

# EDIT School - 2023

Brookhaven National Lab, NY

Group - 6

Aranya Giri

Charles-E. Granger

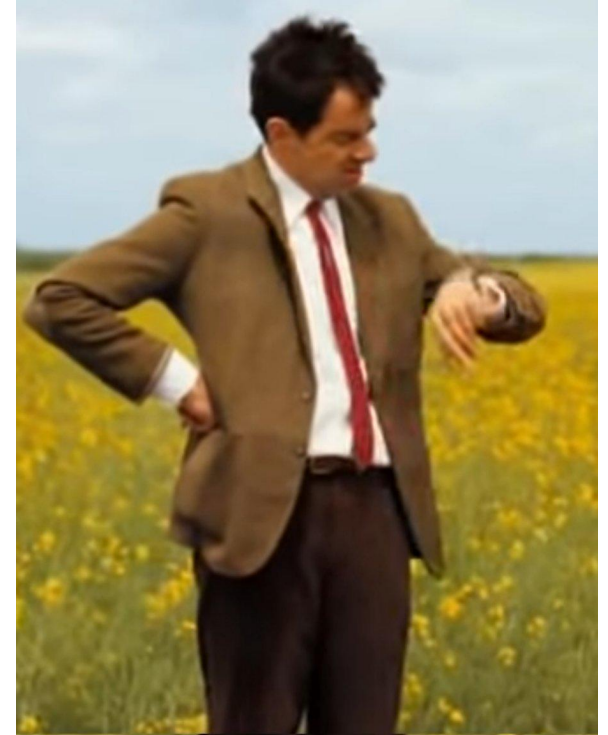
Gloria Maithya

Miranda Rabelhofer

Julian Driebeek

Shirsendu Nanda

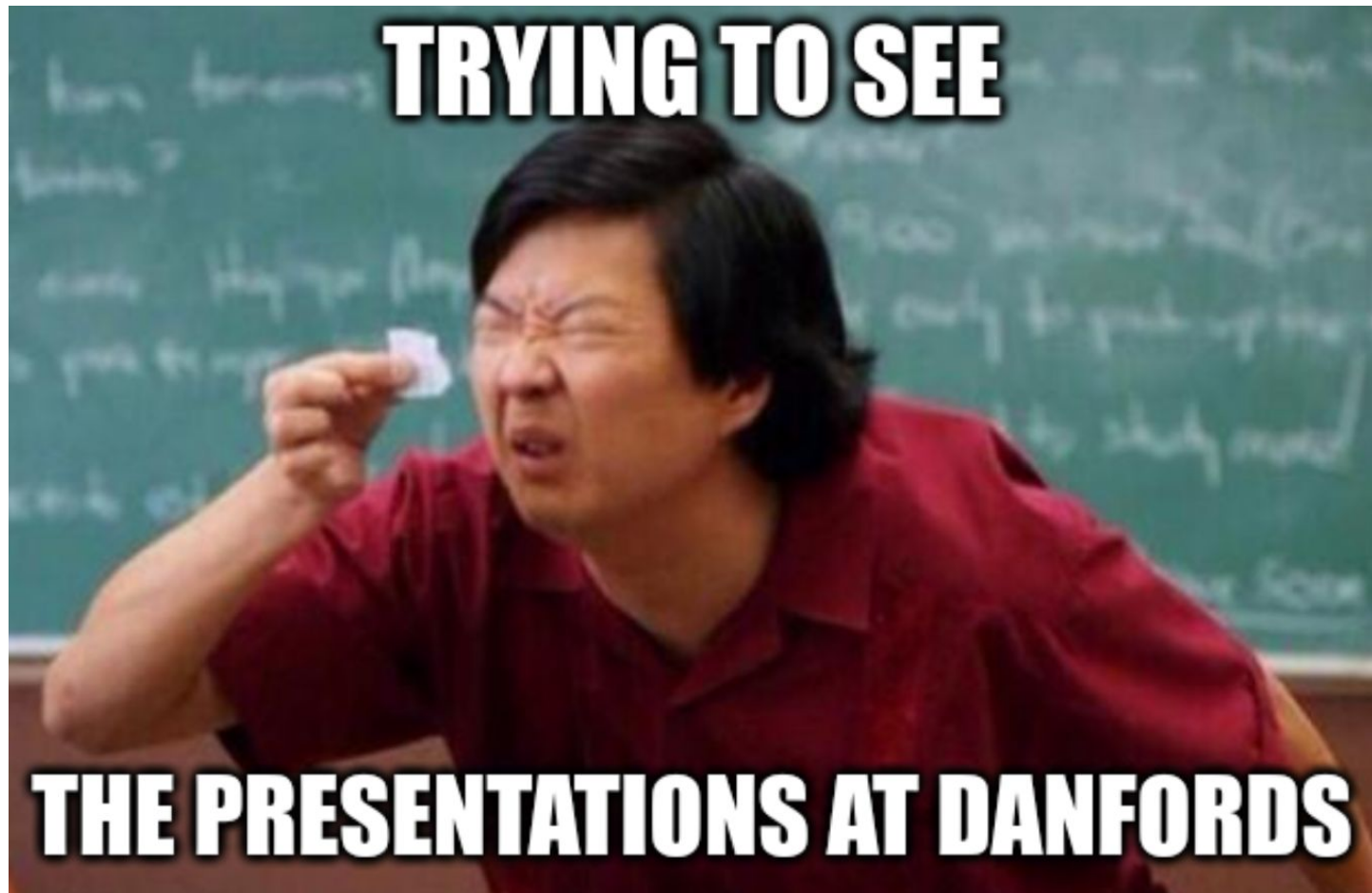
# Group - 6 taking pictures at 6 pm



**Meanwhile Michael**

# Suggestions

- **Final version of the slides should be uploaded before the presentation as PDF**
- **The area surrounding Danfords is nice but... microwaves, or small kitchens, and *reliable* wifi would be better suited for this length of time.**
- **Students should be notified ahead of time of software needed for labs.**
- **It is impressive how much we got to see! But for activities that not everyone gets to do maybe there could be a choice.**



Guess who is in  
this picture ?

