Edward Kelly, Associate Professor
Department of Pharmaceutics, University of Washington

"Bioengineered Microphysiological Systems for Predictive Toxicity Testing"

Dr. Kelly earned his PhD in Biochemistry from the University of Washington in the laboratory of Richard Palmiter. Following a postdoctoral fellowship in molecular toxicology at UW with David Eaton, he ventured into Biotech, managing a Preclinical group at Targeted Genetics Corporation, evaluating the safety and efficacy of AAV-based gene therapies.

Upon his return to academia, his research interests have stayed within the realm of preclinical biology. His lab works on developing novel models to study normal human physiology and disease states, with a particular focus on cytochrome P450 enzymes and their role in endobiotic/xenobiotic metabolism.

The focus of his lab is on *ex vivo* modeling of human organ physiology and toxicological responses to drug/xenobiotic challenge. This research makes use of "organs on chips" or microphysiological systems (MPS) populated with primary and stem-cell derived cell types to recapitulate two key ADME organs, the liver and kidney. Recent work is extending MPS technologies to model human diseases, as well as how organs respond to the extreme environment of microgravity on the International Space Station. Dr. Kelly holds the position of Associate Professor in the Department of Pharmaceutics, Adjunct Associate Professor in the Department of Environmental and Occupational Health Sciences and also serves as Co-Director of the Pharmaceutical Bioengineering Program.