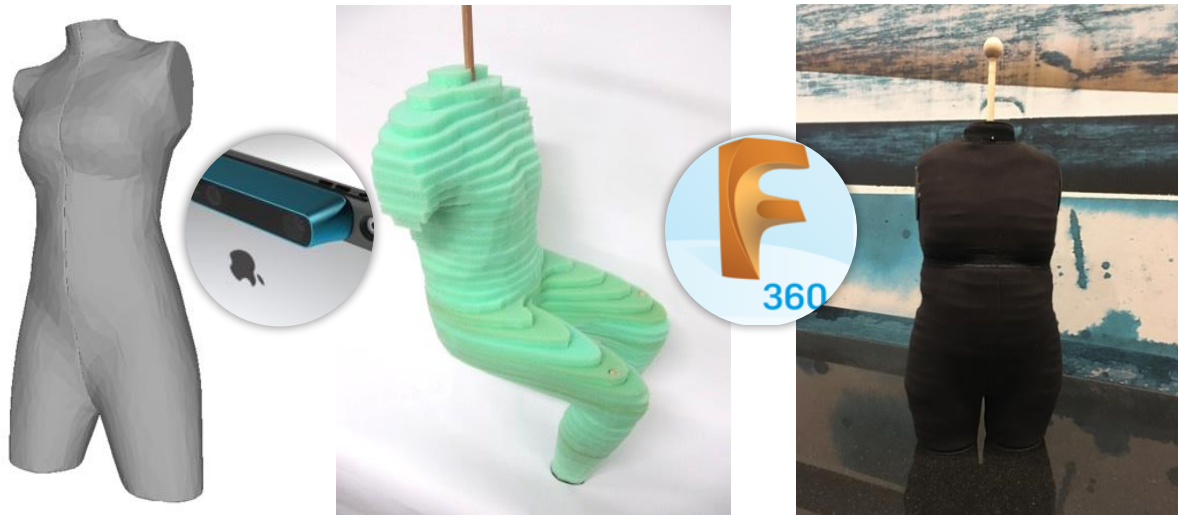


**Workshop:** Creating custom half-scale dress forms from 3D body scans

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This workshop was an opportunity for ITAA members to learn about a low-cost method to capture 3D body scans and transform them into custom half-scale dress forms in a hands-on workshop. This workshop builds on research presented at ITAA starting in 2016 regarding the usefulness of half-scale dress forms as a pedagogical and research tool. Specifically, Ashdown & Phoenix (2016) reported that by using custom-made half-scale dress forms, students were engaged with the patternmaking process, and Phoenix & Ashdown (2018) observed that instructors could augment student's affinity to learn garment fit by creating custom half-scale dress forms of fit models. Furthermore, Morris, Aflatoony, and Romine (2018) reported on new technologies to capture, process, and develop custom half-scale dress forms, which resulted in a “best practice” for utilizing low-cost tools to achieve the apparel-related end goals. Overall, this workshop is a culmination of research activities by both workshop coordinators who feel that custom half-scale dress forms have far-reaching applications in teaching and research.



The workshop coordinators shared their process to develop custom half-scale dress forms with 25 ITAA members. Participants had the opportunity to learn and participate in the entire custom half-scale development process from capturing 3D data to assembling the final dress form. The first half of the time was spent learning to scan, process, and cut the materials needed to build the forms. The second half of the time was spent constructing an actual half-scale dress form. An outline of the workshop activities is provided below:

1. **Introduction:** The workshop began with an introduction to the overall workflow of developing a custom half-scale dress form. The participants were provided with a step-by-step handout for the entire processes addressed in this first part of the workshops.
2. **Digitally capturing, processing, and creating half-scale dress forms:** Next, Morris & Phoenix instructed the participants on how to capture 3D scans using a Structure Sensor. Participants took turns having a hands-on experience capturing a 3D body scan of a volunteer participant. Morris demonstrated to the entire group how to clean, mirror and prepare the scan for laser cutting using AutoDesk Meshmixer and Fusion360.
3. **Cutting the custom half-scale dress form:** The workshop coordinators then showed a short video of how the foam is cut using a laser cutter. Morris and Phoenix discussed alternative methods of laser cutting. Before the workshop, the coordinators pre-cut the dress form pieces and brought them for the participants. The dress form created at the workshop were a basic woman's size eight form.
4. **Constructing half-scale dress form:** Phoenix demonstrated how to construct the dress forms, including best practices for balancing the forms. Each participant constructed their own half scale form. Phoenix then demonstrated how to cover and finish the half-scale dress forms. Upon completion of the workshop participants experienced the entire custom half-scale dress form creation process and leave with a half-scale form.

#### References

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