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Weill Cornell Medicine
Department of Radiology
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Cornell University
Computational Biology
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Faculty Appointments

2013-2015 **Instructor of Mathematics in Radiology and Neuroscience**
Department of Radiology and the Brain and Mind Research Institute
Weill Cornell Medicine, New York, NY

2014-2018 **Visiting Researcher**
Non-Invasive Brain Stimulation and Human Motor Control Laboratory
Burke Rehabilitation Center, White Plains, NY

2015-2019 **Assistant Professor of Mathematics in Radiology and Neuroscience**
Department of Radiology and the Brain and Mind Research Institute
Weill Cornell Medicine, New York, NY

2017-2019 **Adjunct Assistant Professor**
Department of Biostatistics and Computational Biology
Cornell University, Ithaca, NY

2021-2022 **Adjunct Associate Professor**
Burke Neurological Research Institute, White Plains, NY

2019-2023 **Associate Professor of Mathematics in Radiology and Neuroscience**
Department of Radiology and the Brain and Mind Research Institute
Weill Cornell Medicine, New York, NY

2019-2023 **Adjunct Associate Professor**
Department of Computational Biology
Cornell University, Ithaca, NY

2023-present **Professor of Mathematics in Radiology and Neuroscience**
Department of Radiology and the Brain and Mind Research Institute
Weill Cornell Medicine, New York, NY

2023-present **Adjunct Professor**
Department of Computational Biology
Cornell University, Ithaca, NY

Education

Mount Union College

BS, Mathematics, May 2004
Graduated Summa Cum Laude

Case Western Reserve University

PhD, Applied Mathematics, May 2009
Thesis Advisor: Dr. Daniela Calvetti
Thesis Title: Efficient computational and statistical models of hepatic metabolism

Weill Cornell Medicine

Postdoctoral Fellow, 2009-2013
Department of Radiology, Raj Laboratory

Publications (h-index = 39, i10-index = 88, total citations = 5,502)

PEER-REVIEWED JOURNAL PUBLICATIONS

1. Calvetti D.*, Kuceyeski A.*, and Somersalo E. (2008) Sampling-based analysis of spatially distributed model for liver metabolism at steady state, Multi-Scale Modeling and Simulation 7(1), p 407-431. ***co-first author**

2. Calvetti D.*, **Kuceyeski A.***, and Somersalo E. (2008) A mathematical model of liver metabolism: from steady state to dynamic, *Journal of Physics: Conference Series* (124). ***co-first author**
3. **Kuceyeski A.**, Maruta, J., Niogi, S., Ghajar, J. and Raj, A. (2011) *The generation and validation of white matter connectivity importance maps*. *NeuroImage* (58), p 109-121.
4. **Kuceyeski A.**, Zhang, Y. and Raj, A. (2012) *Investigating white matter loss and gray matter changes in Alzheimer's disease and Fronto-temporal dementia using structural brain connectivity information*. *NeuroImage* 61(4): p 1311-23.
5. Raj, A., **Kuceyeski, A.** and Weiner, M. (2012) *A diffusion network model of disease progression in dementia*. *Neuron* 73(6): p 1204-15.
6. Ivkovic, M., **Kuceyeski, A.**, and Raj, A. (2012) *Statistics of Weighted Brain Networks Reveal Hierarchical Organization and Gaussian Degree Distribution*. *PLoS ONE* 7(6): e35029.
7. LoCastro, E., **Kuceyeski, A.** and Raj, A. (2013) *Brainography: An Atlas-Independent Surface and Network Rendering Tool for Neural Connectivity Visualization*. *NeuroInformatics*, News Item.
8. **Kuceyeski A.**, Maruta, J., Relkin, N., and Raj, A. (2013) *The Network Modification (NeMo) Tool: elucidating the effect of white matter integrity changes on cortical and subcortical structural connectivity*. *Brain Connectivity*, 3(5).
9. **Kuceyeski A.**, Meyerhoff, D., Durrango T., and Raj, A. (2013) *Loss in Connectivity (LoCo) in regions of the brain reward system in alcohol dependence*. *Human Brain Mapping*, 34(12), p 3129-42.
10. **Kuceyeski, A.**, Kamel, H., Navi, B.B., Raj, A., and Iadecola, C. (2014) *Predicting future brain tissue loss from white matter connectivity disruption in ischemic stroke*. *Stroke*, 45(3), p 717-22.
11. Goel, P., **Kuceyeski, A.**, LoCastro, E. and Raj, A. (2014) *Spatial patterns of genome-wide expression profiles reflect anatomic and fiber connectivity architecture of healthy human brain*. *Human brain mapping*, 35(8), p 4204-18.
12. Glodzik, L.*, **Kuceyeski A.***, Rusinek, H., Tsui, W., Mosconi, L., Li, Y., Osorio, R.S., Williams, S., Randall, C., Spector, N., McHugh, P., Murray, J., Pirraglia, E., Vallabhajosula, S., Raj, A., de Leon, M.J. (2014) *Reduced glucose uptake and A β in brain regions with hyperintensities in connected white matter*. *NeuroImage*, 100, p 684-91. ***co-first author**
13. **Kuceyeski, A.**, Vargas, W., Dayan, M., Monohan, E., Blackwell, C., Raj, A., Fujimoto, K., Gauthier, S.A. (2015) *Modeling the relationship between gray matter atrophy, abnormalities in connecting white matter and cognitive performance in early Multiple Sclerosis*. *American Journal of Neuroradiology*. 36(4), p 702-9. PMID: 25414004.
14. Raj, A., LoCastro, E., **Kuceyeski, A.**, Tosun, D., Relkin, N. and Weiner, M. (2015) *Network diffusion model of progression predicts longitudinal patterns of atrophy and metabolism in Alzheimer's Disease*. *Cell Reports*, 10 (3), p. 359-369.
15. **Kuceyeski, A.**, Navi, B.B., Kamel, H., Relkin, N., Villanueva, M., Raj, R., Togli, T., O'Dell, M. and Iadecola, C. (2015) *Exploring the brain's structural connectome: a quantitative stroke lesion-dysfunction mapping study*. *Human Brain Mapping*, 36(6), p 2147-60. PMC4414746.
16. Juluru, K., Al Khor, N., He, S., **Kuceyeski, A.**, and Eng, J. (2015) *A Mathematical Simulation to Assess Variability in Lung Nodule Size Measurement Associated With Nodule-Slice Position*. *Journal of Digital Imaging*. 28(3), p 373-9.
17. Dayan, M., Monohan, E., Pandya, S., **Kuceyeski, A.**, Nguyen, T., Raj, A., Gauthier, S. (2016) *Profilometry: A new statistical framework for the characterization of white matter pathways, with application to multiple sclerosis*. *Human Brain Mapping*, 37(3), p 989-1004.
18. Otal B., Dutta A., Foerster A., Ripolles O., **Kuceyeski A.**, Miranda P.C., Edwards D.J., Ilić T.V., Nitsche M.A., Ruffini G. (2016) *Opportunities for Guided Multichannel Non-invasive Transcranial Current Stimulation in Poststroke Rehabilitation*. *Frontiers in Neurology*, p 7-21. PMC4764713.
19. **Kuceyeski, A.**, Navi, B.B., Kamel, H., Relkin, N., Villanueva, M., Raj, R., Togli, T., Iadecola, C. and O'Dell, M. (2016). *Structural connectome disruption at baseline predicts 6-months post-stroke outcome*. *Human Brain Mapping*, 37(7), p 2587-2601. PMID: 27016287.
20. **Kuceyeski, A.***, Sudhin, S.*, Dyke, J.P., Bickel, S., Abdelnour, F., Schiff, N.D., Voss, H.U., Raj, A. (2016) *The application of a mathematical model linking structural and functional connectomes in severe brain injury*. *NeuroImage: Clinical* (11), p 635-647. PMC4864323. ***co-first author**
21. Pandya, S., **Kuceyeski, A.** and Raj, A. (2017) *The brain's structural connectome mediates the relationship between regional neuroimaging biomarkers in Alzheimer's disease*. *Journal of Alzheimer's Disease*, 55 (4), p 1639-1657.