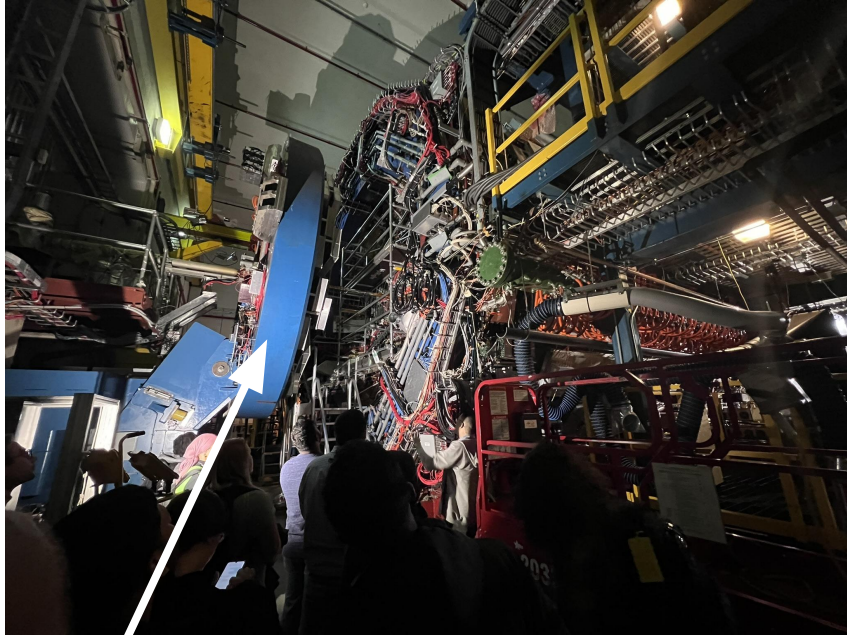


# What's up with the leaks @ BNL ?



**STAR leak #1**

# Tour to STAR Detector

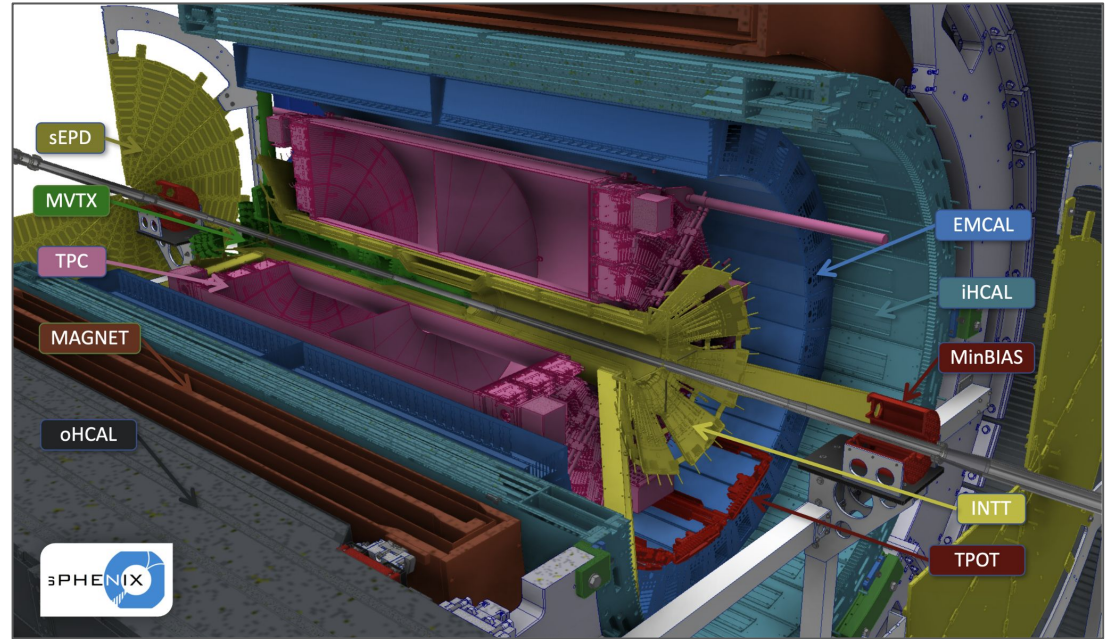


**TOF (left) and Central Barrel Detector.**



**I cannot be on top of the world but surely was on top of STAR :)**

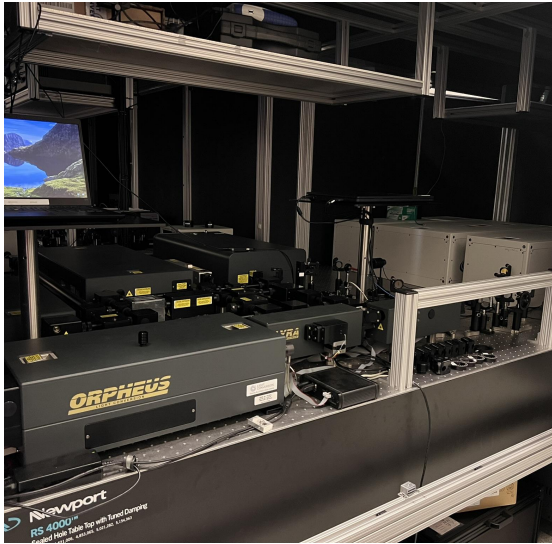
# sPHENIX Experiment



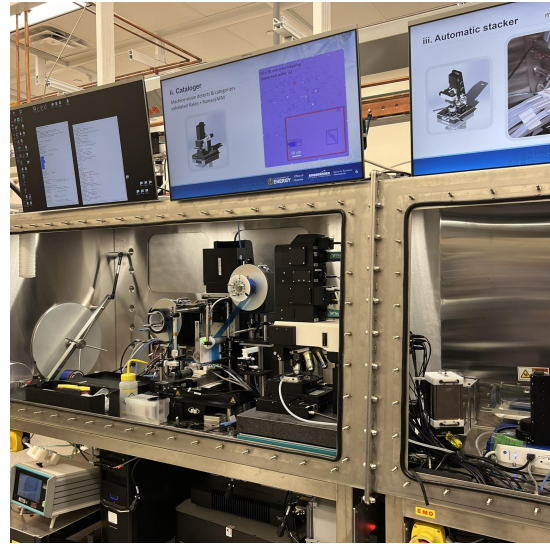
[sPHENIX Assembly Pics](#)



