



ANEUVAS TECH. INC. PORTABLE MEDICAL BENCH

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DR. BECKER - ADVISOR and CLIENT

Project Description

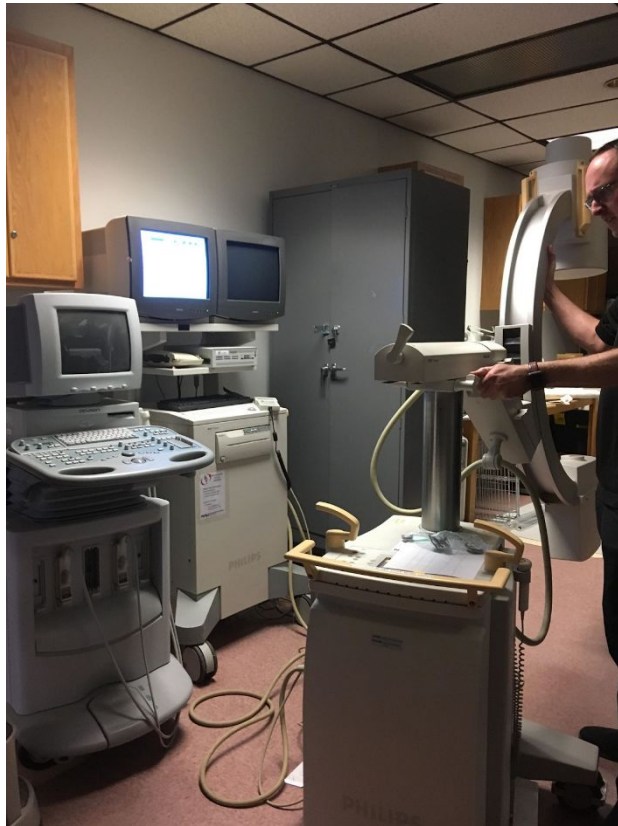


Fig 1: X-Ray Machine

Safely and easily transporting
blood flow model experimental
setup through buildings
Compatible and Protective of
Medical Research Devices
Support Clean-Room Hood
Reduce Shock During Transport
X-Ray Machine Compatible
Spill Prevention