22. Chiang G., Chang E., Pandya S., **Kuceyeski A.**, Hu J., Isaacson R., Ganzer C., Schulman A., Sobel V., Vallabhajosula S., Ravdin L. (2017) *Cognitive deficits in non-demented diabetic elderly appear independent of brain amyloidosis*. J Neurol Sci, 372, p 85-91. PMID: 28017255.
23. Kaunzner U.W., Kang Y., Monohan E., Kothari P.J., Nealon N., Perumal J., Vartanian T., **Kuceyeski A.**, Vallabhajosula S., Mozley P.D., Riley C.S., Newman S.M., Gauthier SA. (2017) *Reduction of PK11195 uptake observed in multiple sclerosis lesions after natalizumab initiation*. Multi Scler Relat Disord, 15, p 27-33. PMID: 28641769.
24. Yao Y, Nguyen TD, Pandya S, Zhang Y, Hurtado Rúa S, Kovanlikaya I, **Kuceyeski A**, Liu Z, Wang Y, Gauthier SA. (2018) *Combining Quantitative Susceptibility Mapping with Automatic Zero Reference (QSM0) and Myelin Water Fraction Imaging to Quantify Iron-Related Myelin Damage in Chronic Active MS Lesions*. Am J Neuroradiol., 39 (2), p 303-310, PMID: 29242359.
25. Fuchs TA, Dwyer MG, **Kuceyeski A**, Choudhery S, Carolus K, Li X, Mallory M, Weinstock-Guttman B, Jakimovski D, Ramasamy D, Zivadinov R, Benedict RHB. (2018) *White matter tract network disruption explains reduced conscientiousness in multiple sclerosis*. Hum Brain Mapp. 39(9), p 3682-3690. PMID: 29740964.
26. Fuchs TA, Carolus K, Benedict RHB, Bergsland N, Ramasamy D, Jakimovski D, Weinstock-Guttman B, **Kuceyeski A**, Zivadinov R, Dwyer MG. (2018) *Impact of Focal White Matter Damage on Localized Subcortical Gray Matter Atrophy in Multiple Sclerosis: A 5-Year Study*. Am J Neuroradiol., 39(8), p 1480-1486. PMID: 29976833
27. **Kuceyeski A**, Monohan E, Morris E, Fujimoto K, Vargas W, Gauthier SA. (2018) *Baseline biomarkers of connectome disruption and atrophy predict future processing speed in early multiple sclerosis*. NeuroImage: Clinical, 19, p 417-424.
28. Kang Y, Schlyer D, Kaunzner UW, **Kuceyeski A**, Kothari PJ, Gauthier SA. (2018) *Comparison of two different methods of image analysis for the assessment of microglial activation in patients with multiple sclerosis using (R)-[N-methyl-carbon-11]PK11195*. PLoS One, 13(8):e0201289. PMID: 30091993.
29. Puig, J., Blasco, G., Alberich-Bayarri, A., Biarnes, C., Navas-Martí, M., Rivero, M., Gich, J., Figueras, J., Torres, C., García, F., Daunis-i-Estadella, P., Oramas-Requejo, C.L., Serena, J., Schlaug, G., Stinear, C.M., **Kuceyeski, A.**, Deco, G., Sorino, C., Thomalla, G., Essig, M., Figley, C., Menon, B., Demchuk, A., Nael, K., Wintermark, M., Liebeskind, D., Pedraza, S. (2018) *Resting State Functional Connectivity MRI and Outcome after Acute Stroke*. Stroke., 49(10), p 2353-2360.
30. Respino M, Jaywant A, **Kuceyeski A**, Victoria LW, Hoptman MJ, Scult MA, Sankin L, Pimontel M, Liston C, Belvederi Murri M, Alexopoulos GS, Gunning FM. (2019) *The impact of white matter hyperintensities on the structural connectome in late-life depression: Relationship to executive functions*. NeuroImage: Clin., 23:101852. PMID: 31077981.
31. Gerber MB, McLean AC, Stephen SJ, Chalco AG, Arshad UM, Thickbroom GW, Silverstein J, Tsagaris KZ, **Kuceyeski A**, Friel K, Santos TEG, Edwards DJ. (2019) *NeuroMeasure: A Software Package for Quantification of Cortical Motor Maps Using Frameless Stereotaxic Transcranial Magnetic Stimulation*. Front Neuroinform. 13:23. PMID: 31105546
32. Khosla M, Jamison K, **Kuceyeski A**, Sabuncu MR. (2019) *Ensemble Learning with 3D convolutional neural networks for functional connectome-based prediction*. NeuroImage. 199, p 651-662. PMID: 31220576.
33. Khosla M, Jamison K, **Kuceyeski A**, Sabuncu MR. (2019) *Detecting Abnormalities in Resting-State Dynamics: An Unsupervised Learning Approach*. Machine Learning in Medical Imaging, p. 301-309.
34. **Kuceyeski A**, Jamison KW, Owen JP, Raj A, Mukherjee P. (2019) *Longitudinal increases in structural connectome segregation and functional connectome integration are associated with better recovery after mild TBI*. Hum Brain Mapp., 40(15), p 4441-4456. PMID: 31294921.
35. Tozlu C, Edwards D, Boes A, Labar, D, Tsagaris, KZ, Silverstein, J, Lane, HP, Sabuncu, MR, Liu, C, **Kuceyeski, A.** (2020) *Predicting response to motor therapy in chronic stroke patients using Machine Learning*. Neurorehabilitation and Neural Repair, 34(5):428-439, PMID: 32193984.
36. Dhamala E, Jamison K, Sabuncu M, **Kuceyeski A.** (2020) *Sex classification using long-range temporal dependence of resting-state functional MRI time series*. Human Brain Mapping.
37. Cha J, Speaker S, Hu B, Altinay M, Koirala P, Karne H, Spielberg J, **Kuceyeski A**, Dhamala E, Anand A. *Neuroimaging correlates of emotional response-inhibition discriminate between young depressed*

