

# BIOENGINEERING SEMINAR

SPRING 2024

## Robots that Learn to Influence Humans

### Abstract

Our society is rapidly developing interactive robots that collaborate with humans, e.g., self-driving cars near pedestrians, surgical devices with doctors, and assistive arms for disabled adults. The humans who interact with these systems will not always be experts in robotics: so how should we facilitate mutual understanding between everyday users and learning agents? My talk will examine this question from two perspectives: the robot's and the human's. From the robot's point-of-view, I will formalize algorithms that learn to interpret low-dimensional human inputs for controlling robot arms. From the human's point-of-view, I will leverage multimodal feedback to reveal what the robot has learned and when the robot is uncertain. When viewed together, these perspectives enable robots to learn to influence human partners towards coordinated and emergent behaviors.

### Biography

Dylan Losey is an assistant professor in Mechanical Engineering at Virginia Tech. His research interests lie at the intersection of human-robot interaction, learning, and control. Specifically, he develops algorithms that enable robots to personalize their behavior for human collaborators. Dylan was previously a postdoctoral scholar at Stanford University. He earned his doctoral degree in Mechanical Engineering from Rice University in 2018 and his bachelor's degree in Mechanical Engineering from Vanderbilt University in 2014. Dylan has received Best Paper awards from the Conference on Robot Learning and the IEEE/ASME Transactions on Mechatronics. He is an NSF CAREER award recipient.



### Dylan Losey, PhD

Assistant Professor,  
Mechanical Engineering  
Virginia Tech

**Thursday, February 29**  
**12:00-1:00 pm**

Fairfax Campus:  
**Horizon Hall, Rm 1008**

Live streaming to SciTech  
Campus: KJH 258