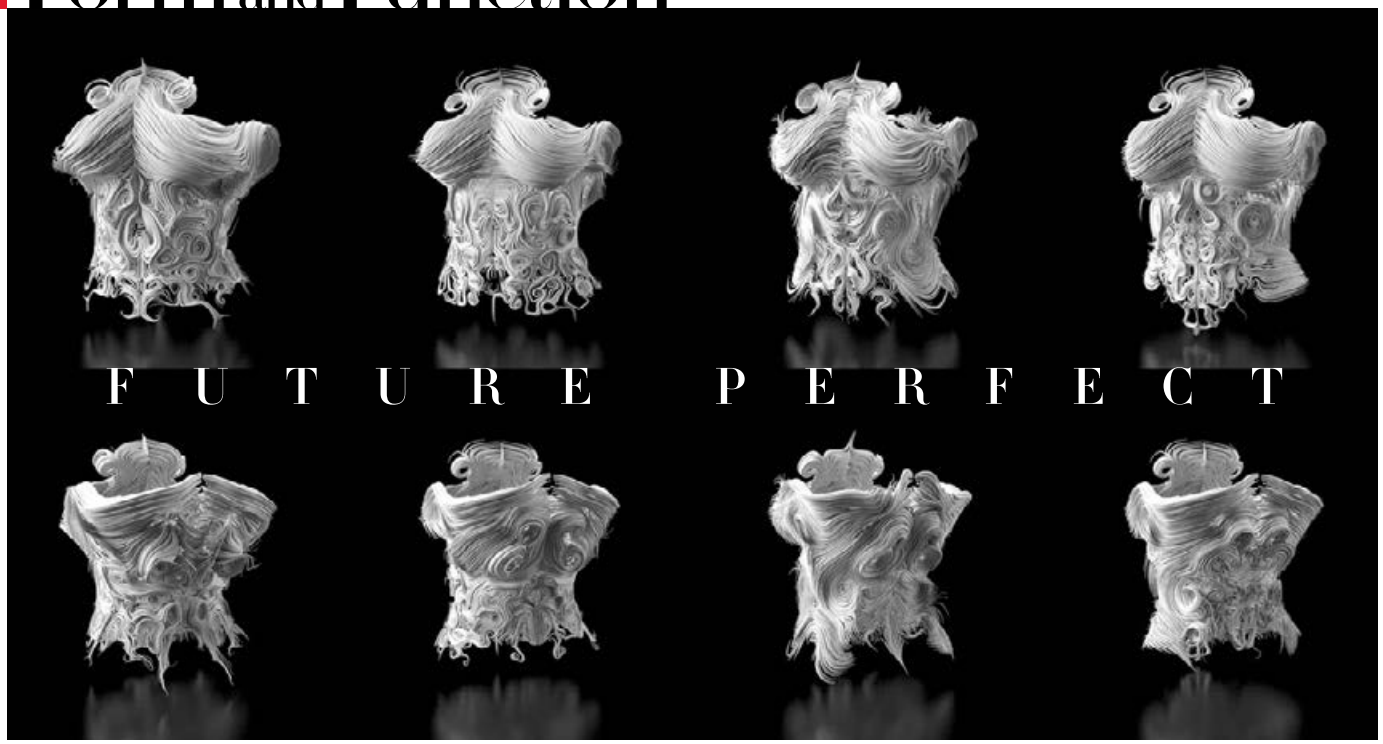
Form and Function



Robert Sullivan pays a visit to the high-tech lab of Neri Oxman, the MIT designer and architect who is quite literally designing the fashion of tomorrow.

Neri Oxman's work space in MIT's fabled Media Lab is a kind of cross between the Museum of Natural History and the Starship *Enterprise.* "We have a wasp nest somewhere here," she says, nodding past a set of skeletal prototypes toward a robotic arm. Oxman, the leader of MIT's Mediated Matter team, is showing off a recent baglike creation—translucent and very beautiful, reminiscent of something you might find at the edge of the sea—produced with the aid of a 3-D printer from a substance derived from crustaceans.

For years now, Oxman has been the designer and architect working at the forefront not just of the things we make but of how we make them and what we do with them. Far from merely designing clothes, she's redefining what clothes are—and what they could be. "Designers have to follow certain rules—a set of accepted customs or norms—to achieve, for example, a dress," Oxman says. "And why? I ask."

The newest technologies have always walked hand in hand with fashion: The sewing machine, as we see in "Manus x Machina," was instrumental in the invention of haute couture. To sit in Oxman's lab, though, is to look back at the creative possibilities of almost primordial biological processes while, at the same time, beholding the possibilities of cutting-edge design, much of it realized through 3-D printing (often working with Naomi Kaempfer of Stratasys). That includes everything from a so-called Anthozoa Cape and Skirt (designed with Iris van Herpen) to an invention Oxman calls Carpal Skin—an MIT collaboration on a glove to protect against carpal tunnel syndrome, its various skins inspired by the patterns on the coats of various animals—to mind-blowing prototypes that Oxman calls Wanderers: She refers to one example as a "microfluidic wearable," but you can think futuristic pants that incorporate photosynthetic bacteria. Wanderers wouldn't just cover you—they'd also nourish you, as the living matter within them would transform into "oxygen for breathing, photons for seeing, biomass for eating, biofuels for moving, and calcium for building." Naturally, scores of medical applications hang in the balance. In the meantime, Oxman's work has garnered exhibitions and honors from places like the Museum of Modern Art and the Pompidou Center.

"Neri is both artist and alchemist," says Andrew Bolton, curator in charge of the Met's Costume Institute. "Her works hint at magical properties that convey a strange, almost haunting presence. As objects, they are otherworldly—defined by neither time nor place."

Oxman is equally at ease discussing Louis Kahn as riffing on David Bowie. She also loves both classical and new music and points to, for example, Beethoven's late quartets as a source of inspiration. Even in her labwear—black jeans and black tank top, along with a vintage Rick Owens jacket—she is a schematic for easy elegance.

She found the jacket in Tel Aviv. Oxman grew up in a two-architect home in Haifa, and after a few years at medical school in Jerusalem, she switched to architecture—first at the Technion, in Haifa, and then at the Architectural Association School of Architecture, in London. In 2005, she went back to school, at MIT, to learn the math—the coding, the computational skills—to design the way she wanted to design, and after her Ph.D. she founded Mediated Matter.

Lest that leave the impression that Oxman is a mere technician, mention a designer like Yohji Yamamoto and she's waxing rhapsodic. "He brings together the timely and the timeless," she says. "To me, that's what good fashion is about." As for her own uniform? "It's either a T-shirt or Yamamoto, but not in between. You don't need much. You need a soul and good taste." □

STUDIES FOR ZUHAL, FROM THE WANDERERS COLLECTION, BY NERI OXMAN AND THE MEDIATED MATTER GROUP, IN COLLABORATION WITH STRATASYS. IMAGE COURTESY OF MEDIATED MATTER.

FULL SPECTRUM
NERI OXMAN, THE DIRECTOR OF MIT'S MEDIATED MATTER TEAM.
PHOTOGRAPHED BY LANE CODER, *VOGUE*, 2009.
OPPOSITE: VARIOUS ITERATIONS OF A 3-D-PRINTED CORSET.