# **EMILY S. FINN**

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## ACADEMIC APPOINTMENTS

2020- Assistant Professor
Department of Psychological and Brain Sciences, Dartmouth College

## **EDUCATION & TRAINING**

2017-2020	Postdoctoral Fellow, National Institute of Mental Health, Bethesda, Md.
	Section on Functional Imaging Methods, Laboratory of Brain & Cognition
	Mentor: Peter A. Bandettini, Ph.D.

2012-2017 Ph.D., Yale University, New Haven, Conn.Neuroscience, with Distinction, awarded May 2017Advisor: R. Todd Constable, Ph.D.

2005-2009 B.A., Yale University, New Haven, Conn. Linguistics, with Distinction, *summa cum laude* 

## RESEARCH SUPPORT

2020-2022	NARSAD Young Investigator Award, Brain & Behavior Foundation
2019-2024	PI, K99MH120257, National Institute of Mental Health
	K99R00 Pathway to Independence Award: Linking brain activity during naturalistic tasks to individual phenotypes on the depression spectrum
2014-2017	National Science Foundation Graduate Research Fellowship
2012-2014	Gruber Foundation Graduate Fellowship

## **AWARDS & FELLOWSHIPS**

2019	NIMH Director's Award for Scientific Contributions
2019	Maryland Neuroimaging Retreat Early Career Scholar
2018	Fellowship, Methods in Neuroscience at Dartmouth Computational Summer School
2016	Merit Abstract Award, Organization for Human Brain Mapping

2012	Best Poster Award, Yale Bioimaging Sciences Retreat
2009	Phi Beta Kappa
2009	Daniel E. Merriman Prize for Outstanding Leadership, Yale University
2005	Robert C. Byrd Scholar, Connecticut
2005	National Merit Scholar

#### PEER-REVIEWED PUBLICATIONS

Rosenberg MD, Scheinost D, Greene AS, Avery EW, Kwon YH, **Finn ES**, Ramani R, Qiu M, Constable RT, Chun MM. (2020). Functional connectivity predicts changes in attention over minutes, days, and months. *Proceedings of the National Academy of Sciences*, in press.

Huber L, **Finn ES**, Handwerker DA, Boenstrup M, Glen D, Kashyap S, Ivanov D, Petridou N, Marrett S, Goense J, Poser B, Bandettini PA. (2020). Sub-millimeter fMRI reveals multiple topographical digit representations that form action maps in human motor cortex. *NeuroImage*, in press.

Chen G, Taylor PA, Qu X, Molfese PJ, Bandettini PA, Cox RW, **Finn ES**. (2020). Untangling the Relatedness among Correlations, Part III: Inter-Subject Correlation Analysis through Bayesian Multilevel Modeling for Naturalistic Scanning. *NeuroImage*, in press.

**Finn ES**, Huber L, Jangraw DC, Molfese PJ, Bandettini PA. (2019). Layer-dependent activity in human prefrontal cortex during working memory. *Nature Neuroscience*, 22 (10): 1687-1695.

Lake EMR, **Finn ES**, Noble SM, Vanderwal T, Shen X, Rosenberg MD, Spann MN, Chun MM, Constable RT. The functional brain organization of an individual predicts measures of social abilities in autism spectrum disorder. *Biological Psychiatry*, 86 (4): 315-326.

**Finn ES**, Corlett PR, Chen G, Bandettini PA, Constable RT. (2018). Trait paranoia shapes inter-subject synchrony in brain activity during an ambiguous social narrative. *Nature Communications*, **9**, 2043.

Horien C, Noble S, **Finn ES**, Shen X, Scheinost D, Constable RT. (2018). Considering factors affecting the connectome-based identification process: Comment on Waller et al. *NeuroImage*, 169: 172-175.

**Finn ES**, Scheinost D, Finn DM, Shen X, Papademetris X, Constable RT. (2017). Can brain state be manipulated to emphasize individual differences in functional connectivity? *NeuroImage*, 160: 140-151.

Vanderwal T, Eilbott J, **Finn ES**, Craddock RC, Turnbull A, Castellanos FX. (2017). Individual differences in functional connectivity during naturalistic viewing conditions. *NeuroImage*, 157: 521-530.

Rosenberg MD, **Finn ES**, Scheinost D, Constable RT, Chun MM. (2017). Characterizing attention with predictive network models. *Trends in Cognitive Sciences*, 21: 290-302.

Shen X, **Finn ES**, Scheinost D, Rosenberg MD, Chun MM, Papademetris X, Constable RT. (2017). Using connectome-based predictive modeling to predict individual behavior from brain connectivity. *Nature Protocols* 12: 506-18.

