**MEDIATED MATTER**

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The Mediated Matter group focuses on Nature-inspired design and design-inspired Nature. We conduct research at the intersection of computational design, digital fabrication, materials science, and synthetic biology, and apply that knowledge to design across scales—from the micro scale to the building scale. We create biologically inspired and engineered design fabrication tools and technologies and structures aiming to enhance the relation between natural and man-made environments. Our research area, entitled Material Ecology, integrates computational form-finding strategies with biologically inspired fabrication. This design approach enables the mediation between objects and environment; between humans and objects; and between humans and environment. Our goal is to enhance the relation between natural and man-made environments by achieving high degrees of design customization and versatility, environmental performance integration, and material efficiency. We seek to establish new forms of design and novel processes of material practice at the intersection of computer science, material engineering, and design and ecology, with broad applications across multiple scales.

Our work combines design with science and technological innovation. Informed by nature, we operate at the intersection of computational design, digital fabrication, materials science and synthetic biology. We synthesize this knowledge to design across disciplines and scales. We create novel and specialized digital fabrication tools and technologies—for architects and designers—that engage computational design, digital fabrication, biology, the environment, and their subject materials as inseparable and harmonized dimensions of design. We invented the field of Material Ecology, which considers computation, fabrication, and the material itself as synergetic. In this approach products and buildings are designed as living interactive entities: environmentally informed, computationally grown, digitally manufactured and biologically augmented. Such environmentally informed and engineered interfaces include a 3D-printed fluidic clothing for energy production, a 3D printer that prints in glass for solar harvesting of building skins, and an interactive bio- interface for melanin production in both body and building scales. Pairing the creation of novel technologies for digital fabrication with speculative design, we strive to rethink the future of designs that interface the body, the building and the environment in the bio- digital age.

PHOTO GALLERY.





