

# **Test Article Infrastructure Update**

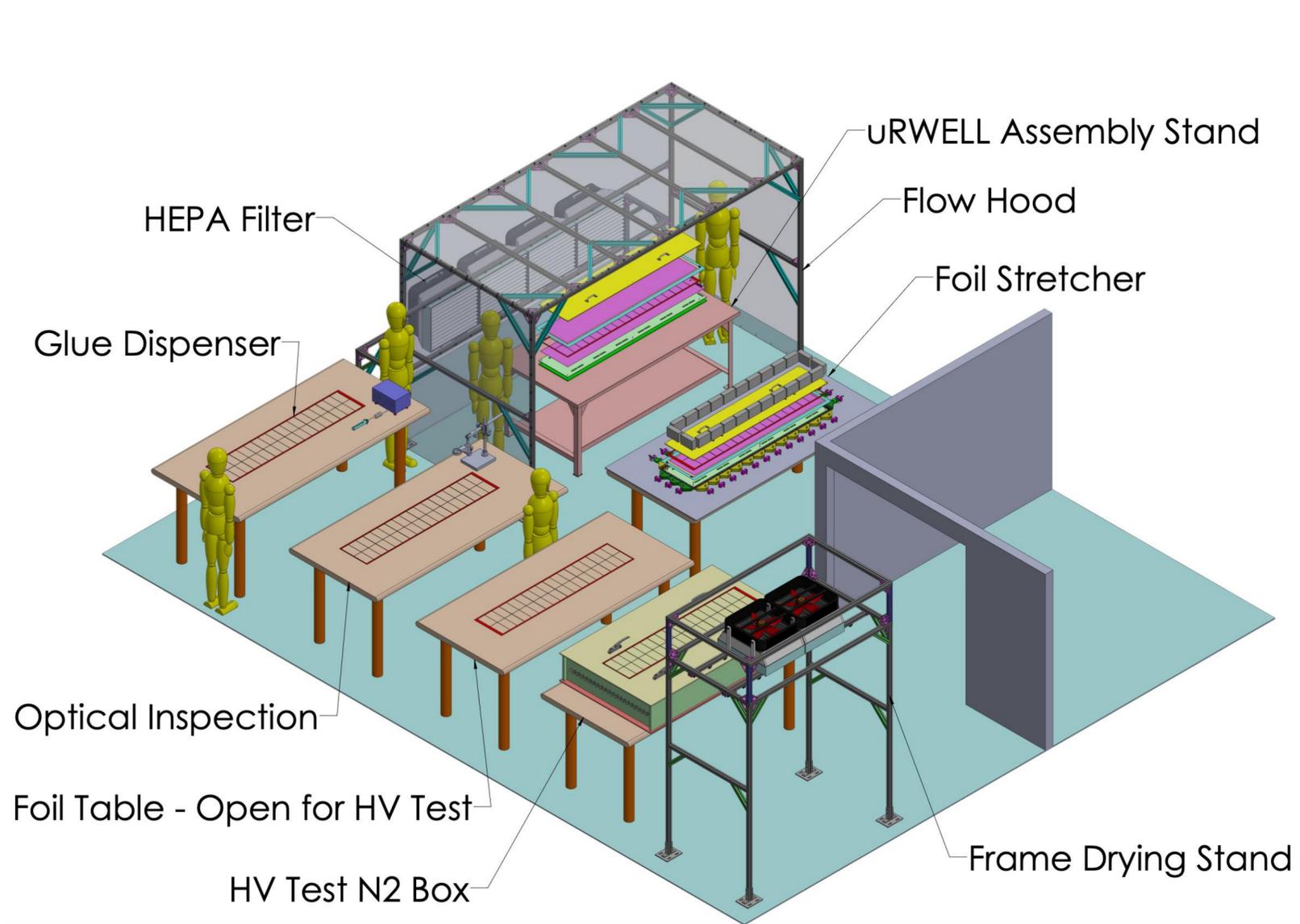
**Xinzhan Bai — 2/19/2026**

# Outline

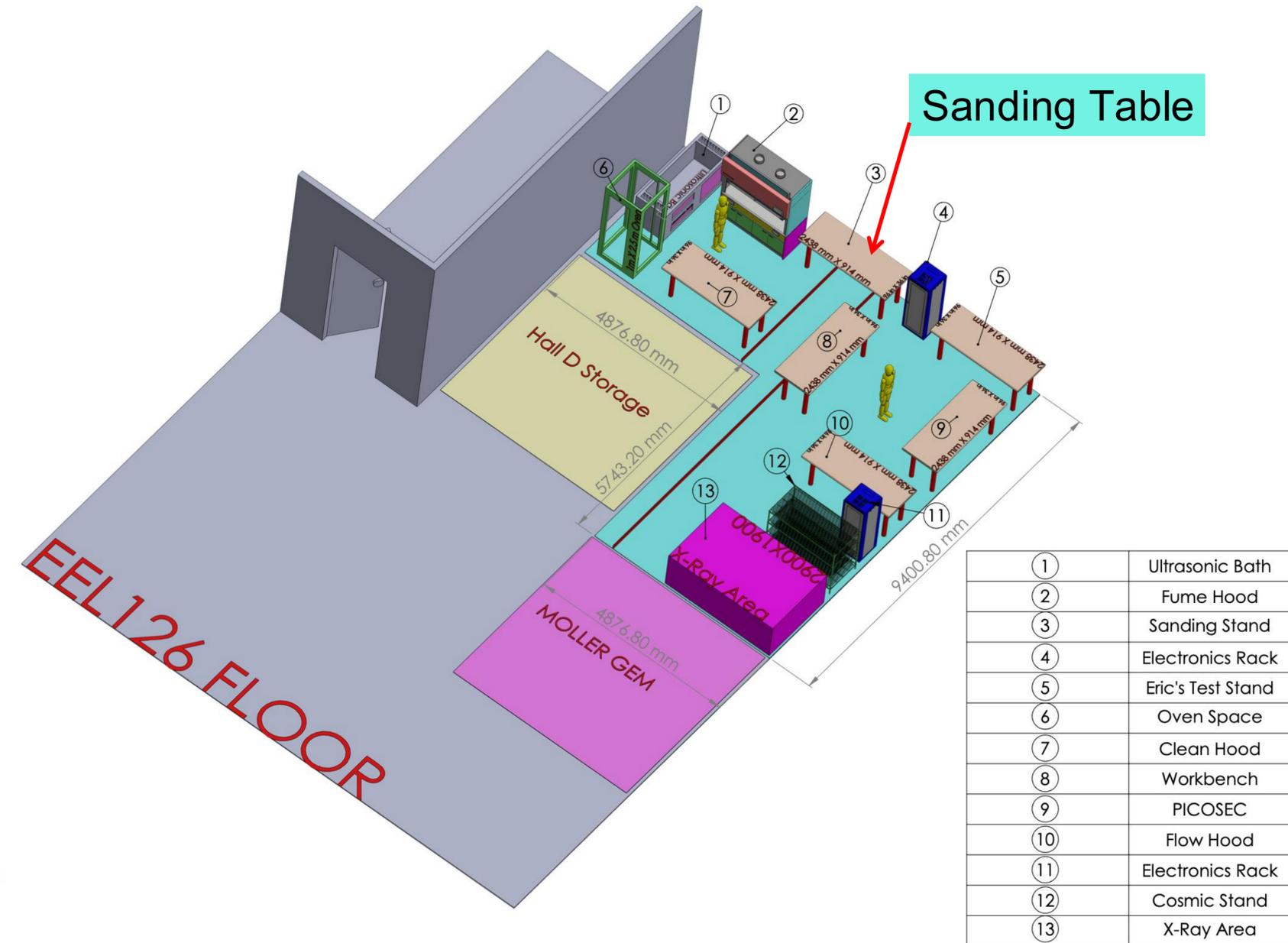
- Overall Status
- MPGD Lab and Cleanroom Installation
