



Joseph Baker

Instructor, Psychiatry and Behavioral Sciences - Center for Interdisciplinary Brain Sciences Research

 Curriculum Vitae available Online

Bio

ACADEMIC APPOINTMENTS

- Instructor, Psychiatry and Behavioral Sciences - Center for Interdisciplinary Brain Sciences Research
- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- Career Development Award (K99/R00), NICHD (2018 - 2023)
- NIH Loan Repayment Award, NICHD (2018 - 2020)
- CNI Seed-grant Award, Stanford Center for Cognitive and Neurobiological Imaging (2017)
- Evolutionary Precursors and Early Development of Basic Number Processing Conference Travel Award, NIH (2013)
- Dissertation Award, Utah State University (2012 - 2013)
- Walter R. Borg Scholarship and Research Productivity Award, Utah State University, Department of Psychology (2010)
- Robert E. Prytulla Scholarship for Excellence in Psychological Studies, Middle Tennessee State University, Department of Psychology (2007)

PROFESSIONAL EDUCATION

- Postdoctoral Fellowship, Center for Interdisciplinary Brain Sciences Research, Division of Brain Sciences, School of Medicine, Stanford University (2013)
- Ph.D., Utah State University , Experimental Psychology (2013)
- M.A., Middle Tennessee State University , Cognitive Psychology (2009)
- B.A., New Mexico State University , Psychology (2004)

Research & Scholarship

CLINICAL TRIALS

- Effect of Turner Syndrome on Number Sense, Not Recruiting

Publications

PUBLICATIONS

- **fNIRS measurement of cortical activation and functional connectivity during a visuospatial working memory task.** *PLoS one*
Baker, J. M., Bruno, J. L., Gundran, A., Hosseini, S. M., Reiss, A. L.
2018; 13 (8): e0201486
- **Portable Functional Neuroimaging as an Environmental Epidemiology Tool: A How-To Guide for the Use of fNIRS in Field Studies** *ENVIRONMENTAL HEALTH PERSPECTIVES*
Baker, J. M., Rojas-Valverde, D., Gutierrez, R., Winkler, M., Fuhrmann, S., Eskenazi, B., Reiss, A. L., Moral, A. M.

2017; 125 (9): 094502

- **Sex differences in neural and behavioral signatures of cooperation revealed by fNIRS hyperscanning** *SCIENTIFIC REPORTS*
Baker, J. M., Liu, N., Cui, X., Vrticka, P., Sagar, M., Hosseini, S. M., Reiss, A. L.
2016; 6
- **A meta-analysis of math performance in Turner syndrome.** *Developmental medicine and child neurology*
Baker, J. M., Reiss, A. L.
2016; 58 (2): 123-130
- **Prenatal exposure to organophosphate pesticides and functional neuroimaging in adolescents living in proximity to pesticide application.** *Proceedings of the National Academy of Sciences of the United States of America*
Sagiv, S. K., Bruno, J. L., Baker, J. M., Palzes, V., Kogut, K., Rauch, S., Gunier, R., Mora, A. M., Reiss, A. L., Eskenazi, B.
2019
- **Manganese exposure and working memory-related brain activity in smallholder farmworkers in Costa Rica: Results from a pilot study** *ENVIRONMENTAL RESEARCH*
Palzes, V. A., Sagiv, S. K., Baker, J. M., Rojas-Valverde, D., Gutierrez-Vargas, R., Winkler, M. S., Fuhrmann, S., Staudacher, P., Menezes-Filho, J. A., Reiss, A. L., Eskenazi, B., Mora, A. M.
2019; 173: 539–48
- **Manganese exposure and working memory-related brain activity in smallholder farmworkers in Costa Rica: Results from a pilot study.** *Environmental research*
Palzes, V. A., Sagiv, S. K., Baker, J. M., Rojas-Valverde, D., Gutierrez-Vargas, R., Winkler, M. S., Fuhrmann, S., Staudacher, P., Menezes-Filho, J. A., Reiss, A. L., Eskenazi, B., Mora, A. M.
2019; 173: 539–48
- **Inter-brain synchrony in mother-child dyads during cooperation: An fNIRS hyperscanning study** *NEUROPSYCHOLOGIA*
Miller, J. G., Vrticka, P., Cui, X., Shrestha, S., Hosseini, S., Baker, J. M., Reiss, A. L.
2019; 124: 117–24
- **Exposure to Pesticides and Health Effects on Farm Owners and Workers From Conventional and Organic Agricultural Farms in Costa Rica: Protocol for a Cross-Sectional Study.** *JMIR research protocols*
Fuhrmann, S., Winkler, M. S., Staudacher, P., Weiss, F. T., Stamm, C., Eggen, R. I., Lindh, C. H., Menezes-Filho, J. A., Baker, J. M., Ramirez-Munoz, F., Gutierrez-Vargas, R., Mora, A. M.
2019; 8 (1): e10914
- **Inter-Brain Synchrony in Mother-Child Dyads During Cooperation: An fNIRS Hyperscanning Study.** *Neuropsychologia*
Miller, J. G., Vrticka, P., Cui, X., Shrestha, S., Hosseini, S. M., Baker, J. M., Reiss, A. L.
2018
- **Mind over motor mapping: Driver response to changing vehicle dynamics.** *Human brain mapping*
Bruno, J. L., Baker, J. M., Gundran, A., Harbott, L. K., Stuart, Z., Piccirilli, A. M., Hosseini, S. M., Gerdes, J. C., Reiss, A. L.
2018
- **Neural, physiological, and behavioral correlates of visuomotor cognitive load** *Scientific Reports*
Hosseini, S., Bruno, J. L., Baker, J. M., Gundran, A., Harbott, L. K., Gerdes, J., Reiss, A. L.
2017; 8866
- **Neural, physiological, and behavioral correlates of visuomotor cognitive load.** *Scientific reports*
Hosseini, S. M., Bruno, J. L., Baker, J. M., Gundran, A., Harbott, L. K., Gerdes, J. C., Reiss, A. L.
2017; 7 (1): 8866
- **A Proof of Concept Study of Function-Based Statistical Analysis of fNIRS Data: Syntax Comprehension in Children with Specific Language Impairment Compared to Typically-Developing Controls** *FRONTIERS IN BEHAVIORAL NEUROSCIENCE*
Fu, G., Wan, N. J., Baker, J. M., Montgomery, J. W., Evans, J. L., Gillam, R. B.
2016; 10
- **Using Open-Response Fraction Items to Explore the Relationship Between Instructional Modalities and Students' Solution Strategies** *INTERNATIONAL JOURNAL OF EDUCATION IN MATHEMATICS SCIENCE AND TECHNOLOGY*
Shumway, J. F., Moyer-Packenham, P. S., Baker, J. M., Westenskow, A., Anderson-Pence, K. L., Tucker, S. I., Boyer-Thurgood, J., Jordan, K. E.

