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## Extreme Collaboration

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### Abstract

This talk will focus on collaborations with artists and designers and the new research and commercial applications it has spawned.

Serendipity plays a great part in research and I met Helen Storey because of a radio programme called Material World. We worked together on Wonderland, an Art/Science project that argued that drastic new thinking is required to address today's environmental issues with regard to branding and the ethical implications of packaging. Begun in 2005 with support from the EPSRC, the main outcome of the project was the production of a central artistic and metaphorical work (Disappearing Dresses) which saw a series of dissolving dresses being created in the gallery at the London College of Fashion, UAL. These provided a powerful visual showcase for the work undertaken by the collaboration which also produced some tangible ideas -products with potential for further development.

Catalytic Clothing (CatClo) was conceived in 2008 repurposing established nano-scale technology - applied to concrete, glass, paints – by combining art, design and science to use the textile surface of clothing to purify air. This is an entirely new application of semi-conductor photocatalysis and global market opportunity. CatClo was also funded by the EPSRC under the title Extreme Collaboration Delivering Solutions for a Failing World influencing project direction and outcomes. CatClo addresses challenges and raises questions of a global, environmental and societal nature. One of the outputs was the Field of Jeans installation introducing the idea that everyday clothing and textiles can purify the air we breathe. It was accompanied by a four minute campaign film, made possible by generous in-kind contributions from creative and celebrity partners including the model Erin O'Connor and a sound track by Radiohead, and has been seen by millions of people. Large scale trials of photocatalytic environmental interventions will be described and the route to market for CatClo will be discussed.

Serendipity played a part in the catalytic poem – through the Lyric Festival organized by the University. In Praise of Air was written by award-winning writer and Professor of Poetry Simon Armitage. Our Alfred Denny building is home to the world's first air-cleansing poem. Capable of purifying its surroundings, the poem will eradicate the nitrogen oxide pollution created by about 20 cars every day. And the technology used could also be applied to billboards and advertisements alongside congested roads to cut pollution. This is a collaboration between science and the arts to highlight a very serious issue of poor air quality in our towns and cities. If every banner, flag or advertising poster in the country did this, we'd have much better air quality. It would add less than £100 to the cost of a bill board poster and would turn advertisements into catalysts in more ways than one. The countless thousands of poster sites that are selling us all sorts of stuff beside our roads could be cleaning up emissions at the same time. Best of all, the publicity around the poem made this very likely and advertising companies will be doing it soon!