The objective of this Research Associate’s research is to examine the mechanisms by which eukaryotic cells take up and efflux the essential trace metals, iron and manganese. A specific focus is on the role of the amyloid precursor protein in modulating iron trafficking across the blood-brain barrier. These studies are carried out primarily in cultured mammalian cells, and primary cultures of capillary endothelial cells, astrocytes and neurons removed from mice and rats. In addition, the structure and function aspects of recombinant forms of proteins involved in these iron trafficking processes will be examined by biophysical (isothermal calorimetry, circular dichroism) and cell biologic approaches. This research involves a variety of methods including extensive use of molecular biologic/protein engineering techniques (recombinant DNA technology); cell culture; protein localization (indirect immunofluorescence, FRET); protein expression and purification; enzyme and various analyte assays (ELISAs); protein biophysical quantification (enzyme kinetics, isothermal calorimetry, circular dichroism); cellular metabolite ($^{59}$Fe- and $^{54}$Mn-trafficking) kinetics.

The kosmanlab is located in the brand-new Jacobs School of Medicine and Biomedical Sciences of the University at Buffalo. Take a look at our new digs at [http://kosmanlab.com/](http://kosmanlab.com/).

We want to recruit a new Ph.D. to our group, one who has a demonstrated ability to work independently and to supervise less-experienced trainees. The successful candidate will be eligible for and qualified as a recipient of extramural fellowship support. Seeking such funds is a critical aspect of post-doctoral training.

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We look forward to hearing from you!