Senior's 3-D printed, sustainable clothing wins scholarship

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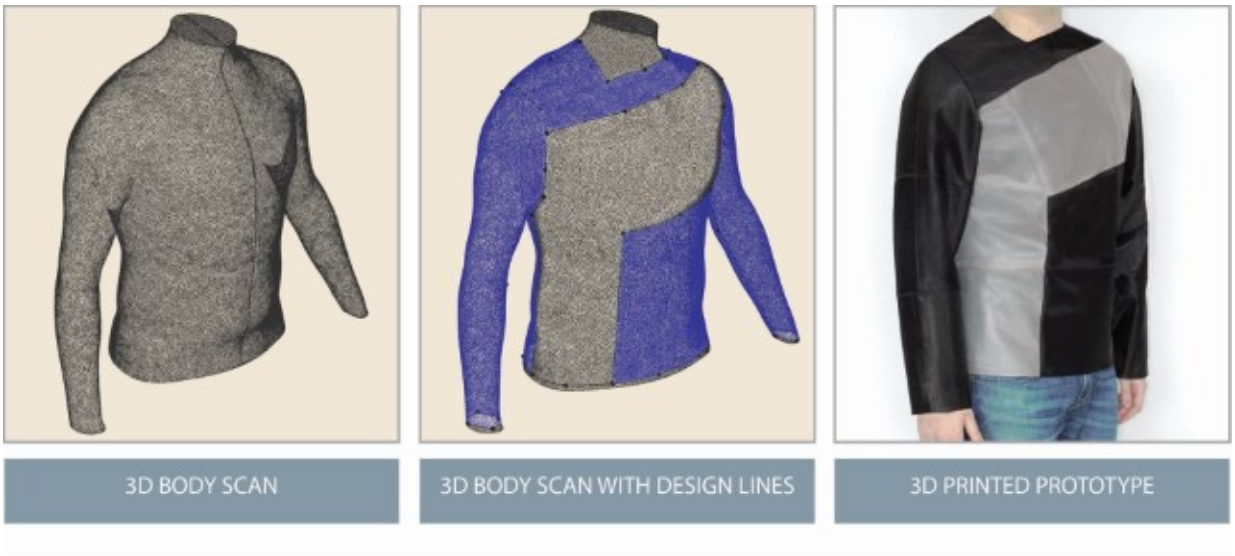
Eric Beaudette, at right, with fellow students and models in a Cornell laboratory.

With his idea for 3-D-printed, custom-fit activewear, Eric Beaudette '16 hopes professional young men can go from the workplace to the gym without breaking a sweat.

It could be the next breakthrough in sustainable fashion: convertible, multipurpose clothing that wearers alter seamlessly by adding or removing collars, sleeves, hoods, pockets or other accessories depending on the occasion. What's more, he says, the fully recyclable garments would virtually eliminate waste found in the typical apparel design and manufacturing process.

For his concept, "Recycl3-D," Beaudette, a student in Cornell's Department of Fiber Science & Apparel Design (FSAD) in the College of Human Ecology, received one of four $30,000 Geoffrey Beene National Scholarships from the YMA Fashion Scholarship Fund at a gala in New York City Jan. 12.

"As a graduating senior entering the workforce in a short time, winning the award reassures me that I have the skills needed to make a difference to solve real-world issues," Beaudette said. "Receiving this award as well as interacting with industry leaders has made such a positive impact on my confidence and will help me with everything I set out to do in my life."



Concept for the Recycl3D member design process. Left: Body scan taken at store location. Middle: Design lines from a look in the 2016 Spring Collection are placed on the body scan. Right: After the wearer adjusts details such as fit of torso and sleeves, color and modular accessories, the custom garment is 3-D printed and mailed.

Beaudette's honor completes a fashion three-peat for Cornell, as he joins Justine Lee '14 and Blake Uretsky '15 in bringing the prize to campus in consecutive years. In addition this year, a record 11 Cornell students earned $5,000 awards for their YMA Fashion Scholarship entries: Jessa Chargois '18, Sydney Conner '16, Caroline Donelan '16, Kristina Escobar '17, Jacqueline Fogarty '18, Joanne Kim '17, Kennedy Rauh '17, Sarah Ruehlow '16, Caroline Soule '16, Samantha Stern '17 and Hannah Wheeler '16.

For the competition, Beaudette created a full-scale prototype garment based on his measurements taken in Cornell's 3-D Body Scanner and an innovative locking mechanism and accessories to allow for mix-and-match styling. Everything was 3-D-printed at Cornell. Subscribers to his

brand would create custom looks by choosing colors, patterns and accessories; when finished with a garment it would be returned to Recycl3D and converted to raw material for apparel, packaging or other uses.

"The real perks of 3-D printing have not been used to their full potential. I brought together recycling with synthetic blends, customization from body scanning and optimization of the manufacturing process to drastically reduce production waste," Beaudette said.

The 2016 Recycl3D Spring Collection. Each look has two distinct variations, made possible by removable 3-D printed accessories.

In preparing his case study and final pitch to fashion industry leaders, Beaudette said he worked on it "every day since April 2015" with support from FSAD senior lecturer Anita Racine, his "adviser, mentor and design consultant " on the project.

As a freshman Beaudette, who hails from Hollis, New Hampshire, joined the Cornell Performance Apparel Design Lab led by FSAD assistant professor Huiju Park, where he has studied the science and design of functional apparel. Previously, for instance, Beaudette and

collaborators created smart garments that pulsed with light in response to ambient sound for the annual Cornell Fashion Collective runway show.

"Having a hybrid education between science and design allows me to investigate any one aspect of a product through two unique perspectives," Beaudette said. "True product design, especially for apparel, has to be a perfect marriage between design and materials. My dream is to be a product developer and innovator, and bring new perspectives to materials and technologies specifically made to interact with the human body."

Provided by Cornell University