- adults with and without sub-threshold bipolar symptoms (*Emotional Response-inhibition in Young Depressed Adults*). *J Affect Disord*. 2021 Feb 15;281:303-311.
38. Sweeney EM, Nguyen TD, **Kuceyeski A**, Ryan SM, Zhang S, Zexter L, Wang Y, Gauthier SA. *Estimation of Multiple Sclerosis lesion age on magnetic resonance imaging*. *Neuroimage*. 2021 Jan 15;225:117451.
 39. Kang Y, Rúa SMH, Kaunzner UW, Perumal J, Nealon N, Qu W, Kothari PJ, Vartanian T, **Kuceyeski A**, Gauthier SA. *A Multi-Ligand Imaging Study Exploring GABAergic Receptor Expression and Inflammation in Multiple Sclerosis*. *Mol Imaging Biol*. 2020 Dec;22(6):1600-1608.
 40. Fuchs TA, Ziccardi S, Benedict RHB, Bartnik A, **Kuceyeski A**, Charvet LE, Oship D, Weinstock-Guttman B, Wojcik C, Hojnacki D, Kolb C, Escobar J, Campbell R, Tran HD, Bergsland N, Jakimovski D, Zivadinov R, Dwyer MG. *Functional Connectivity and Structural Disruption in the Default-Mode Network Predicts Cognitive Rehabilitation Outcomes in Multiple Sclerosis*. *J Neuroimaging*. 2020 Jul;30(4):523-530.
 41. Liew SL, Zavaliangos-Petropulu A, Jahanshad N, Lang CE, Hayward KS, Lohse KR, Juliano JM, Assogna F, Baugh LA, Bhattacharya AK, Bigjahan B, Borich MR, Boyd LA, Brodtmann A, Buetefisch CM, Byblow WD, Cassidy JM, Conforto AB, Craddock RC, Dimyan MA, Dula AN, Ermer E, Etherton MR, Fercho KA, Gregory CM, Hadidchi S, Holguin JA, Hwang DH, Jung S, Kautz SA, Khlif MS, Khoshab N, Kim B, Kim H, **Kuceyeski A**, Lotze M, MacIntosh BJ, Margetis JL, Mohamed FB, Piras F, Ramos-Murguialday A, Richard G, Roberts P, Robertson AD, Rondina JM, Rost NS, Sanossian N, Schweighofer N, Seo NJ, Shiroishi MS, Soekadar SR, Spalletta G, Stinear CM, Suri A, Tang WKW, Thielman GT, Vecchio D, Villringer A, Ward NS, Werden E, Westlye LT, Winstein C, Wittenberg GF, Wong KA, Yu C, Cramer SC, Thompson PM. *The ENIGMA Stroke Recovery Working Group: Big data neuroimaging to study brain-behavior relationships after stroke*. *Hum Brain Mapp*. 2020.
 42. Dhamala E, Jamison K, Jaywant, A, Dennis, S, **Kuceyeski A**. *Distinct functional and structural connections predict crystallised and fluid cognition in healthy adults*. *Human Brain Mapping*. 2021. Vol 42: p 3102– 3118.
 43. Khosla M, Ngo GH, Jamison K, **Kuceyeski A**, Sabuncu MR. *Cortical response to naturalistic stimuli is largely predictable with deep neural networks*. *Sci Adv*. 2021;7(22):eabe7547. doi:10.1126/sciadv.abe7547.
 44. Gu, Z, Jamison, K, Sabuncu, M, **Kuceyeski A**. *Heritability and interindividual variability of regional structure-function coupling*. *Nat Communications*. 2021. Vol 12, p 4894.
 45. Jaywant, A, Dunlop, K, Victoria, L, Oberlin, L, Lynch, C, Respino, M, **Kuceyeski, A**, Scult, M, Hoptman, M, Liston, C, O'Dell, M, Alexopoulos, G, Perlis, R, Gunning, F. (2022) *Estimated Regional White Matter Hyperintensity Burden, Resting State Functional Connectivity, and Cognitive Functions in Older Adults*. *Am J Geriatr Psychiatry*. 30(3):269-280. PMID: 34412936.
 46. Hurtado-Rua, S, Kaunzner, U, Pandya, S, Sweeney, E, Tozlu, C, **Kuceyeski, A**, Nguyen, T, and Gauthier, S. (2022) *Lesion features discriminate multiple sclerosis patients*. *European Journal of Neurology*. 29(1): 237-246. PMID: 34402140.
 47. Tozlu C, Jamison K, Nguyen T, Zinger N, Kaunzner U, Pandya S, Wang Y, Gauthier S, **Kuceyeski A**. (2021) *Structural disconnectivity from paramagnetic rim lesions is related to disability in multiple sclerosis*. *Brain and Behavior*. 11(10): e2353. PMID: 34498432.
 48. Tozlu C, Jamison K, Gauthier S and **Kuceyeski A**. (2021) *Estimated connectivity networks outperform observed connectivity networks when classifying people with multiple sclerosis into high and low disability groups*. *NeuroImage: Clinical*. 32:102827. PMID: 34601310.
 49. Liew SL, Zavaliangos-Petropulu A, Jahanshad N, Lang CE, Hayward KS, Lohse KR, Juliano JM, Assogna F, Baugh LA, Bhattacharya AK, Bigjahan B, Borich MR, Boyd LA, Brodtmann A, Buetefisch CM, Byblow WD, Cassidy JM, Conforto AB, Craddock RC, Dimyan MA, Dula AN, Ermer E, Etherton MR, Fercho KA, Gregory CM, Hadidchi S, Holguin JA, Hwang DH, Jung S, Kautz SA, Khlif MS, Khoshab N, Kim B, Kim H, **Kuceyeski A**, Lotze M, MacIntosh BJ, Margetis JL, Mohamed FB, Piras F, Ramos-Murguialday A, Richard G, Roberts P, Robertson AD, Rondina JM, Rost NS, Sanossian N, Schweighofer N, Seo NJ, Shiroishi MS, Soekadar SR, Spalletta G, Stinear CM, Suri A, Tang WKW, Thielman GT, Vecchio D, Villringer A, Ward NS, Werden E, Westlye LT, Winstein C, Wittenberg GF, Wong KA, Yu C, Cramer SC, Thompson PM. *Smaller spared subcortical nuclei are associated with worse post-stroke sensorimotor outcomes in 28 cohorts worldwide*. *Brain Communications*. 3(4): fcab254. PMID: 34805997.

50. Dhamala, E., Jamison, K, Jaywant A., and **Kuceyeski A.** (2022) *Shared functional connections within and between cortical networks predict individual cognitive abilities in adult males and females.* Human Brain Mapping. 43(3): 1087-1102. PMID: 34811849.
51. Olafson E, Jamison K, Sweeny E, Liu H, Wang D, Bruss J, Boes A, **Kuceyeski A.** (2021) *Functional connectome reorganization after pontine stroke is associated with structural disconnection and motor recovery.* Neurolmage. Vol 245; 118642.
52. Tozlu C, Jamison K, Gauthier S and **Kuceyeski A.** (2021) Dynamic functional connectivity better predicts disability than structural and static functional connectivity in people with multiple sclerosis. Frontiers in Neuroscience. 15: 763966. PMID: 34966255.
53. Gu Z, Jamison K, Khosla M, St-Yves G, Naselaris T, Kay K, Sabuncu M, **Kuceyeski A.** (2022) *NeuroGen: Synthesizing images for discovery neuroscience.* Neurolmage. 247:118812. PMID: 34936922.
54. Ngo G, Khosla M, Jamison K, **Kuceyeski A,** Sabuncu M. (2022) *Predicting individual task contrasts from resting-state functional connectivity using a surface-based convolutional network.* Neurolmage. 248:118849. PMID: 34965456.
55. Kang Y, Jamison J, Wen K, Jaywant A, Dams-O'Connor K, Schiff N, **Kuceyeski A,** Shah S. (2022) *Longitudinal alterations in GABA_A receptor availability following traumatic brain injury.* Brain Communications. 4(4): fcac159. PMID: 35794871.
56. Zavaliangos-Petropulu A, Lo B, Donnelly MR, Schweighofer N, Lohse K, Jahanshad N, Barisano G, Banaj N, Borich MR, Boyd LA, Buetefisch CM, Byblow WD, Cassidy JM, Charalambous CC, Conforto AB, DiCarlo JA, Dula AN, Egorova-Brumley N, Etherton MR, Feng W, Fercho KA, Geranmayeh F, Hanlon CA, Hayward KS, Hordacre B, Kautz SA, Khlif MS, Kim H, **Kuceyeski A,** Lin DJ, Liu J, Lotze M, MacIntosh BJ, Margetis JL, Mohamed FB, Piras F, Ramos-Murguialday A, Revill KP, Roberts PS, Robertson AD, Schambra HM, Seo NJ, Shiroishi MS, Stinear CM, Soekadar SR, Spalletta G, Taga M, Tang WK, Thielman GT, Vecchio D, Ward NS, Westlye LT, Werden E, Winstein C, Wittenberg GF, Wolf SL, Wong KA, Yu C, Brodtmann A, Cramer SC, Thompson PM, Liew SL. (2022) *Chronic Stroke Sensorimotor Impairment Is Related to Smaller Hippocampal Volumes: An ENIGMA Analysis.* J Am Heart Assoc. 11(10):e025109. PMID: 35574963.
57. Marcille M, Hurtado Rúa S, Tyshkov C, Jaywant A, Comunale J, Kaunzner UW, Nealon N, Perumal JS, Zexter L, Zinger N, Bruvik O, Wang Y, Sweeney E, **Kuceyeski A,** Nguyen TD, Gauthier SA. (2022) *Disease correlates of rim lesions on quantitative susceptibility mapping in multiple sclerosis.* Sci Rep. 12(1):4411. PMID: 35292734.
58. Barrash J, Bruss J, Anderson SW, **Kuceyeski A,** Manzel K, Tranel D, Boes AD. (2022) *Lesions in different prefrontal sectors are associated with different types of acquired personality disturbances.* Cortex. 147:169-184. PMID: 35051710.
59. Buyukturkoglu K, Vergara C, Fuentealba V, Tozlu C, Dahan JB, Carroll BE, **Kuceyeski A,** Riley CS, Sumowski JF, Oliva CG, Sitaram R, Guevara P, Leavitt VM. (2022) *Machine learning to investigate superficial white matter integrity in early multiple sclerosis.* J Neuroimaging. Jan;32(1):36-47. PMID: 34532924.
60. Singleton P, Luppi A, Carhart-Harris RL, Cruzat J, Roseman L, Deco G, Kringelbach M, Stamatakis EA, **Kuceyeski A.** (2022) *Receptor-informed network control theory links LSD and psilocybin to a flattening of the brain's control energy landscape.* Nature Communications **13**, 5812. PMID: 36192411; PMCID: PMC9530221.
61. Olafson E, Russello G, Jamison K, Liu H, Wang D, Bruss J, Boes A, **Kuceyeski A.** (2022) *Frontoparietal network activation is associated with motor recovery in ischemic stroke patients.* Communications Biology. 2022. 5(1):993. PMID: 36131012.
62. Gu Z, Jamison K, Sabuncu M, **Kuceyeski A.** (2022) *Personalized visual encoding model construction with small data.* Communications Biology. Vol 5: 1382.
63. Tozlu C, Card S, Jamison K, Gauthier S, **Kuceyeski A.** (2023) *Larger lesion volumes in people with multiple sclerosis is associated with increased transition energies between brain states and decreased entropy of brain activity.* Network Neuroscience. 7(2):539-556. PMID: 37397885.
64. Singleton P, Wang J, Mithoefer M, Hanlon C, George M, Mithoefer A, Mithoefer O, Coker A, Yazar-Klosinski B, Emerson A, Doblin R, **Kuceyeski A.** (2023) *Evidence for altered neural activity patterns after MDMA-assisted therapy in adults with chronic and severe post-traumatic stress disorder: a pilot study.* Frontiers in Psychiatry. Vol 13, p 3012.