Fig 2: Clean Room Hood and
Air Filter

Design Description: Changes from SEM1

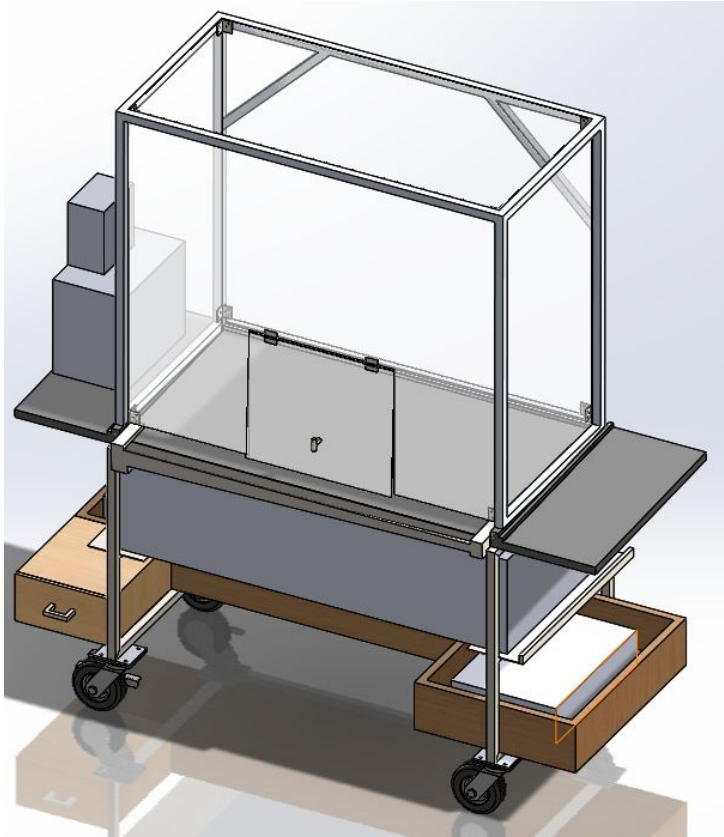
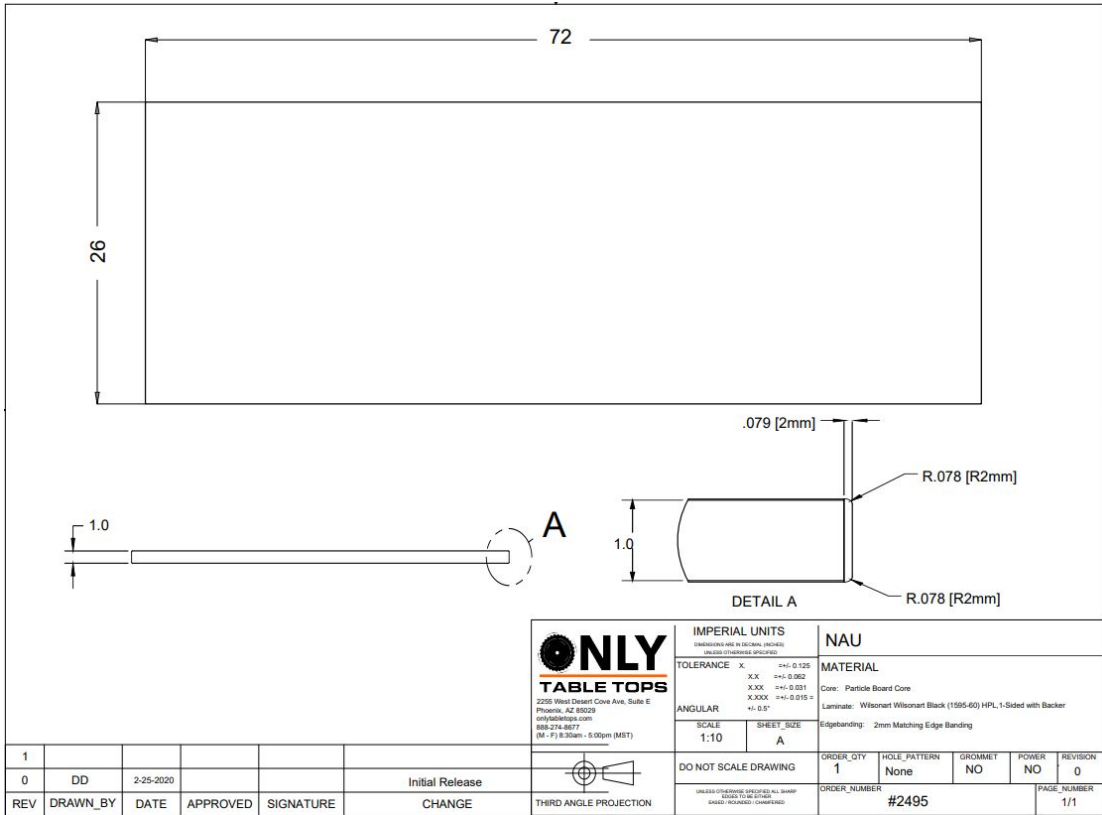


Fig 3: Current SolidWorks Design

- Tabletop:
 - Oak and Polycarbonate → Wilsonart
 - Tilted Tabletop → Angled Frame, Wedges
 - Spill Guards around Perimeter of Hood
 - Gutter Tray
- Frame:
 - Dimensions Match Hood → Wider
 - Storage for Air Filter during transport
- Storage:
 - Storage will be removable
 - Drawer slides have been omitted

