face-like expertise in fingerprint examiners. *Vision Sciences Society*, Sarasota, FL.

**Pereira, A., James, K.H., Jones, S. S., & Smith, L. B.** (2011). Children’s knowledge of an object’s canonical upright and the statistical structure of self-selected object views. *Society for Research on Child Development*, Montreal, Canada.

**James, K.H.** (2011). Action influences perception by limiting available information: What toddlers look at is determined by how they hold objects. *Society for Research on Child Development*, Montreal, Canada.

## Teaching Experience

### Developmental Psychology

Cognitive Neuroscience

Development of Brain and Behavior

Developmental Cognitive Neuroscience (graduate and undergraduate level)

Human Neuropsychology (graduate and undergraduate level)

Brain & Cognition (graduate level)

Object Recognition: A Cognitive Neuroscience Perspective (graduate level)

Department of Psychological and Brain Sciences, Indiana University

Computer Applications in Psychological Research  
 Psychology Department, University of Western Ontario

**Trainees**

Post-Doctoral Fellows

2013-2014: Elizabeth Wakefield

2011-2012: Sandra Street

Graduate Students (Primary advisor only are listed, co-supervised an additional 6)

*Present:*

-Daniel Plebanek, PhD 2

-Sophia Vinci-Booher PhD 5

*Graduated:*

-Felipe Munoz

PhD 2017

*Assistant Professor*

*Austral University of Chile*

-R. Joanne Jao

PhD 2015

*Post-doctoral fellow, San Diego State University*

-Julia Li

PhD 2015

*Research Scientist, Rotman Associates Research*

-Andrew Butler

PhD 2011

*Assistant Professor, Valparaiso University*

-Meagan Yee

PhD 2012

*Assistant Visiting Professor, University of Cincinnati*

-Elizabeth Wakefield

PhD 2013

*Assistant Professor, Loyola University*

-Eungi Huh

MA 2011

Undergraduate Honors Students (Honors thesis supervision)

2017- present -Courtney DelaCuesta

2016-2017 -Devon Olsen

-Neha Sehgal

-Russell Will

2015-2016 -Allison Grace

-Debbie Zemlock

2014-2015 -Aesha Maniar

2012-2013 -Melissa Beringer

- Arianna Gutierrez (*Excellence in Research award*)

- JR Kantor award for outstanding honors thesis)*
- 2010-2011 -Benis Pavistan
- 2009-2013 -Alyssa Kersey (*STARS research scholar, STARS summer fellowship award*)
- 2007-2011 -Laura Engelhardt (*Cox Research Scholar, JR Kantor award for outstanding honors thesis*)
- 2009-2011 -Christin Neary
- 2008-2009 -Isak Allen
- 2006-2007 -Matthew King (*Howard Hughes Medical Institute Undergraduate Capstone Award*)
- Corrie Beck
- 2005-2008 -Scott Mueller (*Howard Hughes Medical Institute Undergraduate Capstone Award*)
- 2005-2007 -Alexander Foss (*Howard Hughes Medical Institute Undergraduate Capstone award, Hutton Honors College Fellowship*)
- 2005-2008 -Thea Atwood, (*Howard Hughes Medical Institute Undergraduate Capstone Award*)
- 2003-2004 -Shilpi Roy, Vanderbilt University
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### **Departmental, College and University Service**

#### *Present:*

- 2012-present: External advisory board member, National Institutes of Health P50 Center grant #HD071764 (2012-2017) *Defining and Treating Specific Written Language Learning Disabilities*
- 2014-STIM mentor, IU-Bloomington
- 2012-present: Director, Child Scientist Activity Week summer camp
- 2005-present: member, Indiana University Imaging Research Facility Operations Committee

#### *Past*

- 2013-2016: Chairperson, IRF Pilot Scan Review committee
- 2015-Member, Developmental Area search committee
- 2010-2016: member, Graduate Admissions committee
- 2007-2016: member, Graduate Program committee
- 2010-2016: Spokesperson, Developmental Psychology Area
- 2012-2013: Director, Child Scientist Activity Week summer camp
- 2012: IGERT admissions committee
- 2011-2012: Developmental faculty search committee
- 2007-2010: Chairperson, Personnel committee, Indiana University Imaging Research Facility
- 2007-2010: Chairperson, IRF Pilot Project committee:
- 2007: Member, Imaging Research Facility Technician position search committee
- 2005: Member, cognitive neuroscience faculty search committee.

