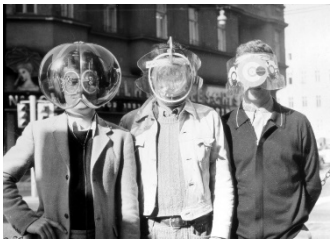
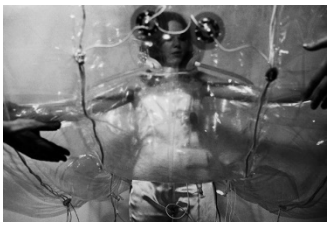
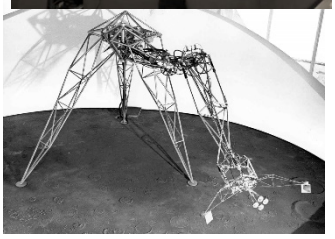
Instructor: Rachel Dickey
Thursday 11:30am-2:15pm
Location: Storrs 255
Email: rdickey4@uncc.edu
Office: Storrs 147

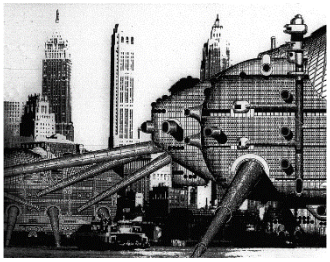
A 

B 

C 

D 

E 

F 

A. Haus Rucker Co, Environmental Transformer, 1968
B. Coop Himmelb(l)au, Heart Space-Astro Balloon, 1969
C. Diller Scofidio + Renfro, Blur: Braincoat, 2002
D. Greg Lynn, RV Prototype House 2012
E. Edward Ihnatowicz, Senster, 1960
F. Archigram, Walking City, 1964

PREMISE. As our bodies, buildings, and cities are being retrofitted with technology to gain dynamic intelligence and contextual awareness, how might we, as designers, provide visions of new spatial typologies and new modes of practice? The purpose of this course is to explore the space between architecture and technological paradigms specifically through the lens of the robot and the cyborg (which emerge from several overlapping dichotomies: man vs. machine, organic vs. mechanical, object vs. subject, myth vs. reality, freedom vs. restraint). This course both recognizes and critiques the fact that the current majority of architectural robotic research focuses primarily around digital fabrication and strives to produce examples of architectural robotics and integrated technologies which are translated from ways of living and human processes, particularly as they pertain to occupation of the built environment.

The class will be organized along three areas of interest:

- Beyond purely technological concerns, students will draw from a library of historical and contemporary precedents ranging from infrastructure scale robotics to body scale architectural prosthetics to contextualize their work. This polemic history will be presented through readings, lectures, and discussions.

- The course involves the design of an actuated responsive and interactive environment. Workshops will cover the use of Arduino for sensing and actuator control to allow for actualization of design ideas.

– Fabrication methods will be explored through discussions on use of composite materials, laminated assembly techniques, self-folding. We will draw upon digital fabrication techniques and methods for building mechanical function.

OBJECTIVES. A core objective is to explore how the robot cyborg narrative might provide designers with a unique lens for exploring newfound intimacies with ourselves, each other, and the world around us. Students are tasked with becoming better informed users of computational tools, while also providing theoretical narratives for their integration into the built environment. An additional objective is for students to understand the relationship between design and translation through active prototyping by exhibiting understanding of material behavior and fabrication.

FORMAT. Each class session will consist of lectures, discussions, progress presentations from students, and hands-on technical workshops. There will be progress assignments to produces design and study models that calumniate in a final course project. Presentations and discussions of ongoing student work are integral to the course. The course project involves the design of responsive architectural elements that demonstrate qualities of a robot (i.e., complexity of motion and re-programmability) while also addressing qualities essential to the language of architecture (i.e, space, light, materials, etc). These projects are an exciting opportunity, to not just think about, but actually demonstrate new possibilities for robotics in architecture via active prototyping. A video of previous student work in this area can be found here: https://www.youtube.com/watch?v=R2AfkkeMExY

Our emphasis goes beyond technology, and we will apply computational methods while also generating creative design narratives.