

# LAr R&D Progress Report

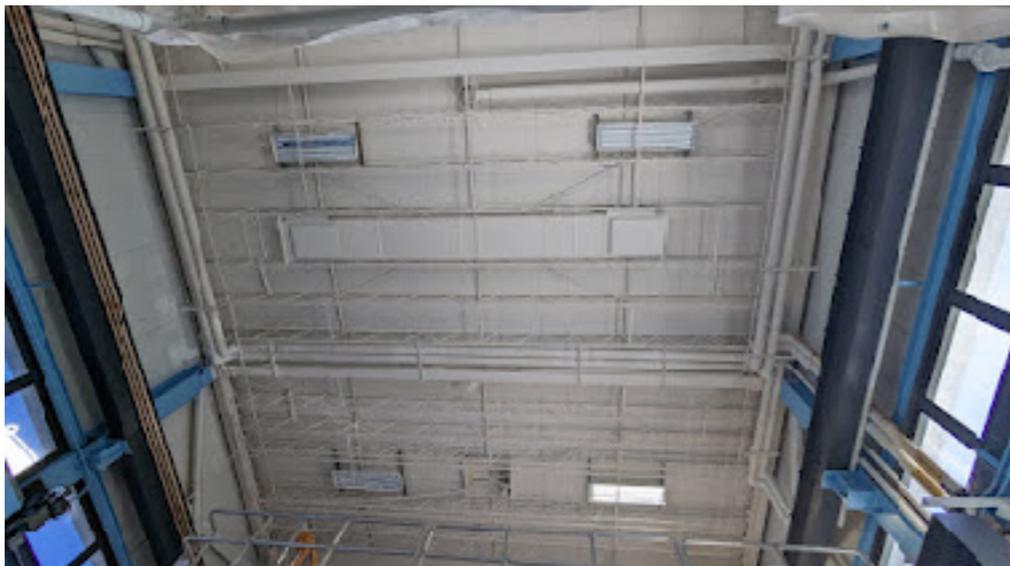
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12/12/23



# Lab Safety and Space Management

- High Bay lamp and heater repair
  - 3 remaining lamps on top of our space are still out
  - No heating at the last two heaters in Highbay, only about 62F
  - The work is scheduled for this Thurs. and Fri. Safety briefing meeting on Thurs. morning
  - Probably no lab access during the period, because the crane is energized overhead with workers on
- LN2 plumbing for 6000-gallon tank
  - Lab procurement started the discussion with Technifab to proceed with the design contract first
  - Future meetings will be coordinated with us, MPO, and Technifab
- ECP monthly meeting
  - The Electrical Competent Person starts on Jan. 1 2024 with a monthly meeting with Electrical Safety Advisor
  - Please pay attention to the UL certificate of electrical equipment over 50V