2004-2012: Member, brain imaging facilities and planning committee  
2004-2010: Co-coordinator, Indiana University Neuroimaging Group

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### **Editorial Service**

Ad Hoc reviewer for:

*Brain & Cognition, Cerebral Cortex, Child Development, Cortex, Developmental Science, Cognitive Neuropsychology, Journal of Cognitive Neuroscience JEP: General; JEP: HPP, Journal of Learning Disabilities, Journal of Neurophysiology, Journal of Social Cognition, Journal of Vision, Learning and Instruction, Neuroimage, Neuropsychologia, Perception, Vision Research.*

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### **University Experience**

2012-present: Associate Professor, Department of Psychological and Brain Sciences, and Programs in Cognitive Science, and Neuroscience  
Indiana University

2007-2012: Assistant Professor, Department of Psychological and Brain Sciences, and Programs in Cognitive Science, Neuroscience, Indiana University

2004-2007: Research Scientist, Department of Psychological and Brain Sciences, and Program in Neuroscience, Indiana University

2001-2004: Postdoctoral fellow, Vanderbilt University

1994-1996: Research Assistant, University of Toronto

### **Honors and Awards:**

2017: Indiana University Trustee Teaching Award

2001-2004: Natural Sciences and Engineering Research Council-Industrial Research Fellowship (declined)

1998-2001: Medical Research Council of Canada Student Fellowship

1998-2000: Natural Sciences and Engineering Research Council PGSb (declined)

1998-1999: Ontario Graduate Scholarship (declined)

1996-2001: University of Western Ontario Graduate Tuition Scholarship

1996-1998: National Science and Engineering Research Council PGSa

1996-1997: Ontario Graduate Scholarship (declined)

1996: University of Toronto Alumni Association Award for Excellence in Science

1995: University of Toronto Scholar

### **Professional Organizations and Memberships**

2008-present: Cognitive Development Society

2007-present: Society for Research in Child Development

2004-present: Cognitive Neuroscience Society

2000-present: Vision Sciences Society

1998-2000: Association for Research in Vision and Ophthalmology

1998-2001: Canadian Society for Brain, Behaviour and Cognitive Science

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**Published Abstracts (posters and proceedings):**

*Munoz-Rubke, F., Olson, D., Will, R., & James, K.H.* (2016). Impact of tool function knowledge on visually-informed mechanical problem solving. *Vision Science Society*, St. Pete Beach, FL.

*Munoz-Rubke, F., Olson, D., Will, R., & James, K.H.* (2016). Impact of tool function knowledge on mechanical problem solving. *Latin American School for Education, Cognitive, and Neural Sciences*, Buenos Aires, Argentina.

*Vinci-Booher, S., Sehgal, N., Munoz-Rubke, F., & James, K.H.* (2016). Perceptual and motor effects of letter writing on brain regions associated with letter perception. *Vision Sciences Society*, St. Pete Beach, FL.

*Vinci-Booher, S., Cheng, H., & James, K.H.* (2016). Handwriting as a visually guided action: A developmental neuroimaging study. *American School for Education, Cognitive, and Neural Sciences*, Buenos Aires, Argentina.

Dasgupta, S.E., McIntire, Z.J., Nguyen, M.A., Li, J.X., **James, K.H.**, & Grossman, E. (2015). STSp functional connectivity in adults and children during biological motion perception. *Society for Neuroscience*, Chicago, IL.

*Li, J.X. & James, K.H.* (2015). Why Does Handwriting Matter? The Effects of Output Variability on Symbol Recognition and Categorization. *Society of Research in Child Development*. Philadelphia, PA.

