

Universal Smart Garments Coming to a Closet Near You?

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Assistant Professor **Lucy Dunne** (Apparel) has received the **National Science Foundation's (NSF) Faculty Early Career Development Award**, also known as the CAREER award. She will receive nearly \$400,000 in NSF funding over the next four years to develop a cut-and-sewn, textile-integrated smart clothing platform.



Dunne paired her early textiles and apparel career with an education in electronic technology. "I didn't face the same obstacles as people who are trained only in apparel and then turn to smart clothing later," she explains. Today, it's Dunne's goal that every student who graduates from the **apparel design program** leaves confident with the knowledge that they know how to build a least a very basic circuit. It goes hand in hand with her teaching philosophy to remove fears and barriers around technology.

It's rare for someone in the apparel design discipline to receive a grant from NSF, which promotes the progress of science and generally funds projects in areas related to science, technology, engineering, and mathematics. Dunne might be the first in the apparel design discipline to receive the CAREER award, but it's not a surprise considering the recent attention she received for projects like **her glove to help firefighters "see"** (developed as a prototype with MFA design student **Tony Carton**) and the class she teaches where students design **wearable technology for NASA**.

Dunne will use her award to integrate a broad range of projects addressing what it would take to create "universal" smart garments for everyday users. She points out that the mobile devices community already has taken this approach, creating a universal device that combines items of greater value - a phone - with items of lesser value - a watch - which consumers might not invest in individually. "Where before I would not have worn a watch, now I have a clock on my phone," explains Dunne. "So I know what time it is anyway. The many things that clothing can do for us might not be individually worth the investment in an expensive garment, but all together they add up to much more."

Her research will involve brainstorming all the possible ways someone could use a smart garment in the form of a t-shirt, a button down shirt, and a pair of jeans, in order to discover the requirements of a universal device. "Students are crucial to this," says Dunne. "I don't think I could do this research anywhere, it's important that we're at a design school where all of the students are trained in design thinking."

She wants her smart garments to also change the way you manage your wardrobe. Most people own dozens of shirts that fit different needs, but they wear only a handful. "We should have one t-shirt that does everything, replaces any number of other t-shirts," she points out, doing things from measuring movement to tracking your temperature to improving your posture. "Ultimately, it would need to be able to have changeable colors and patterns to really replace all of those other garments. But we're not there yet."



This semester, students in her Studio IV apparel design course will **partner with NASA again** to work on clothing solutions for space, including a group whose focus is to make clothes that need to be washed less often.