

Zeynep Mevhibe Saygin

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Education and Work Experience

The Ohio State University Assistant Professor Department of Psychology	2017-present
Massachusetts Institute of Technology Postdoctoral Fellow Advised by Nancy Kanwisher	2012-2017
Massachusetts General Hospital Postdoctoral Fellow Advised by Bruce Fischl	2012-2017
Massachusetts Institute of Technology Ph.D. in Systems Neuroscience Thesis: <i>"Structure-Function Relationships in Human Brain Development."</i> Advised by John D.E. Gabrieli & Rebecca R. Saxe	2007-2012
Children's Hospital Boston Technical Assistant Advised by Michael Rivkin	2005-2007
Brown University B.Sc. in Neuroscience Advised by David Sheinberg	2001-2005

Awards and Honors (selected)

Alfred P. Sloan Research Fellow in Neuroscience (2018)
NIH Postdoctoral National Research Award (2014-2017)
Koch Institute Image Awards (2014)
Wellcome Trust Image Awards (2014)
MIT Postdoctoral Association Travel Award (2013)
McGovern Institute Neurotechnology Program (2012-2013)
Sheldon Razin Graduate Student Fellowship (2010-2011)
Human Brain Mapping Trainee Abstract Travel Award (2010)
Angus McDonald Award for Undergraduate Teaching (2010)
MIT Health Science and Technology Catalyst Fund (2010-2011)
MGH Advanced Multimodal Neuroimaging Training Program, Predoctoral Fellow (2009-2010)
Gordon Research Conference: Amygdala in Health & Disease Travel Award (2009)
Presidential Graduate Fellowship (2007-2008)

Grants & Research Support

Chronic Brain Injury Pilot Award (2018; \$24,750). "Longitudinal Assessment of Cognitive and Eye-related Symptoms in Youth Hockey Players - the LACES Youth Hockey Study". PI with Drs Andrew Hartwick, Catherine McDaniel, James MacDonald.

OSU Equipment Grant for SCR (2018; \$6295 joint award w/ Dr. Andy Leber)

FG-2018-10994: Saygin (PI). Alfred P. Sloan Research Fellow in Neuroscience (09/15/2018 - 08/30/2020; \$65,000 annual research support)

F32HD079169: Saygin (PI). NIH Postdoctoral National Research Award (01/01/2014-12/31/2016 \$49,214 (Y1); \$52,190 (Y2); \$53,942 (Y3))

Publications

"Facephenes and rainbows: Causal evidence for functional and anatomical specificity of face and color processing in the human brain." Schalk G., Kapeller C., Guger C., Ogawa H., Hiroshima S., Lafer-Sousa R., **Saygin Z.**, Kamada K., and Kanwisher N. (2017). PNAS doi: 10.1073/pnas.1713447114.

"Integration and Segregation of Default Mode Network Resting- state Functional Connectivity in Transition-age Males with High- functioning Autism Spectrum Disorder: A Proof of Concept Study." Joshi G., Anteraper S., Patil K., Semwal M., Goldin R., Furtak S., Chai X., **Saygin Z.**, Gabrieli J., Biederman J., and Whitfield-Gabrieli S. (2017). Brain Connectivity doi: 10.1089/brain.2016.0483.

"High-resolution magnetic resonance imaging reveals nuclei of the human amygdala: manual segmentation to automatic atlas." **Saygin Z. M.**, Kliemann D., Iglesias E., van der Kouwe, A.J.W., Boyd E., Reuter M., Stevens A., Van Leemput K., McKee A., Frosch M.P., Fischl B., Augustinack J. (2017) NeuroImage, doi: 10.1016/j.neuroimage.2017.04.046.

"Connectivity precedes function in the development of the visual word form area." **Saygin, Z.M.**, Osher D.E., Norton E. S., Youssoufian D.A., Beach S., Feather J., Gaab, N., Gabrieli, J., Kanwisher N. (2016) Nature Neuroscience, doi:10.1038/nn.4354.

