

COVID-19 RESPONSE

IAA VIRTUAL TOWN HALL

3D Printing for PPE Fabrication



TOWN HALL AGENDA

1. 2:00 – 2:05pm Welcome
Etiquette Reminder
Presenter Introductions
2. 2:05 – 2:25pm Amanda Behr
3. 2:25 – 2:45pm David Robinson
4. 2:45 – 3:05pm Beatrice Robichaud
5. 3:05 – 3:25pm Dr. Gerald T. Grant
6. 3:25 – 3:40pm Q & A and Discussion
7. Closing – Thank you to our presenters and attendees!

AMANDA BEHR, MA, CCA, CMI, FAMI

Contact Info: abehr@augusta.edu

Learn more: <https://www.augusta.edu/innovation/covid19>



Program Director, Associate Professor

Augusta University, Augusta, Georgia, USA

Bio

Amanda Y. Behr, MA, CCA, CMI, FAMI is a board certified Medical Illustrator and Certified Clinical Anaplastologist who serves the Department of Medical Illustration as Program Director.

Relevant Experience

- Anaplastology
- Medical Art
- 3D Modeling & Printing
- Clinical Practice – Private and Institutional

Augusta University COVID PPE Response

Material and Techniques

*Amanda Y. Behr, MA, CCA, CMI, FAMI
Program Director and Associate Professor
Department of Medical Illustration
DCG Anaplastology Clinic*



AUGUSTA UNIVERSITY

Projects

Face Shields



Face Masks



Face Shields

- Modified Prusa design
 - Velcro strap
- 10 Mil plastic recommended
 - No need for bottom bar
- Printed with FDM and Resin printers



Face masks



- Modified Montana design
- 61 mm opening
- Tested silicone and 3D print with user group
- To replace surgical masks
- Two sizes
- Molds printed with FDM and Resin Printers

