

A Project Focused on Making Sustainable Luxury Fabrics from Waste. *By Kathlyn Swantko*

## Material Gains

**T**he Trash2Cash (T2C) project at the University of the Arts London (UAL) is addressing sustainability issues with textile fibers and fabrics through Design Driven Material Innovation (DDMI). The program is headed by UAL with 18 collaborating partners from nine European countries, and is currently looking at ways to use cotton and polyester waste to regenerate new fibers that can be integrated back into fashion, interiors, automotive, and other products.

"T2C is a three and a half year project funded through the EU's Horizon 2020 initiative," states Professor Rebecca Early, director of the Textile Futures Group (TFRC) at UAL. "T2C aims to do exactly what the name says—to take trash (waste paper and discarded clothing), turning it into valuable material again, and then feeding it back into a circular economy."

UAL oversees the design and methodology teams and is responsible for communicating the impact of the work. Professor Early's partner on this is UAL Dr. Rosie Hornbuckle, post doc specialist in tools, sustainability, materials and communication.

T2C employs the concept of Design Driven Material Innovation (DDMI), which involves designers

and industry working alongside scientists to challenge the traditional linear 'lab-first, design-later' materials R&D process. UAL is responsible for creating a brand and identity, developing tools for workshops, facilitating discussions, and producing T2C podcasts.

"Currently, we're designing the collaborative method. There will be a year of designing the yarn, then the fabric, and then the product," explains Early. "Throughout the project, there will be constant cycles of innovation involving design research, scientists, trend analysts, business specialists, and actual companies who sell to end users—all focusing on making luxury materials out of waste."

The design work package is led by Aalto University, joined by Dr. Kate Goldworthy, UAL's reader in circular textile design, and Dr. Dawn Ellams, UAL's specialist in dyeing/printing on recycled cellulose. Their responsibility is producing detailed lifecycle maps and developing product tools for the circular economy.

### Trash2Cash Results and Project Goals

"In a collaborative project, every discipline starts with its own language and point of view," cites Early. "Since we're in the early stages of the project, our aim has



Professor Rebecca Early and Dr. Kate Goldworthy (right) in the Barriers to Opportunities workshop session, Material Connexions, Milan, May 2016.

fiber, and engineering the fiber to behave in a particular way. Instead of adding chemical finishes or making expensive changes during the fabric production stage, the program goal is to functional-

ize the fabric at the fiber stage. This develops a process for recycling and regenerating both polyester and cotton.

"Globally I believe this will have two impacts. First, we will have a way of producing sustainable luxury fabrics from waste through chemical regeneration methods," explains Early. "Second, scientists and industry will be able to match their development work with global issues/demands at the beginning of the process, and we can determine what inventions will help to challenge or ease the global problem." ●

been to make everyone connect, so that everyone 'owns' the new methodology." Early says that there is real enthusiasm for the program. "Right now we're saying, this is the real stuff, this is the design process, and we're developing the vision. So, we have a continued real push-pull among everyone involved."

An important part of the project is the special T2C travelling suitcases, which contain collected fibers, tools, fabrics, objects and postcards. The suitcases allow the partners to share notes, as well as drawings and diagrams. This way, the team can constantly communicate innovation methods from different perspectives, and fuse their viewpoints together.

The Trash2Cash model is based on taking waste paper and disused clothing to make a brand new

*For more information on the Trash2Cash research program, contact Professor Rebecca Early at the University of Arts London, r.l.earley@chelsea.arts.ac.uk.*

*Kathlyn Swantko is president of the FabricLink Network.*

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### Partnership Opportunities:

Kristi Rummel  
kristi@rummelmedia.com  
608.435.6220

### Editorial Opportunities:

Kathy Swantko  
kgswantko@fabriclink.com  
818.345.7501

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