Stanford

# John P. Hegarty II

Instructor, Psychiatry and Behavioral Sciences - Child and Adolescent Psychiatry

Curriculum Vitae available Online

## Bio

### BIO

The overarching goal of my research is to identify neurobiological subgroups and develop objective biomarkers for individuals with psychiatric and neurological disorders in order to improve biologically-based diagnosis and advance the development of precision medicine for mental health. Biologically-based diagnosis and treatment are extremely limited for some psychiatric conditions, especially neurodevelopmental disorders such as autism spectrum disorder (ASD), but also critically-needed to increase early identification and improve treatment outcomes. My early career training has focused on developing expertise in non-invasive neuroimaging approaches for examining participants ranging from young children to adults and my research has focused on identifying the neurobiology underlying typical and atypical neurodevelopment.

Thus far in my early research career, my primary contributions to science fall within four major categories:
1) identifying the neural correlates of different cognitive and behavioral deficits, 2) investigating the neurobiological substrates of treatment response, 3) examining the etiological factors that contribute to atypical brain development in children with autism, and 4) summarizing and increasing accessibility to autism-related research. My earliest research investigated the neurobiology associated with the cognitive deficits of alexithymia, dyslexia, and stress to further develop theories of the underlying mechanisms that contribute to differences in cognitive and behavioral processing. My subsequent dissertation research, in which I began to focus on neurodevelopmental disorders, examined the neural correlates of treatment response to beta-blockers in adults with ASD and also assessed the contribution of cerebellar circuits to autism-related symptoms, which is well-supported from postmortem studies but understudied in clinical populations. During my postdoctoral training, I have been further developing skills for working with young children with and without neurodevelopmental disorders as well as utilizing advanced neuroimaging and neurophysiological approaches to examine the biological mechanisms underlying different types of cognitive and behavioral symptoms. My most recent research has focused on examining the neural correlates of response to behavioral interventions as well as examining the etiological factors that contribute to atypical brain development in twins with autism. The independent line of research that I will continue to develop in my research lab will aim to improve our understanding of typical and atypical brain development and identify objective biomarkers for advancing precision medicine.

### ACADEMIC APPOINTMENTS

- Instructor, Psychiatry and Behavioral Sciences - Child and Adolescent Psychiatry
- Member, Maternal & Child Health Research Institute (MCHRI)

### LINKS

- ORCID: https://orcid.org/0000-0002-3533-5527
- http://med.stanford.edu/autism.html: http://med.stanford.edu/autism.html

# Teaching

## GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Child Psychiatry (Fellowship Program)

# Publications

## PUBLICATIONS

- **Genetic and environmental influences on structural brain measures in twins with autism spectrum disorder** *MOLECULAR PSYCHIATRY*
  Hegarty, J. P., Pegoraro, L. L., Lazzeroni, L. C., Raman, M. M., Hallmayer, J. F., Monterrey, J. C., Cleveland, S. C., Wolke, O. N., Phillips, J. M., Reiss, A. L., Hardan, A. Y.
  2020; 25 (10): 2556–66

- **Frequency Drift in MR Spectroscopy at 3T.** *NeuroImage*
  Hui, S. C., Mikkelsen, M., Zollner, H. J., Ahluwalia, V., Alcauter, S., Baltusis, L., Barany, D. A., Barlow, L. R., Becker, R., Berman, J. I., Berrington, A., Bhattacharyya, P. K., Blicher, et al
  2021: 118430

- **Effects of stress on functional connectivity during verbal processing.** *Brain imaging and behavior*
  Nair, N., Hegarty, J. P., Ferguson, B. J., Hooshmand, S. J., Hecht, P. M., Tilley, M., Christ, S. E., Beversdorf, D. Q.
  2019

- **A pilot investigation of neuroimaging predictors for the benefits from pivotal response treatment for children with autism.** *Journal of psychiatric research*
  Hegarty, J. P., Gengoux, G. W., Berquist, K. L., Millan, M. E., Tamura, S. M., Karve, S., Rosenthal, M. D., Phillips, J. M., Hardan, A. Y.
  2019; 111: 140–44