65. Bukhari, H., Su, C., Dhamala, E., Gu, Z., Jamison, K., & **Kuceyeski, A.** (2023) *Graph-matching distance between individuals' functional connectomes varies with relatedness, age, and cognitive score.* Human Brain Mapping, 44(9), 3541– 3554.
66. Tozlu C, Olafson E, Jamison KW, Demmon E, Kaunzner U, Marcille M, Zinger N, Michaelson N, Safi N, Nguyen T, Gauthier S, **Kuceyeski A.** (2023) *The sequence of regional structural disconnectivity due to multiple sclerosis lesions.* Brain Communications. 5(6):fcad332.
67. Gu, Z., Jamison, K., Sabuncu, M.R. and **Kuceyeski A.** (2023) *Human brain responses are modulated when exposed to optimized natural images or synthetically generated images.* Communications Biology, 6, 1076.
68. Butler T, Zhou L, Ozsahin I, Wang XH, Garetti J, Zetterberg H, Blennow K, Jamison K, de Leon MJ, Li Y, **Kuceyeski, A.**, Shah SA, (2023) *Glymphatic clearance estimated using diffusion tensor imaging along perivascular spaces is reduced after traumatic brain injury and correlates with plasma neurofilament light, a biomarker of injury severity,* Brain Communications, Volume 5, Issue 3, fcad134.
69. Olafson ER, Sperber C, Jamison K...Thompson PM, Liew S-L, **Kuceyeski A,** (2024) *Data-driven biomarkers better associate with stroke motor outcomes than theory-based biomarkers,* Brain Communications, Volume 6, Issue 4, fcae254
70. Luppi, A.I., Singleton, S.P., Hansen, J.Y., Jamison K, Bzdok D, **Kuceyeski A,** Betzel R, Misic B. (2024) *Contributions of network structure, chemoarchitecture and diagnostic categories to transitions between cognitive topographies,* Nature Biomedical Engineering, 8, 1142–1161.
71. Singleton SP, Velidi P, Schilling L, Luppi A, Jamison K, Parkes L, **Kuceyeski A,** (2024) *Altered Structural Connectivity and Functional Brain Dynamics in Individuals With Heavy Alcohol Use Elucidated via Network Control Theory,* Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, Volume 9, Issue 10, pages 1010-1018.
72. Sadeghi S., Gu Z., De Rosa E, **Kuceyeski A,** Anderson A. (2024) *Direct perception of affective valence from vision.* Nature Communications, 15, 10735.
73. Gu Z, Jamison K, **Kuceyeski A,** Sabuncu MR. (2024) *Decoding natural image stimuli from fMRI data with a surface-based convolutional network.* Medical Imaging with Deep Learning, PMLR 227:107-118.
74. Zhao Q, Nooner KB, Tapert SF, Adeli E, Pohl KM, **Kuceyeski A,** Sabuncu MR (2025) *The Transition From Homogeneous to Heterogeneous Machine Learning in Neuropsychiatric Research,* Biological Psychiatry Global Open Science, Volume 5, Issue 1.
75. Singleton, S.P., Timmermann, C., Luppi, A.I., Eckernäs E, Roseman L, Carhart-Harris RL, **Kuceyeski A.** (2025). *Network control energy reductions under DMT relate to serotonin receptors, signal diversity, and subjective experience.* Communications Biology. Vol 8, p 631.
76. Roy N, Singleton SP, Jamison K, Mukherjee P, Shah SA, **Kuceyeski A.** (2025) *Brain activity dynamics after traumatic brain injury indicate increased state transition energy and preference of lower order states.* NeuroImage: Clinical. Volume 46, 103799.
77. Zhang Y, Finn ES, Sabuncu MR, **Kuceyeski A** (preprint) *View, engage, predict: enhancing brain-behavior mapping with naturalistic movie-watching fMRI.* bioRxiv. doi: <https://doi.org/10.1101/2025.07.28.666907>
78. Jamison K, Gu Z, Wang Q, Tozlu C, Sabuncu M, **Kuceyeski A.** (2025) *Krakencoder: A unified brain connectome translation and fusion tool.* Nature Methods. 1-10.
79. Schilling L, Singleton SP, Tozlu C, Hédo M, Zhao Q, Pohl KM, Jamison K, **Kuceyeski A.** (2025) *Sex-specific differences in brain activity dynamics of youth with a family history of substance use disorder.* Nature Mental Health. Vol 3, p 1493–1511.

80. Kim, JZ, Betzel, RF, Beyh A, Howell A, **Kuceyeski A**, Larsen B, Seguin C, Zhang X-H, Holmes A & Parkes L. *Inferring intrinsic neural timescales using optimal control theory*. (2025) Nat Commun 16, 11639.
81. Chen H, Jamison KJ, Sabuncu MR, **Kuceyeski A**. *Beyond Grid-Locked Voxels: Neural Response Functions for Continuous Brain Encoding*. (2026) ICLR Conference Proceedings.
82. Betzel R, Puxeddu MG, Seguin C, Bazinet V, Luppi A, Podschun A, Singleton SP, Faskowitz J, Parakkattu V, Misic B, Markett S, **Kuceyeski A** & Parkes L. Controlling the human connectome with spatially diffuse input signals. *Communications Biology* 9, 501.
83. Huang K, Jamison KW, Jacobs E, Miolane N, **Kuceyeski A**. (preprint) *The progression of sex differences in brain networks across the lifespan*. bioRxiv. doi: <https://doi.org/10.64898/2026.01.30.702608>
84. Radanovic A, Jamison KW, Kang Y, Tozlu C, Shah SA, and **Kuceyeski A**. (2026) *Longitudinal Multimodal Neuroimaging After Traumatic Brain Injury*. Human Brain Mapping, Vol 47, no. 6: e70534.

