

A TOUCH OF WOOL:

between science and design



In Western Australia, an innovative collaborative project brings together science, fashion and Merino woolgrowers.

Wool growing has a long history in Western Australia. We are surrounded by wool growing and we are constantly 'touched' by the culture of wool. It is reflected in the landscape, people and activity surrounding this fascinating material. Designers working within this context cannot escape the imprints of this cultural 'landscape', and wool is a material that local textile artists and designers continue to explore.

Western Australia is a landscape that has fostered innovative projects bringing artists, designers and local wool together. *Print on the Sheep's Back*, an exhibition developed by textile designer Jemma Dacre in 1993–94, commissioned WA-based artists and textile designers to create designs that were printed onto locally produced fine wool shawls. The Moora Wool Awards, conducted between 1992–96, was another WA initiative that aimed to highlight the importance of design to the wool industry. In keeping with this tradition, several years ago Curtin University and the Department of Food and Agriculture joined forces to focus on merging the design and science of wool.

While collaboration between the arts and sciences is not a new phenomenon, it continues to create a challenging dynamic. Researchers from Curtin University of Technology's Department of Design and the Department of Food and Agriculture WA (DAFWA) Wool Desk have taken this step to explore the potential of such a partnership. For the past two years, we have been working closely on collaborative approaches to wool research in order to further our investigations into garment comfort. This partnership has resulted in the establishment of *Design for Comfort*, a project that recognises the significant role that design has to play in this research context.

The most recent element of this research has been the project titled *a touch of wool*. It focused on the integration of the design process, through the involvement of fashion and textiles designers who demonstrated expertise in combining knowledge about materials with the body and cultural significance of garment design. Five of WA's most innovative designers – Aurelio Costarella, Rebecca Paterson, Megan Salmon, Louise Snook and Melissa Yap – fashioned knitted wool fabric into garments that tested both the creative potential and the next-to-skin comfort of these fabrics. *a touch of wool* has been an exciting collaboration between science and design, taking the research through all phases from the 'paddock to parade'. The project has integrated the science of fibre, yarn development, the structure of cloth and the aesthetic of garment.

Previous research, conducted at the Department of Agriculture, had focused on consumer appraisal of wool fabrics, which is based on the benchmark



Left to right: Megan Salmon, 2006, fabric designed and knitted in WA (Merinotech wool), commercial wool. Photo: Ashley de Prazer

Rebecca Paterson, *Hoola-hooped series 1*, 2006, fabric designed and knitted in WA (Merinotech wool), silk. Photo: Ashley de Prazer

Louise Snook, *Metamorphosis*, 2006, fabric designed and hand-knitted in WA (Merinotech wool), hand-knitted hem, hand-felted beads. Photo: Ashley de Prazer

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testing of fabrics, and looked at people's responses to the handle and comfort of fabrics. Although there is interesting information on the relationship between fibre, fabric and the response to fabric, there is no evidence that a comfortable fabric will generate a comfortable garment.

Designers worked with researchers to develop customised knit fabrics for their garments. DAFWA's comfort research into fibre cloth appraisal was applied to the selection of fibre and the development of the yarn used in these customised fabrics. The fabrics were knitted using a Shima Seiki whole-garment machine, which enabled designers to work with researchers on the development of new and unique fabric structures. Megan Salmon, a *touch of wool* project designer, said:

Together we have explored the use of a Jimmy Pike artwork, and it has culminated in a fabric that operates very differently to my previous work. The wool itself is extremely soft and malleable and the interpreted graphic has provided me with new textures to work with.

As a result of the technical changes to the fibre and yarn, the fabrics were lightweight, soft to the touch and an inspiration for both researchers and designers. Another *a touch of wool* project

designer, Rebecca Paterson, said, 'It has been wonderful to work with the knitted fabric made from local fibre. It is so bouncy. I was really looking for a cloth that would work with my idea of moving the garment with and against the body.'

This project has allowed the building of a Western Australian yarn and fabric with very particular fibre properties, and the placing of the fabrics with a group of talented Western Australian designers. The garments that were produced show that, besides the specific designs applied in the garments, there has been a more general response by the designers to the materials they were handling. A scientific outcome appears to have produced a change in the design outcomes, and also illustrates properties that were not evident in the yarn testing.

DAFWA scientist Dr John Stanton commented:

It was interesting to observe the designer response to the new fabrics provided to them for this project. As a result of a technical change in the fibre and fabric, the designers were confident in their exploration and creation of 'next-to-skin' garments in wool. In addition to the next-to-skin element, the garments were often multilayered, yet not heavy. And they seemed to be playing with the elasticity of the wool fabrics, provided in part by the knit structure, and in part by the elasticity in the yarn fibre that was shown through testing of the yarns.

The garments created by the fashion designers working on a *touch of wool* were presented at the World Merino Conference opening fashion event held in Perth this year. The presentation of this exciting WA designer fashion has generated high levels of support and recognition from wool growers through to the fashion industry for the continuation of this research.

The relationship between body and garment is critical to the overall understanding of comfort for the wearer. *Design for Comfort* research is now using the experience gained from their work with designers and a *touch of wool* to investigate factors affecting this relationship. Whole-garment technology presents researchers with new capabilities for manipulating garment structure and fit. The advantage of whole-garment seamless knitwear is that it provides the wearer with superior fit and comfort, freer movement and stretch, enhanced drape and flow of fabric, and improved structural integrity in the garment.

This project has been an exciting exploration of the potential for the merging of science, design and technology. The *Design for Comfort* team continues their commitment to the merging of science and design in their wool comfort research, and plans the development of a touring exhibition illustrating the cultural significance of this work. Aurelio Costarella, one of a *touch of wool* project designers, concludes:

I believe that this project once again shows the innovation of Western Australian design. Utilising Western Australian wool in an experimental and innovative way demonstrates that talent, technology and production can occur in the same environment. ■■■■

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This article summarises the contributions and writing of the *Design for Comfort* research team members – Dr John Stanton, Professor Suzette Worden, Emma Kopke, Mel Dowling and the author – published in a *touch of wool* catalogue, Department of Agriculture and Food Western Australia, Perth, 2006. Designers' comments are from the same catalogue.

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