

AMY KUCEYESKI, PHD
Weill Cornell Medicine
Department of Radiology and Brain and Mind Research Institute
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Faculty Appointments

- 2019-present **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-present **Adjunct Associate Professor**
Department of Statistics and Data Science and Computational Biology
Cornell University, Ithaca, 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
- 2014-2018 **Visiting Researcher**
Non-Invasive Brain Stimulation and Human Motor Control Laboratory
Burke Rehabilitation Center, White Plains, NY
- 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

Education

Case Western Reserve University

PhD, Applied Mathematics, May 2009

Thesis Advisor: Dr. Daniela Calvetti

Thesis Title: Efficient computational and statistical models of hepatic metabolism

Mount Union College

BS, Mathematics, May 2004

Graduated Summa Cum Laude

RESEARCH

Research Training

- 2009-2013 **Postdoctoral Fellow**, Department of Radiology, Weill Cornell Medicine, New York, NY
- Designed a novel approach studying brain connectivity in healthy and diseased patients using graph-theoretic measures and high-dimensional data processing methods.
 - Developed methods to infer cortical involvement from white matter injury; applied this methodology to Alzheimer's disease, Fronto-temporal dementia and alcohol dependence.
 - Results from this work were presented in several peer-reviewed journals and various world-wide conferences.
- 2006-2009 **Research Assistant**, Mathematics Department, Case Western Reserve University, Cleveland, OH
- Developed a family of computational models of liver metabolism using statistical tools; this will be a useful aid in the study of liver function and in the design of preventive and curative measures for metabolic disorders
 - Designed procedures for steady state analyses, parameter estimation, and dynamic sensitivity analyses for hepatic metabolism models that were validated by experimental data

- Initiated a project developing a new methodology for identifying phenotypic subgroups within the Bipolar Disorder population with the National Institute of Mental Health and the National Institute of Neurological Disorders and Stroke
- Implemented data mining techniques, including association rule analysis and frequent itemsets, on large sets of medical history data in both Matlab and Excel, which lead to some conclusions about frequency and concurrence of symptoms in patients with the disease that may help diagnosis and prevention

Publications

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., Durrazo 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., Togliola, 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 Khorri, 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., Togliola, 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. **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.

BOOK CHAPTERS

1. **Kuceyeski A.** (2017) “Brain Lesion Studies.” *Encyclopedia of Evolutionary Psychological Science*, Editors: Todd K. Shackelford and Viviana A. Weekes-Shackelford, Springer.
2. **Kuceyeski A and Boes A.** (in press) “Lesion network mapping: from a topologic to a hodologic approach”, *Lesion-to-Symptom Mapping: Principals and Tools*. Editors: Daniel Mirman and Dorian Pustina.

REVIEWS

1. Khosla M, Jamison K, Ngo GH, **Kuceyeski A**, Sabuncu MR. (in press) *Machine learning in resting-state fMRI analysis*. Magn Reson Imaging.

Presentations

INVITED TALKS

- 11/19 *The role of the connectome in post-stroke impairment and recovery*
Cleveland Clinic, Cleveland, OH
- 10/19 *NeuroImaging in the Cloud*
Cloud Computing Symposium, WCM, New York, NY
- 09/19 *Connectomics in injury and recovery*
Brain Injury Research Seminar Series, 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 NeuroImaging Symposium, WCM, New York, 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
- 11/16 *The role of the brain's connectome in health and disease*
Buffalo NeuroImaging Analysis Center, Buffalo, NY
- 10/16 *The (dys)-connectome: quantifying brain network influences in disease and recovery*
Biomedical Imaging Center 3rd Annual Symposium, Mount Sinai, NY
- 04/16 *Exploring the connectome without diffusion tensor imaging: from research to clinical application in stroke*
European Stroke Conference, Venice Italy
- 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
- 10/14 *Modeling the Link Between Structural Connectivity Network Disruption and Performance and Activity Limitation in Stroke*
American Congress for Rehabilitation Medicine, Toronto, Canada
- 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
- 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
- 04/12 *Quantifying loss in brain connection in Neurodegeneration*
Columbia University, New York, NY
- 03/12 *Linking Structural Brain Network Disruption to Dysfunction*

- Brain Trauma Foundation**, New York, NY
 09/11 *Quantifying Disruptions in the Structural Brain Network*
McGill University, Montreal, Quebec, Canada
 09/07 *Mathematical modeling and its application to liver metabolism*
Mount Union College, Alliance, OH
 06/07 *The liver: spatial distribution at steady state*
Applied Inverse Problems Conference, Vancouver, Canada, June 2007
 05/07 *Adaptive sampling techniques: application to a large-dimensional liver metabolism model*
Lappeenranta University of Technology, Lappeenranta, Finland
 12/06 *A spatially distributed metabolic model of the liver in fasted, resting state*
Finnish Inverse Problems Society Conference, Tampere, Finland

