

IEM SEMINAR SERIES

TUESDAY
APRIL 26th, 2016



Institute for
Engineering in Medicine

UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

FREE event, no registration
required.

Pizza and drinks will be provided
at around 11:45am.

12:00PM - 1:00PM
Room 2-102

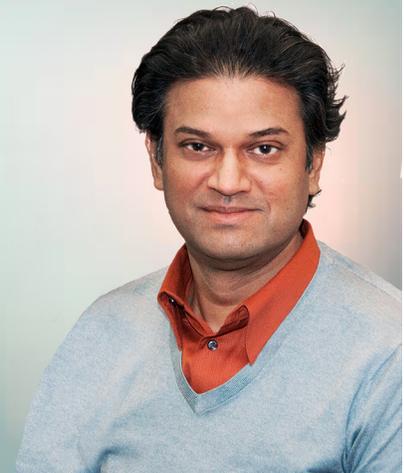
Center of Magnetic
Resonance Research

For additional information on
Dr. Hyder's presentation,
please contact:
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Metabolic Dialectics in Biomedical Neuroimaging

D.S. FAHMEED HYDER,
PH.D.

Professor, Radiology & Biomedical Imaging
Professor, Biomedical Engineering
Technical Director, MRRC Preclinical Scanners
Program Director, QNMR Core Center



The Institute for Engineering in Medicine (IEM) is pleased to announce the IEM Seminar by Dr. Fahmeed Hyder, "Metabolic Dialectics in Biomedical Neuroimaging."

Otto Warburg observed that cancers possess high aerobic glycolysis, defined as glucose use in excess of oxidative phosphorylation despite sufficient oxygen. But the "Warburg effect" has even influenced interpretations of neuroimaging data in both task and rest paradigms. Certain dogmatic perspectives on cerebral metabolism have prevailed primarily as a consequence of over-emphasis on imaging contrast, but at cost of sacrificing imaging specificity. However innovative technologies, based on advanced magnetic resonance methods, allow physiological and chemical activities of the neuropil to be measured. Results show that high oxidative phosphorylation in healthy brain supports incessant need for ion gradient restoration of cell membrane, a prerequisite for synaptic transmission and conduction. However elevated aerobic glycolysis may be a reliable biomarker in cancer. These new horizons in biomedical neuroimaging provide great enthusiasm for early diagnosis and following treatments for a range of neurodegenerative disorders, and even gliomas.

D. S. Fahmeed Hyder is Professor of Radiology & Biomedical Imaging and Biomedical Engineering at Yale University. He is a founding member of the Department of Biomedical Engineering. He is also founder and director of the QNMR Core Center, a widely used institutional resource for systems-level neuroimaging. His teaching and research involves development of neuroimaging technologies, spanning from neuroscience to neuro-oncology. He received a bachelor's degree in physical chemistry in 1990 from Wabash and a doctoral degree in biophysical chemistry from Yale in 1995. His work has produced nearly 150 peer-reviewed publications and invited presentations. He has written and edited books on functional neuroimaging. He holds several magnetic resonance patents on molecular neuroimaging. He has had continuous NIH support since becoming an independent investigator and several NIH institutes have supported him. He has renewed grants from different scientific funding agencies and he has received early career awards from various societies and agencies. He sits on editorial boards of several scientific journals and he reviews for many scientific journals spanning several disciplines. He serves on advisory panels of several funding agencies. In his free time, he enjoys family, music, arts, languages, travel, and sports. He also volunteers for Distressed Children International and other organizations.

For more information on IEM Seminar Series, visit
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