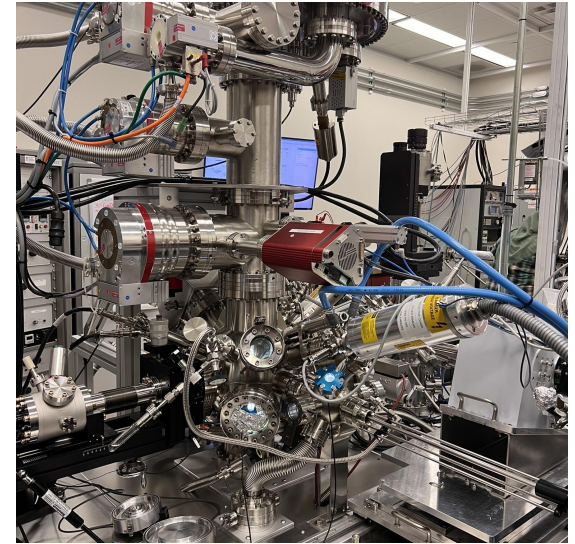
# Tour to CFN



**1 Million \$ fsec (psec at back) laser setup for study like quantum dots.**

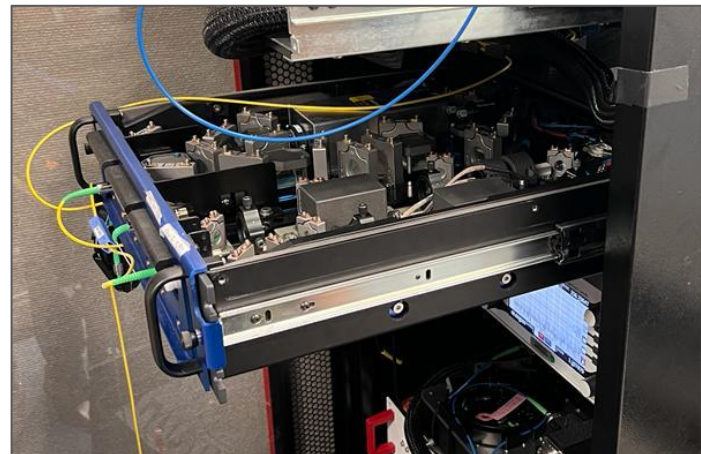


**Automatic single surface (2D layer) production on a substrate ( Quantum Press )**

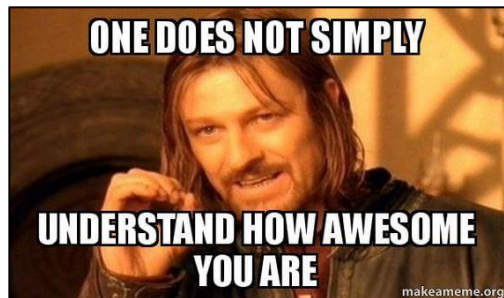