Support and Awards

CURRENT RESEARCH GRANTS

- National Institutes of Health: NINDS 1R56NS111052 08/15/2019-07/31/2024
 PI: Butler
 Role: co-I
 Title: CSF Clearance and Brain Amyloid Dynamics after Traumatic Brain Injury
 Description: This project applies Positron Emission Tomography (PET) to measure amyloid and amyloid clearance in the brains of patients following TBI. We will test the hypothesis that CSF clearance predicts the reduction in the amount of amyloid present in the brain one year after TBI and will also examine whether CSF clearance is relevant to recovery (cognitive, functional and symptomatic) from TBI.
- Department of Radiology, CBIC Imaging Research Pilot Award 07/01/2019-06/30/2020
 PI: Butler
 Role: co-I
 Title: Biomarkers of neurodegeneration in women who have experienced repetitive traumatic brain injury due to intimate partner violence
 Description: The major goals of this project are to identify neuroimaging based biomarkers of neurodegeneration in victims of domestic violence
- Department of Radiology, CBIC Imaging Research Pilot Award 10/01/2019-09/30/2020
 PI: Kuceyeski and Calderon
 Role: co-PI
 Title: Brain structural connectivity changes in mouse models of post-traumatic brain injury recovery
 Description: The major goals of this project are to relate diffusion MRI based biomarkers of injury and measures of motor recovery after traumatic brain injury in mice
- Department of Radiology, CBIC Imaging Research Pilot Award 02/01/2019-06/30/2020
 PI: Kuceyeski and Shah
 Role: co-PI
 Title: Neuronal loss underlying impaired executive attention after traumatic brain injury (TBI)
 Description: The major goals of this project are to relate PET-based biomarkers of neuronal loss to attention deficits in traumatic brain injury subjects.
- Department of Radiology, CBIC Imaging Research Pilot Award 08/01/2018-07/31/2020
 PI: Kuceyeski
 Role: PI
 Title: The evolution of the connectome in stroke
 Description: The major goals of this project are to quantitatively model the changes in the structural and functional connectome in the brains of post-stroke patients.
- National Institutes of Health: NINDS 1R01NS114405-01 07/01/2019-06/30/2024
 PI: Boes
 Role: co-I

Title: Predicting Cognitive Outcomes from Stroke Based on Lesion Location
Description: The goals of this project are to use advanced statistical techniques applied to lesion characteristics to obtain more accurate prediction of cognitive outcomes in post-stroke populations.

National Institutes of Health: NINDS 1R01NS102646-01A1 12/01/2017-11/30/2022
PIs: Kuceyeski and Shah
Role: co-PI

Title: Multi-modal imaging of the mechanisms underlying impaired executive attention after traumatic brain injury
Description: The goals of this project are to characterize the underlying mechanisms of attention deficits in TBI patients using EEG, MRI and machine learning approaches.

National Institutes of Health: NINDS 1R21 NS104634-01 9/30/2017-8/31/2020 (NCE)
PI: Kuceyeski
Role: PI

Title: Quantifying the Role of the Connectome in Resiliency to Multiple Sclerosis
Description: The goals of this project are to use machine-learning approaches to compare the connectomes of MS patients that have high and low amounts of disability despite having similar amounts of lesion load.

National Institutes of Health: NINDS NS104283 07/01/2018-06/30/2023
PI: Gauthier
Role: Co-investigator

Title: Exploring Mechanisms of Tissue Injury in Multiple Sclerosis
Description: To test the hypotheses that m/M activity and iron increase within acute MS lesions are associated with more myelin destruction and that the combination of low myelin and persistent iron within chronic MS lesions predicts neurodegeneration and sustained clinical disability.

National Institutes of Health: NIBIB R01 EB022717-01 09/30/2016-06/30/2019
PI: Raj
Role: Co-investigator

Title: Multimodal modeling framework for fusing structural and functional connectome data
Description: This project will develop graph theoretic models of brain activity.

National Multiple Sclerosis Society: RR-1602-07671 10/01/2016-09/30/2020
PI: Thanh Ngyuen
Role: Co-investigator

Title: Identifying mechanisms of myelin repair in multiple sclerosis
Description: The major goals of this project are to use multi-modal MR imaging to detect demyelination and myelin repair in multiple sclerosis

National Institutes of Health, NCI: 1R01CA181566-01A1 5/19/2015-4/30/2020
PI: Spincemaille
Role: Co-investigator

Title: Compact Representations of Dynamic Liver MRI
Description: To develop and test an MR-based imaging method for more accurate characterization of liver tumors during initial detection and follow-up.

PAST RESEARCH GRANTS AND STIPENDS

Kellen Junior Faculty Fellowship 4/1/17-7/31/18
PI: Kuceyeski
Role: PI

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

National Institutes of Health, NHLBI R21 HL132277-01 9/1/16-8/31/18

PIs: Kuceyeski and James Min

Role: Co-PI

Title: An integrated computing platform for prediction and visualization of coronary ischemia

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

Leon Levy Research Fellowship

2/1/13-06/31/14

PI: Kuceyeski

Role: PI

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

Description: 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.