- Detector Assembly Tooling Readiness
- Summary and Next Steps

# Two Labs : Cleanroom and EEL126 (RD&I Group MPGD Lab) Layout

## EEL-121 Cleanroom Layout



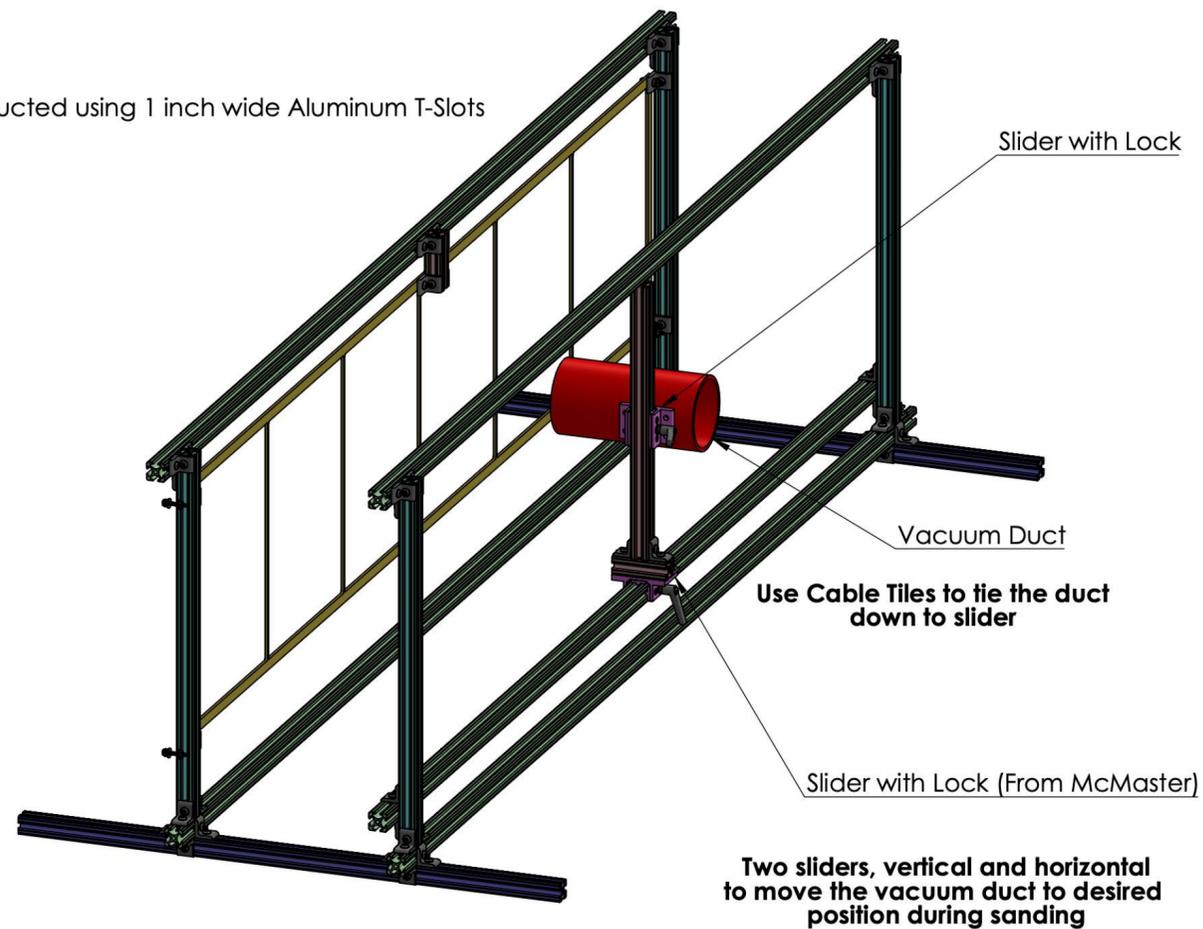
## RD&I Group MPGD Lab (EEL-126)