BOOK CHAPTERS

1. **Kuceyeski A** and Boes A. (2022) "Lesion network mapping: from a topologic to a hodologic approach", *Lesion-to-Symptom Mapping: Principals and Tools*. Editors: Daniel Mirman and Dorian Pustina.
2. Gu Z, Jamison K, Sabuncu M, **Kuceyeski A** (2024) "Machine Learning and neuroimaging: Understanding the human brain in health and disease", *Computational and Network Modeling of NeuroImaging Data*, Editor Kendrick Kay. Elsevier.
3. Tozlu C, **Kuceyeski A**, Dwyer MG, (2025) "Use of artificial intelligence in multiple sclerosis imaging," Editor(s): Dejan Jakimovski, Robert Zivadinov. Handbook of Imaging in Multiple Sclerosis, Academic Press, pages 383-420.

REVIEWS & COMMENTARIES

1. Khosla M, Jamison K, Ngo GH, **Kuceyeski A**, Sabuncu MR. (2019) *Machine learning in resting-state fMRI analysis*. Magn Reson Imaging. 64:101-121. PMID: 31173849; PMCID: PMC6875692.
2. Shah, S, Lowder, R and **Kuceyeski A**. (2020) *Quantitative multimodal imaging in traumatic brain injuries producing impaired cognition*. Current Opinions Neurology, 33(6): p. 691-698.
3. Tozlu, C. and **Kuceyeski A** (2024) *Quantifying the Relationship Between Multiple Sclerosis Lesions and Depression*, Biological Psychiatry, Volume 95, Issue 12, 1058 - 1059
4. Singleton P and **Kuceyeski A** (2024) *Bridging Psilocybin-Induced Changes in the Brain's Dynamic Functional Connectome With an Individual's Subjective Experience*, Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, Volume 9, Issue 7, 637-638.

Presentations

INVITED TALKS

- 09/11 *Quantifying Disruptions in the Structural Brain Network*
McGill University, Montreal, Quebec, Canada
- 03/12 *Linking Structural Brain Network Disruption to Dysfunction*
Brain Trauma Foundation, New York, NY
- 04/12 *Quantifying loss in brain connection in Neurodegeneration*
Columbia University, New York, NY
- 06/13 Works in Progress Seminar: *Exploring the brain's connectome: linking patient dysfunction to network disruption*
The Brain and Mind Research Institute, WCM, New York, NY
- 10/13 *Structural disconnection in early multiple sclerosis patients is related to atrophy in subcortical areas and a measure of cognition*

- European Committee for Treatment and Research in Multiple Sclerosis Conference**, Copenhagen, Denmark
- 03/13 *Changes to the Structural Connectivity Network in MS Subjects Is Correlated with Cortical Thickness and a Measure of Disability*
American Academy of Neurology Conference, San Diego, CA
- 10/14 *Modeling the Link Between Structural Connectivity Network Disruption and Performance and Activity Limitation in Stroke*
American Congress for Rehabilitation Medicine, Toronto, Canada
- 11/15 *The (dys)-connectome: quantifying brain network influences in disease and recovery*
The City College of New York, New York NY
- 10/15 *The (dys)-connectome: quantifying brain network influences in disease and recovery*
Mount Sinai Hospital, New York NY
- 04/16 *Exploring the connectome without diffusion tensor imaging: from research to clinical application in stroke*
European Stroke Conference, Venice Italy
- 10/16 *The (dys)-connectome: quantifying brain network influences in disease and recovery*
Biomedical Imaging Center 3rd Annual Symposium, Mount Sinai, NY
- 11/16 *The role of the brain's connectome in health and disease*
Buffalo Neurolmaging Analysis Center, Buffalo, NY
- 04/18 *The role of the connectome in health, disease and recovery*
Progress in Neuroscience Seminar
The Brain and Mind Research Institute, WCM, New York, NY
- 09/18 *Machine Learning and the Brain's Connectome*
Bridging the Gap: Machine Learning in Medicine Symposium, Ithaca, NY
- 09/18 *Quantifying and manipulating the connectome*
Cross-campus Neurolmaging Symposium, WCM, New York, NY
- 09/19 *Connectomics in injury and recovery*
Brain Injury Research Seminar Series, WCM, New York, NY
- 10/19 *Neurolmaging in the Cloud*
Cloud Computing Symposium, WCM, New York, NY
- 11/19 *The role of the connectome in post-stroke impairment and recovery*
Cleveland Clinic, Cleveland, OH
- 7/20 *Connectivity Networks in the Human Brain*
Online Academic Conference of College of Biological Sciences, China Agricultural University
- 7/20 *Work-life balance: finding your fulcrum*
Conference for the Organization for Human Brain Mapping, Student Interest Group Seminar
- 2/21 *Increased Range of Dynamic Functional Connectome Trajectories Predict Better Attention in Individuals with Traumatic Brain Injury*
International Neuropsychological Society (virtual conference)
- 5/21 *Psychedelics flatten the brain's energy landscape*
Canadian Computational Neuroscience Spotlight, Montreal, Canada (virtual conference)
- 6/21 *Structure-function (dis)connectome coupling: brain network modeling in disease*
Symposium talk, **Organization for Human Brain Mapping** (virtual)
- 6/21 *Structure-function (dis)connectome coupling: brain network modeling in disease*
Burke Neurological Institute, White Plains, NY (virtual)
- 6/21 *Artificial and biological neural networks*
Pattern Recognition Lab, Friedrich-Alexander University, Erlangen-Nurnberg, Germany (virtual)
- 7/21 *Connectomics in neurological impairment and recovery*
Clinical Neuroanatomy Seminars, France/Germany (virtual)
- 7/21 *Artificial and biological neural networks*
Korean Brain Seminar, Ewha Women's University, Seoul, South Korea (virtual)

- 2/22 *Toward causal brain mapping: from lesions to psychedelics*
Brain Space Initiative, Georgia State University/Georgia Tech and Emory University for a worldwide audience (virtual)
- 6/22 *Psychedelics acutely flatten the brain's energy landscape*
Organization for Human Brain Mapping Conference, Glasgow, Scotland (virtual)
- 11/22 *Using Network Control Theory to understand and influence the brain*
The Brain Modes Conference, Vina del Mar, Chile (virtual)
- 12/22 *Quantitative modelling of brain-behavior relationships*
Data Science Applied Research and Education Seminar (ARES), University of Toronto Department of Statistical Science
- 12/22 *Neural networks of neural networks: understanding human vision with machine learning*
Computational and methodological statistics, King's College, London, UK
- 5/23 *The role of AI in understanding the brain in health and disease*
New Wave of AI in Healthcare, Mount Sinai, New York, NY
- 8/23 *Understanding artificial and biological neural networks*
The 16th International Conference on Brain Informatics, Hoboken, NJ
- 1/24 *Brain activation dynamics in disease, recovery and altered states*
McGill University, Montreal, Canada (virtual)
- 4/24 *Network control models of the brain in health, altered states, disease and recovery*
University of Pennsylvania, Philadelphia PA
- 6/24 *Release the KrakenCoder: a tool for multi-modal connectome fusion and translation*
Neurohackademy, Seattle WA (virtual)
- 11/24 *Human brain dynamics in health, disease, recovery, and altered states*
Houston Methodist Hospital, Houston TX
- 2/25 *Brain connectome-behavior mapping in clinical populations*
UCLA Neurology Department Grand Rounds (virtual)
- 2/25 *Symposium Talk: Structural and functional brain disconnection in MS*
Americas Committee for Treatment and Research in Multiple Sclerosis Forum, West Palm Beach, FL
- 4/25 *Symposium Talk: Sex-specific differences in brain activity dynamics of youth with a family history of substance use disorder*
Society for Biological Psychiatry, Toronto, Canada
- 6/25 *Symposium Talk: Network Control Theory and substance use disorder*
Organization for Human Brain Mapping, Brisbane Australia (talk given for me by my PhD student Louisa Schilling)
- 7/25 *Network Control Theory Models of Shifting Brain Dynamics In Psychedelics*
Neurobiology of Psychedelics, Gordon Research Conference, Smithfield, RI
- 11/25 *AI for enhanced connectome-behavior mapping*
Society for Neuroscience, San Diego CA
- 11/25 *Computational models to understand the human brain*
Medical University of South Carolina Neuroscience Seminar Series (virtual)
- 1/26 *AI for brain behavior mapping*
Making Connections - Brains & Other Complex Systems, Cambridge University (virtual)
- 6/26 *Sex matters: brain dynamics differ by sex in children with a family history of substance use disorder*
Paris Brain Institute, Sorbonne University, Paris, France
- 11/26 *Sex differences in brain dynamics of adolescents with a family history of substance use*
WomenMind Conference, Toronto, Canada

