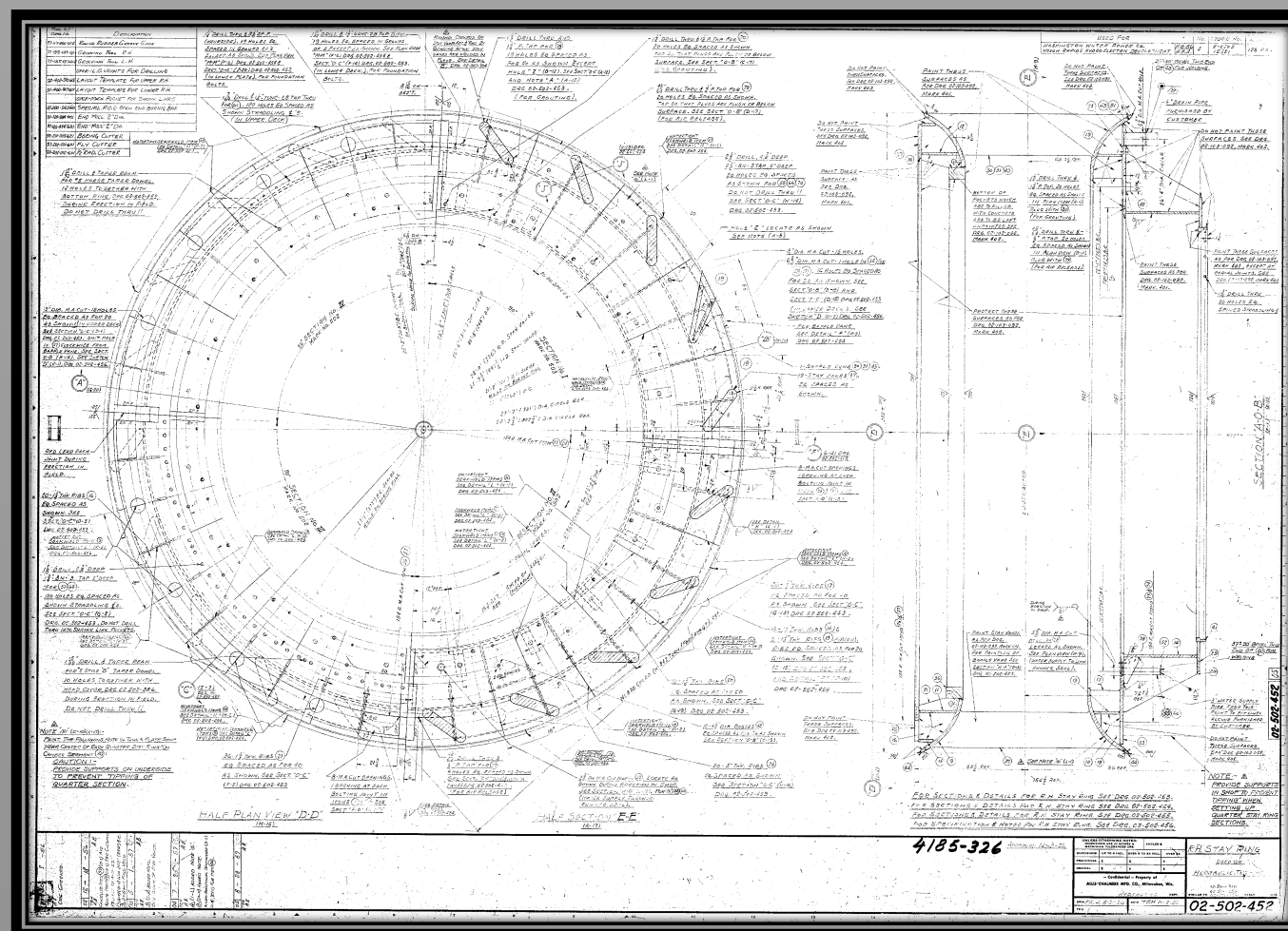


## The Intolerables

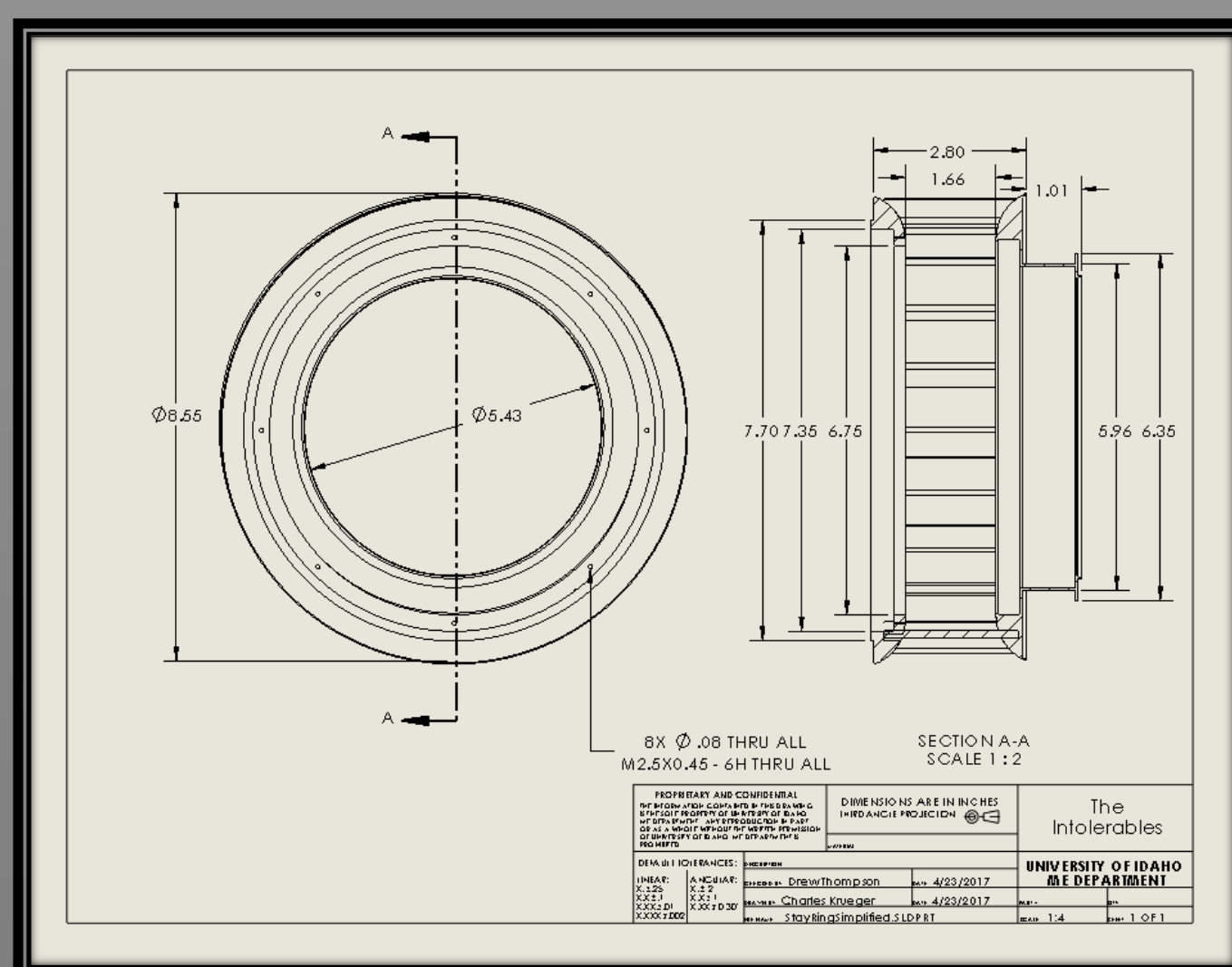
### Problem Statement:

Read and interpret old drawings and create a working scale model replica to improve understanding and knowledge of hydropower dam systems