Face masks



Materials

Food grade



Separator



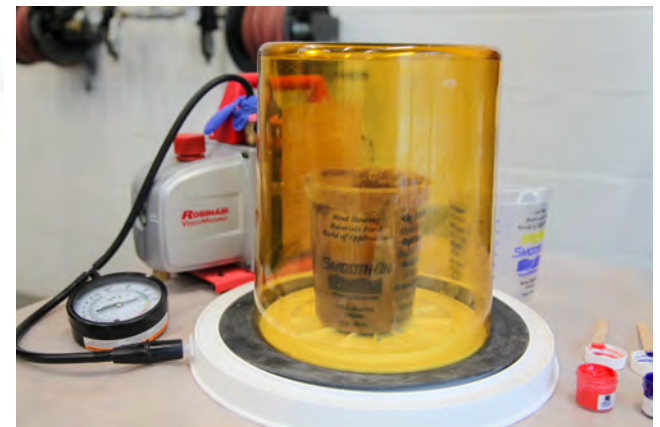
RTV 3045
45 Durometer



Silicone Pigment

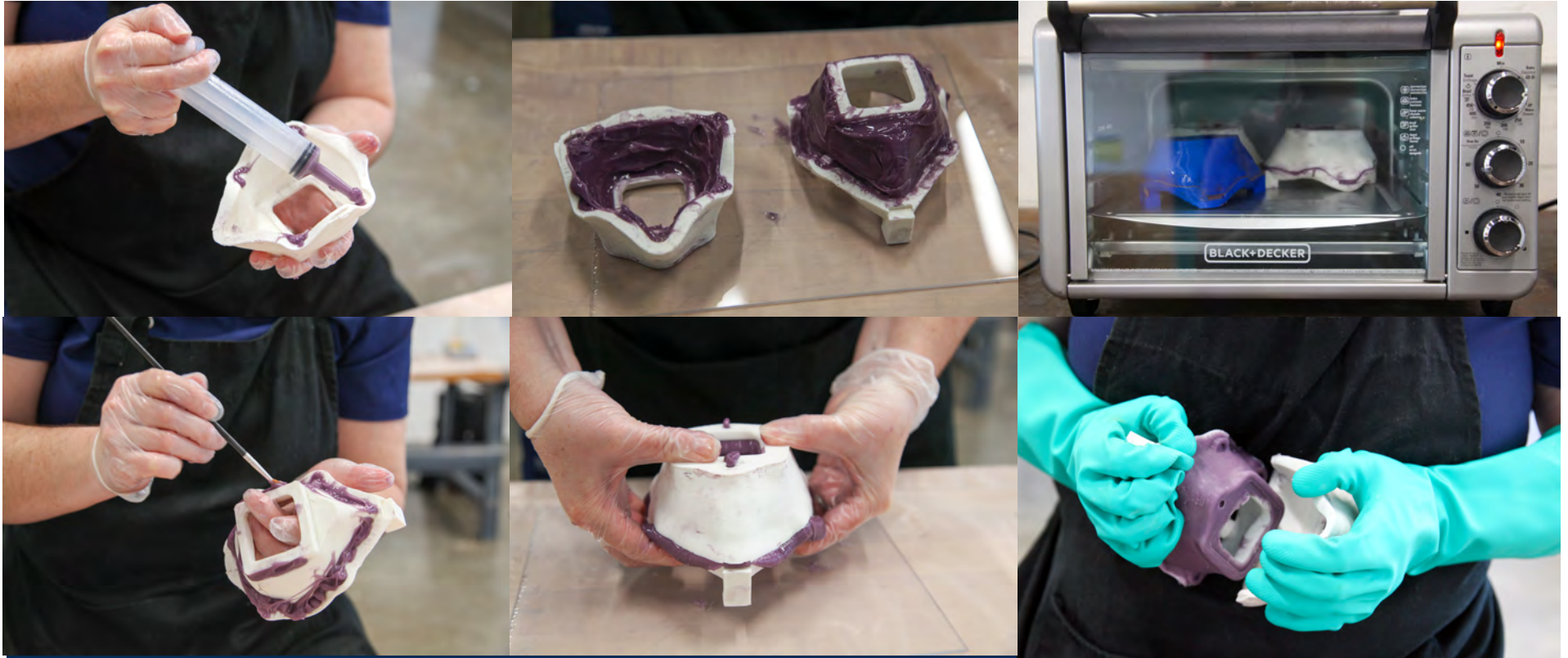


Thixotropic Agent



Vacuum to 29 Hg

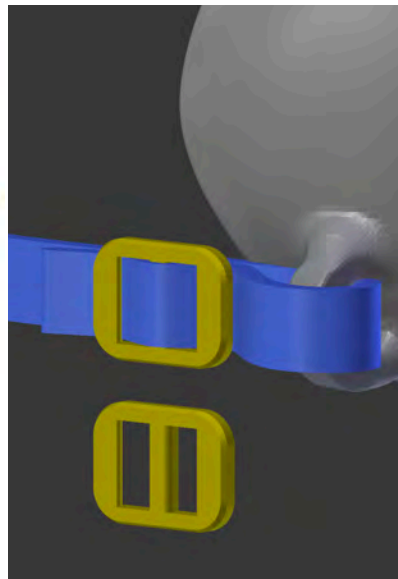
Packing the Mold



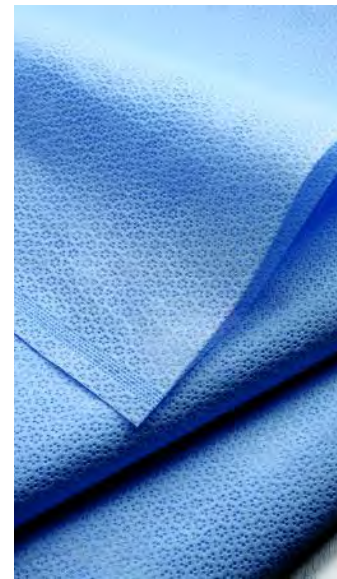
Materials



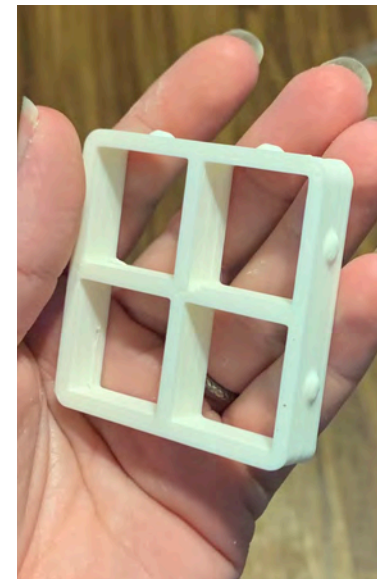
Tourniquet Strap



3D Printed Buckle

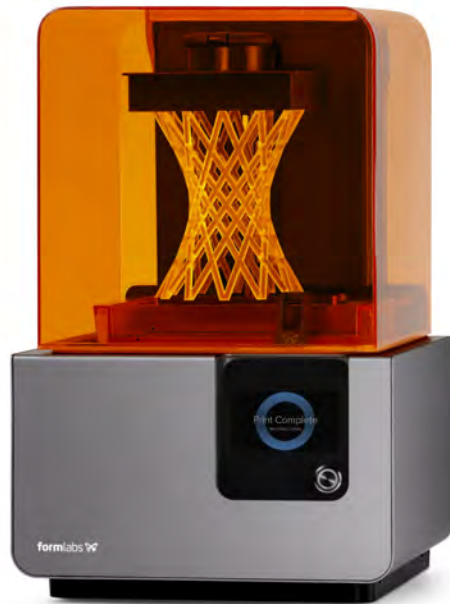


Sterilization Fabric

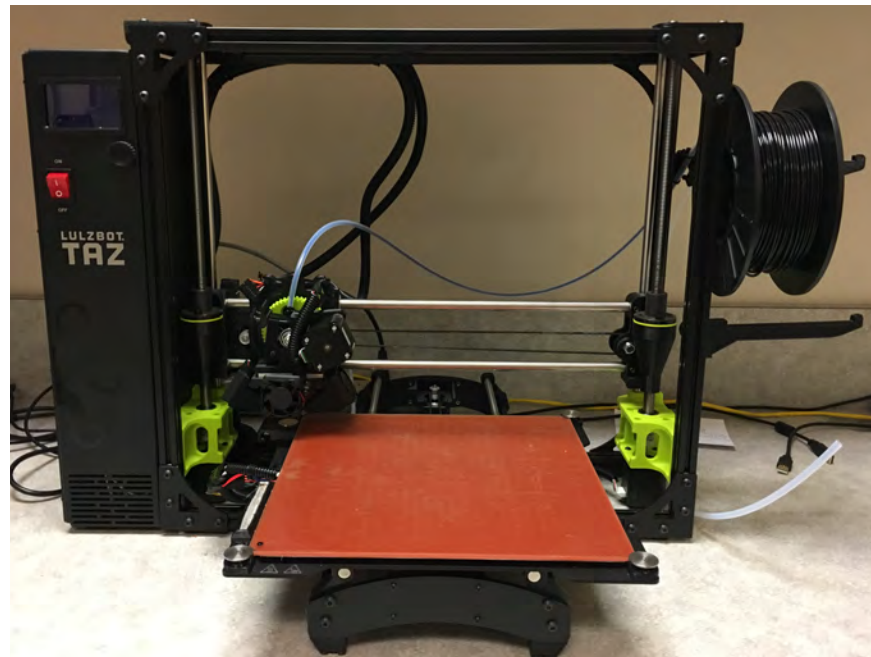


3D Printed and Cast Filter

Printers



Form 2



LulzBot TAZ 6

Face Masks



Two Sizes

Discussion and Future

- 3D printing
 - Size and durability
 - Availability
- Casting technique
- Liability

Future

- Vacuum forming
- Alternative mold materials
- Mold smoothing



<https://www.augusta.edu/innovation/covid19>

FACE SHIELD TASK FORCE:

MEMBERS:

Cheryl Goldsleger - *Morris Scholar of Art*

Bill Gray - College of Education

Scott Thorp - AVP of Interdisciplinary Research
Department Chair

Paul York - Information Technology

Erika Grimm - Institutional Information Analyst

David Stevens - Savannah River Site

Jessica Dinsmore - Augusta University Student

John Peterson - Instructor at MOSAIC Technologies Group

Sarah Long - Director of Research Operations, Augusta
University

Michael Diamond - SR VICE PRESIDENT FOR RESEARCH

Dale Strasser - MTU Solutions

MONTANA BEHR MASK TASK FORCE:

Amanda Behr - Medical Illustration/AU Anaplastology
Lab

Brian Rust, Brian McGrath, Mariana Williams -
Department of Art

Damian Priessman – AU Health ISCU

Michael Ray, RJ Mysona, Alain De Greef - SOLVAY
Mark Jarzewiak

Lynsey Ekema- Response Coordinator



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