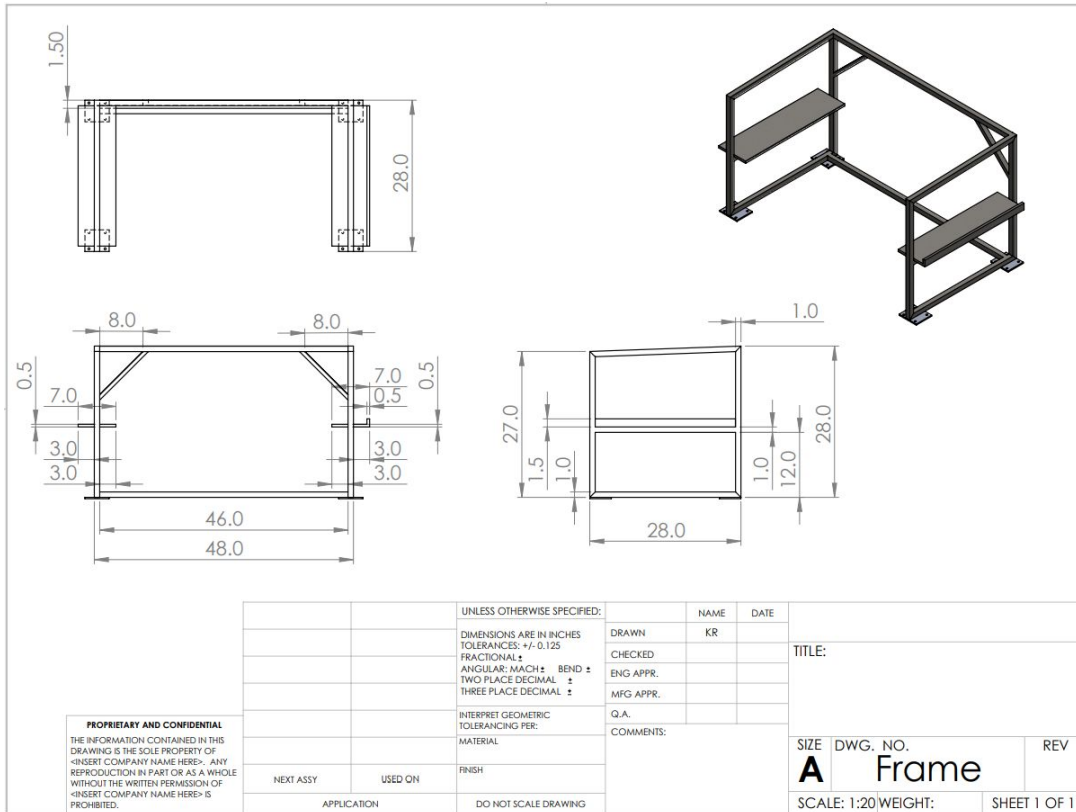
Design Description: Tabletop



- Spill Guards as attachments around perimeter of hood
- No hood grooves
- Wilsonart - no polycarbonate workspace
- No taper, only frame angled
- Wedge attachments for frame

Fig 4: Current Tabletop Design, Order

Design Description: Frame



Bolt Plates for Wheel Attachment
1" Tilt from back to front
Air Filter Support Shelf for Transport