# MPGD Lab – Sanding Stand

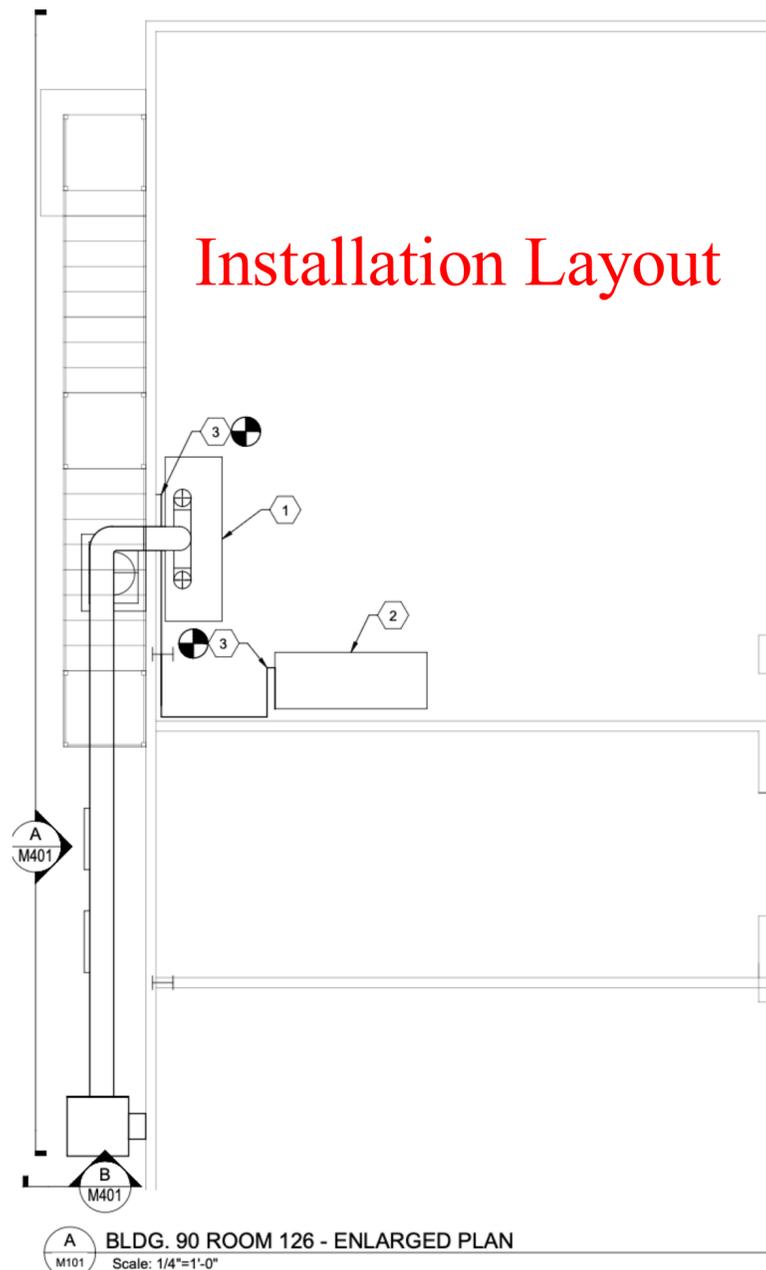
- Sanding (**debur**) stand is completed (smooth the surface of the spacers)
- JLab has rules regarding manufacturing G10-FR4 material
- Presented a demo to **JLab ES&H department**
- Hazard mitigation: **Goggles, long sleeve shirts, gloves, wearable air quality monitor near neck**
- **Vacuum with HEPA filter** to collect G10 dust
- **HEPA vacuum and air monitor from JLab ES&H**

Constructed using 1 inch wide Aluminum T-Slots



# MPGD Lab – Fume Hood

- Duct installation (modify the building wall to install the duct)
- JLab Facility is moving forward on Fume Hood Installation in EEL126
- Quote has been generated, including parts (centrifugal fan, duct, etc) and labor
- PR to be submitted (**by the end of next week**)



A BLDG. 90 ROOM 126 - ENLARGED PLAN  
M101 Scale: 1/4"=1'-0"

**LEGEND:**

⊕ NEW CONNECTION

# KEY NOTES:

1. EXISTING FUME HOOD. SEE SHEET M-501 FOR DETAILS.
2. EXISTING ULTRASONIC BATH.
3. CONNECT ULTRASONIC BATH 1" DRAIN TO EXISTING 2" BUILDING SANITARY SYSTEM. SEE SHEET M-501 FOR DETAILS.