Scheinost D, Tokoglu F, Shen X, **Finn ES**, Noble S, Papademetris X, Constable RT. (2016). Fluctuations in global brain activity are associated with changes in whole-brain connectivity of functional networks. *IEEE Transactions on Biomedical Engineering*, 63(12): 2540–2549.

Pinango MM, Finn ES, Lacadie C, Constable RT. (2016). The localization of long-distance dependency components: Integrating the focal-lesion and neuroimaging record. *Frontiers in Psychology*, 7: article 1434.

Noble S, Scheinost D, **Finn ES**, Shen X, [...], Cannon TD, Constable RT. (2017) Multisite reliability of MR-based functional connectivity. *NeuroImage*, 146: 959-970.

**Finn ES**, Constable RT. (2016). Individual variation in functional brain connectivity and its implications for personalized approaches to psychiatric disease. *Dialogues in Clinical Neuroscience*, 18(3): 277–287.

Rosenberg MD, Zhang S, Hsu WT, Scheinost D, **Finn ES**, Shen X, Constable RT, Li C, Chun MM. (2016). Methylphenidate modulates functional network connectivity to enhance attention. *Journal of Neuroscience*, 36(37): 9547–9557.

Rosenberg MD\*, **Finn ES**\*, Scheinost D, Shen X, Papademetris X, Constable RT, Chun MM. (2016) A neuromarker of sustained attention from whole-brain functional connectivity. *Nature Neuroscience*, 19: 165–171.

\*Authors contributed equally

**Finn ES\***, Shen X\*, Scheinost D, Rosenberg MD, Huang J, Chun MM, Papademetris X, Constable RT. (2015) Functional connectome fingerprinting: Identifying individuals using patterns of brain connectivity. *Nature Neuroscience*, 18: 1664–1671.

\**Authors contributed equally* 

Press coverage: BBC, NBC, PBS, CBS, Newsweek, Scientific American, Discover, Wired, Nature News, The Scientist

Companion article for lay reader: TheConversation.com

Powers III AR, Ganscos MG, Finn ES, Morgan PT, Corlett PR. (2015). Ketamine-induced hallucinations. *Psychopathology*, 48 (6): 376-385.

Garrison KA, Scheinost D, **Finn ES**, Shen X, Constable RT. (2015) The (in)stability of functional brain network measures across thresholds. *NeuroImage*, 118: 651-661.

Rosenberg MD, **Finn ES**, Constable RT, Chun MM. (2015) Predicting moment-to-moment attentional state. *NeuroImage*, 114: 249-256.

Scheinost D, **Finn ES**, Tokoglu F, Shen X, Papademetris X, Hampson M, Constable RT. (2015). Sex differences in normal age trajectories of functional brain networks. *Human Brain Mapping*, 36(4): 1524-1535.

**Finn ES**, Shen X, Holahan JM, Scheinost D, Lacadie C, Papademetris X, Shaywitz SE, Shaywitz BA, Constable RT. (2014) Disruption of functional networks in dyslexia: A whole-brain, data-driven analysis of connectivity. *Biological Psychiatry*, 76(5): 397-404.

Scheinost D, Shen X, **Finn ES**, Sinha R, Constable RT, Papademetris X. (2014) Coupled intrinsic connectivity distribution analysis: A method for exploratory connectivity analysis of paired fMRI data. *PLoS ONE*, 9(3): e93544.

Constable RT, Scheinost D, **Finn ES**, Shen X, Hampson M, Winstanley FS, Spencer DD, Papademtris X. (2013) Potential use and challenges of functional connectivity mapping in intractable epilepsy. *Frontiers in Neurology*, 4 May: 39.

## **PREPRINTS**

**Finn ES**, Glerean E, Khojandi AY, Nielson D, Molfese PJ, Handwerker DA, Bandettini PA. Idiosynchrony: From shared responses to individual differences during naturalistic neuroimaging. [in revision] PsyArXiv: https://doi.org/10.31234/osf.io/yeu89

## **BOOK CHAPTERS**

**Finn ES**, Scheinost D, Shen X, Papademetris X, Constable RT. Methodological Issues in fMRI Functional Connectivity and Network Analysis. In *Brain Mapping: An Encyclopedic Reference*, ed. Toga, AW, Elsevier Inc., San Diego, 2015, pp. 697-704.

