Curriculum Vitae

David Eugene Osher, PhD

Department of Psychology
The Ohio State University
201 Lazenby Hall
1827 Neil Avenue
Columbus, OH 43210

(617) 595-1282
osher.6@osu.edu

Education and Work Experience

The Ohio State University, Columbus, OH Aug 2020-Present
Assistant Professor

The Ohio State University, Columbus, OH 2017-2020
Research Scientist

Boston University, Boston, MA 2013-2017
Postdoctoral Researcher
Advised by Dr. David Somers

Massachusetts Institute of Technology, Cambridge, MA 2007-2013
Ph.D., Computational Neuroscience
Advised by Dr. John D.E. Gabrieli
Thesis committee: Drs. John D.E. Gabrieli, Robert Desimone, Rebecca Saxe, Bruce Fischl

The Ohio State University, Columbus, OH 2001-2006
B.Sc. in Psychology
Cum Laude
With Honors in the Arts and Sciences
With Distinction in Psychology

Grants, Fellowships, and Honors

CCBS Seed Grant (PI)	2022-2024
R01 1R01DC017711 (Co-I)	2019-2024
Ohio Supercomputer Champion Award (PI)	2019-2024
NEI Early Career Scientist Travel Grant	2019
Hariri Institute for Computing, Computational Science & Engineering Research Award (PI)	2016-2017
Hariri Institute for Computing, Computational Science & Engineering Research Award (PI)	2014-2015
NIMH Developmental Cognitive Neuroscience	2011-2013
NEI Integrative Training Award in Vision	2008-2011
NSF Graduate Research Fellowship Honorable Mention	2009
NIGMS Integrative Neuronal Systems Training Award	2007
Graduation with Honors and Distinction, Cum Laude, Ohio State University	2006
Trustees Scholarship	2001-2005

Publications and manuscripts

"A personalized cortical atlas, generated from individual subject voxelwise connectivity" Molloy, M.F. and **Osher D.E.** (in review)

"Effect of Extremely Preterm Birth on Adolescent Brain Network Organization" Molloy, M.F., Yu, E.J., Mattson, W.I., Hoskinson, K.R., Taylor, H.G, **Osher, D.E.**, Nelson, E.E., Saygin, Z.M. (in review)

"Leveraging multimodal neuroimaging and machine learning to predict processing speed in multiple sclerosis." Manglani, H. R., Dhamala, E., Shankar, A., Nicholas, J.A., **Osher, D.E.**, & Prakash R.S (in preparation).

"The Neural Consequences of Convergence Insufficiency and Reading: Atypical Volume and Radial Diffusivity in the Arcuate Fasciculus" Zeng, Y., Fogt, N., Toole, A., Oechslin, T., Widmer, D., Manning, S., Kulp, M. and **Osher, D.E.** (in preparation).

"The intrinsic neonatal hippocampal network: rsfMRI findings." Howell, A.L., **Osher D.E.**, Li J., Saygin Z.M. (2020). Journal of Neurophysiology, 124(5):1458-1468.

"Innate connectivity patterns drive the development of the visual word form area." Li J., **Osher D.E.**, Hansen H.A., Saygin Z.M., (2020). Scientific Reports, 10, 18039.

"Predicting an individual's Dorsal Attention Network from functional connectivity fingerprints." **Osher D.E.**, Brissenden J.A., Somers D.C., (2019). Journal of Neurophysiology, 122(1), 232-240.

"Topographic Cortico-Cerebellar Networks Revealed by Visual Attention and Working Memory." Brissenden J.A., Tobyne S.M., **Osher D.E.**, Levin E.J., Halko M.A., Somers D.C., (2018). Current Biology, 28(21). 3364-3372.e5.

"Prediction of individualized task activation in sensory modality-selective frontal cortex with connectome fingerprinting." Tobyne S.M, Somers D.C., Brissenden J.A., Michalka S.W., Noyce A.L., **Osher D.E.** (2018). Neuroimage, 183, 173–185.

