



Tissue Interfacing Robotic Therapeutics

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Thursday, April 1, 2021

Via Zoom @ 2:30pm

<https://usc.zoom.us/j/93176796114?pwd=MmVNdIRLQUs3bS9VSVNWOU5qUEhwQT09>

Meeting ID: 931 7679 6114

Passcode: 895038

Abstract: Medical devices that conform to and interact with the body hold profound implications in medicine, supporting a new generation of personalized and automated therapies with higher patient compliance and faster diagnostic feedback. In this talk, we will explore a series of ingestible and wearable technologies that physically interact with targeted tissues through programmable geometric and material transformations to enable previously unachievable therapeutic and sensing capabilities. Specifically, we will review the development of novel technologies enabling the oral delivery of macromolecule drugs such as insulin, as well as technologies enabling the rapid assessment of cancer therapeutics through real-time tumor monitoring.

Biography: Dr. Alex Abramson is an NIH F32 Postdoctoral fellow in Chemical Engineering at Stanford University working with Profs. Zhenan Bao, Joseph Desimone, and the late Sanjiv Sam Gambhir. He received his B.S. in Chemical and Biomolecular Engineering from Johns Hopkins University and his Ph.D. in Chemical Engineering from MIT under the direction of Profs. Robert Langer and Giovanni Traverso. His research, which focuses on oral biologic drug delivery and bioelectronic therapeutics, has been featured in news outlets such as The New York Times, NPR, and Wired, and he has worked closely with Novo Nordisk to develop clinical translation strategies for some of his inventions. Dr. Abramson is also involved in the public health sector and has performed research on quantifying the quality-of-life impact that novel biomedical technologies have on patients worldwide. In his spare time, Dr. Abramson volunteers as a STEM tutor at a local middle school, mentors start-up ventures in the biotechnology space, plays golf, and hikes. For more information about Dr. Abramson, please visit his website: www.agabramson.com.