#### **INVITED CONFERENCE TALKS**

4	2020	Brain Connectivity Workshop, Toronto, ON, Canada (upcoming)
2	2019	Brain Health & Performance Summit, The Ohio State University
2	2019	Social & Affective Neuroscience Society, Miami, Fl.
2	2019	Maryland Neuroimaging Retreat, Baltimore, Md. (Early Career Scholar)
2	2018	4th Biennial Brain Function Workshop, Whistler-Blackcomb, BC, Canada
2	201 <i>7</i>	Brainhack DC, Washington, DC
4	201 <i>7</i>	South by Southwest, Austin, TX
2	2017	Brainhack NYC (keynote), Child Mind Institute, New York, NY
4	2016	Fifth Biennial Conference on Resting State Brain Connectivity, Vienna, Austria
4	2016	3 <sup>rd</sup> Biennial Brain Function Workshop, Whistler-Blackcomb, BC, Canada

2015	American Society for Neuroradiology Annual Meeting, Chicago, Ill.
2014	2 <sup>nd</sup> Biennial Brain Function Workshop, Whistler-Blackcomb, BC, Canada

## INVITED SEMINARS & COLLOQUIA

2019	Georgetown Methods Lab, Georgetown Psychology, Washington, D.C.
2019	Hasson Lab Seminar, Princeton University, Princeton, N.J.
2019	Chen/Honey Lab Seminar, Johns Hopkins University, Baltimore, Md.
2019	Dept. of Psychological & Brain Sciences, Dartmouth College, Hanover, N.H.
2019	Nathan S. Kline Institute, Orangeburg, N.Y.
2018	Aly/Baldassano Lab Seminar, Columbia Psychology, New York, N.Y.
2018	NIMH Julius Axelrod Symposium, Bethesda, Md.
2017	NIMH Clinical & Translational Neurosciences Branch, Bethesda, Md.
2017	Johns Hopkins/Kennedy Krieger Institute, Baltimore, Md.
2016	Centre for Functional MRI of the Brain (FMRIB), University of Oxford, UK
2016	Max Planck Institute, University College London, UK
2016	National Institute of Mental Health, Bethesda, Md.
2015	Kavli Brain Coffee Hour, Yale Institute for Network Science, New Haven, Conn.
2014	Yale Magnetic Resonance Research Center Seminar Series, New Haven, Conn.

## CONTRIBUTED CONFERENCE TALKS

2020	Organization for Human Brain Mapping, Montreal (Ed. Workshop, upcoming)
2019	Organization for Human Brain Mapping, Rome, Italy
2018	Society for Neuroscience, San Diego, CA
2018	Organization for Human Brain Mapping, Singapore
2017	Society for Neuroscience, Washington, DC
2017	Computational Neuroscience Society, Antwerp, Belgium
2017	Organization for Human Brain Mapping, Vancouver, BC (Symposium)
2017	Organization for Human Brain Mapping, Vancouver, BC (Educational Workshop)
2017	Society of Biological Psychiatry, San Diego, CA
2012	Society for Neuroscience, New Orleans, LA

## **CONFERENCE POSTER PRESENTATIONS**

(selected; first author only)

**Finn ES**, Khojandi AY, Molfese PJ, Handwerker DA, Bandettini PA. Inter-subject representational similarity analysis reveals brain-phenotype relationships during movie watching. Organization for Human Brain Mapping, June 2019, Rome.

**Finn ES**, Huber L, Jangraw DC, Molfese PJ, Bandettini PA. Layer-dependent activity in human prefrontal cortex during working memory. Organization for Human Brain Mapping, June 2019, Rome.

- **Finn ES**, Corlett PR, Chen G, Constable RT, Bandettini PA. Trait paranoia shapes inter-subject synchrony in brain activity during an ambiguous social narrative. Organization for Human Brain Mapping, June 2018, Singapore.
- **Finn ES**, Corlett PR, Chen G, Constable RT, Bandettini PA. Trait paranoia shapes inter-subject synchrony in brain activity during an ambiguous social narrative. Organization for Human Brain Mapping, June 2018, Singapore.
- **Finn ES**, Scheinost D, Finn DM, Shen X, Papademetrix X, Constable RT. Can brain state be manipulated to emphasize individual differences in functional connectivity? Organization for Human Brain Mapping, June 2017, Vancouver, BC.
- **Finn ES**, Shen X, Scheinost D, Qiu M, Corlett PR, Constable RT. Investigating the stability of the functional connectome fingerprint under anesthetic drugs. Conference on Resting State / Brain Connectivity, September 2016, Vienna.
- **Finn ES**, Shen X, Scheinost D, Qiu M, Corlett PR, Constable RT. Investigating the stability of the functional connectome fingerprint under anesthetic drugs. Organization for Human Brain Mapping, June 2016, Geneva.
- **Finn ES**, Shen X, Scheinost D, Rosenberg MD, Huang J, Chun MM, Papademetris X, Constable RT. The individual brain connectome predicts fluid intelligence. Organization for Human Brain Mapping, June 2015, Honolulu, HI.
- **Finn ES**, Tokoglu F, Shen X, Hoffman RE, Constable RT. Resting-state brain networks predict severity of auditory hallucinations in schizophrenia. Society for Neuroscience Annual Meeting, Nov 2014, Washington, DC.
- **Finn ES**, Rosenberg MD, Shen X, Scheinost D, Papademetris X, Chun MM, Constable RT. Complex brain networks at rest predict individual working memory and attentional performance. Fourth Biennial Conference on Resting State/Brain Connectivity, Sept 2014, Cambridge, MA.
- **Finn ES**, Scheinost D, Hampson M, Shen X, Tokoglu F, Papademetris X, Constable RT. Sex differences in functional brain organization detected using a novel voxelwise, threshold-free measure of intrinsic connectivity. Poster presented at The Networked Brain, a Cell symposium prior to Society for Neuroscience Annual Meeting, Nov 2013, San Diego.
- **Finn ES**, Rosenberg MD, Shen X, Chun MM, Constable RT. Predicting attention and performance across varying task loads from complex networks during task and at rest. Society for Neuroscience Annual Meeting, Nov 2013, San Diego.
- **Finn ES**, Shen X, Holahan JM, Scheinost D, Lacadie C, Papademetris X, Shaywitz SE, Shaywitz BA, Constable RT. Identifying group differences in functional subnetworks: a novel whole-brain