"Sensory-biased attention networks in human lateral frontal cortex revealed by intrinsic functional connectivity." *Tobyne S.M., ***Osher D.E.**, Michalka S.W., Somers D.C. (2017). NeuroImage, 162. 362-372.

"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.D., Feather J., Gaab, N., Gabrieli, J.D., Kanwisher N. (2016). Nature Neuroscience, 19(9), 1250-5.

"Functional Evidence for a Cerebellar Node of the Dorsal Attention Network." Brissenden J.A., Levin E.J., **Osher D.E.**, Halko M.A., Somers D.C. (2016). Journal of Neuroscience, 36(22), 6083-96.

"Structural connectivity of the developing human amygdala." Saygin Z. M., **Osher D.E.**, Martin R., Koldewyn K., Redcay E., Gabrieli J.D.E., Sheridan M. (2015). PLoS ONE, 10(4): e0125170.

"Structural Connectivity Fingerprints Predict Cortical Selectivity for Multiple Visual Categories across Cortex." **Osher D.E.**, Saxe R., Koldewyn K., Gabrieli J.D.E., Kanwisher N., Saygin Z.M. (2016, ePub 2015). Cerebral Cortex, 26(4), 1668-83.

"Tracking early reading development: DWI measures of white matter volume and integrity correlate with Phonological Awareness in children before formal reading instruction." 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. (2013). Journal of Neuroscience, 33(33), 13251-8.

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

"Predicting functional activity from structural connectivity." **Osher D.E.**, Saygin Z. and Gabrieli J. (2011) 5. Frontiers in Neuroinformatics. doi: 10.3389/conf.fninf.2011.08.00010.

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

Conference Presentations

CCBBI Research Day 2022. "The Left Inferior Frontal Gyrus and Language in Healthy Adults and Post-Stroke Aphasia." Diedrichs, V.A., Osher, D.E., Harnish, S.M.

CCBBI Research Day 2022. "Identifying visual brain regions in the absence of task fMRI." Molloy, M.F., Saygin, Z.M., Osher D.E. Oral Presentation.

CCBBI Research Day 2022. "Lesion-Symptom Mapping of Semantics and Phonology in People with Aphasia." Timog, J., Diedrichs, V.A., Osher, D.E., Harnish, S.M.

Academy of Aphasia 2022. "The inferior frontal gyrus and resting state connectivity in aphasia." Diedrichs, V.A., Osher, D.E., Harnish, S.M.

Vision Sciences Society 2022. "Identifying visual brain regions in the absence of task fMRI." Molloy, M.F., Saygin, Z.M., Osher D.E. Oral Presentation.

Vision Sciences Society 2022. "A personalized cortical atlas for high level vision." Molloy, M.F., Osher D.E.

Clinical Aphasiology Conference 2022. "The inferior frontal gyrus and its role in the resting state connectivity of individuals with aphasia." Diedrichs, V.A., Osher, D.E., Fridriksson, J., den Ouden, D.B., Rorden, C., Newman-Norlund, R., Harnish, S.M.

Association for Clinical and Translational Science 2022. "Resting state fMRI connectivity in individuals with aphasia and the role of the inferior frontal gyrus." Diedrichs, V.A., Osher, D.E., Harnish, S.M.

CCBBI Research Day 2021. "A personalized cortical atlas, generated from individual subject voxelwise connectivity." Molloy, M.F., Osher D.E. Oral Presentation.

Eleanor M. Saffran Cognitive Neuroscience Conference 2021. "Neural Compensation in the Language Network: Preliminary Data." Diedrichs, V.A., Osher, D.E., Harnish, S.M.

Society for Neuroscience 2021. "A personalized cortical atlas, generated from individual subject voxelwise connectivity". Molloy, M.F., Osher D.E.

Cognitive Neuroscience Society 2020. "The developmental trajectory of the domain-general cortex." A. Howell, D. Osher, J. Li, Z.M. Saygin.

