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# Labile and immobilized iron in neurodegenerative diseases

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Elevated levels of iron are associated with many neurological diseases such as Parkinson's, Alzheimer's, ALS, MS and Huntington's as well as Neurodegeneration with Brain Iron Accumulation (NBIA). However, it is unclear whether this iron is a cause or a result of pathology, and little is known about what form the iron takes and how such knowledge might be useful for improved diagnosis or treatment. It was examined several tissue types for iron using synchrotron radiation spectroscopy, as well as high -field MRI, and have looked into the role that immobilized iron might play as a heterogeneous catalyst of oxidation. This is based on identification of iron oxides present in human patient autopsy tissue that differs from normal "safe" states such as ferritin or hemoglobin. We think that iron and copper play key roles in maintaining, if not initiating, the ongoing inflammatory, oxidative environment that is toxic to neurons and will examine how better understanding might lead to better diagnosis and possible disease-modifying treatment. Challenges with evaluating the role of iron will be examined as well as the possible role of chelators as treatment agents.

## Biography

Christopher Batich received a PhD from Rutgers in Organic Chemistry. He did a Post-doc at the University of Basel and then worked at the DuPont Central Research and Development Department. He joined the University of Florida in 1980. He was the founding Director of the graduate biomedical engineering program at UF, and founding Associate Director of the Clinical and Translational Science Institute (CTSI) established at UF in 2009. He is a co-inventor of 60 patents with three commercialized. He is a fellow in the American Institute of Medical and Biological Engineering (AIMBE), and has published in the field of biomedical engineering.

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