

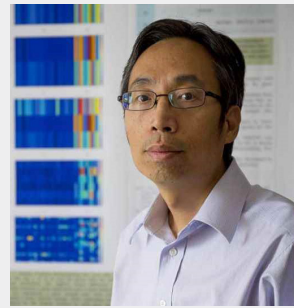
PAGE MORTON HUNTER DISTINGUISHED SEMINAR SERIES



INTEGRATION OF MULTI-MODAL BRAIN IMAGING AND MULTI-OMICS FOR PRECISION MEDICINE

Recent years have witnessed the convergence of multiscale and multimodal brain imaging and omics techniques, showing great promise for systematic and precision medicine. In the meantime, they also bring significant data analysis challenges when integrating and mining these large volumes of heterogeneous datasets. In this talk, firstly I will give an overview on the combination of multi-modal brain imaging and omics for precision medicine. Secondly, I will present our latest developments of machine/deep learning and statistical models for multi-scale data representation and analysis. Thirdly, I will present examples of applying these models to the extraction of biomarkers from (epi)genomics and MRI imaging data. In particular, I will focus on the integration of multiscale genomic and imaging data for improved diagnosis of mental illnesses (e.g., schizophrenia) and brain development study.

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Dr. Wang received a B.S. degree in applied mathematics from Tianjin University, China, in 1990, an M.S. degree in computational mathematics and a Ph.D. in communications and electronic systems from Xi'an Jiaotong University, China, in 1993 and 1996, respectively. After graduation, he had visiting positions at the Center for Wavelets, Approximation and Information Processing of the National University of Singapore and Washington University Medical School in St. Louis. From 2000 to 2003, he worked as a senior research engineer at Perceptive Scientific Instruments, Inc., then Advanced Digital Imaging Research, LLC, Houston, Texas. In 2003, he returned to academia as an assistant professor of computer science and electrical engineering at the University of Missouri-Kansas City. He is currently a full Professor of Biomedical Engineering and Biostatistics & Data Sciences at Tulane University School of Science and Engineering & School of Public Health and Tropical Medicine. Also, a member of the Tulane Center of Bioinformatics and Genomics, Tulane Cancer Center and Tulane Neuroscience Program. He has been on numerous program committees and NSF and NIH review panels and served as editors for several journals such as *J. Neuroscience Methods*, *IEEE/ACM Trans. Computational Biology and Bioinformatics (TCBB)* and *IEEE Trans. Medical Imaging (TMI)*. Recent effort has been bridging the gap between biomedical imaging and genomics, where he has over 300 peer reviewed publications. For this work, he was elected to be a fellow of American Institute of Biological and Medical Engineering (AIMBE).

September 1, 2022 • 3:30 p.m.

In-person:
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