CCBBI Research Day 2019. "Cortical selectivity driven by connectivity: Innate connectivity patterns of the visual word form area." Li J., Osher D.E., Hansen H.A., Saygin Z.M. Oral Presentation.

CCBBI Research Day 2019. "Parcellation of the cingulate gyrus using anatomical connectivity profiles." Flanagan J., Saygin Z.M., Lenz F., Osher D.E.

CCBBI Research Day 2019. "The Developmental Trajectory of the Domain-General Cortex." Howell, A.L., Osher, D.E., Li, J, Saygin, Z.M.

Society for Neuroscience 2019. "The connectivity fingerprinting toolbox." Osher D.E., Saygin Z.M.

Society for Neuroscience 2019. "Innate connectivity patterns of the visual word form area." Li J., Osher D.E., Hansen H.A., Rhodes M.R., Howell A.L., Saygin Z.M.

Society for Neuroscience 2019. "The intrinsic neonatal hippocampal network: rsfMRI findings." Howell A.L., Osher D.E., Li J., Saygin Z.M.

Vision Sciences Society 2019. "Connectivity Fingerprints for the Visual Brain and Behavior." Osher D.E., Saygin Z.M.

Vision Sciences Society 2018. "Predicting the location of macaque face patches with functional connectivity." Osher D.E., Fuller-Deets J., Conway B.

Vision Sciences Society 2017. "Predicting an individual's own Dorsal Attention Network from their functional connectivity fingerprint." Osher D.E., Tobyne S.M., Brissenden J.A., Noyce A.L., Michalka S.W., Levin E.J., Somers D.C.

Vision Sciences Society 2017. "Visuospatial attentional selectivity within the cerebellum." Brissenden J.A., Osher D.E., Levin E.J., Halko M.A., Somers D.C.

Vision Sciences Society 2017. "Mapping Task Response Profiles in Visual-biased Frontal Cortex." Tobyne S.M., Noyce A.L., Osher D.E., Brissenden J.A., Levin E.J., Michalka S.W., Somers D.C.

Vision Sciences Society 2017. "Visual, spatial, or visuospatial? Disentangling sensory modality and task demands in frontal cortex." Noyce A.L., Tobyne S.M., Michalka S.W., Osher D.E., Shinn-Cunningham B., Somers D.C.

Neuroscience 2016. "Visuospatial representations within cerebellar node of the dorsal attention network." Brissenden J.A., Osher D.E., Levin E.J., Halko M.A., Somers D.C.

Neuroscience 2016. "Functional connectivity predicts individual differences in sensory-biased caudolateral prefrontal cortex response to attention and working memory." Tobyne S.M., Osher D.E., Michalka S.W., Noyce A.L., Somers D.C.

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

Human Brain Mapping 2015. "Connectivity precedes function in the development of the visual word form area." Kanwisher N., Osher D., Norton E., Youssoufian D, Beach S, Feather J, Gabrieli J, Saygin Z.

Human Brain Mapping 2015. "COMA: A registration approach specifically for subcortical structures." Osher D.E., Tobyne S.M., Congden K., Somers D.C.

Vision Sciences Society 2015. “Structural and functional connectivity of visual and auditory attentional networks: insights from the Human Connectome Project.” Osher D.E., Tobyne S.M., Congden K., Michalka S.W., Somers D.C.

Vision Sciences Society 2015. “Cerebellar contributions to visual attention and visual working memory revealed by functional MRI and intrinsic functional connectivity.” Brissenden J.A., Levin E.J., Osher D.E., Devaney K.J., Halko M.A., Somers S.C.

Cognitive Neuroscience Society 2015. “Connectivity fingerprints for the social brain.” Saygin Z.M., Osher D.E., Koldewyn K., Gabrieli J.D.E., Saxe R.R., Kanwisher N.

