Heart disease is the most significant cause of morbidity and mortality in the industrialized world. Recent technological advancement has enabled the generation of patient-specific and disease-specific human induced pluripotent stem cell-derived cardiomyocytes (iPSC-CMs) in vitro. These iPSC-CMs carry all the genetic information from the individuals from whom they are derived. Dr. Wu will discuss recent advances in this technology and how it may be used for elucidating mechanisms of rare inherited cardiovascular diseases, for drug discovery, and for precision medicine.