

# Clemson Apparel Research Center Offers Ongoing Service for Textile Industry

**P**roduct creativity and innovation are essential elements if the U.S. textile and apparel industry is to maintain its competitive position within the global market. Key industry support for many recent successful designs has come as a result of research being done on the university level.

In 1987, Clemson University became an early resource leader by launching its Clemson Apparel Research (CAR) facility. Initially established to revitalize the domestic sewn-products industry through the proper application of advanced technology and management practices, CAR is now a premier national resource for high-performance textiles and related materials research and applications.

Dr. Christine Cole, director of CAR, explained, "Like many large university research centers, CAR was established in response to a winning government grant proposal. Specifically targeted to the Department of Defense Logistics Agency, CAR was started as a demonstration of manufacturing technology for producing apparel, utilizing a series of research projects to improve the manufacturing technology."

However in 1992, besides doing a number of large research projects for the U.S. government, CAR also began working closely with businesses and individual entrepreneurs. Its fast-turn manufacturing and supply chain optimization solutions are still being applied very effectively in industries other than sewn products.

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**DR. CHRISTINE COLE  
CAR DIRECTOR**

CAR's long-term projects involve work with small entrepreneurs and small industry projects, conducted under the umbrella of the Department of Commerce Manufacturing Extension Partnership. Dr. Cole noted, "We've worked with designers of pocketbooks, jackets, floatation clothing for children, products for horses, hazmat clothing, and breast prostheses."

Dr. Cole mentioned that one current project is with NanoScale, a small business involved in nanotechnology materials. "NanoScales has asked us to partner with them on developing more comfortable, less expensive protective clothing and a forensics bag for possible chemical/biological contaminated materials," Dr. Cole explained. "Their nanotechnology is the active ingredient, while CAR does the design of the materials, fabrication and/or the selection of fabrics, design, and fabrication of the end items."

A second project is an on-going partnership with the U.S. government involving the Army's soft and hard body armor for soldiers. Dr. Cole continued, "In this alliance, CAR manages the pattern for PEO (Program Executive Office) Soldiers. The designs are the Army's and the industry's, while we build the production patterns for the IOTV (Improved Outer Tactical Vest), which incorporates any changes the Army wants to implement."

Past CAR programs have led to the development of two trademarked products — Clemson's BalancedFlow and Duraseal. Dr. Cole said, "These products came as a result of problems we encountered during our research."

BalancedFlow is unique and easy-to-use supply chain execution software. The goal of BalancedFlow is to maximize profits by multiplying revenue and minimizing costs across the entire supply chain for all participating partners.

Duraseal Seaming Technology is a unique method for joining two or more substrates at a seam. Unlike conventional seams, Duraseal seams do not compromise the barrier properties of the materials that



are fused. The Duraseal seams have improved the peel strength, compared to conventional adhesive seams. Furthermore, the seams have improved strength without sacrificing the desired functional properties of the substrate materials. Going forward, Dr. Cole would like to have CAR broaden its traditional cut-and-sew projects to include more material design and fabrication research.

Dr. Cole stated, "While we continue to support small entrepreneurs and apparel production processes, we are now working more closely with other departments at Clemson in the development of new polymeric and inorganic fibers. So, we're doing fiber processing and material design, as well as product design and fabrication." ●

For more information on CAR, visit <http://car.clemson.edu> or contact Dr. Christine Cole, [cwjrv@clemson.edu](mailto:cwjrv@clemson.edu), 864-646-8230.

Kathlyn Swantko, president of the FabricLink Network, created TheTechnicalCenter.com for industry networking and marketing of specialty textiles, and FabricLink.com for consumer education about everything fabric.

## The Networking Sites for the Textile Industry

**Fabric**link

FabricLink.com

Trade-to-Consumer

The  
**Technical  
Center**

theTechnicalCenter.com

Trade-to-Trade

Check out the opportunities to effectively  
get your message out!