

***E. Mark Haacke, PhD, Professor of Radiology, Wayne State University
Vice-Chairman, Biomedical Engineering in the School of Medicine***

Professor Haacke is a pioneer in the development of new magnetic resonance imaging (MRI) technology and image reconstruction including MR angiographic (MRA) imaging, fast imaging cardiovascular imaging, susceptibility weighted imaging (SWI), quantitative susceptibility mapping (QSM) and super-resolution reconstruction. He has published more than 350 papers, has more than 35,000 citations of his work and an h-index of 90. His focus has been on developing new methods for studying neurodegenerative and neurovascular disease. He is currently President and Co-Founder of the International Society for Neurovascular Disease (ISNVD) and is past President and founding President of the International Society for Magnetic Resonance in Medicine (ISMRM) and of the Society for Magnetic Resonance in Imaging (SMRI). He has been awarded the Gold Medal of the ISNVD and the Gold and Silver Medals of the ISMRM. His paper on susceptibility weighted imaging was awarded one of the top 30 papers in the last 30 years published in the journal Magnetic Resonance in Medicine (MRM). His papers on iron in the brain and susceptibility mapping published in MRI are among the highest accessed and quoted papers in that journal.

Prof. Haacke's group has developed a number of new techniques to study Parkinson's disease including: an SWI based magnetization transfer contrast (MTC) imaging sequence for neuromelanin imaging, a new approach for enhanced contrast and quantitative T1 and spin density mapping referred to as strategically acquired gradient echo (STAGE) imaging, an automated segmentation algorithm for extracting the deep gray matter nuclei including the substantia nigra (SN) and a new two region of interest high iron content analysis for evaluating the heterogeneity of iron deposition in the SN. His group also has interest in expanding databases related to neurodegenerative diseases and he has access to more than 4,000 cases of dementia, multiple sclerosis, Parkinson's disease, stroke and traumatic brain injury (TBI).

Prof. Haacke has helped to establish a standardized protocol for imaging the midbrain and SN for this project and in the past has developed standardized protocols for multiple sclerosis and TBI. His group is dedicated to imaging iron and improving quantitative susceptibility mapping methods. He has more than 25 people working for him on MR imaging in his research laboratories. This provides a major resource for dealing with technical and processing issues in MRI.