"Impaired frontal-limbic white matter maturation in children at high risk for major depression." Hung Y., **Saygin Z.**, Biederman J., Hirshfeld-Becker D., Uchida M., Doehrmann O., Han M., Chai J., Kenworthy T., Yarmak P., Gaillard S., Whitfield-Gabrieli S., & Gabrieli J.D.E. (2016) Cerebral Cortex, doi: 10.1093/cercor/bhw250.

"Brain Connectomics Predict Response to Treatment in Social Anxiety Disorder." Whitfield-Gabrieli S., Ghosh S., Nieto-Castanon A., **Saygin Z.**, Doehrmann O., Chai J., Reynolds G., Hofmann S., Pollack M., Gabrieli J. (2015). Molecular Psychiatry, doi:10.1038/mp.2015.109.

"Structural connectivity fingerprints predict cortical selectivity for visual categories." Osher D., Saxe R., Koldewyn K., Gabrieli J., Kanwisher N., **Saygin Z.** (2015). Cerebral Cortex, doi: 10.1093/cercor/bhu303.

"Structural connectivity of the developing human amygdala". **Saygin Z.**, Osher D., Koldewyn K., Martin R., Finn A., Saxe R., Gabrieli J., Sheridan M. (2015). PloS ONE, 10(4): e0125170. doi:10.1371/journal.pone.0125170.

"Altered Resting-State Functional Connectivity of the Frontal-Striatal Reward System in Social Anxiety Disorder." Manning J., Reynolds G., **Saygin Z.**, Hofmann S., Pollack M., Gabrieli J., Whitfield-Gabrieli S. (2015) PLoS ONE, 10(4): e0125286. doi:10.1371/journal.pone.0125286.

"Structural and functional connectivity fingerprints for face, body, scene, and object perception." **Saygin, Z.M.**, Kanwisher, N. (2014). Journal of Vision 14(10): 603; doi:10.1167/14.10.603

"Tracking the Roots of Reading Ability: White Matter Volume and Integrity Correlate with Phonological Awareness in Prereading and Early-Reading Kindergarten Children." **Saygin Z.**, Norton E., Osher D., Beach S., Cyr A., Ozranov-Palchik O., Yendiki A., Fischl B., Gaab N., Gabrieli J.D.E. (2013). Journal of Neuroscience, 33(33), 13251–13258.

"Anatomical connectivity patterns predict face-selectivity in the fusiform gyrus." **Saygin Z.**, Osher D., Koldewyn K., Reynolds G., Gabrieli J., & Saxe R. (2012). Nature Neuroscience, 15(2), 321-327.

"Predicting treatment response in social anxiety disorder from functional magnetic resonance imaging." Doehrmann O., Ghosh S., Polli F., Reynolds G., Horn, F., Keshavan A., Triantafyllou C., **Saygin Z.**, Whitfield-Gabrieli S., Hofmann S., Pollack M., Gabrieli J. (2012). Archives of General Psychiatry, 1-11.

"Connectivity-based segmentation of human amygdala nuclei using probabilistic tractography." **Saygin Z.**, Osher D., Augustinack J., Fischl B., & Gabrieli J. (2011). NeuroImage, 56(3), 1353-1361.

Manuscripts under Review and in Preparation

"Functional and structural dissociations in human extrastriate cortex for face and word processing." **Saygin Z.**, Scott T., Feather J., Fedorenko E., Kanwisher N. (in prep).

"Structural and functional connectivity fingerprints for face, body, scene, and object perception." **Saygin, Z.** & Kanwisher, N. (under review).

"Anatomical connections for a theory of mind." **Saygin Z.**, Osher D., Feder D., Koster-Hale J., & Saxe R. (in prep).

"Region-Optimized Affine Registration (ROAR)." Osher D.E., Tобыne S.M., **Saygin Z.**, Somers D.C. (in prep).

“Reduced Amygdala and Neocortical Habituation to Faces in Patients with Generalized Social Anxiety Disorder.” Ghosh S., Doehrmann O., **Saygin Z.**, Keshavan A., Polli F., Reynolds G., Schwartz C., Hofmann S., Pollack M., Gabrieli J. (under review).

