

“Mediated Matter”

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12:30 - 2:00pm
Room 7-431

Neri Oxman

Assistant Professor, Media Arts and Sciences, MIT
MATERIALECOLOGY Design, Principal

Abstract

How can we contribute to human and environmental good by learning about material and design from nature? Over the last century of design, the creation of artifacts has been characterized by the growing separation of form and material. Materiality is, by tradition, secondary to form. With the exception of a few pioneering cases in contemporary design, the material realm has been humbled from its equal footing, and not without consequences in product and spatial design. In my talk I will discuss how matter ---defined here as the material substance which occupies space---is applied across multiple scales to mediate between object and environment, between human and object and between human and environment. I will propose a unique approach to computationally-enabled form-finding procedures, and discuss how such processes contribute to novel ways of creating, distributing and depositing material. Amongst such contributions is achieving a high degree of design customization through material constraints that correspond to the changing needs and demands of the user. Another contribution is significant material reduction by means of assigning graduated physical properties and behavior as they correspond to structural and environmental performance; not unlike the way in which forms are created in nature. Practical applications include rapid customized augmentation (dynamically adaptive stiffness/elasticity functions applied to case-by-case pathologies), variable density fabrication (bone-printing), and in-situ product customization (breathing furniture). The presentation will conclude with a call to shift the design paradigm of the machine to a paradigm of the organism, by promoting seamless objects that mediate physical behavior and functional constraints.

Bio

<http://www.media.mit.edu/people/neri>