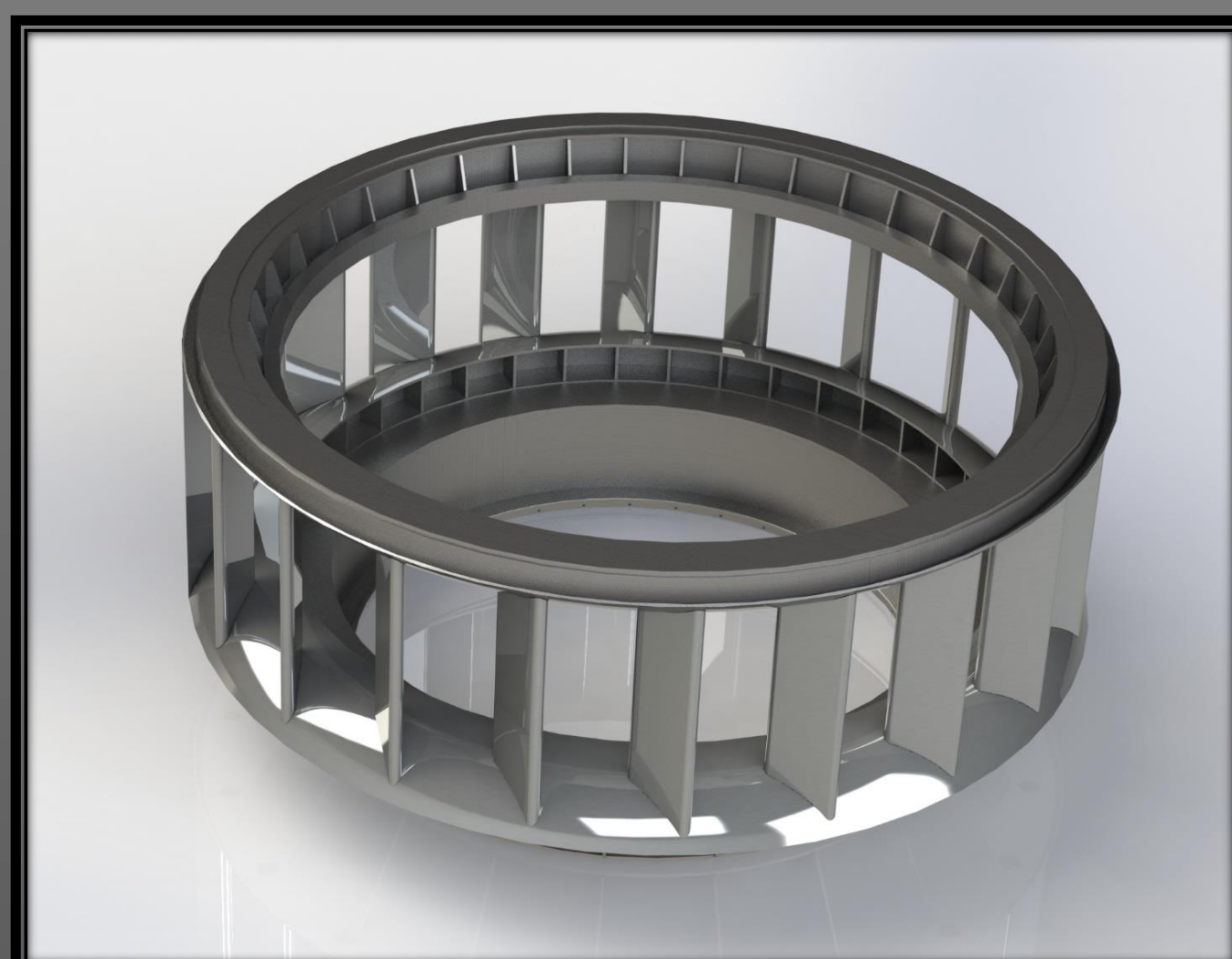
### Modeling Process:



The Original Drawing



The Simplified Drawing

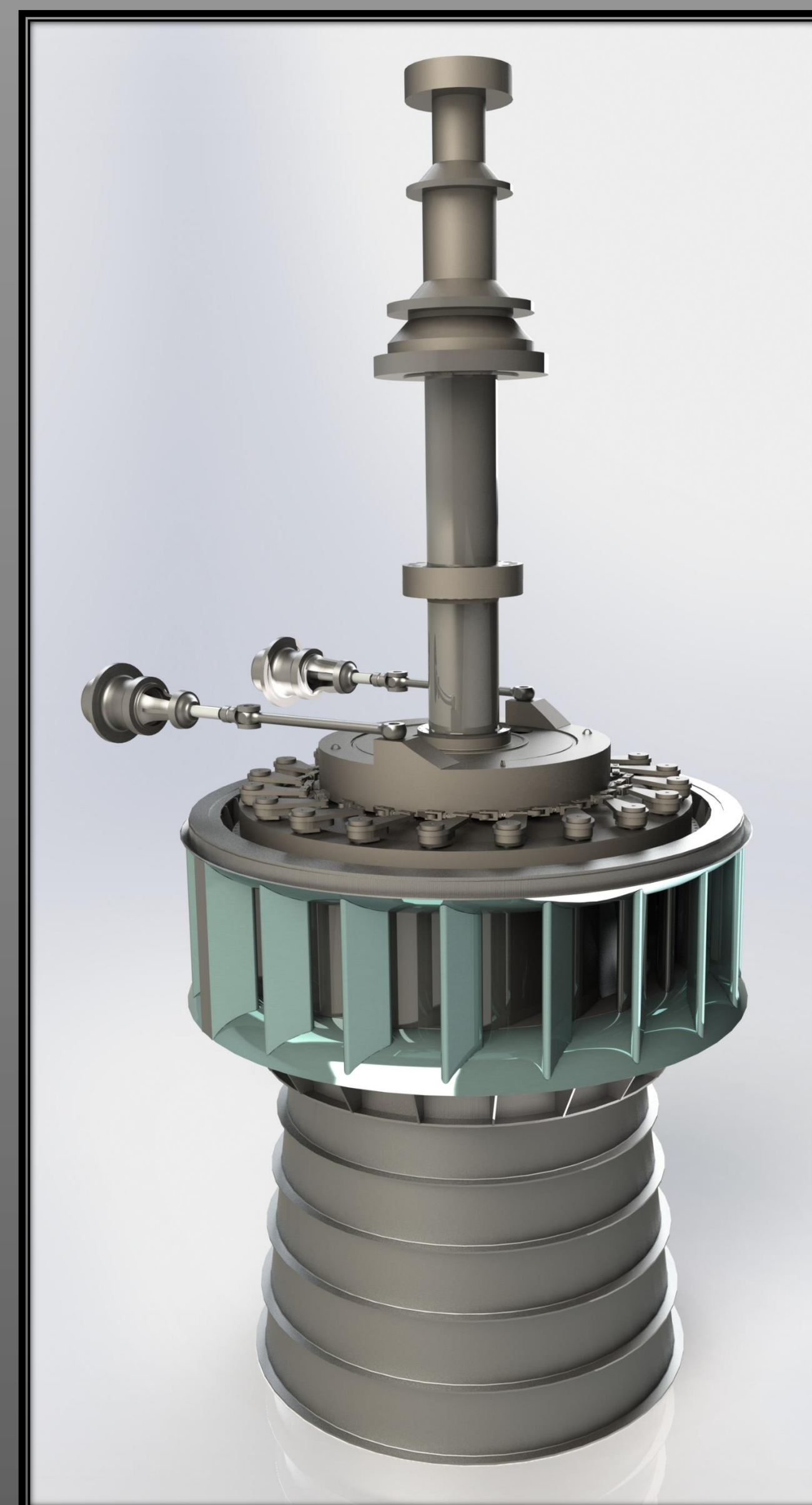


Render of Part



Left to Right: Ken Speers, Drew Thompson, Alex Gomez, Charles Krueger

Assembled Model