2016; 4 (2): 112–32

- **Cortical Activations During a Computer-Based Fraction Learning Game: Preliminary Results from a Pilot Study** *TECHNOLOGY KNOWLEDGE AND LEARNING*
Baker, J. M., Martin, T., Aghababayan, A., Armaghanyan, A., Gillam, R.
2015; 20 (3): 339–55
- **Sensitivity of fNIRS measurement to head motion: An applied use of smartphones in the lab.** *Journal of neuroscience methods*
Cui, X., Baker, J. M., Liu, N., Reiss, A. L.
2015; 245: 37-43
- **Multiple visual quantitative cues enhance discrimination of dynamic stimuli during infancy.** *Journal of experimental child psychology*
Baker, J. M., Mahamane, S. P., Jordan, K. E.
2014; 122: 21-32
- **The evolution of self-control.** *Proceedings of the National Academy of Sciences of the United States of America*
MacLean, E. L., Hare, B., Nunn, C. L., Addessi, E., Amici, F., Anderson, R. C., Aureli, F., Baker, J. M., Bania, A. E., Barnard, A. M., Boogert, N. J., Brannon, E. M., Bray, et al
2014; 111 (20): E2140-8
- **Predictors of Achievement When Virtual Manipulatives are Used for Mathematics Instruction** *REDIMAT-REVISTA DE INVESTIGACION EN DIDACTICA DE LAS MATEMATICAS*
Moyer-Packenham, P. S., Baker, J., Westenskow, A., Anderson-Pence, K. L., Shumway, J. F., Jordan, K. E.
2014; 3 (2): 121-+
- **The impact of emotion on numerosity estimation** *FRONTIERS IN PSYCHOLOGY*
Baker, J. M., Rodzon, K. S., Jordan, K.
2013; 4
- **A study comparing virtual manipulatives with other instructional treatments in third- and fourth-grade classrooms** *Journal of Education*
Moyer-Packenham, P., Baker, J. M., Westenskow, A., Anderson, K., Shumway, J., Rodzon, K., Jordan, K. E.
2013; 193 (2): 25-39
- **A shared system of representation governing quantity discrimination in canids.** *Frontiers in psychology*
Baker, J. M., Morath, J., Rodzon, K. S., Jordan, K. E.
2012; 3: 387-?
- **Tracking of food quantity by coyotes (Canis latrans)** *BEHAVIOURAL PROCESSES*
Baker, J. M., Shivik, J., Jordan, K. E.
2011; 88 (2): 72-75
- **Multisensory information boosts numerical matching abilities in young children** *DEVELOPMENTAL SCIENCE*
Jordan, K. E., Baker, J.
2011; 14 (2): 205-213