

Preliminary Arm Design

Wrist

The wrist has two degrees of freedom and attaches to the hand.

Shoulder

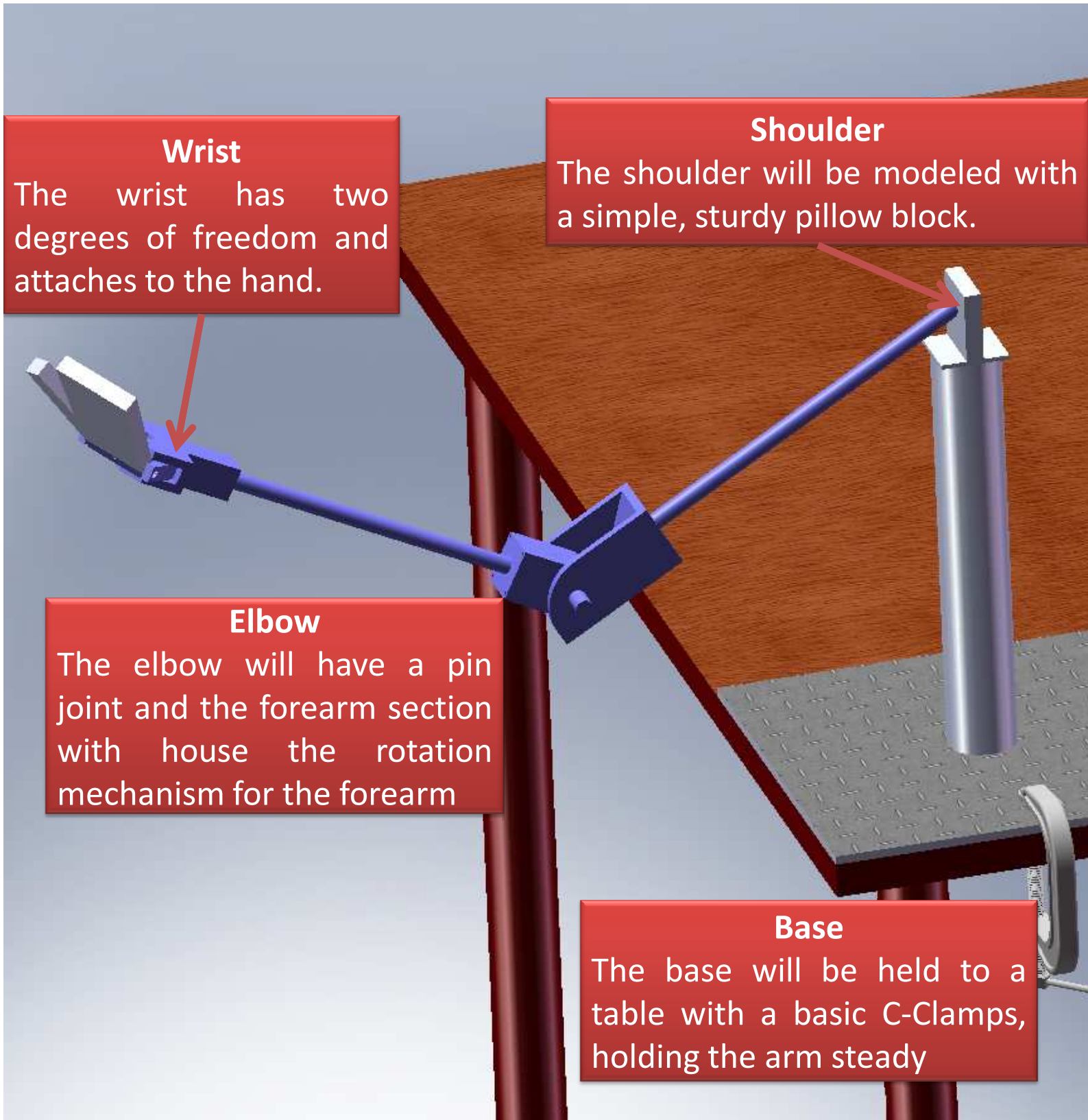
The shoulder will be modeled with a simple, sturdy pillow block.