**Xray-Fluoresence Electron Spectroscopy to detect elements upto 1-2 thin nano surface.**

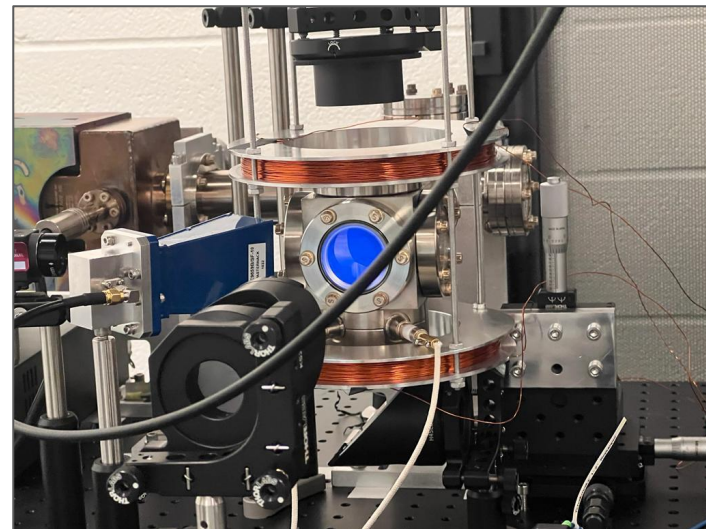
# Q-Future is @ BNL



**Quantum Optical Memory**

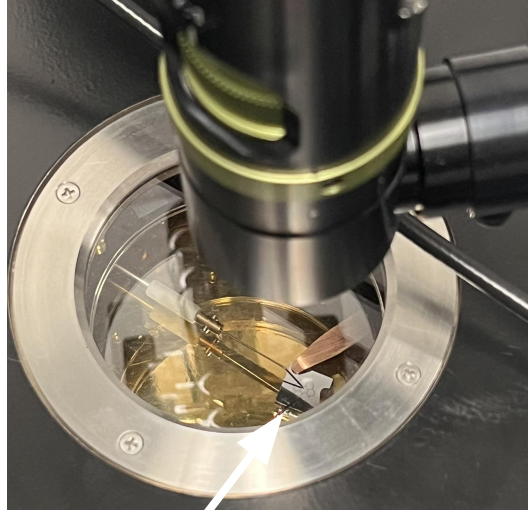


**Semiconducting  
circuits at milliKelvin**

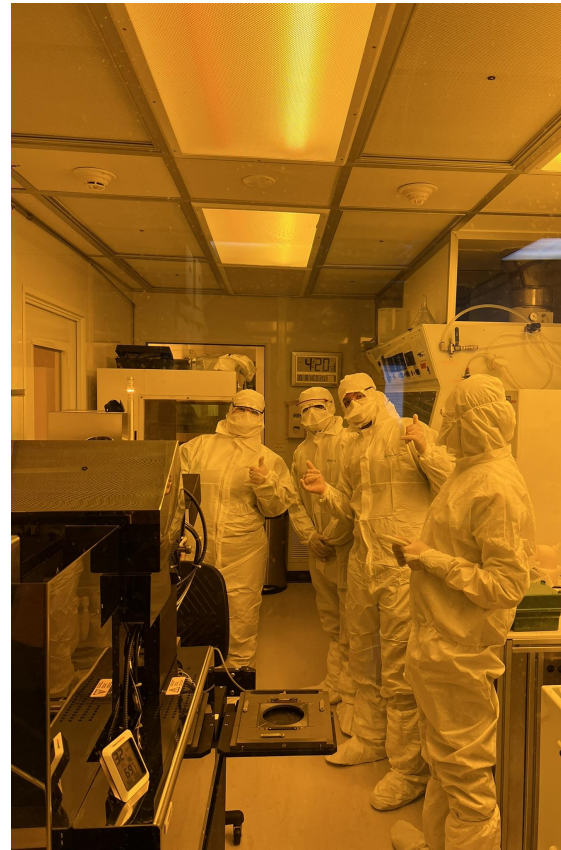


**Ultracold atoms at microKelvin  
using lasers.**