JSA / TJNAF CONSTRUCTION COST ESTIMATE					
Project: B90 Rm 126 Fume hood and Ultrasonic Bath Installation		Designer of Record N. Andrews			
Location: BUILDING # 90		W/O/TO			
		Date: 2/2/2025			
	Material Total	Labor Total	Equipment Total	Total	TOTAL COST W/ SUB O/P
<b>BUILDING CONSTRUCTION</b>					
DIVISION 01	GENERAL REQUIREMENTS	\$0	\$0	\$0	\$0
DIVISION 02	EXISTING CONDITIONS	\$0	\$0	\$0	\$0
DIVISION 03	CONCRETE	\$0	\$0	\$0	\$0
DIVISION 04	MASONRY	\$0	\$0	\$0	\$0
DIVISION 05	METALS	\$0	\$0	\$0	\$0
DIVISION 06	WOOD, PLASTICS, COMPOSITES	\$0	\$0	\$0	\$0
DIVISION 07	THERMAL & MOISTURE PROTECTION	\$0	\$0	\$0	\$0
DIVISION 08	OPENINGS	\$0	\$0	\$0	\$0
DIVISION 09	FINISHES	\$0	\$0	\$0	\$0
DIVISION 10	SPECIALTIES	\$0	\$0	\$0	\$0
DIVISION 11	EQUIPMENT	\$0	\$0	\$0	\$0
DIVISION 12	FURNISHINGS	\$0	\$0	\$0	\$0
DIVISION 13	SPECIAL CONSTRUCTION	\$0	\$0	\$0	\$0
DIVISION 14	CONVEYING EQUIPMENT	\$0	\$0	\$0	\$0
DIVISION 21	FIRE SUPPRESSION	\$0	\$0	\$0	\$0
DIVISION 22	PLUMBING	\$0	\$0	\$0	\$0
DIVISION 23	HVAC	\$10,454	\$16,197	\$1,576	\$28,227
DIVISION 26	ELECTRICAL	\$4,530	\$3,375	\$0	\$7,905
DIVISION 27	COMMUNICATIONS	\$0	\$0	\$0	\$0
DIVISION 28	ELECTRONIC SAFETY & SECURITY	\$0	\$0	\$0	\$0
DIVISION 31	EARTHWORK	\$0	\$0	\$0	\$0
DIVISION 32	EXTERIOR IMPROVEMENTS	\$0	\$0	\$0	\$0
DIVISION 33	UTILITIES	\$0	\$0	\$0	\$0
<b>SUBTOTAL</b>		<b>\$14,984</b>	<b>\$19,572</b>	<b>\$1,576</b>	<b>\$36,132</b>
Bond	2%				\$842
Contingency	5%				\$2,105
<b>SUBTOTAL</b>					<b>\$45,040</b>
<b>Project Total</b>					<b>\$45,040</b>

