"Future Practices and Technologies in Anthropometrics and Body Scanning"

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Overview

This special topic session consisted of a panel of global academic leaders in human anthropometrics and 3D body scanning. The five panelists provided oral presentations related to their area of expertise that prompted discussions with attendees about the future of this research space.

Purpose of Session

Anthropometry is the science of measuring the size and proportions of the human body, as applied to the design of products. It is the root of engineering product patterns, establishing appropriate fit, and product performance. In the *past,* manual methods using tape measures and anthropometers were used to collect this type of data. However, over the last 20 years, body scanning technologies have been adopted by researchers to collect high-resolution images of the human body, that can be transformed into avatars that designers/engineers can measure digitally. The once laborious and time consuming manual methods of measuring is slowly becoming obsolete. The *future* of this space is even more exciting, as 3D scanners are being refined by manufacturers to be hand-held, cost effective and have the ability to collect traditionally "hard-to capture" parts of the body like hands and feet, along with motion (which eliminates the need for motion capture systems). There have also been great strides in software development, to convert and manipulate 3D scan data, to make mannequins, lasts, patterns, tooling files, etc. The presenters invited to this special topic session are at the forefront of these research spaces, either through evaluating or utilizing these technologies for product design and development. Through their presentations, they aim to share experiences and new ideas that attendees can adopt into their research practices and course curriculums.

Session Presentations

Four presentations were shared with attendees regarding state-of-the-art and future technologies under development, that can be used for capturing 3D scan data, converting scan data and building new product concepts with scan data. The presentations included:
   • Comparison of 3D scanning technologies for anthropometric data collection (Griffin).

• Utilizing 3D Scanning & Other Technologies for Product Design and Development (Morris).
• The Foot and Footwear Design (Sokolowski & LaBat).
• Five Precepts for Research Using New Technologies (Ashdown).

<u>Conclusion</u>

From Nike to NASA, new technologies are being widely adopted, to aid in the creation of innovative products and sizing systems. Academic leaders and ITAA members are crucial to training the next generation of apparel and footwear industry practitioners, so they can understand the challenges and benefits of design rooted in anthropometrics and scanning technologies. While many ITAA members are aware of technologies available, the landscape, accessibility, and use of these technologies is changing dramatically and sometimes confusing. This session provided in depth analysis and current research related to anthropometrics and body scanning for ITAA members, especially for ones who are considering new equipment purchases or lab remodels.