Support and Awards

CURRENT RESEARCH GRANTS

NIH/NIMH 1R01MH137166-01A1 Kuceyeski (PI) 4/01/2025-3/31/2028

The KrakenCoder: a multi-modal connectome fusion tool for brain-behavior mapping

The proposed research aims to develop tools with which multi-modal connectomes can be represented in a common latent space to increase the accuracy of brain-behavior mapping in healthy populations.

Total award: \$1,647,726

Role: PI

NIH/NINDS 1R01NS134646-01A1 Kuceyeski and Gauthier (co-PIs) 08/08/2024-7/31/2029
Multi-scale, multi-modal imaging assessment of trajectories of cognitive impairment in Multiple Sclerosis

This research project will use micro- and macro-scale anatomical and physiological brain imaging techniques to identify biological mechanisms of cognitive decline in people with multiple sclerosis (MS).

Total award: \$3,351,995

Role: PI

Ann S. Bowers Foundation Kuceyeski (PI) 4/01/2024-3/31/2027

AI for advancing women's brain health through the Ann S. Bowers Women's Brain Health Initiative

To develop and apply AI techniques to better understand the female brain and support health across the lifespan.

Total award: \$750,000

Role: PI

NIH CSR Fox (PI) 1/01/2022-12/31/2026

Seizures and Children's Outcomes after Stroke (SCOUTS)

Determine the inflammatory signaling pathways activated by acute seizures in children with stroke. Aim 2. Identify the inflammatory signaling pathways associated with post- stroke epilepsy. Aim 3. Determine the brain regions and stroke-disrupted brain networks associated with post-stroke epilepsy.

Total subaward to WCM: \$66,127

Role: co-I

Cornell Intercampus Pilot Grant Kuceyeski (co-PI) 10/9/2020-12/31/2022(NCE)

Creating and Validating a Novel, Non-Invasive Method for Targeted Brain Activation

To use ML to create synthetic images targeted to achieve a certain pattern of brain activity.

Total award: \$25,000

Role: co-PI

Cornell University MRI Facility Pilot Grant Kuceyeski (PI) 5/01/2021-4/31/2023(NCE)

Understanding the relationship between the brain's connectivity networks and cognition in pre- and post-menopausal MS patients

To quantify differences in brain connectomes between multiple sclerosis patients before and after menopause.

Total award: \$25,000

Role: PI

PAST RESEARCH GRANTS AND STIPENDS

NIH/NIBIB NRSA F32 Post-doc Fellowship Kuceyeski (PI) 8/2010-8/2012

Construction of a connectivity importance map of white and gray matter in the human brain

Awarded this prestigious two-year postdoctoral fellowship research training grant to study structural connectivity in the human brain

Role: PI

Leon Levy Research Fellowship Kuceyeski (PI) 2/1/13-06/31/14

Quantifying the link between connectivity disruption and patient dysfunction and disability in stroke

This project focused on creating biomarkers that quantified the impact of stroke infarct location and size on the structural connectivity network in the brain and built models to predict patient disability based on these biomarkers.

Role: PI

NIH/NCI: 1R01CA181566-01A1 Spincemaille (PI) 5/19/2015-4/30/2020

Compact Representations of Dynamic Liver MRI

To develop and test an MR-based imaging method for more accurate characterization of liver tumors during initial detection and follow-up.

Role: Co-I

NIH/NINDS R01NS092802

Raj (PI)

7/15/16-12/01/17

Predictive model of spread of Parkinson's pathology using network diffusion

The major goals of this project are to use mathematical models to predict the spread of pathology in Parkinson's disease.

Role: Co-I

NIH/NHLBI R21HL132277

Kuceyeski and Min (co-PIs)

9/1/16-8/31/18

An integrated computing platform for prediction and visualization of coronary ischemia

To improve visualization and prediction of coronary ischemia from CT imaging and computational fluid dynamics.

Role: Co-PI

NIH/NIBIB R01EB022717

Raj (PI)

9/30/16-6/30/19

Multimodal modeling framework for fusing structural and functional connectome data

This project will develop graph theoretic models of brain activity.

Role: Co-I

NIH/ NINDS R01NS092802

Raj (PI)

7/15/16-12/01/17

Predictive model of spread of Parkinson's pathology using network diffusion

The major goals of this project are to use mathematical models to predict the spread of pathology in Parkinson's disease.

Role: Co-I

National Multiple Sclerosis Society: RG-1602-07671

Nguyen (PI)

10/01/16-9/30/20

Quantitative MRI of lesion iron and myelin repair

To develop MRI methods for quantifying iron and myelin in MS lesions and correlate with recovery.

Role: Co-I

Kellen Junior Faculty Fellowship

Kuceyeski (PI)

4/1/17-7/31/18

Multiple Sclerosis and Connectomes

To use quantitative methods, including mathematical modeling and machine learning, to uncover connectome-based mechanisms of resiliency to multiple sclerosis-related damage.

Role: PI

NIH/NINDS R21NS104634

Kuceyeski (PI)

9/27/17-9/26/21

Quantifying the role of the connectome in resiliency to multiple sclerosis

To identify differences between high and low adapting patients with MS using machine learning.

Role: PI

NIH/NINDS R01NS102646

Kuceyeski and Shah (co-PIs)

12/01/17-11/31/23(NCE)

Multi-modal imaging of the mechanisms underlying impaired executive attention after traumatic brain injury

To elucidate mechanisms of attention impairment in TBI using EEG/MRI and machine learning.

Role: co-PI

NIH/NINDS R01NS104283

Gauthier (PI)

7/1/2018-6/30/2023

Identifying mechanisms of tissue injury in MS lesions: a multi-modality imaging approach

To test the hypotheses that m/M activity and iron increases in acute MS lesions results in more myelin destruction and that low myelin and persistent iron predicts neurodegeneration and disability.