method applied to dyslexia. International Society for Magnetic Resonance in Medicine Annual Meeting, Apr 2013, Salt Lake City.

**Finn ES**, Kim I, Piñango MM. On the status of intermediate gaps in sentence processing. CUNY Conference on Human Sentence Processing, March 2010, New York.

#### **TEACHING**

Summer 2018	Instructor, NIH Neuroimaging Summer Course
Summer 2017	Instructor, Online Brain Intensive course
Fall 2015	Teaching Fellow, Introduction to Cognitive Science (Yale College)
	Prof. April Ruiz
Fall 2013	Teaching Fellow, Introduction to the Human Brain (Yale College)
	Prof. Amy Arnsten

#### **MENTORING**

(trainees for whom I serve(d) as primary or co-primary mentor)

Jessica Huang (high school student; summer 2015, 2016)
Natasha Topolski (post-baccalaureate fellow; fall 2017 – spring 2018)
Amy Loret (undergraduate student; summer 2018)
Dannie Griggs (undergraduate student; summer 2018)
Arman Khojandi (post-baccalaureate fellow; summer 2018 – summer 2019)
Chandler Richards (post-baccalaureate fellow; summer 2019 – present)

## **OUTREACH ACTIVITIES**

2017	NIH Take Your Child to Work Day volunteer activity leader
2012-2016	Yale Neuroscience "Brain Awareness Day" volunteer activity leader
2008-2009	Instructor & Lead Curriculum Developer, EVOLUTIONS After-School Program
	& College Prep Course, Yale Peabody Museum of Natural History (free program
	for public high school students in the New Haven area)

#### SELECTED POPULAR PUBLICATIONS

"How I Learned to Stop Worrying and Love Linguistics". <u>The New York Times</u>, July 20, 2009. "Brain activity is as unique – and identifying – as a fingerprint." <u>TheConversation.com</u>, Oct 12, 2015.

## POPULAR LECTURES

2017	"Can you lie to MRI? The science of mind reading"
	Panel at South by Southwest, Austin, TX
2013	"Mind Reading: Can we do it? Should we?"

## PROFESSIONAL SERVICE

2020-2022 Program Committee, Organization for Human Brain Mapping2018 Abstract reviewer, Organization for Human Brain Mapping

## INSTITUTIONAL SERVICE

2017	NIH Post-bac Poster Day volunteer judge
2014-2016	Yale Magnetic Resonance Research Center Seminar Series organizer
2013-2014	Yale Interdepartmental Neuroscience Program Student-Faculty Lunch organizer
2013	Yale Interdepartmental Neuroscience Program NeuroDay planning committee

## **PROFESSIONAL AFFILIATIONS**

Organization for Human Brain Mapping Society for Neuroscience

## EDITORIAL BOARD MEMBERSHIPS

2018- Network Neuroscience

2017- NeuroImage (special issue guest editor: "Naturalistic Imaging", fall 2019)

## AD HOC MANUSCRIPT REVIEW

Nature Communications Biological Psychiatry Brain Nature Neuroscience **Brain Connectivity** Network Neuroscience Brain Structure & Function New England Journal of Medicine Cerebral Cortex NeuroImage Developmental Cognitive Neuroscience Personality Neuroscience Frontiers in Neuroscience PLoS Computational Biology Human Brain Mapping PLoS ONE Proceedings of the National Academy of Intelligence Journal of Neuroscience Sciences

#### **GRANT REVIEW**

National Science Foundation

## SKILLS/OTHER

Winner, Best Brain Icon, Brain Art Competition 2016 (NeuroBureau/OHBM) Spanish (fluent), French (proficient), German, Russian, Modern Greek (basic) CrossFit Level 1 Trainer