# CONNECTIVE ENVIRONMENTS

**URBAN SYNERGETICS LAB**

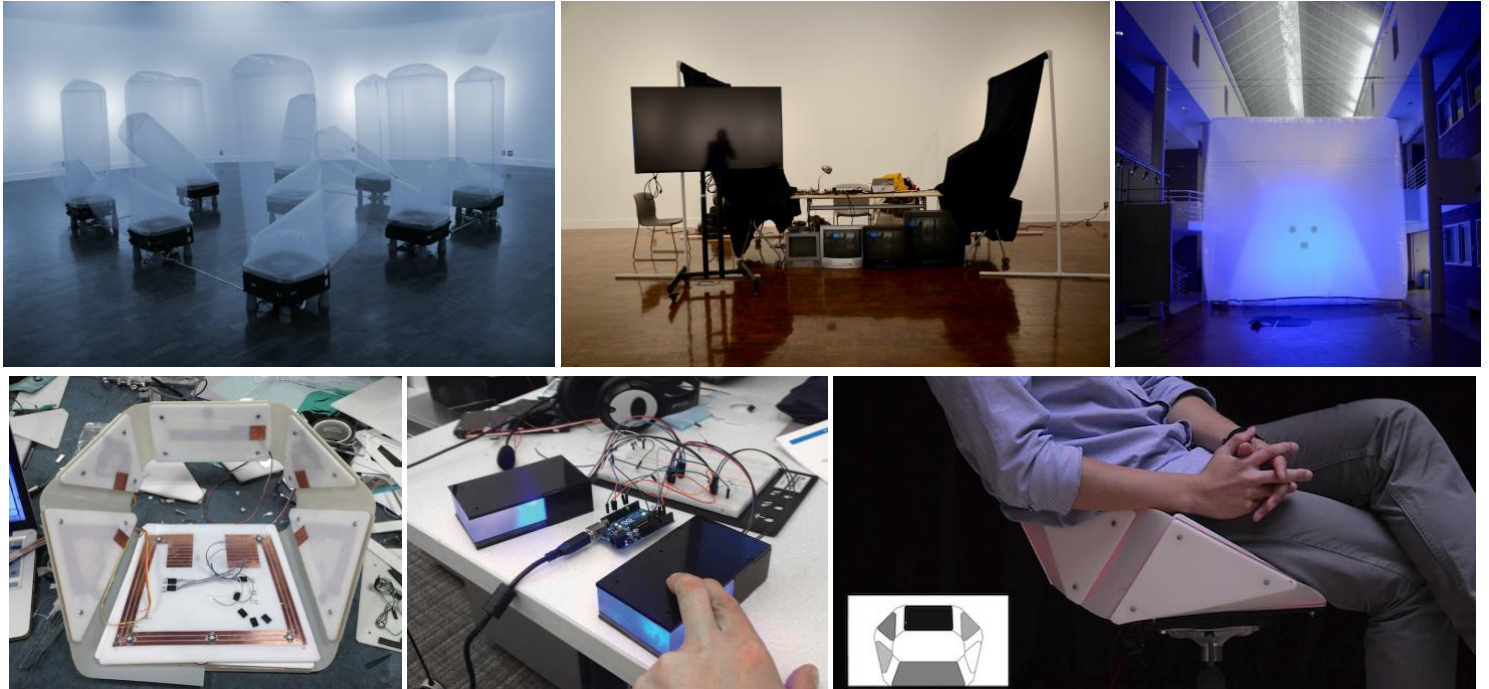## Physical Telepresence Architectural Media for Social Awareness

ARCH 6306: T 11:30pm-2:00pm / Previous year's website: https://connective-environments-fall2019.tumblr.com/

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### PREMISE

What if the built urban environment could mediate human interactions? This course introduces design, prototyping, programming and evaluation of physical telepresence media for individual and/or collective interactions in the age of social distancing, with and through the built environment. Through a project-based approach, students will explore how information technology and material or physical constraints enable novel affordances, and how these affordances drive design decisions for closing the loop between sensing and (re)acting. Project examples include tangible human-building interfaces, wearables, networked inflatables, music or sound interfaces, connected furniture.

### OBJECTIVES

Provides foundational skills in designing, prototyping, and programming interactive physical telepresence systems, analog or digital. Students learn how to conceptualize, present, and critique designs in a studio format; how to develop, program, and assess interactive systems; how to review state of the art literature in HCI/HBI/TEI and how to write a conference paper. Emphasis is on critical thinking and tradeoffs between technical complexity, end goals, design decisions, functionality, and quality of craft.

### TOPICS

Physical telepresence; shape changing Interfaces; distributed systems; tangible, embodied, and embedded interfaces; physical/mechanical computing.

### METHOD

The course is taught online and combines lectures, guest talks (from practitioners and faculty from MIT, CU Boulder ATLAS, The New School, Berklee / tentatively), lab assignments, readings, and student presentations and discussions.  Class is organized into three team projects and one final paper. Students regularly update a website to document projects and weekly progress. Final project integrates skills critically in a real architectural context that engages multiple individuals to interact with/through it. Final paper will be of publishable quality at the level of the ACM SIGCHI TEI, DIS, or ACADIA conferences (short paper or project category).

### PARTICIPATION

Open to G/U students in Architecture.

### PREREQUISITES

Students are expected to be self-motivated, have basic skills in 3D modeling and fabrication, and be familiar with the Arduino board and programming language (there are plenty tutorials online). Due to the breadth of topics, the course does not cover in depth each technical skill. Students must

coordinate in advance with Alex Cabral and Storrs Fabrication Lab for fabrication requirements of their projects.