Refereed Conference Proceedings

Norton E.S., **Saygin Z.M.**, Beach S., Ozernov-Palchik O., Gaab N., Gabrieli J.D.E. (2017). The Utility of EEG and MRI Brain Measures for Predicting Future Reading Difficulties

Norton, E. S., Beach, S. D., **Saygin, Z. M.**, Ozranov-Palchik, O., Park, A., Robinson, S., Gaab, N., & Gabrieli, J. D. E. (2016). Brain measures identify which kindergartners at risk for reading difficulties go on to develop dyslexia. Society for the Scientific Study of Reading.

“Predicting functional activity from structural connectivity.” Osher D.E., **Saygin Z.M.**, Gabrieli J.D.E. (2011). Frontiers in Neuroinformatics Conference Abstract: 4th INCF Congress of Neuroinformatics. doi: 10.3389/conf.fninf.2011.08.00010.

“Connectivity-based segmentation of human amygdala nuclei using probabilistic tractography”. **Saygin ZM**, Osher DE, van der Kouwe A, Gabrieli JDE. (2010). *NeuroImage*.

“Abnormal amygdala response to face and object novelty in social anxiety disorder.” **Saygin Z.M.**, Sabhlok S.R., Reynolds G.O., Richey J.A., Song S.S., Shah A.M., Hofmann S.G., Pollack M.T., Schwartz C.E., Gabrieli J.D.E., Polli F.E. (2009). NeuroImage, 47(S1), 71.

“Personality Correlates of Amygdala Response to Masked Fear and Novelty.” Reynolds G.O., **Saygin Z.M.**, Sabhlok S.R., Richey T., Song S.S., Shah A.M., Hofmann S.G., Pollack M.T., Schwartz C.E., Gabrieli J.D., Polli F.E. (2009). NeuroImage, 47(S1), 193.

Invited Talks

1. Emory University (April 21 2018)
2. Ohio State University (Apr. 11 2016)
3. Ohio State University (Feb. 12 2016)
4. Boston University (Jan. 28 2016)
5. Johns Hopkins (Apr. 16 2015)
6. The Social Brain Minisymposium, Cognitive Neuroscience Society, (Mar. 31 2015)
7. Wiring the Brain, Cold Spring Harbor Laboratory (Mar. 25 2015)
8. Tulane University (Jan. 22 2015)
9. Fetal-Neonatal Neuroimag. & Dev. Science Center, Harvard Medical School (Sept. 30 2014)
10. The Social Neuroscience of Autism Minisymposium, Freie Universitat Berlin (July 1 2014)
11. Vision Sciences Society (May 18 2014)
12. Harvard University (Feb. 25 2014)

13. Johns Hopkins (Dec. 9 2013)
14. Society for Neuroscience (Nov. 12 2013)
15. CLPS/Neuroscience Seminar, Brown University (Aug. 16 2013)
16. Rockefeller University (Aug. 13 2013)
17. University of Maryland (Aug. 9 2013)
18. Laboratory for Brain and Cognition, NIMH (Aug. 8 2013)
19. Center for Cognitive Neuroscience, University of Pennsylvania (Aug. 7 2013)
20. Computational Radiology Laboratory, Children's Hospital Boston (Mar. 7 2012)
21. Society for Neuroscience (Nov. 2011)
22. Laboratories of Cognitive Neuroscience, Children's Hospital Boston/Harvard Medical School (Nov. 2011)
23. Development and Affective Neuroscience/ Mood and Anxiety Disorders Program, NIMH (Oct. 18 2011)
24. Society for Neuroscience (Nov. 2010)
25. Association for Behavioral and Cognitive Therapies Convention (Nov. 17 2010)
26. Human Brain Mapping Conference (Jun. 2010)
27. Laboratories of Cognitive Neuroscience, Children's Hospital Boston/Harvard Medical School (2010)
28. McGovern Institute Retreat, MIT (Jun. 2 2010)
29. McGovern Institute 10th Anniversary, MIT (Oct. 14 2010)
30. The Alan and Lorraine Bressler Clinical and Research, Program for Autism Spectrum Disorders. MGH/Harvard Medical School (Feb. 23 2009)

Peer-reviewed Abstracts and Conference Presentations

"Connectivity precedes function in the development of the visual word form area." **Saygin Z.M.**, Osher D.E., Norton E. S., Youssoufian D.A., Beach S., Feather J., Gaab, N., Gabrieli, J., Kanwisher N. Society for Neuroscience. (2016).

