

# DESIGN & MAKING ACROSS DISCIPLINES: Architecture in COVID-19

A Pilot Collaboration between AAP & Cornell Tech

## Co-meeting courses

ARCH 7151 – Design Topic Research Studio (MS MDC students only) (6 credits)

ARCH 5116, ARCH 8913 & ARCH 4101/4102, 5101: Option Studio (B.Arch / M.Arch students only) (6 credits)

DESIGN 6151 (Cornell Tech students only); ARCH 4605/6605 Special Topics in Construction (3 credits)

FALL 2020: Mondays - 12:40-6:30pm Studio; Thursdays - 9:00am-10:15 Seminar / 10:30am-2:10pm workshop

Cornell Tech/AAP campuses; Modality: Studio is hybrid/in-person and seminar is Online

Instructor: Jenny E. Sabin / [jsabin@cornell.edu](mailto:jsabin@cornell.edu) / TA: Cameron Nelson / [cn339@cornell.edu](mailto:cn339@cornell.edu)

Office Hours: By appointment



Figure 1 (left) - Selection of work produced in the Sabin Lab @Cornell AAP, Jenny Sabin Studio, and Sabin+Jones LabStudio, 2006 – 2020; Figure 2 (right) – Protective face harness featuring 3-D printed flexible hinge by Sabin Lab as part of Operation PPE 2020

## I. Rationale:

Although there have been tremendous innovations in design, material sciences, bio- and information technologies, direct interactions and collaborations between scientists, architects, and engineers are rare. One approach is to couple architectural designers with engineers and scientists within a research-based laboratory-studio in order to develop new ways of thinking, seeing and working in each of our fields. **This combined studio+seminar is an introduction to fundamental concepts and methods in design and emerging technologies across architecture, engineering, and science to prepare students with the necessary tools and knowledge for iterative, hybrid, and synthetic thinking in design & making across disciplines.** Course work includes exposure to different theories, research, and practices of design and emerging technologies, making and digital fabrication (3D printing), computational and generative design, new materials, and bio-inspired design. Emphasis will be upon **problem generation** over immediate problem solving with specific focus in areas of materials and making, generative design, simulation, computational design, physical modeling, and digital fabrication within a hybrid lab+studio setting. This combined studio and seminar aims to engage and develop **hybrid thinking in design** through generative processes and digital fabrication of material and form across disciplines. Students from diverse disciplinary backgrounds investigate the intersections of architecture and science, and apply insights and theories from biology and mathematics to the design, fabrication, and production of material products and digital tools.

## The Design Project:

**From the politicization of masks in the US, to the disproportionate numbers of Black, Latinx, indigenous, and minority communities affected by COVID-19, to jaw-dropping gaps in supply chains of PPE for our front-line healthcare professionals, how have architects, engineers, and scientists responded to the challenges of COVID-19?** Operation PPE + Informal Fabrication leverages the participatory and networked space of design and making across disciplines to innovate design solutions to rapidly respond to gaps in supply chains at times of extreme crisis. This combined studio+seminar takes its point of departure from the production of personal protective equipment (PPE) undertaken by individual schools of architecture and research units in response to the crisis of PPE provisions. This studio and linked elective will explore our complex and contemporary context during COVID-19. PPE will be our point of departure and an opening to larger themes addressing how architecture, space, and products in the context of COVID-19 engage issues of equity, inequality, justice, inclusive design, new models for design and collaboration, the democratic space of making as a collective, and more! Students will work in collaborative groups composed of students from Cornell Tech and Architecture at AAP. **The studio and seminar will be divided into 3 linked design projects: 1) Innovations in PPE & 3D-printing; 2) Body Architecture, real and virtual; 3) Space, equity, inclusivity, and social distancing.**