*Vinci-Booher, James, James, K.H.* (2015). Investigating Functional Connectivity in the Developing Brain Using Generalized Psychophysiological Interactions Analysis. *Society of Research in Child Development*. Philadelphia, PA.

*Wakefield, Congdon, Novack, Goldin-Meadow & James, K.H.* (2015). Why Does Gesture Facilitate Learning? An Investigation of the Underlying Neural Mechanism. *Society of Research in Child Development*. Philadelphia, PA.

*Jao, R. J., James, K.H., & James, T.W.* (2015). The development and organization of visuohaptic modality-biased signals in the LOC. *Vision Sciences Society*, St. Pete Beach, FL.

*Wakefield, E.M., Novack, M., Congdon, E., Goldin-Meadow, S., & James, K.H.* (2014). Understanding the Neural Effects of Learning with Gesture: Does gesture help learners because it is grounded in action? *International Society of Gesture Studies*, San Diego, CA.

*Jao, R.J., James, K.H., & James, T.W.* (2014). Development of dorsal and ventral stream connectivity: A visuohaptic psychophysiological interaction study. *Vision Science Expo*, Indiana University. Bloomington, IN.

*Jao, R.J., James, K.H., & James, T.W. (2014). Functional connectivity analysis shows developmental changes in visuohaptic brain networks. Association for Psychological Science, San Francisco, CA.*

*Jao, R. J., James, K. H., & James, T. W. (2014). Developmental changes in functional connectivity: A visuohaptic psychophysiological interaction study. Annual IGERT Showcase at Indiana University. Bloomington, IN.*

*Vinci-Booher, S., Engelhardt, L., James, T.W., & James, K.H. (2014). Investigating the development of letter perception using gPPI connectivity analysis. Center of Excellence for Women in Technology Conference, Bloomington, IN.*

*Li, J. X., Smith, L. B., Jones, S. S., & James, K. H. (2013). Effects of manual rotation experience on the development of mental rotation strategies. Cognitive Development Society, Memphis, TN.*

*Wakefield, E. M., & James, K. H. (2013). Behavioral and neural effects of learning with different gesture strategies. Cognitive Development Society, Memphis, TN.*

*Jao, R.J., James, T.W., & James, K.H. (2013). Visuohaptic crossmodal matching: A developmental fMRI study. Vision Science Society, Naples, FL.*

*Jao, R.J., James, T.W., & James, K.H. (2012). Multisensory Convergence of Vision and Haptics Across Development. Cognitive Neuroscience Society, Chicago, IL.*

*Wakefield, E.M. & James, K.H. (2012). Motor processing during gesture perception across development: An fMRI study. Cognitive Neuroscience Society, Chicago, IL.*

*Butler, A., Pavisian, B. & James, K.H. (2012). Neural differences in translating abstract versus concrete visual representations into actions. Cognitive Neuroscience Society, Chicago, IL.*

*Li, J.X., Smith, L.B., Jones, S.S., & James, K.H. (2012). Effects of action on the development of object constancy. International Conference on Infant Studies, Baltimore, MD.*

*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. Society for Research in Child Development, Montreal, PQ.*

*Engelhardt, L., & James, K.H. (2011). Easy as ABC: Using fMRI to determine how drawing, tracing, and typing contribute to letter acquisition. UCLA Psychology Undergraduate Research Conference, Los Angeles, CA.*

*Engelhardt, L., & James, K.H. (2010). Manual interaction with objects leads to motor cortex recruitment in children. UCLA Psychology Undergraduate Research Conference, Los Angeles, CA.*



Wakefield, E. M., & James, K. H. (2011). Neural correlates of gesture processing across development. *Cognitive Neuroscience Society*, San Francisco, CA.

James, K.H., Periera, A., Swain, S. Jones, S. & Smith, L.B. (2011). Vision for action in toddlers: How objects are held influences how they are viewed. *Society for Research in Child Development*, Montreal, PQ.