# Silicon Detector

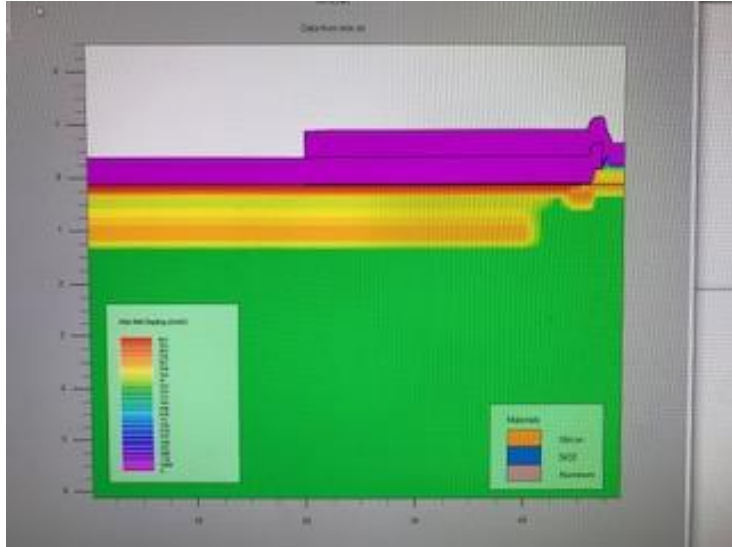
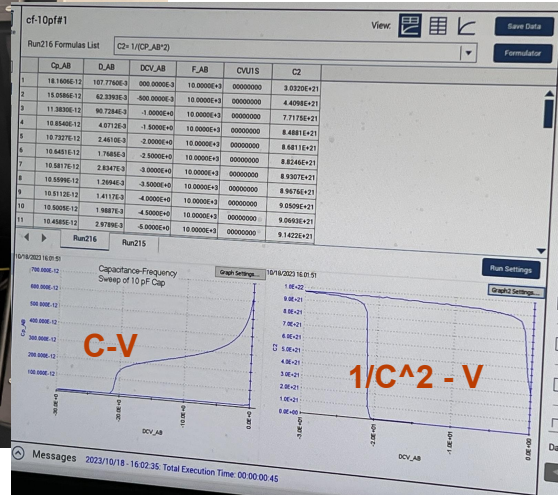
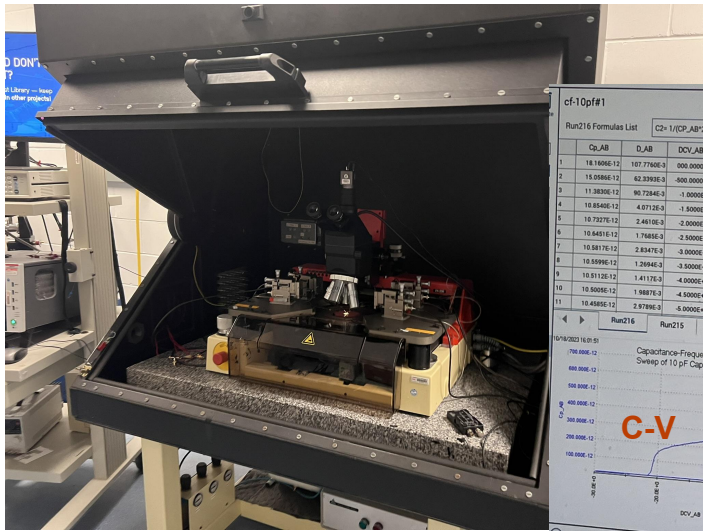


**Probe Station for Germanium  
Sensor.**



**Heisenberg in clean room ( 100  
particles /m<sup>3</sup> ) to create “chips” ?**

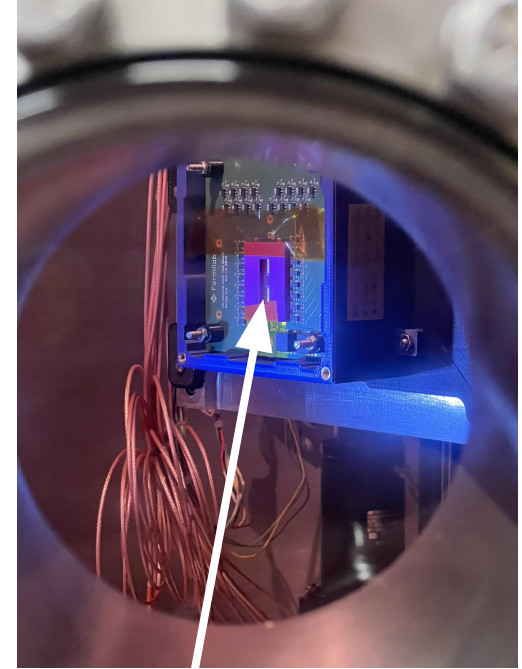
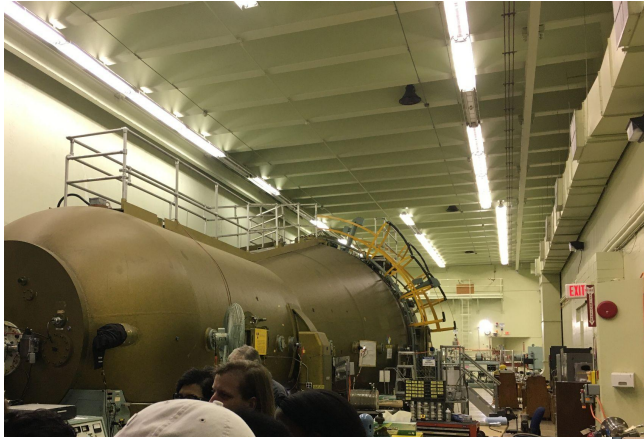
# Silicon Detector