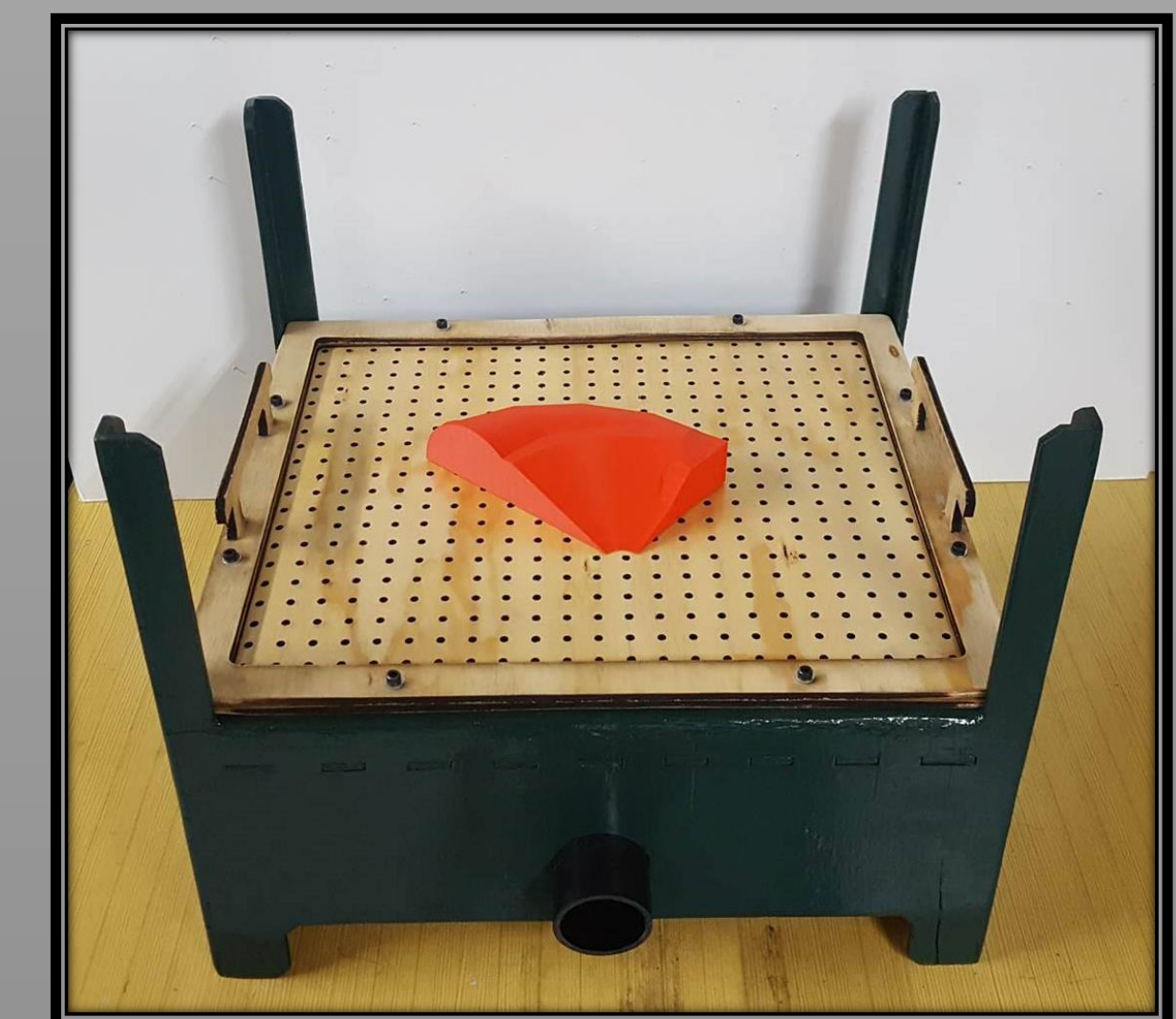


Exploded View

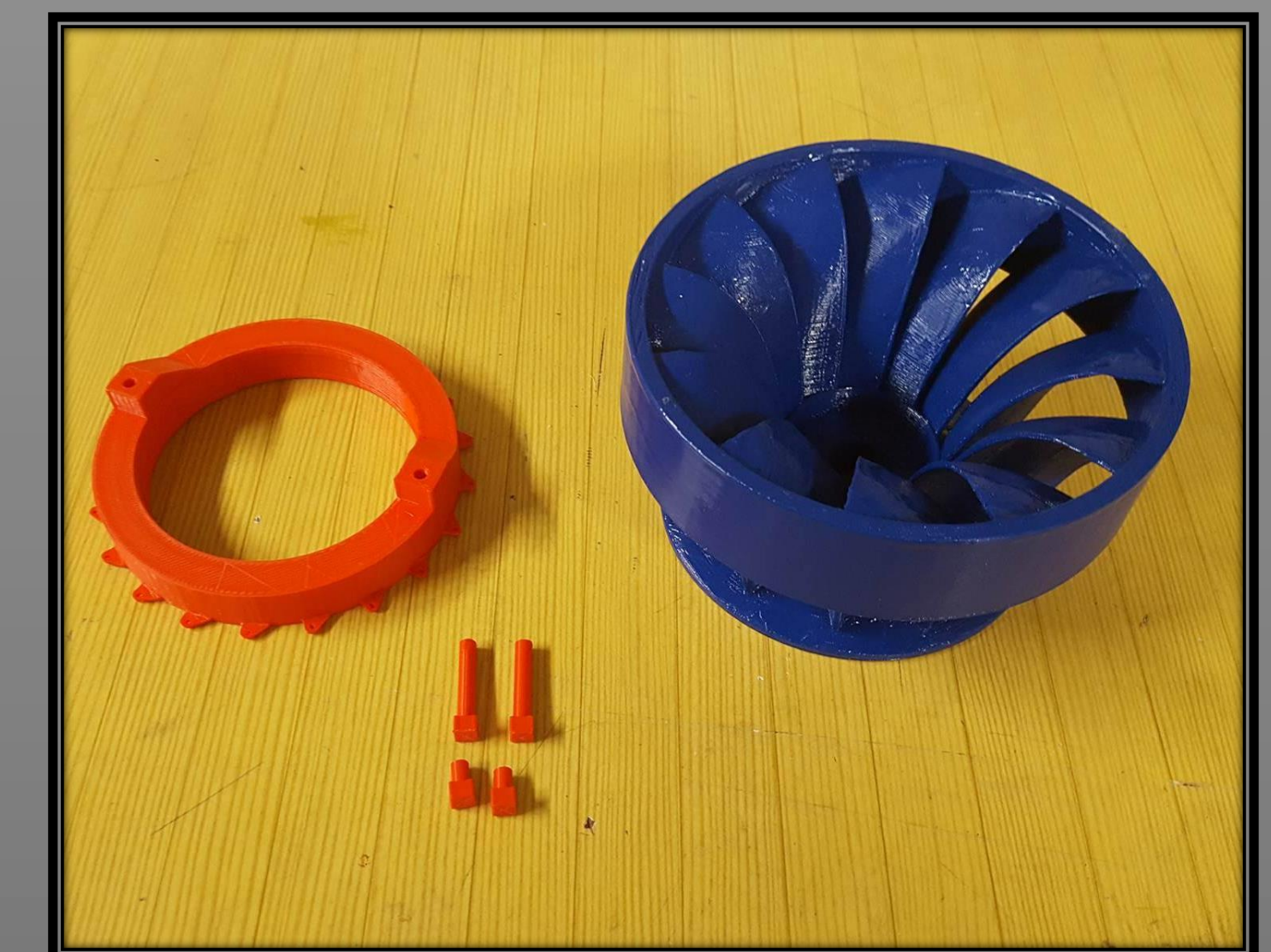


### Manufacturing Process:

To make the scaled model we used a variety of manufacturing options. These included machining, 3D printing, vacuum forming, and hand crafting.



Vacuum Forming Table



3D Printed Control Ring and Runner

Special thanks to Dr. Odom, Alex Olson, Jeff Smutney, Wagstaff, and Avista.