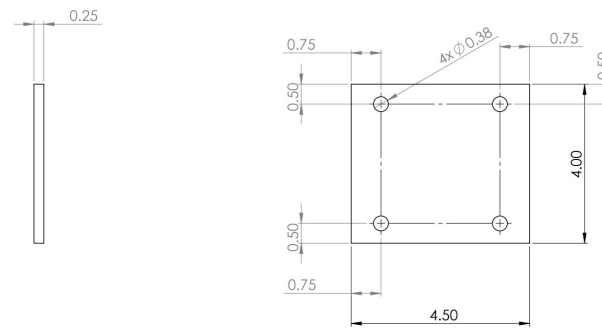


Fig 5: Current Frame Design, Order

Design Description: Storage

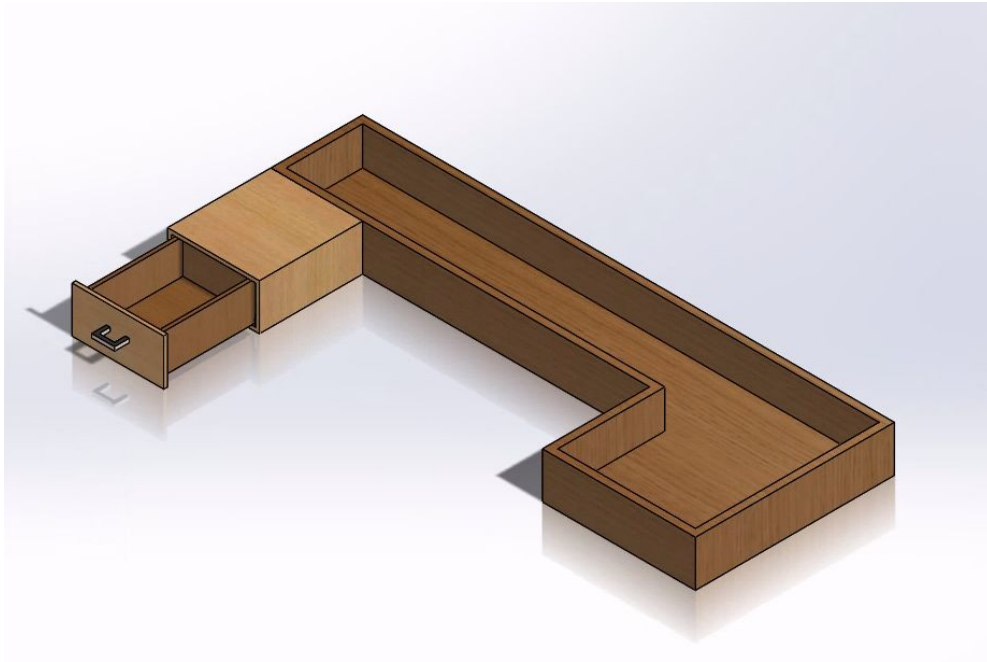


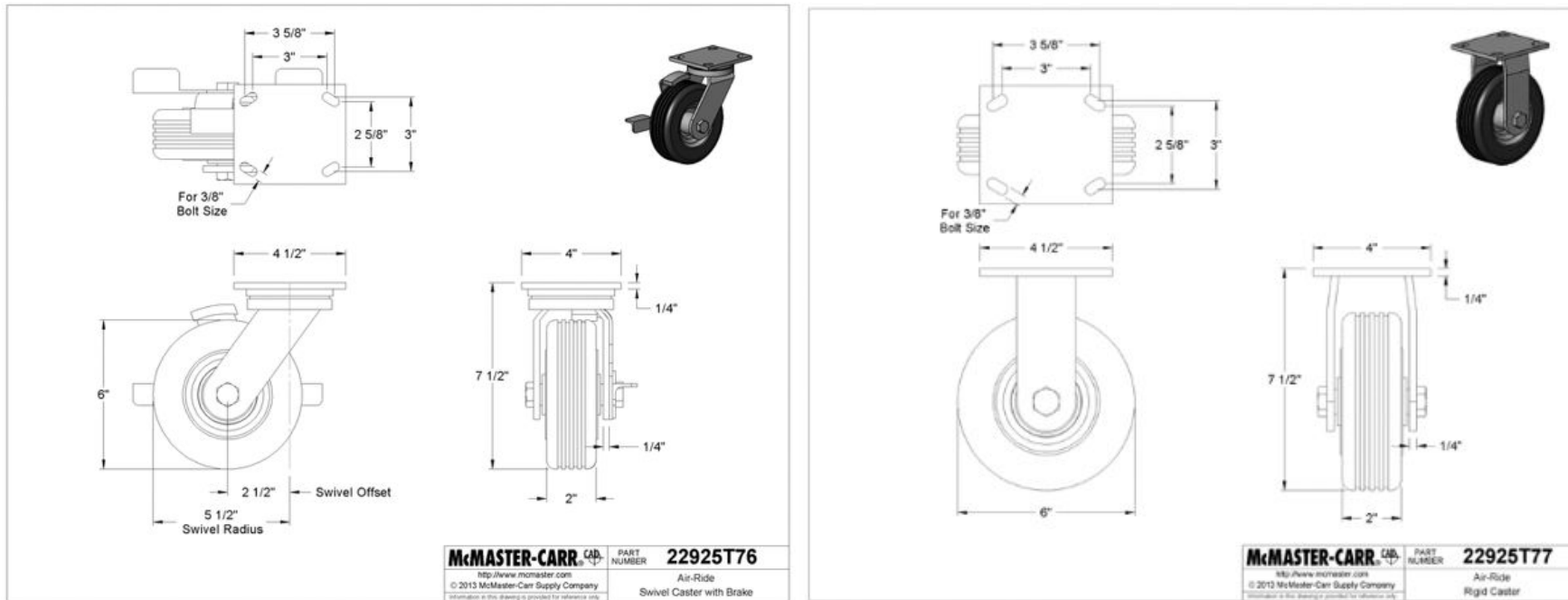
Fig 6: Storage CAD

Needed to hold about 40 lbs.