Maouene, J., Harman James, K., Sethuraman, N., Maouene, M. & Smith, L.B. (2010). Correlating Body Experiences, Knowledge of Verbs, and Development of Argument Structure. *International Cognitive Linguistics Association*, San Diego, CA.

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Butler, A.J. & James, K.H. (2010). The Recognition of Actively vs. Passively Learned Audiovisual Associations. *Cognitive Neuroscience Society*, Montreal, PQ.

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James, K.H. (2008). Does learning to print help learning to read? An fMRI approach. *Indiana Neuroimaging Symposium*. Bloomington, IN.

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James, K.H. (2006). Writing facilitates learning of Abstract Representations of Letter-like symbols. *Vision Sciences Society*, Sarasota, FLA.

James, K.H. & Gauthier, I. (2006). Visual-Motor interactions during the perception and writing of letters. *Cognitive Neuroscience Society*, San Francisco, CA.

Wong, A C-N, Jobard, G., James, T.W., James, K.H., Gauthier, I. (2005). Neural activation to characters of expertise. *Human Brain Mapping*, Toronto, Ontario, Canada.

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Gauthier, I., **James, K.H.**, James, T.W., Jobard, G., Wong, A C-N. (2004). Selectivity for letters in the left fusiform gyrus. *Society for Neurosciences*, San Diego, CA.

**James, K.H.**, Martelli, M., James, T.W., Majaj, N., Pelli, D.G. & Gauthier, I. (2004). fMRI reveals the role of the left fusiform gyrus in letter detection. *Vision Sciences Society*, Sarasota, FL.

**James, K.H.**, Wong, CN, & Gauthier, I. (2003). fMRI activation to letters: A different picture from letter strings and individual letters. *Human Brain Mapping*, New York, NY.

**James, K.H.**, Roy, S.P, & Gauthier, I. (2003). Visual perception is affected by motor experience: Evidence from letter recognition. *Vision Sciences Society*, Sarasota, FL.

**James, K.H.**, Humphrey, G.K., & Goodale, M.A. (2002). Exploring novel objects: What do we look at? *Vision Sciences Society*, Sarasota, FL.

**James, K.H.**, Humphrey, G.K., Vilis, T. Corrie, B. & Goodale, M.A. (2001). Learning to Recognize Objects in a Virtual Environment. *Vision Sciences Society*, Sarasota, FL.

**James, K.H.**, Humphrey, G.K., Vilis, T. & Goodale, M.A. (2000). Learning to recognize objects: Effects of active exploration and passive viewing. *National Research Council conference for Deans and Presidents of Canadian Universities*. Location?

**James, K.H.**, Humphrey, G.K. & Goodale, M.A. (2000). Matching objects after active exploration and passive viewing. *Southern Ontario Neuroscience Association*, London, ON.

**James, K.H.**, Humphrey, G.K. & Goodale, M.A. (2000). Active exploration and passive viewing of novel objects: Effects on recognition and perceptual matching. *Southern Ontario Neuroscience Association*, London, ON.

**Harman, K.L.**, Humphrey, G.K. & Goodale, M.A. (1999). The effects of self directed exploration on the recognition of novel, 3D objects. *Association for the Scientific Study of Consciousness*, London, ON.

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**Harman, K.L.** & Humphrey, G.K. (1998). Recognizing novel 3d objects: Effects of training and test tasks. *Canadian Society for the Study of Brain, Behaviour and Cognitive Science*, Ottawa, ON.

**Harman, K.L.** & Humphrey, G.K. (1998). Encoding 'regular' and 'random' sequences of views of three-dimensional objects rotating in depth. *Association for Research in Vision and Ophthalmology*, Ft. Lauderdale, FL.

**Harman, K.L.** & Moscovitch, M. (1996). Part based and holistic processing of faces and objects: An investigation of the inversion effect. *Canadian Society for the Study of Brain, Behaviour and Cognitive Science*, Montreal, PQ.