National Institutes of Health, NIBIB NRSA Post-doc Fellowship EB012404-01

8/2010-8/2012

PI: Kuceyeski

Role: PI

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

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

National Institutes of Health, NINDS R01 NS092802-01A1

7/15/16-12/01/17

PI: Ashish Raj

Role: Co-investigator

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

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

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

04/08 **Honorable Mention**

Research Showcase, Case Western Reserve University, Cleveland, OH

Awarded to approximately 10% of the participants for excellence in research and poster presentation

04/07 **First Prize**

Research Showcase, Case Western Reserve University, Cleveland, OH

Approximately 5% of the participants were awarded this prize for outstanding research and communication of their work

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

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
- 10/17 & 10/18 Lecture for Radiology Resident Education Seminar, WCM, New York, NY
- 03/19 Lecture for Cornell Bioinformatics Club, Cornell University, Ithaca NY

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 and Bob Xie, WCM, New York, NY
- Summer 2016 Biophysics graduate program rotation mentor: Hasan Mohammad, 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
- 2015-2018 PhD thesis committee member, Christopher Mezas, Department of Neuroscience, WCM, New York, NY
- 04/19-06/19 Rotation mentor for neuroscience PhD student Suniyya Waraich, 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
- 06/19 PhD Thesis Committee Member for PhD student Sarah Eskreis-Winkler
- 05/19-9/19 Undergraduate research project mentor, Sharon Dang and Alex Lin, Cornell University, Ithaca NY
- 07/19-9/19 Undergraduate Summer Research Experience mentor, Sarah Dennis (Sarah Lawrence)
- 12/18-present PhD Committee Member for Biomedical Engineering PhD student Qihao Zhang, Cornell University, Ithaca, NY
- 12/18-present Minor PhD mentor for Biomedical Engineering PhD student Jinwei Zhang, Cornell University, Ithaca, NY
- 05/19-present Undergraduate research project mentor Jason Chen, Cornell University, Ithaca NY
- 2016-present PhD thesis committee member, Xhie Xie, Department of Neuroscience, WCM, New York, NY
- 2017-present PhD thesis committee member, Evan Yu, Department of Electrical and Computer Engineering, Cornell University, Ithaca NY
- 2017-present PhD thesis committee member, Meenakshi Kholsa, Department of Electrical and Computer Engineering, Cornell University, Ithaca NY
- 2018-present PhD thesis committee member, Hassan Mohammad, Department of Physiology, Biophysics and Systems Biology, WCM, New York NY
- 2018-present PhD thesis committee member, Gabriele Campanella, Department of Physiology, Biophysics and Systems Biology, WCM, New York NY
- 2018-present PhD thesis advisor, Elvisha Dhamala, Department of Neuroscience, WCM, New York, NY
- 2018-present Postdoctoral Fellow advisor, Ceren Tozlu, Department of Radiology, WCM, New York NY and Department of Statistics and Data Science and Computational Biology, Cornell University, Ithaca NY
- 2019-present PhD thesis committee member, Suniyya Waraich, Department of Neuroscience, WCM, New York, NY
- 2019-present PhD thesis committee member, Gia Ngo, Department of Electrical and Computer Engineering, Cornell University, Ithaca NY
- 10/19-present Rotation mentor for Neuroscience PhD students Emily Olafson and Amanda Simon, WCM, NY NY
- 9/19-present Rotation mentor for Electrical and Computer Engineering PhD student Zijin Gu, Cornell University, Ithaca, NY
- 2019 (TBD) Advisor for a Department of Statistics and Data Science master's student project, 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 Symposium Organizer, *Bridging the Gap: Machine Learning in Medicine*, Cornell University, Ithaca NY
2016-present Founder and Director, Machine Learning in Medicine, Weill Cornell Medicine and Cornell University, www.mlim-cornell.club
2019-present Faculty Advisor, Cornell Bioinformatics Club, Cornell University, Ithaca, NY

Ad-hoc Reviewer

Nature Communications, Brain, Cerebral Cortex, Neurology, Cell, Alzheimer's Research and Therapy, Frontiers in Neurology, American Journal of Neuroradiology, Frontiers in Human Neuroscience, NeuroImage, NeuroImage: Clinical, Human Brain Mapping, Radiology, Stroke, Neuroradiology, PLoS One, Journal of Alzheimer's Disease, European Journal of Neurology, Transactions on Biomedical Engineering, Scientific Reports

Grant Review Panels

French Stroke Research Foundation (France), Healthy Brains for Healthy Lives Research (Canada), Biotechnology and Biological Sciences Research Council (United Kingdom), Dutch Research Council NWO, (Netherlands)

Memberships

Pi Mu Epsilon (mathematics honor society), Vice President
Psi Kappa Omega (academic honor society)
Alpha Lambda Delta (academic honor society)
American Mathematical Society
Society for Industrial and Applied Mathematics
Association for Women in Mathematics
Mathematical Association of America
International Society to Advance Alzheimer's Research and Treatment
American Heart Association
American Academy of Neurology
New York Academy of Sciences
International Society for Magnetic Resonance in Medicine
Organization for Human Brain Mapping
American Congress of Rehabilitation Medicine