

EDUCATION

Cal Poly Pomona Utilizes NX-16 Body Scanner for Cutting-edge Apparel Research. **By Kathlyn Swantko**

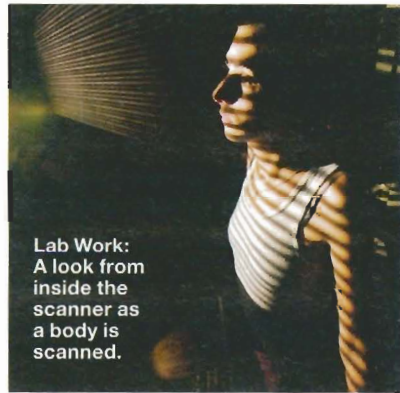
The Evolving and Expanding Role of 3D Imaging

The use of 3-D imaging is not new. Taking measurements with body scanners actually began in the 1990s. In 2001, the first body scanning custom apparel application was launched at retail by Brooks Brothers, New York. About the same time, several universities began researching this technology to study ways to advance the use of innovative 3-D imaging for apparel manufacturing and production. In 2006, Cal Poly State University Pomona, which is one of only 13 universities in the U.S. to have its apparel production option endorsed by the American Apparel and Footwear Association, purchased an NX-16 body scanner and began its body scanning research program.

"The use of 3D imaging for multiple end-use applications is an example of the type of research authored by academicians," notes Dr. Cindy Reagan, professor of apparel merchandising & management (AMM) at Cal Poly Pomona and the associate editor of design/aesthetics for the *Clothing and Textile Research Journal*. "Our research topics include evaluating pattern-fit accuracy from body scan measurements; questioning existing pattern-grading practices versus generating pattern-size variation via body-scan measurements; and evaluating the acceptance of body-scanning for selected target markets."

Cal Poly's purchase of the NX-16 body scanner from TC2 (Textile Clothing Technology Incorporated) and the use of the technology was the vision of Dr. Peter Kilduff, AMM department chair and Dr. Muditha Senanayake, assistant professor AMM. The investment was made to keep Cal Poly's AMM program on the cutting edge of technology, and has enabled Dr. Senanayake and other faculty to pursue body-scanning research.

Besides academia research, Cal Poly uses its body scanner for class lessons in a variety of courses. Dr. Senanayake explains,



"Rather than having a separate 3D body-scanning course, we have embedded this experience into multiple classes. The AMM program introduces the body scanner to students in their sophomore year. The students are body-scanned and the instructor leads a lesson on body proportion. Early curriculum experiments have included conducting NX-16 body-scans on every student enrolled in a CAD pattern making class. The students then use their body-scan measurements to create pattern blocks using Tukatech CAD software."

Cal Poly's undergraduate students focus their research on the acceptance of body-scan data for selected target markets. Senior level students use the body scanner primarily as a research tool in their senior projects for performing market analysis and reporting, and for probing deeper into the use of 3D imaging in their simulation course.

Regan notes, "Specifically, recent undergraduate senior projects have included the acceptance of body scanning for the plus-size market, footwear market, and men's clothing."

The AMM faculty recognizes the growing importance of using body scanning throughout the apparel industry, and offers the use of its scanner to the local industry.

Cal Poly Pomona plans to expand its curriculum to meet industry needs. The long-term goals are to have body-scanning include 3D draping, visualization, and avatar creation. Dr. Senanayake explains,

"The AMM faculty is in the process of being trained in Optitex 3D. The purpose for using this CAD program is to have students better understand garment fit and pattern shaping. We plan to have students create a pattern block using CAD, and to drape the pattern on a standard avatar to recognize and correct the pattern fit."

Today's design and production students step into a changing industry requiring evolving talents. Dr. Regan adds, "To train future professionals, students will need fabrication knowledge to enable them to synthesize how the physical fabrication properties (i.e. stretch, weight, etc.) will behave when input into computer visualization software. With a strong background in 3D imaging

and body scanning the designer will be able to evaluate the fit and aesthetic online, rather than sewing a physical sample. While this process will not completely replace sample-making, it reduces reiterations and repeated fit sessions."

For more information on Cal Poly Pomona's AMM program, contact Dr. Muditha Senanayake (mudithas@csupomona.edu), 909-869-4227; or Dr. Cindy Regan (cregan@csupomona.edu), 909-869-2083.

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