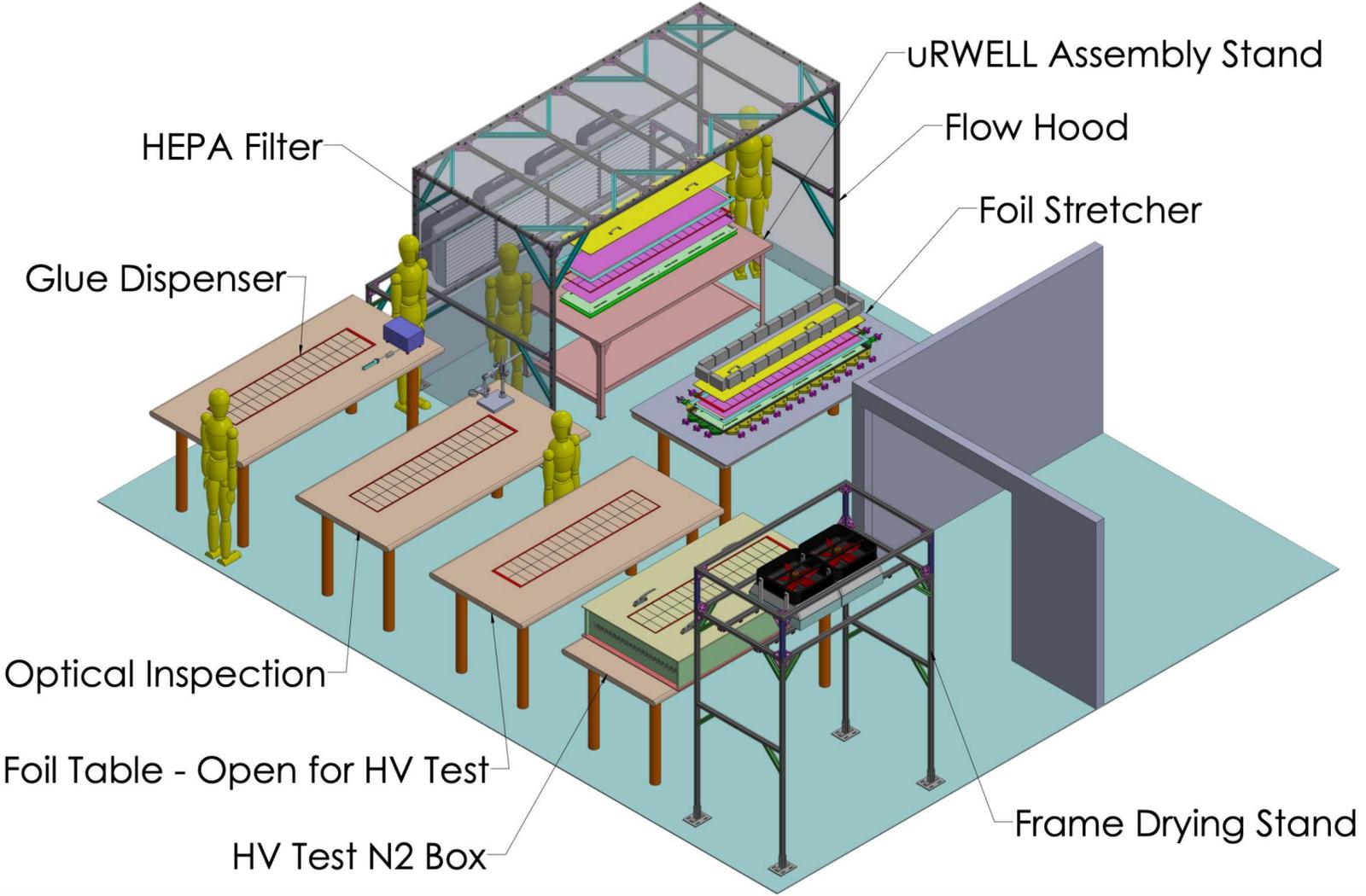
# MPGD Lab – Ultrasonic Bath

- Clean frame after sanding using deionized water
- JLab Facility is managing Installation in EEL126
- **Single-phase 240V power**
- Installation includes 2 parts: power (transformer) and drainage
- Transformer installation completed
- Drainage installation quote completed. PR to be submitted together with Fume Hood (**by the end of next week**)