- **Genetic and environmental influences on cortico-striatal circuits in twins with autism.** *Genetic and environmental influences on cortico-striatal circuits in twins with autism.*
  Hegarty, J. P., Lazzeroni, L. C., Raman, M. M., Hallmayer, J. C., Cleveland, S. C., Phillips, J. M., Reiss, A. L., Hardan, A. Y.
  2019

- **Effects of stress on functional connectivity during problem solving.** *NeuroImage*
  Nair, N. n., Hegarty, J. P., Ferguson, B. J., Hecht, P. M., Tilley, M. n., Christ, S. E., Beversdorf, D. Q.
  2019: 116407

- **Beta-adrenergic antagonism alters functional connectivity during associative processing in a preliminary study of individuals with and without autism.** *Autism : the international journal of research and practice*
  Hegarty, J. P., Zamzow, R. M., Ferguson, B. J., Christ, S. E., Porges, E. C., Johnson, J. D., Beversdorf, D. Q.
  2019: 1362361319868633

- **Genetic and Environmental Influences on Lobar Brain Structures in Twins With Autism.** *Cerebral cortex (New York, N.Y. : 1991)*
  Hegarty, J. P., Lazzeroni, L. C., Raman, M. M., Pegoraro, L. F., Monterrey, J. C., Cleveland, S. C., Hallmayer, J. F., Wolke, O. N., Phillips, J. M., Reiss, A. L., Hardan, A. Y.
  2019

- **Brain connectivity theories of autism** *Encyclopedia of Autism Spectrum Disorders*
  Hegarty, J. P., Hardan, A. Y., Muller, R.
  Springer-Verlag.2019; 2nd

- **Cerebro-Cerebellar Functional Connectivity is Associated with Cerebellar Excitation-Inhibition Balance in Autism Spectrum Disorder** *JOURNAL OF AUTISM AND DEVELOPMENTAL DISORDERS*
  Hegarty, J. P., Weber, D. J., Cirstea, C. M., Beversdorf, D. Q.
  2018; 48 (10): 3460–73

- **Corpus callosum** *Encyclopedia of Autism Spectrum Disorders*
  Hegarty, J. P., Hardan, A. Y., Frazier, T. W.
  Springer-Verlag.2018; 2nd

- **Corpus callosum abnormalities in autism** *Encyclopedia of Autism Spectrum Disorders*
  Hegarty, J. P., Hardan, A. Y., Frazier, T. W.
  Springer-Verlag.2018; 2nd

- **Agenesis of the corpus callosum** *Encyclopedia of Autism Spectrum Disorders*
  Hegarty, J. P., Hardan, A. Y., Frazier, T. W.
  Springer-Verlag.2018; 2nd

- **A proton MR spectroscopy study of the thalamus in twins with autism spectrum disorder.** *Progress in neuro-psychopharmacology & biological psychiatry*
  Hegarty, J. P., Gu, M. n., Spielman, D. M., Cleveland, S. C., Hallmayer, J. F., Lazzeroni, L. C., Raman, M. M., Frazier, T. W., Phillips, J. M., Reiss, A. L., Hardan, A. Y.
  2017

- **Beta-adrenergic antagonism modulates functional connectivity in the default mode network of individuals with and without autism spectrum disorder.** *Brain imaging and behavior*
  Hegarty, J. P., Ferguson, B. J., Zamzow, R. M., Rohowetz, L. J., Johnson, J. D., Christ, S. E., Beversdorf, D. Q.
  2016: -?

- **Morphological differences in the lateral geniculate nucleus associated with dyslexia** *NEUROIMAGE-CLINICAL*
  Giraldo-Chica, M., Hegarty, J. P., Schneider, K. A.
  2015; 7: 830-836

- **Alexithymia and Impairment of Decoding Positive Affect: An fMRI Study** *JOURNAL OF COMMUNICATION*
  Hesse, C., Floyd, K., Rauscher, E. A., Frye-Cox, N. E., Hegarty, J. P., Peng, H.
  2013; 63 (4): 786-806