"Connectivity precedes function in the development of the visual word form area." Kanwisher N., Osher D.E., Norton E. S., Youssoufian D.A., Beach S., Feather J., Gaab, N., Gabrieli, J., **Saygin Z.M.** Vision Sciences Society. (2016).

"Function and connectivity of the VWFA and FFA." **Saygin Z.M.**, Scott T., Feather J., Fedorenko E., Kanwisher, N. Organization for Human Brain Mapping (2015).

"COMA: A registration approach specifically for subcortical structures." Osher D., **Saygin Z.**, Tobyn S., Somers D. Organization for Human Brain Mapping (2015).

“The VWFA and FFA have sharply contrasting functional selectivities and patterns of connectivity.” **Saygin Z.M.**, Scott T., Feather J., Fedorenko E., Kanwisher, N. Vision Sciences Society (2015).

“Structural and functional connectivity fingerprints for face, body, scene, and object perception.” **Saygin Z.M.**, Kanwisher, N. Brain Connectivity (2014).

“Words and Faces: The relation of the Visual Word Form Area and Fusiform Face Area.” Youssoufian, D.A., Scott, T., Kanwisher, N., **Saygin, Z.M.** MIT (2014).

“Structural and functional connectivity fingerprints for face perception.” **Saygin, Z.M.**, Kanwisher, N. Cognitive Neuroscience Society (2014).

“Linking reading abilities with brain structure and function: The ERP mismatch negativity response, left arcuate fasciculus structure, and reading-related skills in kindergarten and 1st grade”. Norton E., Beach S., **Saygin Z.M.**, Ozernov-Palchik O., Cyr, A., Halverson K., Hudson M., Guerrero S., Gaab N., Gabrieli J. Society for the Scientific Study of Reading (2013).

“The functional connectomics underlying dyslexic adaptation deficits”. Osher D.E., **Saygin Z.M.**, Perrachione T., Gabrieli J.D.E. Society for Neuroscience (2012).

“Structural connectivity predicts risk for dyslexia in kindergarteners”. **Saygin Z.M.**, Norton E.S., Osher D.E., Beach S. B., Cyr A.B., Ozranov-Palchik O., Yendiki A., Fischl B., Gaab N., Gabrieli J.D.E. Society for Neuroscience (2012).

“Registration of Histology and MRI using Blockface as Intermediate Space”. Reuter M., Sand P., Huber K., Nguyen K., **Saygin ZM**, Augustinack J., Fischl B. Human Brain Mapping (2012).

“Examining Structural Connectivity in Young Adults with Autism Spectrum Disorders”. Joshi, G., **Saygin Z.M.** Biederman, J., Sheridan, M., Reynolds, G., Sabhlok, S., Goldin, R., Gabrieli, J.D.E. American Academy of Child and Adolescent Psychiatry (2011).

“Connectivity-based segmentation of human amygdala nuclei using probabilistic tractography”. **Saygin ZM**, Osher DE, van der Kouwe A, Gabrieli JDE. Human Brain Mapping (2010).

“Neural responses to emotional faces and scenes in social anxiety disorder”. Doehrmann O, Hofmann SG, Pollack MT, **Saygin ZM**, Reynolds GO, Sabhlok SR, Gabrieli JDE, Polli FE. American Psychological Society Meeting (2010).

“Abnormal amygdala and FFA response to face and object novelty in social anxiety disorder”. **Saygin ZM**, Reynolds GO, Sabhlok SR, Richey JA, Hofmann S, Pollack M, Schwartz C, Gabrieli JDE, Polli FE. Society for Neuroscience Meeting (2009).