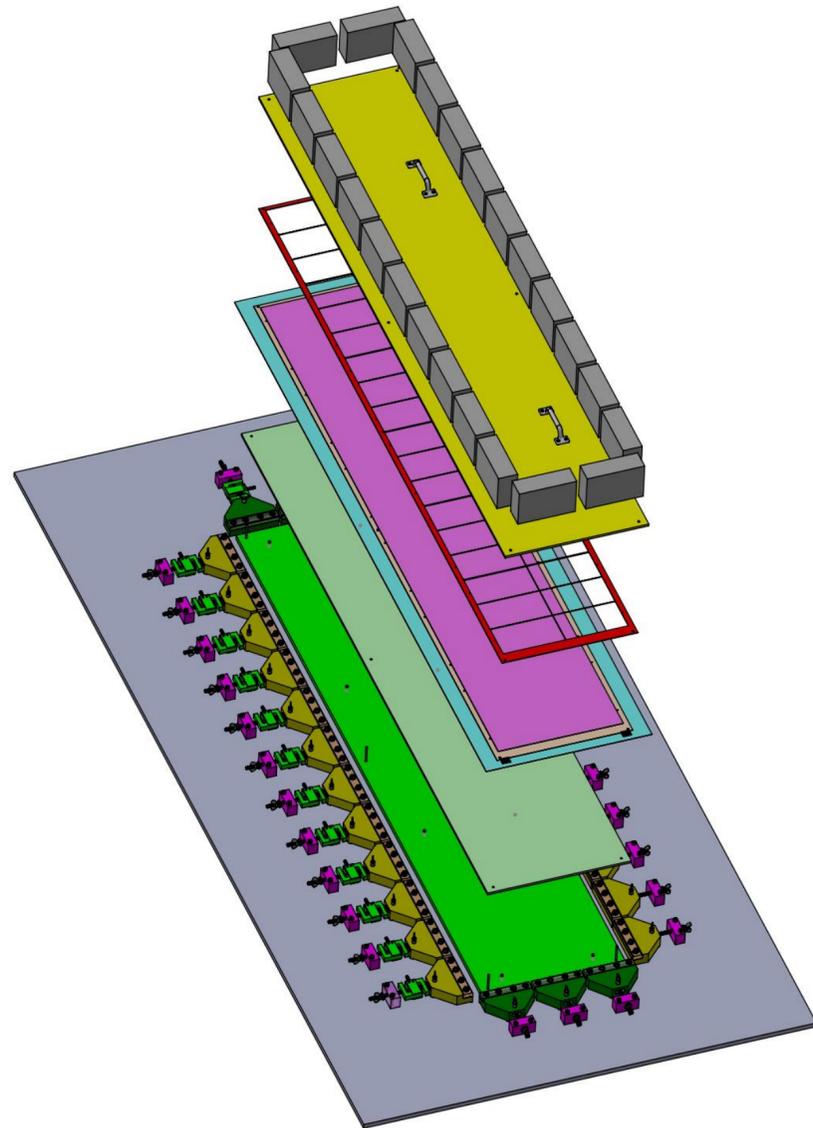
# Cleanroom Overall Status

- Equipment installation and Building modification



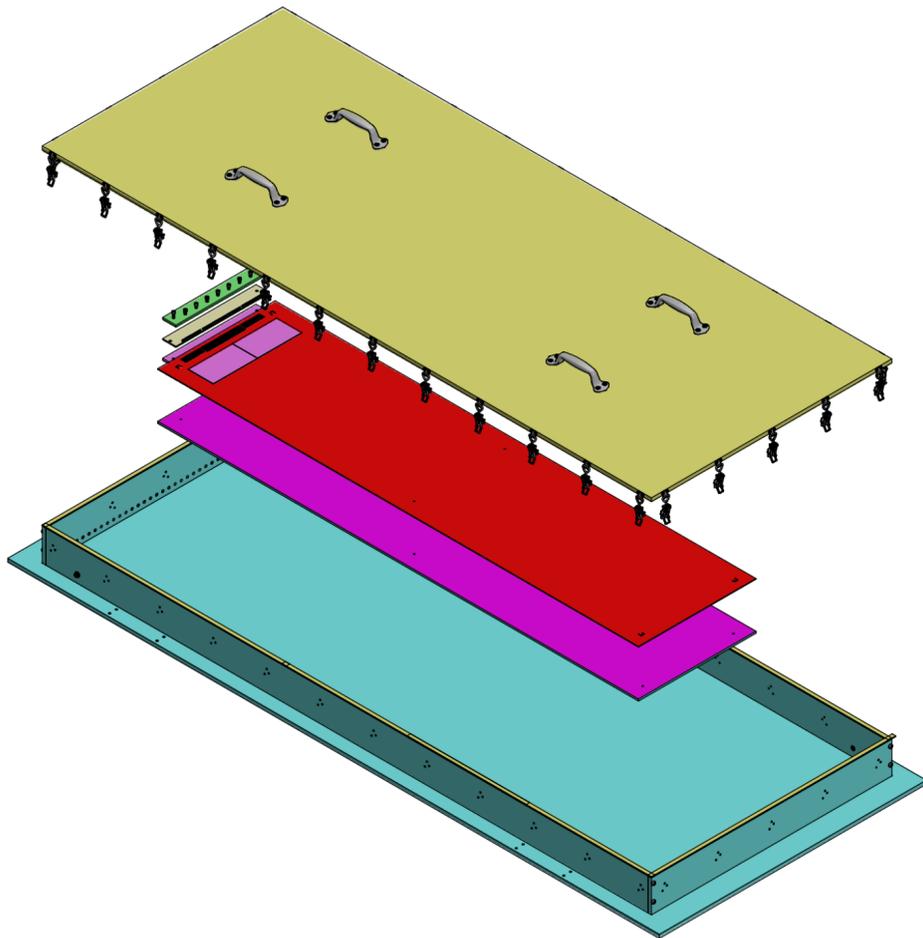
# Cleanroom – Stretcher

- Stretcher assembly is completed (Armen – JLab technician completed wire preparation for force sensors)
- Mock-up run
- Stretcher is long, the table is sagging in the middle, an additional support structure is to be built
- Materials arrived in JLab Shipping & Receiving