Role: Co-I

NIH/NINDS 1R56NS111052 Butler (PI) 8/15/2019-7/31/2024
CSF Clearance and Brain Amyloid Dynamics after Traumatic Brain Injury
This project applies PET to measure clearance of amyloid in TBI to examine if it's recovery-related.
Role: co-I

NIH/NIMH 1RF1MH123232 Kuceyeski (PI) 5/01/2021-4/31/2024
Heritability and cognitive implications of structural-functional connectome coupling
To investigate how structural-functional connectome relationships vary with genetics and cognition.
Role: PI

NIH/NINDS R21NS120227 Basu (PI) 5/01/2021-4/30/2024
Learning high-dimensional functional connectomes of heterogeneous populations
To create statistical tools to more accurately estimate functional connectomes using functional MRI.
Role: co-I

NIH/NICHHD U01 HD112564 Schambra (PI) 09/01/2024-2/01/2026
Mechanisms of paired vagus nerve stimulation in human chronic stroke
The major goal of this project is to determine the extent to which paired VNS induces behaviorally relevant neuroplasticity in motor and non-motor networks.
Total award: \$1,038,313; subaward to WCM: \$51,039 per year
Role: co-I

Department of Defense Saggari (PI) 7/01/2024-8/01/2025
Dynamic Nudging using Movies: Characterizing and inducing transitions in brain activity patterns using naturalistic stimuli toward cognitive enhancement
Develop an artificial neural networks (ANN)-based learning to directly map movie clips to brain-state transitions as well as behavioral performance across selected domains.
Total award: \$1,000,000; subaward to WCM: \$67,377 per year
Role: co-I

AWARDS

05/12 Magna Cum Laude Award

International Society of Magnetic Resonance in Medicine, Melbourne, Australia

Awarded to the top 15% of all abstracts within the same category

07/20 Editor's Choice Collection, Human Brain Mapping 2020

Awarded to: Kuceyeski A, Jamison KW, Owen JP, Raj A, Mukherjee P. (2019) *Longitudinal increases in structural connectome segregation and functional connectome integration are associated with better recovery after mild TBI*. Hum Brain Mapp., 40(15), p 4441-4456. PMID: 31294921.

07/21 Organization for Human Brain Mapping Merit Awards (top 1% of abstracts)

Functional Connectome Reorganization after Pontine Stroke is Associated with Better Motor Outcomes and Identification

Synthesis of Preferred Images for Individual Regions in the Human Visual Cortex

10/22 Distinguished Investigator Award

The Academy for Radiological and Biomedical Imaging Research

10/23 Mentor of the Year Award

Neuroscience Graduate program, Weill Cornell Medicine

05/26 Mentor of the Year Award

Neuroscience Graduate program, Weill Cornell Medicine

TEACHING AND MENTORING

Formal Teaching

2005 Calculus I for Science and Engineering, Case Western Reserve University, Cleveland, OH
 2005 Calculus I for Life and Social Sciences, Case Western Reserve University, Cleveland, OH
 2006 Calculus II for Life and Social Sciences, Case Western Reserve University, Cleveland, OH
 2008 Integrated Calculus, Summer Medical and Dental Education Program, Case Western Reserve University, Cleveland, OH
 2009 Calculus III for Science and Engineering, Case Western Reserve University, Cleveland, OH
 2021 Faculty advisor, Data Science Basics Course, Neuroscience, WCM, NY NY
 2023-24 Co-instructor, Introduction to Computational Biology, Cornell University, Ithaca NY

Invited Educational Lectures

11/11 & 3/14 Lecture for CS7594: Seminar on Computational Issues in Health and Medicine, Cornell-Ithaca and Cornell NYC-Technion, Cornell University, Ithaca, NY
 12/13 Lecture for CS5660: Signal and Image Processing at Cornell NYC-Technion, Cornell University, Ithaca, NY
 7/14 Rehabilitation Medicine Grand Rounds, WCM, New York, NY
 12/15 Neurology Grand Rounds, WCM, New York, NY
 6/16 Neurological Surgery Grand Rounds, WCM, New York, NY
 11/17 Lecture for ECE 5970: Machine Learning with Biomedical Data, Cornell-Ithaca
 2017-2022 Lecture for Radiology Resident Education Seminar, WCM, New York, NY
 03/19 Lecture for Cornell Bioinformatics Club, Cornell University, Ithaca NY
 02/20 Lecture for Electrical Engineering Department, Cornell University, Ithaca, NY
 08/20 Lecture for Computational Biology Department, Cornell University, Ithaca, NY
 09/21 Lecture for Applied Quantitative Techniques for the Biological Sciences, Neuroscience, WCM, NY NY
 09/23 Lecture at Neuroscience program retreat
 03/24 Lecture at SUNY Canton (virtual)
 09/24 Statistics and Data Science Lecture, Cornell University
 2023-2024 Lectures for Intro to Computational Biology course, Cornell University
 6/24 Lecture at Stanford University
 3/25 Lecture at UCSF, Biomedical Image Analysis

Mentoring

Fall 2011 STEM after-school program mentor, New York Academy of Sciences, New York NY
 2015-2016 Neurosciences graduate program rotation mentor: Naomi Xia, Hillary Raab, Hasan Mohammad and Xhie Xie, WCM, New York, NY
 2015-2018 PhD thesis committee member, Christopher Mezas, Department of Neuroscience, WCM, New York, NY
 Summer 2016 Summer internship mentor:
 Evan Yu, Biomedical Engineering graduate student, Cornell University, Ithaca, NY
 Quintin Rizek, neuroscience graduate student, Brown University, Providence, RI
 Kimberly Ho, high school student, Stuyvesant High School, New York, NY
 2016-2021 PhD thesis committee member, Xhie Xie, Department of Neuroscience, WCM, New York, NY
 2017-2023 PhD thesis committee member for Evan Yu, Department of Electrical and Computer Engineering, Cornell University, Ithaca NY
 2017-2021 PhD thesis co-mentor for Meenakshi Kholsa, Department of Electrical and Computer Engineering, Cornell University, Ithaca NY
 2018-2021 PhD thesis committee member for Hassan Mohammad, Department of Physiology, Biophysics and Systems Biology, WCM, New York NY
 2018-2021 PhD thesis committee member for Gabriele Campanella, Department of Physiology, Biophysics and Systems Biology, WCM, New York NY
 2018-2021 PhD thesis advisor for Elvisha Dhamala, Department of Neuroscience, WCM, New York, NY
 2018-2024 Postdoctoral Fellow and early faculty (Instructor) advisor for Ceren Tozlu, Department of Radiology, WCM, New York NY

09/18-05/19 Mentor for Master's in Engineering project for students Hanyang Zhang, Shashank Pathak, Siwen Chen, Cornell University, Ithaca NY

12/18-2/23 PhD Committee Member for Biomedical Engineering PhD student Qihao Zhang, Cornell University, Ithaca, NY

12/18-3/23 Minor PhD mentor for Biomedical Engineering PhD student Jinwei Zhang, Cornell University, Ithaca, NY

05/19-9/19 Undergraduate research project mentor, Sharon Dang, Cornell University, Ithaca NY

05/19-05/20 Undergraduate research project mentor for Alex Lin, Cornell University, Ithaca NY

06/19 PhD Thesis Committee Member for PhD student Sarah Eskreis-Winkler

07/19-9/19 Undergraduate Summer Research Experience mentor, Sarah Dennis (Sarah Lawrence)

10/19-6/24 PhD thesis committee member for Amanda Simon, Department of Neuroscience, WCM, NY, NY

05/19-2021 Undergraduate research project mentor for Jason Chen, Cornell University, Ithaca NY

2019-2024 PhD thesis co-mentor, Suniyya Waraich, Department of Neuroscience, WCM, New York, NY

2019-2022 PhD thesis committee member, Gia Ngo, Department of Electrical and Computer Engineering, Cornell University, Ithaca NY

2020-2023 PhD thesis advisor for Emily Olafson, Department of Neuroscience, WCM, NY, NY

9/19-6/23 PhD thesis advisor for Electrical and Computer Engineering PhD student Zijin Gu, Cornell University, Ithaca, NY

12/19-05/23 PhD thesis committee member, Josue Barnes, Physiology, Biophysics, Systems Biology WCM, NY, NY

12/19-5/20 Project Advisor, Department of Statistics and Data Science master's students, Cornell University, Ithaca, NY

1/20-present PhD thesis co-mentor for Physiology, Biophysics, Systems Biology PhD student Lisa Iatckova, WCM, NY, NY

1/20-2021 Undergraduate research project mentor, Elaine Wu, Cornell University, Ithaca NY

1/20-9/21 Undergraduate research project mentor, Yiran Li, Cornell University, Ithaca NY

5/20-4/21 Undergraduate research project mentor, Nicholas Vartanian, University of Vermont, VT

