The goal of tissue engineering is to recapitulate organs and tissues that contain several components of native tissue or to design cellular systems that closely mimic structures found in vivo. The design of functioning and useful tissue mimics involves the optimization of numerous parameters, resulting in experimental solutions that are extremely labor and resource intensive. We will discuss the power and promise of computing and systems biology to mitigate these requirements. Experimental and computational advances in systems biology can lead to predictive models of tissue mimics and improve our understanding of bioengineered systems. Ultimately, we may be able to computationally simulate bioengineered tissues and organs, thereby dramatically reducing experimental costs and the time taken to design and improve tissue mimics.

Facilitators: Padma Rajagopalan / T.M. Murali

FRIDAY, NOVEMBER 9, 2–4 PM, ICTAS CAFÉ X