

Title: Materials for Biologically Inspired Soft Robots

Abstract:

Robotics has the potential to address many of today's pressing problems in fields ranging from healthcare to manufacturing to disaster relief. However, the traditional approaches used on the factory floor do not perform well in unstructured environments. The key to solving many of these challenges is to explore new, non-traditional designs. Fortunately, nature surrounds us with examples of novel ways to navigate and interact with the real world. Dr. Tolley's Bioinspired Robotics and Design Lab seeks to borrow the key principles of operation from biological systems and apply them to robotic design. This talk will give an overview of recent projects in the lab that investigate the ways in which the use of non-rigid materials can help solve challenging problems in robotics. These projects seek to develop bioinspired systems capable of navigating the world by walking, digging, and swimming (inspired by animals like turtles, worms, and squid) and of interacting safely with humans and delicate objects.