**Probing P-N diode, Photodiode & LGAD detectors to get the I-V & C-V characteristics plot.**

**LGAD simulated using TCAD**

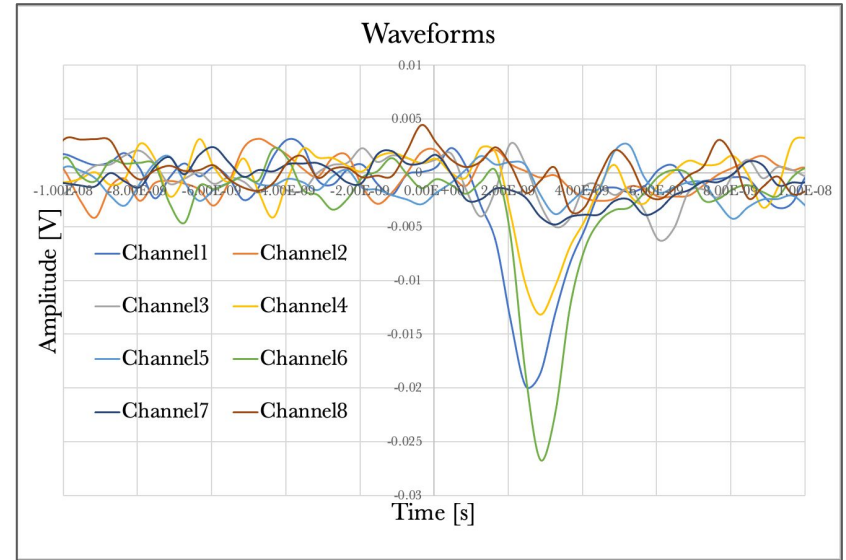
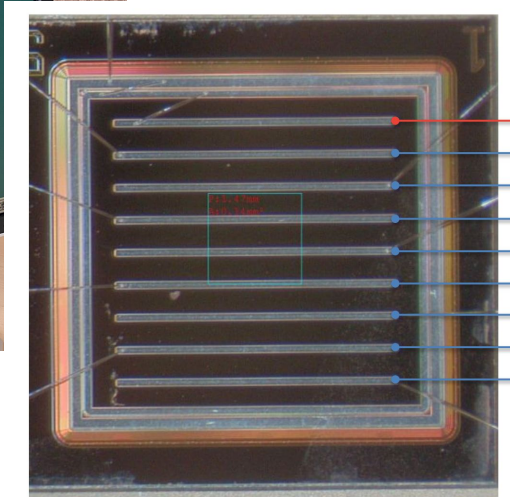
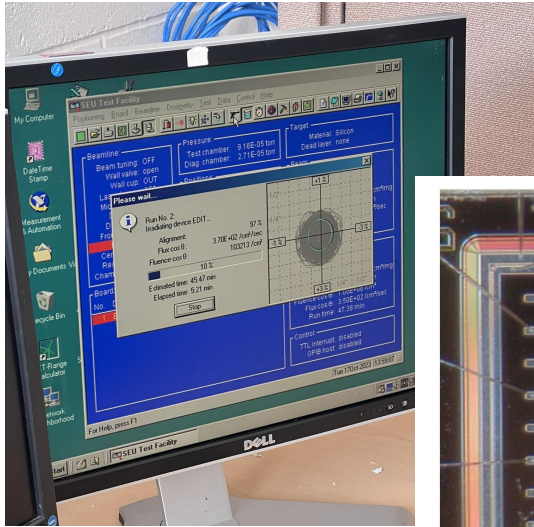
# Facility Tour - Tandem



