Over the past decade, the pharmaceutical industry has more closely aligned drug discovery and development efforts in order to bring optimal preclinical drug candidates forward more rapidly. This interfacial research space is highly multidisciplinary, and there are many opportunities for collaboration amongst medicinal chemists, biologists, toxicologists and pharmacokinetics scientists. Towards this end, Merck development pharmaceutical scientists now routinely work in this space, designing innovative drug formulations that enable evaluation of promising drug candidates in various animal studies throughout the discovery process. Drug delivery methods that enhance the exposure of poorly soluble compounds are a particular area of need and focus. As promising compounds approach development approval, Pharm scientists also help optimize their physicochemical properties and identify a suitable crystalline phase. These early drug delivery and solid state chemistry efforts taken together help ensure that a preclinical drug candidate (PCC) will perform well in both pre-clinical toxicology studies and human clinical formulations. In all cases, miniaturization and state-of-the-art characterization methods are essential.

This presentation will focus on some key drug delivery tools we bring to bear in discovery space and show some brief case studies where effective drug delivery enabled progression of compelling compounds with sub-optimal physicochemical properties. During the Q and A part of the lecture, students also will have time to informally discuss the many interesting career opportunities in in the pharma industry with the speaker.

~Coffee/tea will be served prior to lecture~