“Brain Regions Supporting Fast-Latency Spatial Detection of Angry Faces: An Event-Related fMRI Study”. Richey JA, Polli FE, **Saygin ZM**, Reynolds GO, Sabhlok SR, Hofmann S, Pollack M, Gabrieli JDE. Society for Neuroscience Meeting (2009).

“Default mode abnormalities in social anxiety disorder” Polli FE, **Saygin ZM**, Reynolds GO, Sabhlok SR, Whitfield-Gabrieli S, Hofmann S, Pollack M., Gabrieli JDE. Society for Neuroscience Meeting (2009).

“Novelty processing in social anxiety disorder: BOLD response of amygdala and emotional FFA voxels”. **Saygin ZM**, Reynolds GO, Sabhlok SR, Richey JA, Hofmann SG, Pollack MT, Schwartz CE, Gabrieli JDE, Polli FE. Gordon Research Conference: Amygdala in Health & Disease (2009).

“Abnormal amygdala response to face and object novelty in Social Anxiety Disorder” **Saygin ZM**, Sabhlok SR, Reynolds GO, Richey JA, Song SS, Shah AM, Hofmann SG, Pollack MT, Schwartz CE, Gabrieli JDE, Polli FE. Human Brain Mapping (2009).

“Personality Correlates of Amygdala Response to Masked Fear and Novelty” Reynolds GO, **Saygin ZM**, Sabhlok SR, Richey JA, Song SS, Shah AM, Hofmann SG, Pollack MT, Schwartz CE, Gabrieli JDE, Polli FE. Human Brain Mapping (2009).

“Use of fMRI to Identify Regional Activation of Cerebral Cortex Involved in Successful Performance of an Incidental Verbal Memory Task by Children” Maril A, Davis PE, **Saygin ZM**, Koo J, Mulkern RV, Waber DP, Rivkin MJ. Annals of Neurology (2006).

Referee/Reviewer

PNAS, Nature Neuroscience, Nature Communications, Neuron, Journal of Neuroscience, NeuroImage, NeuroImage Clinical, Cortex, Human Brain Mapping, Brain, Brain Imaging and Behavior, Brain Structure and Function, JINS, Brain Imaging and Behavior, Neuropsychologia, Neuroscience, Pediatrics, Biological Psychiatry

Professional Memberships

Vision Sciences Society (2012-present)
American Association for the Advancement of Science (2008-present)
Cognitive Neuroscience Society (2008-present)
Organization for Human Brain Mapping (2008-present)
Society for Neuroscience (2008-present)

Service

OSU, CCBBI Users Planning Committee (2018-2020)
OSU, Neuroscience Graduate Admissions Committee (2018-2022)
MIT, Interview Weekend Panel Member (2009-2011)
MIT, Cambridge Science Festival (2010)
Chalk on the Walk Harvard Square, Artist (2010)
Organization for Human Brain Mapping, Abstract reviewer (2010)
Massachusetts Institute of Technology, Chair of Cognitive Lunch Talks (2008-2009)
Brown University, Brown Alumni Schools Committees (BASC) interviewer (2007-2010)

Teaching

Developmental Cognitive Neuroscience, Psych 5628, OSU (2018)

Cognitive Proseminar, Psych 7894, OSU (2018, 2019)
Introduction to Cognitive Neuroscience, OSU (2019)
Introduction to Psychology, MIT (2010)
 Guest lectured on personality
Introduction to Psychology, MIT (2010)
 Head TA and held weekly recitations
Introduction to Psychology, MIT, Professor John Gabrieli (2009)
 TA and held weekly recitations
Principles of Neurobiology, Brown University (2005)
 Undergraduate tutor

Mentoring Experience

Graduate Students

Heather Hansen (2017- current)
Jin Li (2018-current)
Athena Powell (2018-current)

Undergraduate Students

Shirin Kasturia (2008)
Lauren Kazmierski (2009)
William Morejon (2009)
Geena Márquez (2009)
Ray Gonzalez (2009)
Breanna Berry (2009-2010)
Michelle Garber (2009)
May Chen (2010)
Amber Li (2011)
Elisha Gray (2011)
Nathan Arce (2011)
Heather Acuff (2012)
Jean Yu (2013)
Osheiza Otori (2013)
Deanna Arpi Youssoufian (2013-2017)
Eshwar Madishetti (2017-present)
Justin Flanagan (2017-present)
Carver Nabb (2018-present)