Two of three devices needed to store underneath: Reservoir, Super pump, and controller

Drawer to hold pens, pencils, etc. for multipurpose use

Design Description: Wheels

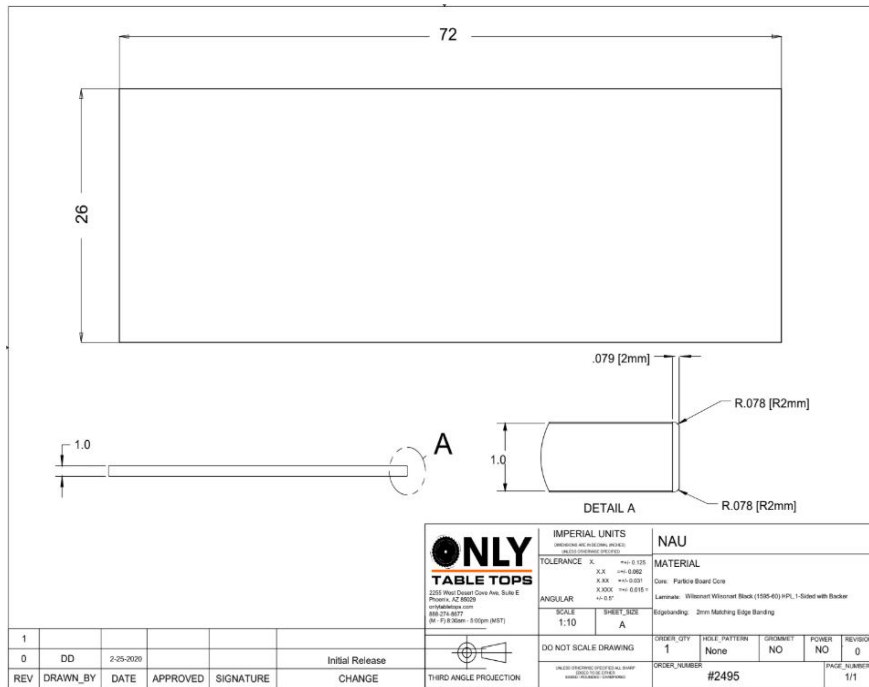


Selected for
weight capacity

Bolted onto
frame

Fig 7: CAD Wheels [1]

Current State: Tabletop



Wilsonart material

72" x 26" x 1"

Rounded edges

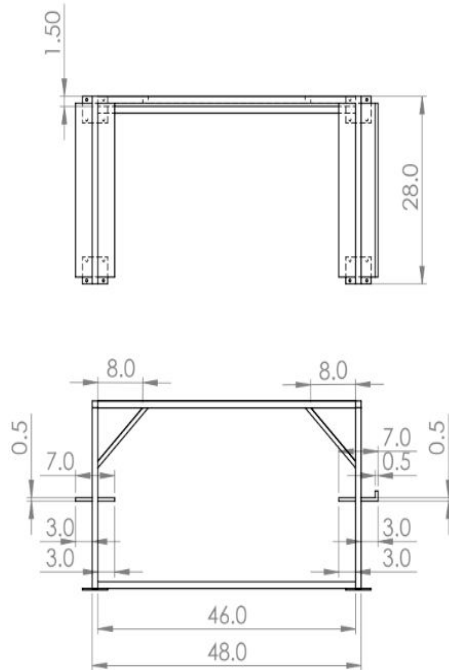
Only Table Tops

Currently being manufactured

Team will pick up once completed

Fig 8: Ordered Tabletop

Current State: Frame



Steel Material order tomorrow
Construct next week

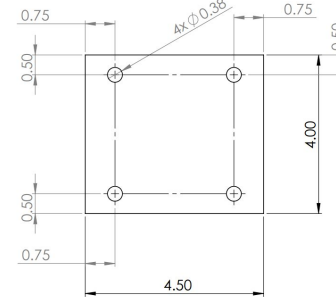
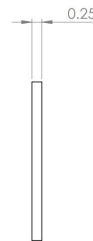
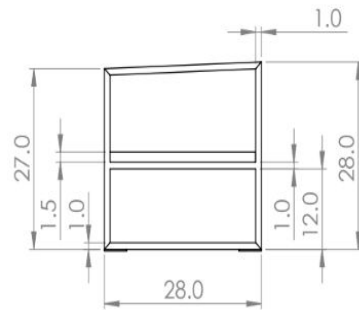


