**Title:**  Engineering human organoids, organs, and societies

**Abstract.**Biological assembly events during human development and regeneration unfold over space and time, and encompass a breathtaking magnitude of scale. These processes fluidly coexist and are functionally interconnected across all levels of spatial scale and dimensionality – spanning molecular, cellular, tissue, organ, organism, and even population and society levels. Despite our growing understanding of these processes, our ability to replicate processes such as human organ assembly remains primitive. Most studies have replicated incomplete “snapshots” or fractional pieces that capture only a small part of the whole. The ability to replicate biological assembly events – such as those that impact how our organs are sculpted – would massively advance human health. Here, I will discuss recent work from my lab in developing new methods for programming human organs, with a focus at interfaces of dimensionality and scale. I will discuss how our approach spanning not only subcellular to organ scales, but also broader levels up to societal scale, ensures that our scientific enterprise benefits not just some individuals, but all of humanity.

**Bio:**Dr. Kelly Stevens is the Koh Associate Professor of Bioengineering, and Laboratory Medicine & Pathology at the University of Washington. Dr. Stevens' research team focuses on human organ design. Her team is developing transformative methods for reading and writing human organs, with a focus at interfaces of dimensionality and scale. Dr. Stevens also works to disseminate the message that to develop advances that equitably improve the lives of all people, our profession needs to include all people. Dr. Stevens has received numerous honors and awards as a result of her work, including Elected Co-Chair of the National Academies of Science, Engineering, and Medicine New Voices Cohort, AIMBE Fellow, Allen Distinguished Investigator Award, NIH New Innovator Award, and BMES CMBE Rising Star Award.