Registration Form

TEAM INFORMATION

Team Name/Project Title: Wonder Women/Lung Model Manufacturing Process

Department: Bioengineering

Faculty Advisors: Jennifer Wagner, Casey Howard, Steve Lammers

Team Members: Mackenzie Wilderman, Yoana Arellano, Kathryn Chrisman

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PROJECT INFORMATION

Description:

The Wonder Women team was tasked with creating a repeatable manufacturing method for a lung model originally developed by Jennifer Wagner and Dr. Emily DeBoer.

Abstract:

This project will focus on developing a repeatable method for manufacturing the lung model produced by Jennifer Wagner and Dr. Emily DeBoer. The process shall produce a model that is anatomically correct and will aid in facilitating training in a cost-effective manner. This model has realistic airways that are semi-flexible, but the silicone casting around the airway mimics the rigidity of the body. It provides a location for physical anatomical markers to be placed within the mold, which helps pulmonary fellows learn the anatomy of normal lungs. The current process lacks repeatability in the way that it is manufactured. The design team was tasked with creating a repeatable method for manufacturing a lung model that is realistic and can facilitate training in a cost-effective manner.

The product will be used to train medical students on how to perform bronchoscopies. It is the size of a 17-year-old child's lungs, and the silicone lining of the airways mimics the real texture and appearance of human lungs, while the outer silicone block makes it durable for students who are just learning how to use a scope. The outer silicone block also makes it sturdy enough to be transported to multiple different locations.