6/20-5/24 PhD thesis advisor for Computational Biology PhD student Parker Singleton, Cornell University, Ithaca, NY

6/20-5/22 Undergraduate research project mentor, Catherine Cai, Cornell University, Ithaca NY

6/20-5/22 High school summer research project mentor, Georgia Russello, White Plains NY

2020-2021 OHBM Mentor Program

2020-2021 Skype a Scientist

1/21-12/23 Undergraduate research project mentor, Bella Nevarez, Cornell University, Ithaca NY

2/21-2/23 Undergraduate research project mentor, Nate Roy, Cornell University, Ithaca NY

6/21-8/22 High school summer research project mentor, Sophie Card

8/21-9/22 Undergraduate research project mentor, James Campbell, Cornell University, Ithaca NY

08/21-11/21 Graduate rotation mentor, Syed Hussain Ul-Bukhari, Weill Cornell Medicine, NY NY

09/21-10/21 Graduate rotation mentor, Hao Xue, Cornell University, Ithaca NY

11/21-12/21 Graduate rotation mentor, Yilin Liu, Cornell University, Ithaca NY

8/22-present PhD thesis advisor, Louisa Schilling, Weill Cornell Medicine, NY NY

8/23-6/25 PhD thesis advisor, Keith Jamison, Cornell University, Ithaca NY

8/24-present PhD thesis advisor, Yunrui Zhang, ECE Cornell University, Ithaca NY

8/24-present PhD thesis advisor, Daniel Chong, ECE Cornell University, Ithaca NY

8/23-5/24 Masters thesis advisor, Marie Hedo, Technical University of Munich, Germany

8/24-4/25 Masters thesis advisor, Natalia Prieto, Technical University of Munich, Germany

8/24-present PhD thesis advisor, Marie Hedo, Comp Bio Cornell University, Ithaca NY

5/24-11/25 PhD thesis advisor, Syed Hussain Ul-Bukhari, Neuro Weill Cornell Medicine, NY NY

8/22-present PhD thesis advisor, Ana Radanovic, Neuro Weill Cornell Medicine, NY NY

8/22-present PhD thesis advisor, Anthony Villegas, Neuro Weill Cornell Medicine, NY NY

8/22-present PhD thesis advisor, Christie Gillies, Neuro Weill Cornell Medicine, NY NY

8/23-present PhD thesis advisor, Haomiao Chen, ECE Cornell University, Ithaca NY

7/25-present MD-PhD thesis advisor, Willian DeFaria, Tri-I MD-PhD program, WCM NY NY

9/24-present Postdoctoral advisor, Ke Huang, Weill Cornell Medicine, NY NY
9/25-present PhD thesis advisor, Safaa Mouline, BME Cornell University, Ithaca NY

ADMINISTRATIVE AND PROFESSIONAL ACTIVITIES

2010-2016 Director, Biomedical Imaging Research Seminar Series, WCM, New York, NY
2015-2016 Faculty Board, Women in Science, WCM, New York NY
9/18, 2/21, 4/22 Symposium Organizer, *Bridging the Gap: Machine Learning in Medicine*, Cornell University, Ithaca NY and Weill Cornell Medicine, NY NY
2016-2026 Founder and Director, Machine Learning in Medicine, Weill Cornell Medicine and Cornell University, www.mlim-cornell.club
2019-2020 Faculty Advisor, Cornell Bioinformatics Club, Cornell University, Ithaca, NY
2020-2022 Review Editor, *Frontiers in Neuroscience: Brain Imaging Methods*
2020-2022 Topic Editor, *Advances in Brain Functional and Structural Networks Modeling via Graph Theory*, *Frontiers in Neuroscience*
2020-present Executive Editor, *Machine Learning in Biomedical Imaging*
2021-2025 Associate Editor, *Data Science in Science*
2024-present Associate Editor, *PLoS Computational Biology*
2024-present Special Issue Editor, *NeuroImage: Clinical*
2024-present Co-director, AI Core, *Ann S. Bowers Women's Brain Health Initiative*
2024-present Lecture Series Organizer, *Ann S. Bowers Women's Brain Health Initiative*, has ~850 registrants from across the world

Ad-hoc Reviewer

Science, Nature, Nature Neuroscience, Nature Human Behavior, Nature Reviews Neuroscience, Nature Communications, Scientific Reports, Brain, Brain Communications, PNAS, Cerebral Cortex, Journal of Neuroscience, Neurology, Cell, Biological Psychiatry, Translational Psychiatry, NeuroImage, NeuroImage: Clinical, Human Brain Mapping, Radiology, Stroke, Neuroradiology, Journal of Cerebral Blood Flow and Metabolism, JAMA Neurology, eNeuro, Cell Reports, Annals of Neurology, Cognitive Neuroscience, PLoS One, Journal of Neurotrauma, Alzheimer's Research and Therapy, American Journal of Neuroradiology, Journal of Alzheimer's Disease, European Journal of Neurology, Transactions on Biomedical Engineering

Grant Review Panels

Swiss National Foundation (2026), National Institutes of Health (EITN/ITN standing member: 2022-2026, NST and SBIB/SBIR study sections: 2021), Congressionally Directed Medical Research Programs (CDMRP) (United States: 2019, 2020), Wellcome Foundation (United Kingdom, 2025) French Stroke Research Foundation (France), Healthy Brains for Healthy Lives Research (Canada), Biotechnology and Biological Sciences Research Council (United Kingdom, 2019), Dutch Research Council NWO (Netherlands, 2019)

Science Communication and Outreach

Brain Wiring Linked to Age, Sex and Cognition, Cornell Chronicle, 2021.08.17
Structural and Functional Alignment in the Brain Linked to Age, Sex and Cognition, Weill Cornell Newsroom, 2021.08.16
Acid test: scientists show how LSD opens doors of perception, The Guardian, 2021.05.19
Cross-campus effort rushes 3D-printed gear to Weill Cornell, Cornell Chronicle, 2020.03.31
One way to help strapped hospitals? Print PPE using 3D printers, NPR, 2020.03.28
Functional connectivity identifies impairment in MS, Clinical Neurology News, 2020.03.01
Cornell research group explores potential of machine learning in medicine, The Cornell Daily Sun, 2020.02.03.
Psychedelic drugs flatten the brain's dynamic landscape, WCM Newsroom, October 3, 2022.
Psychedelic drugs flatten the brain's dynamic landscape, Cornell Chronicle, October 10, 2022.
AI in Neuroscience, Researcher Insights (Vol 2), February 1, 2023.
Scientists use AI-generated images to map visual functions in the brain, WCM Newsroom, November 30, 2023.

Using Computational Biology to Understand How the Brain Works. The Orthogonal Bet: Riskgaming podcast, July 26, 2024.

Professor Amy Kuceyeski x Neuroscience in Sports. Science Encapsulated podcast. July 28, 2024.

MS and Structural Disconnectivity: Pathophysiology and Emerging Technologies. NeuroFrontiers, ReachMD podcast, Feb 27, 2025.

Structural and functional brain disconnection in multiple sclerosis. VuMedi, March 13, 2025.

Mapping the Connections Between the Brain's Structure and Function. WCM Newsroom, June 5, 2025.

Weill Cornell Study Develops AI Tool To Understand How Human Behavior Arises from Brain Networks. MedicalResearch.com, June 17, 2025.

Predicting Brain Function and Artificial Intelligence. To the Best of Our Knowledge, WAMC Northeast Public Radio, June 30th, 2025.

Organizer of 2024-2025 Kaggle+Women in Data Science (WiDS) Datathon Challenge, *Unraveling the Mysteries of the Female Brain*

Early Brain Differences May Explain Sex-Specific Risks for Addiction. WCM Newsroom, November 21, 2025.

Unleashing the Krakencoder. Impact Magazine, Fall 2025.

Large-scale neuroimaging datasets often lack information specific to women's health, constraining AI's analysis potential. The Transmitter, March 16, 2026.

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