Fig 9: Frame and Bolt Plates

Current State: Storage



Fig 10: Constructed Storage

To be completed: painting black,
adding knob to drawer

Current State: Wheels



Fig 11: Wheels

To be completed: fasten to frame

Design Requirements: ERs

Table 1: Engineering Requirements

Engineering Requirement	Units	Target Value	Tolerance	Met?
Cost	\$	1000	+/- 100	Approved
Weight	Lb.	150	+/- 10	Test
Fitting Through Doorway	ft ²	7.5	+/- .1	Test
Tabletop Yield Strength	psi	5	+/- 1	Test
Effective shock absorption	in/s ²	5	+/- 5	Approved
Tabletop Deflection	in	0.25	+/- .05	Test
Tabletop Thickness	in	1.00	+/- 0.10	Met
Bench Height	in	36.00	+/- 0.10	Met
Storage Volume	ft ³	5	+/- 1	Met
Temperature resistance	°F	50	+/- 50	Test
Liquid Drained	%	80	+/- 10	Test



Bill of Materials

Table 2: Bill of Materials

Plywood	Wood Glue	Wood Putty	Sand Paper	Nails	Primer	Paint	Caster Wheels Rigid	Caster Wheels Swivel and Brake	Hex Bolts	Flat Washer	Hex Nut	Frame	Tabletop
\$29.99	In house						\$95.44	\$131.52	\$5.40	\$3.98	\$3.56	\$300	\$591
												Total: \$1160.89	

Implementation Plan

- Tabletop: In Manufacturing
 - Test Load Strength and Drainage Angle
- Frame: Construct next week
 - Test Load Strength
- Storage: Built
 - Adding Paint and Knob Drawer
 - Testing storage capacity
- Wheels: Received
 - Attach to frame next week
 - Assembly next week and spring break

Action Items: Completed and Future



Table 3: Action Items

Action Item	Description	Assigned to	Completed?
Order Tabletop	Order the tabletop and pick up in Phoenix	Hunter	Yes
Order Frame	Order the frame	Katherine	No
Build Storage	Construct storage out of plywood	Kenyon	No
Order Wheels	Order wheels from McMaster-Carr	Kenyon	Yes
Order Wedges	Order tabletop wedges for cleanroom	Kenyon	No
Assemble Frame	Assemble wheels to frame	Team	No
Assemble Tabletop	Fasten wedges to tabletop	Team	No
Full assembly of bench	Assemble entire bench together	Team	No

Testing Procedures

Table 4: Testing Procedures 1-3

TP		ER		Requirements/Procedure
1	Project Cost	1	Cost Target	Bill of Materials Approval from Dr. Becker and Dr. Oman
2	Bench Specifications	7	Tabletop Thickness	Tape Measure for Tabletop Thickness and Bench Height
		8	Bench Height	
		9	Storage Volume	Dr. Becker's supervision to fit devices in the storage area
3	Transporting Bench	3	Fitting Through Doorway	Escort from Dr. Becker or lab assistant
		5	Shock Absorption	

Testing Procedures

Table 5: Testing Procedures 4-7

TP		ER		Requirements/Procedure
4	Temperature Resistance	10	Temperature Resistance	Hot Plate and its Generator; Cold Flagstaff Day Clean Room Hood and Air Filter for Deflection and Yield Strength Measurements during extreme temperatures
5	Liquid Drainage/ Deterioration	11	Liquid Drained	Blood-viscosity substitute liquid and typical lab cleaning fluid from lab assistant; gutter tray, tubing, bucket
6	Weight	2	Overall Weight	Industrial scale (98c); Dr. Becker's approval of the weight
7	Tabletop Strength	4	Tabletop Yield Strength	Cleanroom Hood and Air Filter; Tape Measure
		6	Tabletop Deflection	



Questions?