Elbow

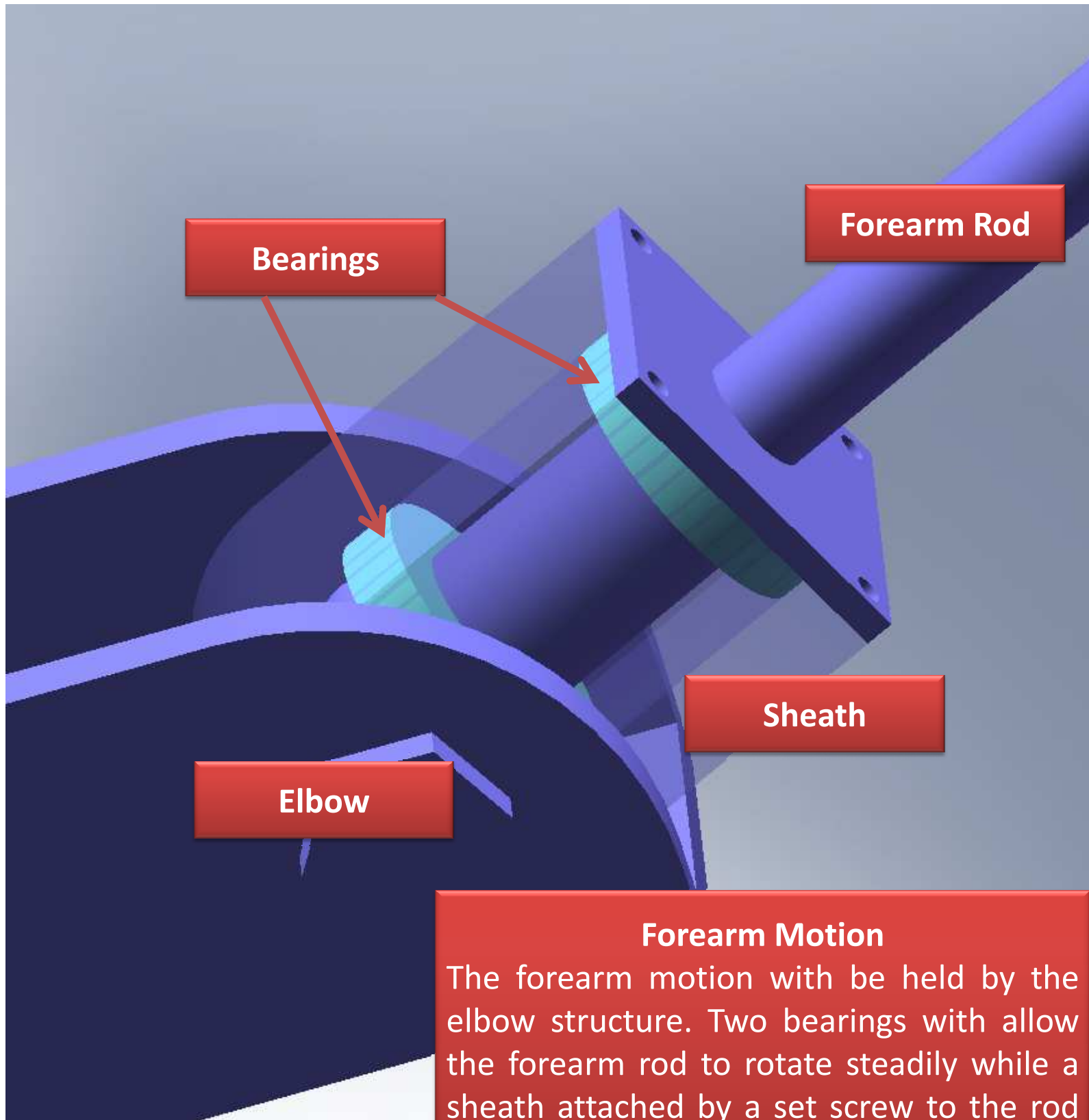
The elbow will have a pin joint and the forearm section will house the rotation mechanism for the forearm.

Base

The base will be held to a table with a basic C-Clamp, holding the arm steady.