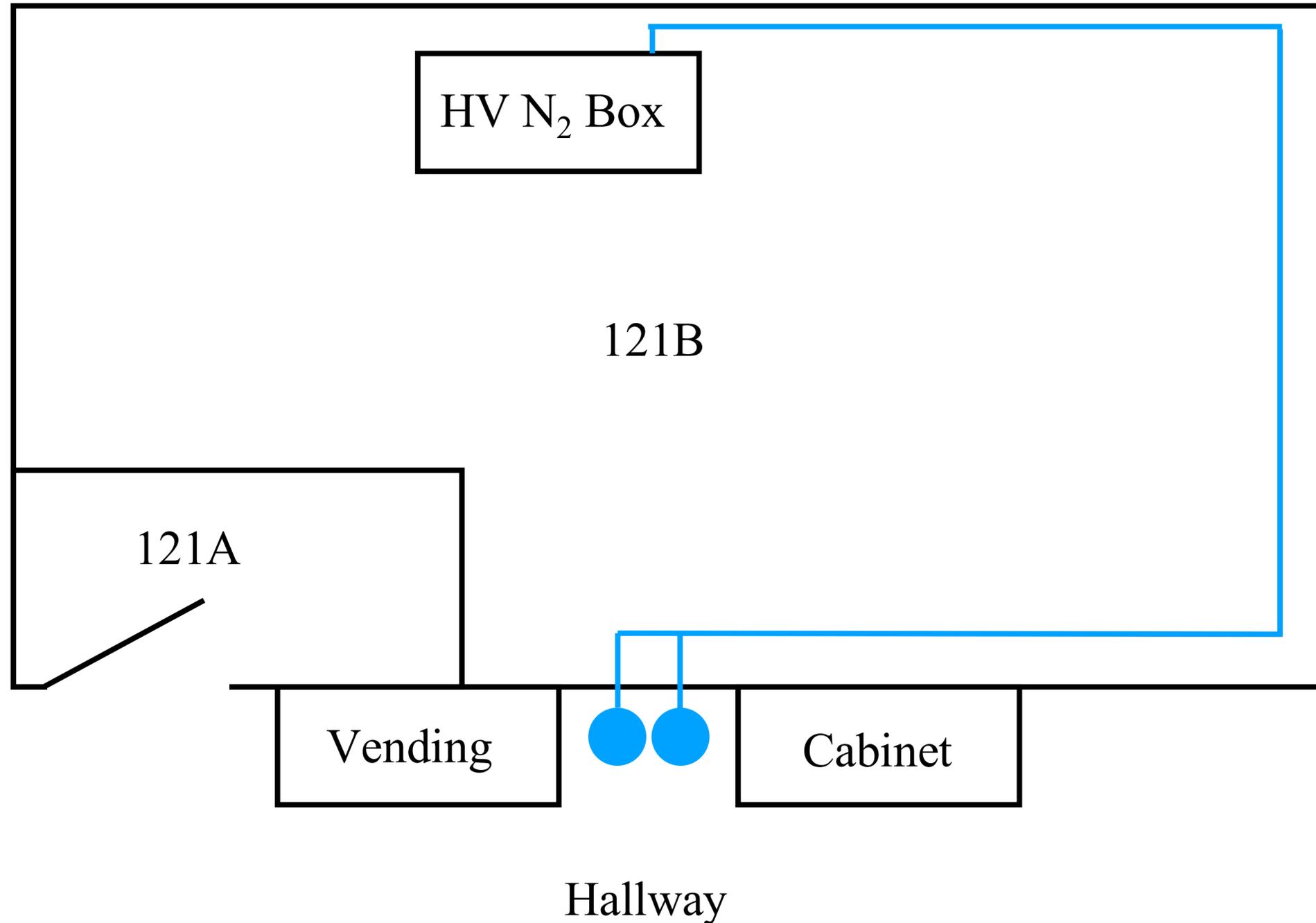


# Cleanroom – HV Nitrogen Box

- Need to run Nitrogen gas from outside the cleanroom to HV Box
- Requires building modification
- Identified a spot in the hallway – outer side of the cleanroom wall – Requires JLab Facility to drill a hole through the wall to run the gas tube
- Software – LabView installation completed by JLab computing helpdesk



