

Emory University's Nell Hodgson Woodruff School of Nursing Secures Prestigious NIH Grant to Harness AI in Predicting Post-Stroke Cognitive Impairment

Atlanta, GA – **Dr. Xiao Hu PhD**, Asa Griggs Candler Professor of Nursing Data Science at Emory University's Nell Hodgson Woodruff School of Nursing (NHWSN), has been awarded an R01 grant from the National Institute of Neurological Disorders and Stroke (NINDS) to spearhead a groundbreaking study aimed at predicting Post-Stroke Cognitive Impairment (PSCI) through advanced artificial intelligence (AI) techniques.

Post-Stroke Cognitive Impairment is a common yet often under-recognized complication that affects stroke survivors, potentially hindering stroke recovery and increasing the risk of recurrent strokes. Despite its prevalence, there are significant gaps in both the understanding of how cerebral vascular contributions to dementia interact with pre-existing neurodegenerative conditions and in the availability of practical tools to aid clinicians in predicting and managing PSCI.

Dr. Hu's innovative research, titled ***AI-RESPECT: Using AI on Routine Clinical and Imaging Data from Acute Stroke Encounters to Predict Post-Stroke Vascular Contributions to Cognitive Impairment***, will address these critical gaps by developing novel AI algorithms. These algorithms will process extensive, routinely available, and ethnically diverse neuroimaging and electronic health record (EHR) datasets to predict PSCI. Through prospectively enrolling patients, the project will also assess the added benefits of incorporating new physiological and biological metrics related to cerebrovascular and neurodegenerative factors.

With the potential to transform clinical practice, Dr. Hu's research project could lead to significant improvements in how stroke survivors are managed, particularly those at high risk of cognitive decline. By predicting PSCI more accurately, healthcare providers can tailor recovery and prevention strategies to each patient's needs, improving outcomes and quality of life.

This grant award underscores Emory University's commitment to advancing health science research and utilizing cutting-edge technologies to improve patient care. The project will be co-directed by mPIs including Dr. Fadi Nahab from Emory Neurology and Dr. Deqiang Qiu from Emory Radiology. The highly interdisciplinary team consists of Dr. Carl Yang from Emory Computer Science, Dr. Jessica Saurman from Emory Neurology, Dr. Alex Fedorov from NHWSN Center for Data Science, Dr. Sandy Billinger from University of Kansas, Dr. Michael Borich from Emory Rehabilitation Medicine, and Dr. Nicholas Seyfried from Emory Biochemistry. In addition, the project will enjoy statistic supported from Dr. Melinda Higgins from NHWSN Office of Nursing Research and infrastructural support for biosample handling and storage from Goizueta Institute @ Emory Brain Health.

Dr. Xiao Hu is a Professor at the Nell Hodgson Woodruff School of Nursing, an associated professor at department of Computer Sciences at College of Arts and Sciences, and a program faculty, and a program faculty member at department of Biomedical Informatics at School of Medicine. Dr. Hu is also the Associate Director of the Center for Data Science. Dr. Hu earned bachelor's and master's of science

degrees in biomedical engineering at the University of Electronic Science and Technology in Chengdu, China. He then studied at UCLA, receiving a PhD in biomedical engineering in 2004.

Dr. Hu conducts research at the intersection of computational and health sciences where he develops signal processing, mathematical modeling, machine learning, and deep learning algorithms to transform physiological and clinical data into actionable information for improving patient care. Through his research, Hu has created knowledge advancing the relationship among clinicians, scientists, engineers, innovators, policy makers, and healthcare administrators.

For more information on Dr. Xiao Hu, visit his [profile](#). To learn more about the R01 Research Project grant, visit the National Institute Of Neurological Disorders And Stroke [website](#).

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About the School of Nursing

As one of the nation's top nursing schools, the Nell Hodgson Woodruff School of Nursing at Emory University is committed to educating visionary nurse leaders and scholars. Ranked the No. 1 master's, No. 2 BSN, and No. 6 DNP programs in the nation by U.S. News & World Report, the school is recognized as a Center of Excellence in Nursing Education by the National League of Nursing. The school offers undergraduate, master's, doctoral and non-degree programs, bringing together cutting-edge resources, distinguished faculty, top clinical experiences, and access to leading health care partners to shape the future of nursing and impact the world's health and well-being. Learn more at nursing.emory.edu.