Michelle's research focuses on developing first-in-class chemical probes and drug leads for novel therapeutic targets in age-related diseases such as cancer and neurodegeneration. Her lab is particularly interested in using small-molecule and protein tools to dissect protein-protein interaction networks relevant to disease. Michelle also co-directs the UCSF Small Molecule Discovery Center (SMDC), which includes high-throughput screening, fragment-based lead discovery, and medicinal chemistry. In a typical year, the SMDC works with more than a dozen academic and pharmaceutical labs to develop novel screening assays and discover starting points for chemical biology and drug discovery.

Michelle is deeply involved in the Academic Drug Discovery community. She is the President of the Academic Drug Discovery Consortium and represents UCSF in the National Cancer Institute's Chemical Biology Consortium and the Accelerating Therapeutics for Opportunities in Medicine (ATOM) consortium; she is also an investigator in the Rainwater Foundation's Tau Consortium. Michelle is on the editorial boards for the Assay Guidance Manual and Current Protocols in Chemical Biology. Prior to UCSF, Michelle was a founding scientist at Sunesis Pharmaceuticals, where she helped discover the potent inhibitors of IL-2/IL-2R SP4206, the anti-inflammatory drug lifitigrast (developed by SARcode/Shire), and develop the anti-cancer experimental therapeutic vosaroxin.