

Birgit Schilling, PhD: Dr. Schilling is a Professor and the Director of the Mass Spectrometry Core at the Buck Institute for Research on Aging in California, and she is also an Adjunct Professor at the University of Southern California (USC). The Schilling lab develops and implements advanced innovative protein analytical technologies (including quantitative proteomics, posttranslational modifications, protein dynamics and biomarker discovery) to advance basic biology and biomedical research related to aging research. Several research projects include investigation of protein phosphorylation, acylation, and other posttranslational modifications, as well as differential expression of proteins during disease and aging processes. We are particularly interested in deciphering underlying mechanisms of senescence during aging, and we have developed MS methodologies to quantitatively analyze protein secretomes, secreted exosomes and to perform accurate quantitative protein expression workflows. The Schilling lab has adopted several novel proteomic technologies with comprehensive and extremely sensitive quantification capabilities, and these are particularly applicable for the proposed project. We are using proteomic data-independent acquisitions (DIA), or SWATH which allows us to accurately determine changes in relative protein expression level between multiple different conditions.