Cognitive Neuroscience Society 2015. “Attentional modulation in the cerebellum revealed by a multiple object tracking task and cerebro-cerebellar functional connectivity.” Levin E.J., Brissenden J.A., Devaney K.J., Rosen M.L., Osher D.E., Halko M.A., Somers S.C.

Cognitive Neuroscience Society 2015. “Cerebro-cerebellar functional connectivity predicts cerebellar activation during visual working memory task performance.” Brissenden J.A., Levin E.J., Osher D.E., Devaney K.J., Halko M.A., Somers S.C.

Neuroscience 2014. “Frontal networks for visual and auditory attention: Mining *structural connectivity* in the Human Connectome Project.” Osher D.E., Tobyne S.M., Michalka S.W., Somers D.C.

Neuroscience 2014. “Frontal networks for visual and auditory attention: Mining *functional connectivity* in the Human Connectome Project.” Tobyne S.M., Osher D.E., Michalka S.W., Somers D.C.

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

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., Gaab N., Gabrieli J.D.E.

Neuroscience 2011. “Anatomical connectivity predicts whole-brain functional responses to visual categories.” Osher D.E., Saygin Z.M., Koldewyn K., Saxe R.R., Gabrieli J.D.E.

Neuroscience 2011. “Structural connectivity of the developing human amygdala.” Saygin Z.M., Osher D.E. Martin R., Reynolds G., Koldewyn K., Gabrieli J.D.E, Sheridan M.

Neuroinformatics 2011. “Predicting functional activity from structural connectivity.” Osher D.E., Saygin Z.M. and Gabrieli J.D.E.

Neuroscience 2010. “Predicting face-selective fusiform voxels from diffusion-based connectivity alone.” Saygin Z.M., Osher D.E., Saxe R.R., Gabrieli J.D.E.

Human Brain Mapping 2010. “Connectivity-based segmentation of human amygdala nuclei using probabilistic tractography.” Saygin Z.M., Osher D.E., van der Kouwe A., Gabrieli J.D.E.

Richard J. & Martha D. Denman Undergraduate Research Forum 2006. “A Method for Assessing Attentional Bias in Anxious Rats.” Osher DE, Vasey, M. W., Givens, B.

Ohio St. Psychology Dept. Undergraduate Research Colloquium 2006. “Attentional Bias and Anxiety in Rodents.” Osher DE, Vasey, M. W., Givens, B.

Professional Memberships

Cognitive Neuroscience Society	2020-present
Vision Sciences Society	2015-present
International Neuroinformatics Coordinating Facility	2011-2012
Gordon Research Conference Membership	2009-2011
Organization for Human Brain Mapping	2008-present
American Association for the Advancement of Science	2008-2013
Society for Neuroscience	2005-present

Invited Talks, Teaching, Guest Lectures

Invited Talks

The Ohio State Medical Center — Mar 2 2021
"The Neural Circuitry of High-Level Vision and Attention: Probing Individual Differences in the Human Brain"

Society for Neuroscience — Oct 23 2019
"The Connectivity Fingerprinting Toolbox"

Carnegie Mellon University — Aug 20 2019
"Individual Variation in Structure and Function of the Visual and Attentive Brain"

University of California, Irvine — Mar 13 2019
"Structure and Function in the Visual and Attentive Brain"

The Ohio State University — Sep 15 2018
"Visual Attention in Cerebral and Cerebellar Networks"

The Ohio State University — Oct 18 2017
"Structural and functional connectivity fingerprints in vision and attention"

The Ohio State University — Feb 12 2016
"Functionally Relevant Networks"

Society for Neuroscience — Nov 16 2014
"Frontal networks for visual and auditory attention: Mining structural connectivity in the Human Connectome Project."

