

Nathan Spreng

Web Bio

Information

Biography

Biographical Statement

I am an assistant professor and the director of the Laboratory of Brain and Cognition in the Department of Human Development at Cornell University. My research examines large-scale brain network dynamics and their role in cognition. Currently, I am investigating the link between autobiography and imagination, how we conceive of the future, and successful navigation of the social world. These investigations extend to the related processes of memory, cognitive control, and social cognition and the interacting brain networks that support them. I am also actively involved in the development and implementation of multivariate and network-based statistical approaches to assess brain activity. In doing so, I hope to better understand the properties of the brain networks underlying complex cognitive processes as they change across the lifespan.

Teaching

Professional

Research

Current Research Activities

I currently have an active program of cognitive neuroscience and aging research into brain network dynamics of goal-directed cognition and behavior across the adult lifespan. This program involves both behavioral and neuroimaging data collection and analysis.

Extension

Education

Education

- B.A., Sarah Lawrence College, Bronxville, NY
- M.A. & Ph.D., Psychology, University of Toronto, ON
- Postdoctoral Fellow, Rotman Research Institute at Baycrest, Toronto, ON
- Postdoctoral Fellow, Department of Psychology, Harvard University, Cambridge, MA

Courses

Courses Taught

HD 4630: Introduction to functional MRI analysis for human neuroimaging (Spring)

HD 4730: Network Neuroscience: Selected Topics (Spring)

HD 2200: Human brain and mind: An introduction to cognitive neuroscience & neurology (Fall)

Websites

Related Websites

<http://lbc.human.cornell.edu/>

<http://scholar.google.com/citations?user=-9vw5MIAAAAJ&hl=en>

Administration

Publications

Selected Publications

Spreng, R.N., DuPre, E., Selarka, D., Garcia, J., Gojkovic, S., Mildner, J., Luh, W.-M. & Turner, G.R. (2014). Goal-congruent default network activity facilitates cognitive control. *Journal of Neuroscience*, 34, 14108-14111.

Andrews-Hanna, J.R., Smallwood, J. & Spreng, R.N. (2014). The default network and self-generated thought: Component processes, dynamic control, and clinical relevance. *Annals of the New York Academy of Sciences*, 1316, 29-52.

Stevens, W.D. & Spreng, R.N. (2014). Resting-state functional connectivity MRI reveals active processes central to cognition. *Wiley International Reviews (WIREs) Cognitive Science*, 5, 233-245.

*Hassabis, D., *Spreng, R.N., Rusu, A.A., Robbins, C.A., Mar, R.A. & Schacter, D.L. (2014). Imagine all the people: How the brain creates and uses personality models to predict behavior. *Cerebral Cortex*, 24, 1979-1987. *co-first authors

Spreng, R.N. & Turner, G.R. (2013). Structural covariance of the default network in healthy and pathological aging. *Journal of Neuroscience*, 33, 15226 - 15234.

Spreng, R.N., Sepulcre, J., Turner, G.R., Stevens, W.D. & Schacter, D.L. (2013). Intrinsic architecture underlying the relations among the default, dorsal attention, and frontoparietal control networks of the human brain. *Journal of Cognitive Neuroscience*, 25, 74-86.

Spreng, R.N. & Schacter, D.L. (2012). Default network modulation and large-scale network interactivity in healthy young and old adults. *Cerebral Cortex*, 22, 2610-2621.

Spreng, R.N., Stevens, W.D., Chamberlain, J., Gilmore, A.W. & Schacter, D.L. (2010).

Default network activity, coupled with the frontoparietal control network, supports goal-directed cognition. *NeuroImage*, 31, 303-317.

Spreng, R.N. & Grady, C. (2010). Patterns of brain activity supporting autobiographical memory, prospection and theory-of-mind and their relationship to the default mode network. *Journal of Cognitive Neuroscience*, 22, 1112-1123.

Spreng, R.N., Mar, R.A. & Kim, A.S.N. (2009). The common neural basis of autobiographical memory, prospection, navigation, theory of mind and the default mode: A quantitative meta-analysis. *Journal of Cognitive Neuroscience*, 21, 489-510.

A more complete list:

[http://www.ncbi.nlm.nih.gov/pubmed?term=%22Spreng%20RN%22\[Author\]](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Spreng%20RN%22[Author])