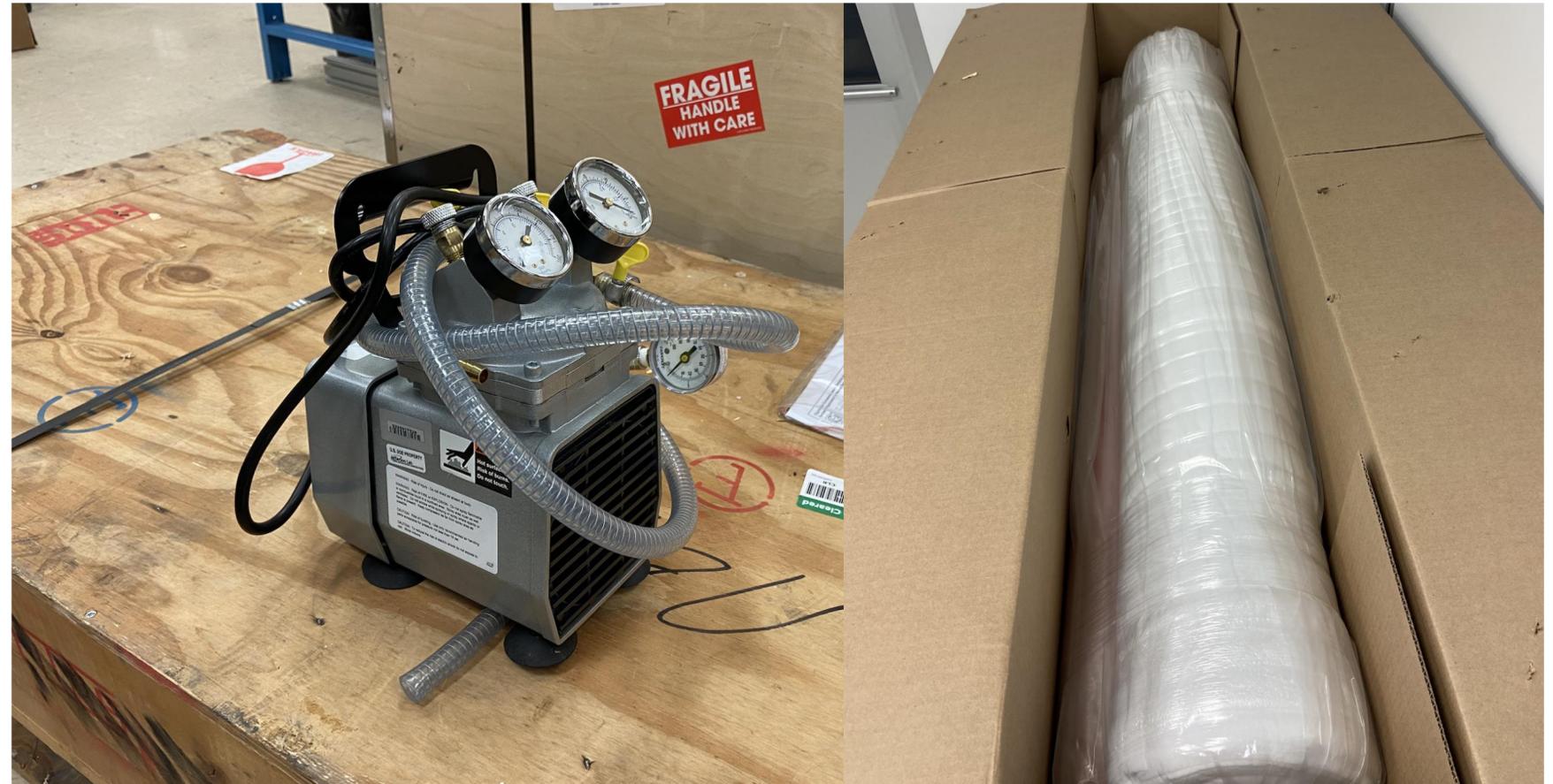
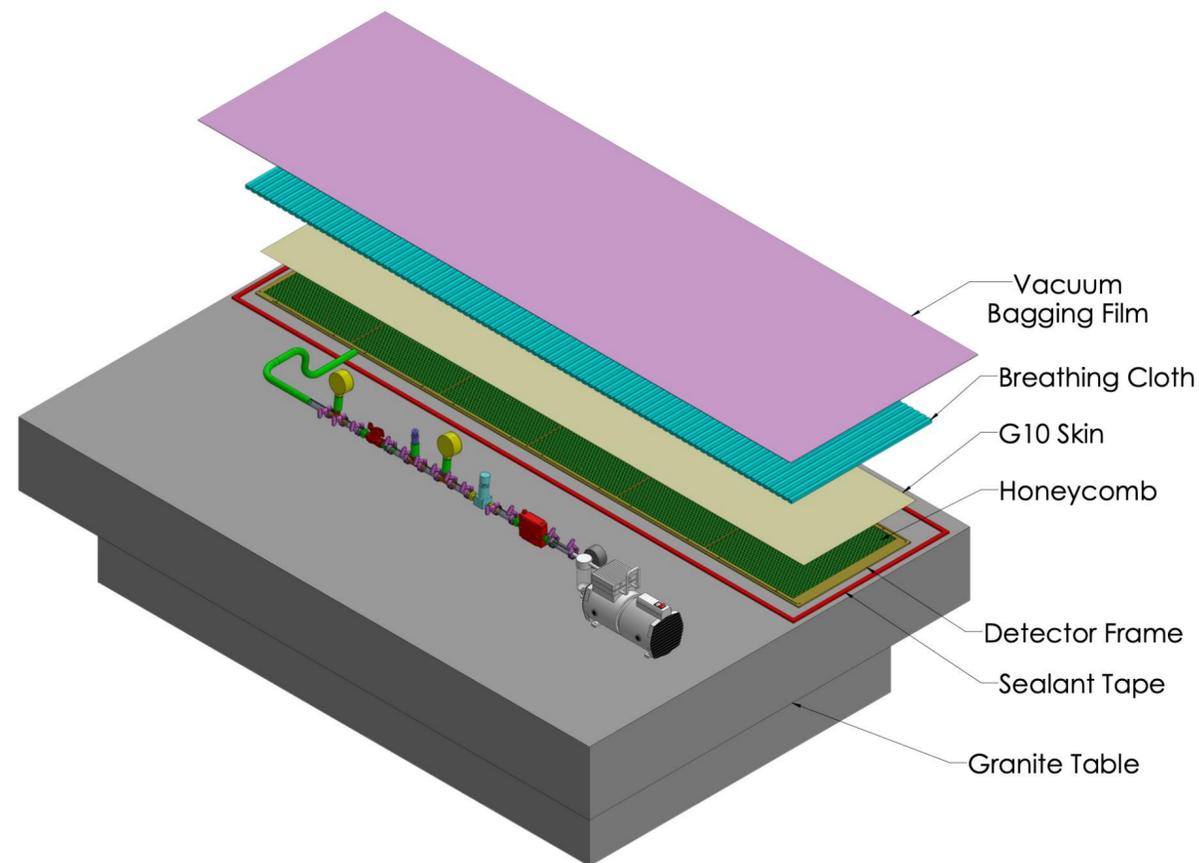
# Cleanroom – Nitrogen Gas Circulation – EEL 121 B



# Liquids for Test Article

- **Fume Hood in EEL 126**
- Varnish – Nuvouern (**Frame Preparation**)
- Aralite + HY (50 g + 20 g) (**Vacuum Bagging**)
- **EEL 121B (Cleanroom)**
- Aralite + HY (5 g + 2 g) (**Detector Assembly**)
- **EEL 126**
- Dow Corning (**Detector sealant**)

- Suggested by JLab ES&H – Move vacuum bagging work (detector honeycomb board assembly) to inside the Fume Hood (originally planned to perform in EEL108 on a granite table)
- **Cathode foil glue work – inside the fume hood**
- A light-weight Aluminum Honeycomb board has been ordered/delivered for this purpose



# Summary

- Under JLab regulations, nearly all installation work depends on JLab Facility (e.g. installing a power cable for HEPA filter requires JLab Facility to execute it)
- Keep following up on JLab Facility
- Perform mock-up run after each equipment is ready
- Goal – Get Cleanroom and MPGD Lab ready by **mid of April**