Bringing Social Distancing to Light: Architectural Interventions for COVID-19 Containment

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With the spread of COVID-19, social distancing has become an integral part of our everyday lives. Worldwide, efforts are focused on identifying ways to reopen public spaces, restart businesses, and reintroduce physical togetherness. We believe that architecture plays a key role in the return to a healthy public life by providing a means for controlling distances between people. Making use of computational processing power and data accessibility, we investigate how we can promote healthy and efficient movement through public spaces. Our approach is dynamic, to easily accommodate developing requirements and programmatic changes within these spaces.

In this talk, we will present previous work focusing on collective behavior and architectural installations and our vision of strategy to address social distancing challenges: a physical intervention system based on light projections that provides direct real-time information about safe trajectories and movement behavior for pedestrians. To execute this vision, we take an approach grounded in computational architectural design, but also draw insights from collective behaviors in biological systems.

Stefana Parascho, Assistant Professor of Architecture at Princeton University, is an architect with teaching and research in the field of computational design and robotic fabrication. Prior to joining Princeton University, she completed her doctorate at ETH Zurich and her architectural studies at the University of Stuttgart. Her research interest lies at the intersection of design, structure, and fabrication, with a focus on fabrication-informed design. She explores computational design methods and their potential role for architectural construction, ranging from agent-based models to mathematical optimization. Her goal is to strengthen the connection between design, structure, and fabrication and the interdisciplinary nature of architectural design through the development of accessible computational design tools.

Corina Tarnita is an Associate Professor in Ecology and Evolutionary Biology and the Director of the Program in Environmental Studies at Princeton University. Previously, she was a Junior Fellow at the Harvard Society of Fellows (2010-2012). She obtained her B.A. (2006), M.A. (2008), and PhD (2009) in Mathematics from Harvard University. She is an ESA Early Career Fellow, a Kavli Frontiers of Science Fellow of the National Academy of Sciences, and an Alfred P. Sloan Research Fellow. Her work is centered around the emergence of complex behavior out of simple interactions, across spatial and temporal scales.

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