Research Assistants

Gretchen Reynolds (2008-2011)
Sandeep Sabhlok (2008-2010)
Jenelle Feather (2014-2016)
Terri Scott (2014-2016)
Harris Hoke (2015-2017)
David Beeler (2016-2017)
Micah Rhodes (present)

Public Media

Nature Reviews Neuroscience Highlights

<http://www.nature.com/nrn/journal/v17/n10/full/nrn.2016.123.html>

MIT <http://news.mit.edu/2016/brain-connections-key-reading-0808>

Dana Foundation http://www.dana.org/News/Targeting_Dyslexia/

BYU Radio <http://www.byuradio.org/episode/50b30dec-bb77-4efa-acd3-8e6bd60afe9c/top-of-mind-with-julie-rose-sexual-assault-long-term-effects-of-bullying-aging-facebook?playhead=3597&autoplay=true>

MIT <http://newsoffice.mit.edu/2015/toward-smarter-selection-therapy-psychiatric-disorders-0811>

WBUR Boston <http://www.wbur.org/2014/06/12/brain-images>

Koch Institute <http://ki-galleries.mit.edu/2014/saygin>

Wellcome Trust <http://www.wellcomeimageawards.org/2014/wiring-of-the-human-brain>

The Guardian <http://www.theguardian.com/science/gallery/2014/mar/09/wellcome-image-awards-2014-life-in-extreme-close-up-in-pictures>

Independent <http://www.independent.co.uk/news/pictures/wellcome-image-awards-2014-shortlist-announcement-9182439.html>

Telegraph <http://www.telegraph.co.uk/science/picture-galleries/10689850/The-winning-entries-in-the-Wellcome-Image-Awards-2014.html#?frame=2848384>

Cell Picture Show (http://www.cell.com/cell_picture_show-koch2014winners)

MIT Technology Review <http://www.technologyreview.com/article/524216/the-art-of-science/>

Boston Magazine 09/16/13 <http://www.bostonmagazine.com/health/blog/2013/09/16/dyslexia-brain-scans-mit-boston/>

NPR news WBUR 08/14/13. <http://commonhealth.wbur.org/2013/08/tracking-dyslexia-in-the-preschool-brain>

CBS news 08/14/13. http://www.cbsnews.com/8301-204_162-57598512/brain-scans-may-diagnose-dyslexia-before-kids-can-even-read

FOX news 08/14/13. <http://www.foxnews.com/health/2013/08/14/can-mri-brain-scans-identify-children-with-dyslexia/>

MIT News 08/13/13 <http://web.mit.edu/newsoffice/2013/brain-scans-may-help-diagnose-dyslexia-0813.html>

US News and World Report 08/13/13 <http://health.usnews.com/health-news/news/articles/2013/08/13/mri-might-allow-earlier-diagnosis-of-dyslexia-study>

BBC News 08/13/13. <http://www.bbc.co.uk/news/health-23679363>

Simons Foundation Autism Research Initiative 02/09/12. <http://sfari.org/news-and-opinion/news/2012/brain-imaging-study-links-structure-and-function-in-face-area>

MIT News 01/03/12. <http://web.mit.edu/newsoffice/2012/face-recognition-0103.html>

Simons Foundation Autism Research Initiative 11/15/11. <http://sfari.org/news-and-opinion/conference-news/2011/society-for-neuroscience-2011/amygdalas-links-to-other-brain-regions-wane-with-age>

German Public Broadcasting 07/21/2011. <http://www.br-online.de/podcast/mp3-download/bayern2/mp3-download-podcast-iq.shtml>

Simons Foundation Autism Research Initiative 05/18/11. https://sfari.org/news-and-commentary/open-article/-/asset_publisher/6Tog/content/imaging-tool-maps-regions-within-amygdala