Harvard University — Jul 14 2014
"Statistical Approaches and Analytical Strategies for Dense Network Data"

Johns Hopkins University — Dec 10 2013
"Diffusion Weighted Imaging: A Tutorial on Principles, Analysis, and Applications"

Biomedical Imaging and Analysis Seminar Series at CSAIL — Apr 19 2012
"Predicting functional activity from anatomical connectivity"

MIT Mini-Symposium on Research in Development and Cognitive Neuroscience — Mar 30 2012
"Predicting neural responses from anatomical connectivity, and its application to developmental disorders"

Society for Neuroscience — Nov 14 2011
"Anatomical connectivity predicts whole-brain functional responses to visual categories"

MIT Seminar Series — Aug 31 2011
"Predicting brain responses from connectivity alone"

Teaching

Current Research in Cognitive Neuroscience, Ohio State University	2022-2023
Cognitive Psychology Proseminar, Ohio State University	2022-2023
Honors Sensation & Perception, Ohio State University	2021-present
Sensation & Perception, Ohio State University	2020-present

MRI Bootcamp, Ohio State University	Summer 2019
Perception and Behavior, Boston University	Spring 2017
Physiological Psychology, Boston University	Spring 2017
Neurophysiology of Memory, MIT	Fall 2009
Cognitive Neuroscience, MIT	Fall 2008

Guest Lectures

Functional Connectivity. SHS 8950, OSU	Spring 2020
Visual Perception. PSYCH 5628, OSU	Fall 2018
Information Processing in the Hippocampus. 9.31, MIT	Fall 2009

Public Media

US News & Word Report 10/29/2020 https://www.usnews.com/news/health-news/articles/2020-10-29/newborn-brains-dont-process-emotions-like-adults
USA Today 10/23/2020 https://www.usatoday.com/videos/tech/2020/10/23/newborns-see-words-birth-according-new-study/3740898001/
OSU News 10/22/2020 https://news.osu.edu/humans-are-born-with-brains-prewired-to-see-words
ArsTechnica 08/11/16. http://arstechnica.com/science/2016/08/brain-wiring-needed-for-reading-isnt-learned-but-in-place-prior-to-reading/
MIT featured news 08/08/16. http://news.mit.edu/2016/brain-connections-key-reading-0808
NPR news 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/
BBC news 08/13/13. http://www.bbc.co.uk/news/health-23679363
US News & World Report 08/13/13. http://health.usnews.com/health-news/news/articles/2013/08/13/mri-might-allow-earlier-diagnosis-of-dyslexia-study
MIT featured news 08/13/13. http://web.mit.edu/newsoffice/2013/brain-scans-may-help-diagnose-dyslexia-0813.html
MIT featured 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
Simons Foundation Autism Research Initiative 05/18/11. https://sfari.org/news-and-opinion/toolbox/2011/imaging-tool-maps-regions-within-amygdala

Service

Psychology Speakers Committee	2021-present
CCBBI Outreach and Talks Committee	2021-present
CCBBI Summer Program Panelist	2021
Psychology Diversity Committee	2020-2021
CCBBI Technical Committee	2019-2021
Ohio Supercomputer Champion User	2019-present
Interview Weekend Panel Member, MIT	2009-2011
Co-chair, CogLunch Colloquium, MIT	2008-2009
President, Neuroscience and Psychobiology Student Association, OSU	2005-2006
Vice-President, Neuroscience and Psychobiology Student Association, OSU	2005

Peer-Reviewing

Communications Biology
Nature Communications
Nature Neuroscience
Cerebral Cortex
NeuroImage
Journal of Neuroscience
Journal of Neurophysiology
Human Brain Mapping

Mentorships

Graduate Students
OSU
Yuxuan Zeng (2021-current)
Victoria Diedrichs (2020-current)
Fiona Molloy (2020-current)

Boston University
Sean Tobyne
James Brissenden

Undergraduates
OSU
Maggie Duffie
Ren Hentz
Jess Timog
Jack Filson
Ashley Learned
Justin Flanagan

Boston University
John Baublitz
Keith Congden
Aparna Panja
Akshay Ajban

MIT
Heather Acuff
Amber Li
Elisha Gray
Nathan Arce