**Beam pipe from Tandem Van-de graaff accelerator with proton beam.**

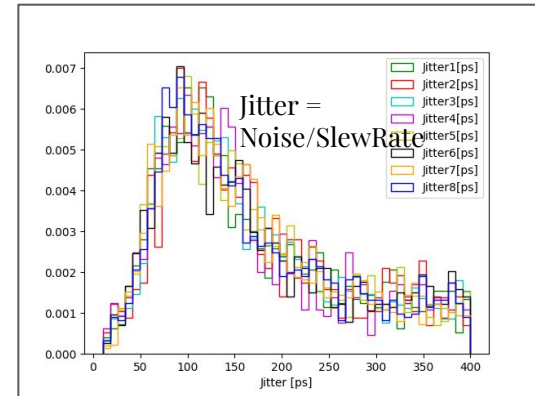
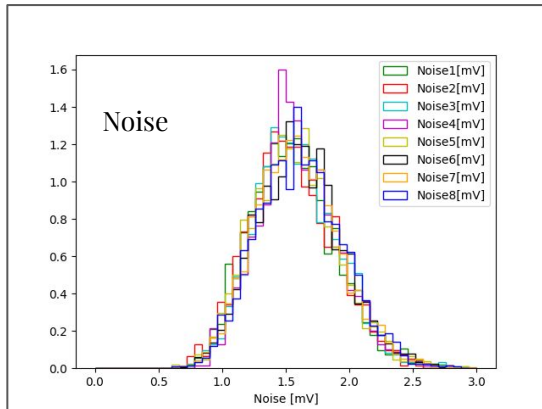
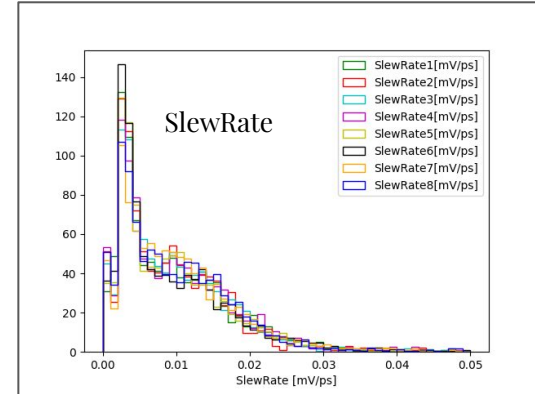
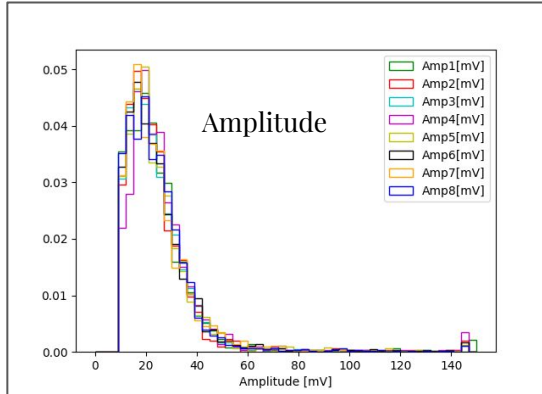
**Testing of AC-LGAD detector with proton beam at Tandem**