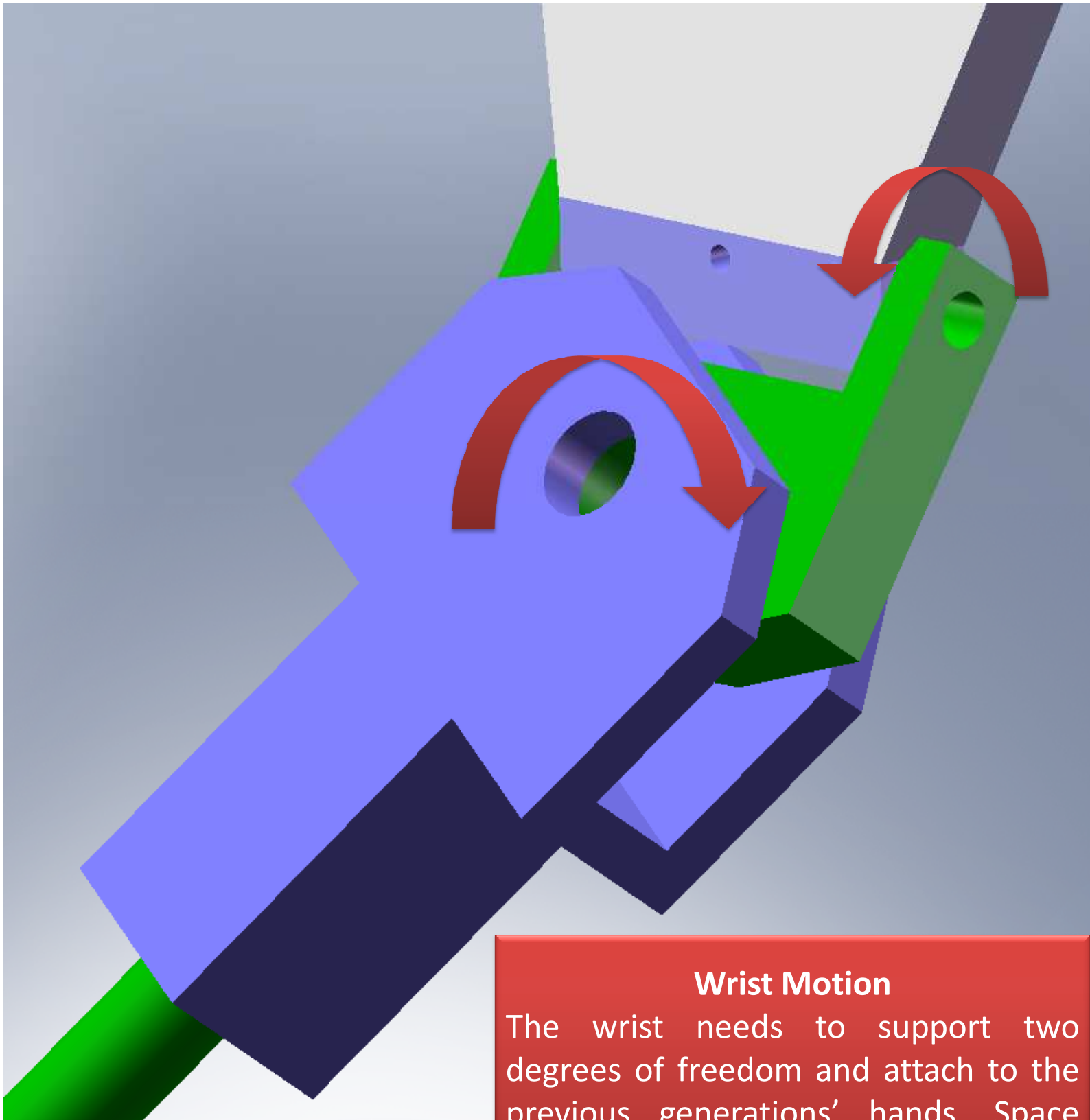
Preliminary Elbow Design



Forearm Motion

The forearm motion will be held by the elbow structure. Two bearings will allow the forearm rod to rotate steadily while a sheath attached by a set screw to the rod makes sure the rod does not slide out.

Preliminary Wrist Design



Wrist Motion

The wrist needs to support two degrees of freedom and attach to the previous generations' hands. Space must be left for cabling to run through.

Design Tasks

1. Modify designs so that cables can be run through wrist
2. Add attachments for air muscles
3. Add air muscles
4. Pneumatic systems
5. Animation video
6. Material properties
7. Mechatronics toolkit interface with LabView