# Tandem Beam Test Analysis

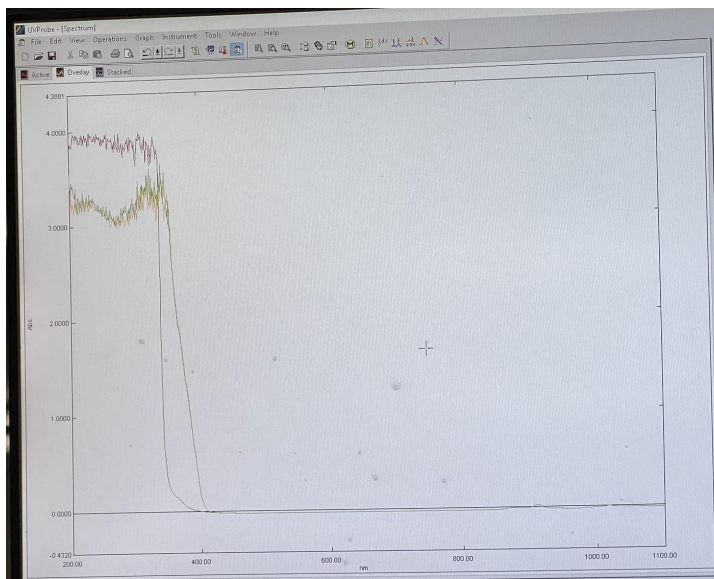


**Proton beam onto a single  
AC-LGAD.**

# Tandem Beam Test Analysis



# Liquid Scintillator



**Shift (towards right) of absorption spectra in DIN with the addition of PPO & MSB.**



**Thin-film Vacuum distillation system for purification for liquid scintillator.**



# Weekend Activities



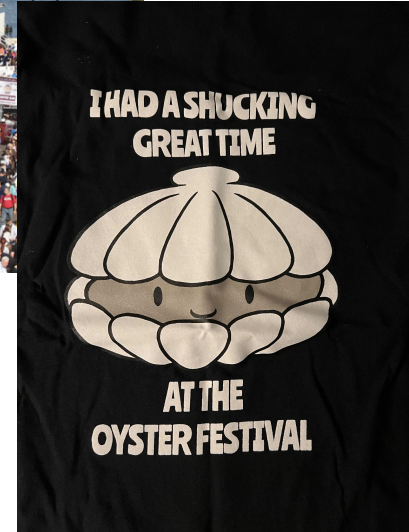
**Visiting Pindar Vineyards**



**Oyster Fest in  
Oyster Bay, NY**



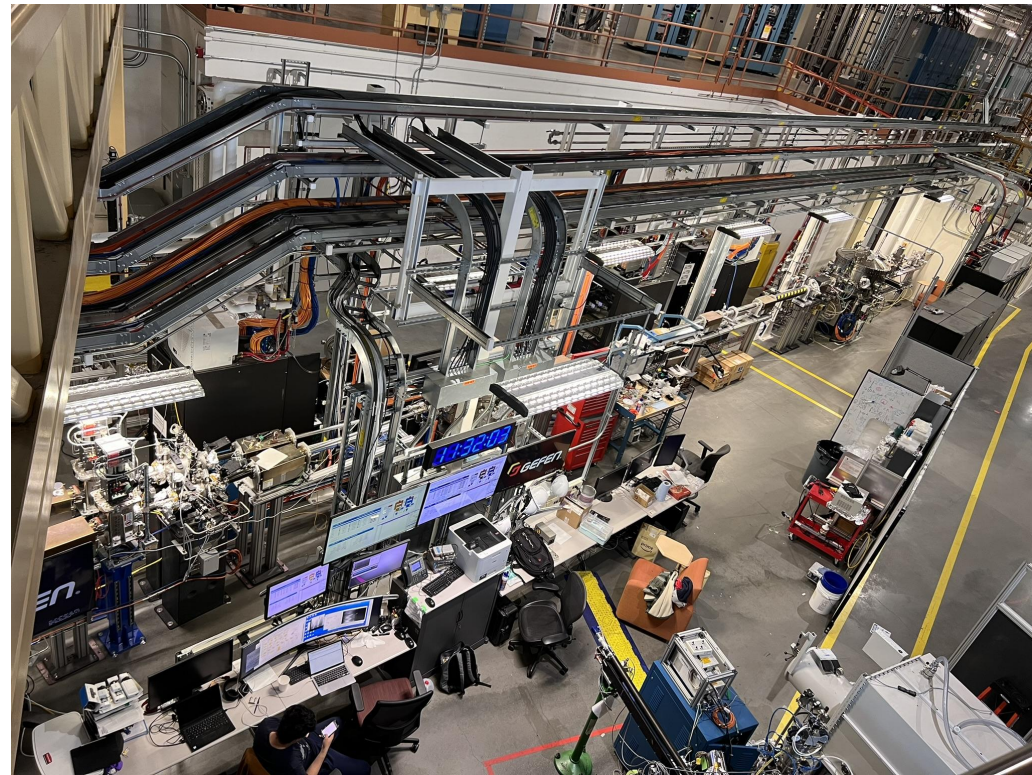
**Visiting NYC-liberty  
statue**



# Facility Tour - NSLS-II



brookhavenlab



**Synchrotron X-ray beam from 3 GeV electron beam  
used for different scientific study.**

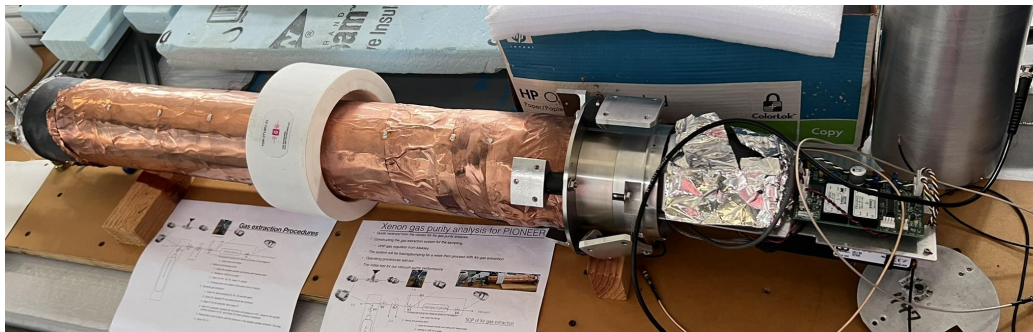
# Liquid Argon



Layers of thin aluminium foils surrounding the vacuum cryostat.



Liquid Nitrogen used for condensing Argon gas after purification.



Liquid Xenon containing scheme. How many screws did you open ?

# Nice bites!



**Your Bagel Cafe, Shirley**



**Harvest Moon Deli, Ridge**



**Billie's Saloon, Port Jefferson**



**Alfredo's Pizzeria, Ridge**

# EDIT School has been a fantastic experience!

- **Everyone at BNL was very welcoming and enthusiastic to have the opportunity to teach and share their research with us**
- **The students have formed a great community**
- **We learned many things that we always wanted to know but didn't know how or where to ask**
- **Gained an appreciation for subjects we didn't know about before**
- **We had so much fun!**

# Thank You



Brookhaven  
National Laboratory