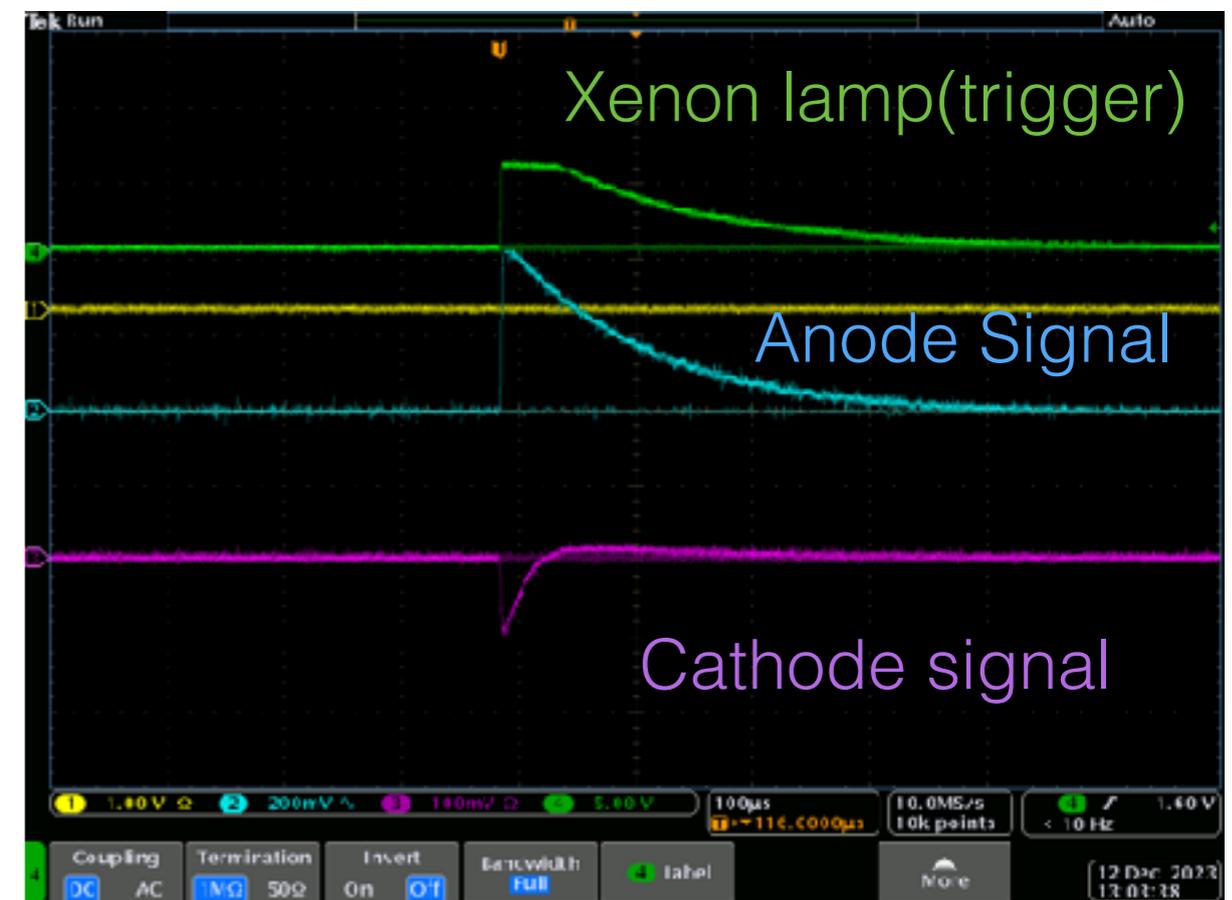
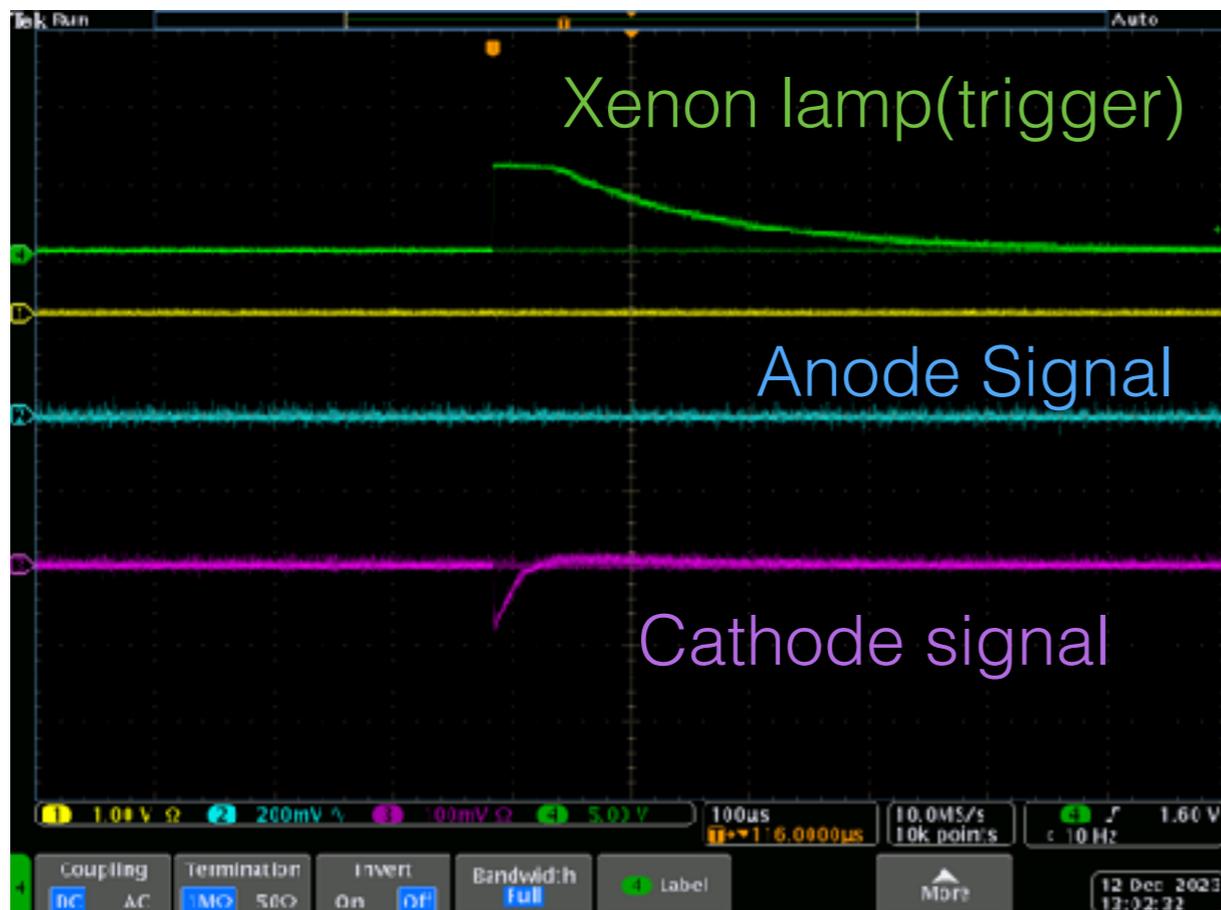
# PrM test in vacuum

- All electronics and optical systems installed and tested
- System leak checked and under stable vacuum
- Charge signal observed from PrM on both cathode and anode



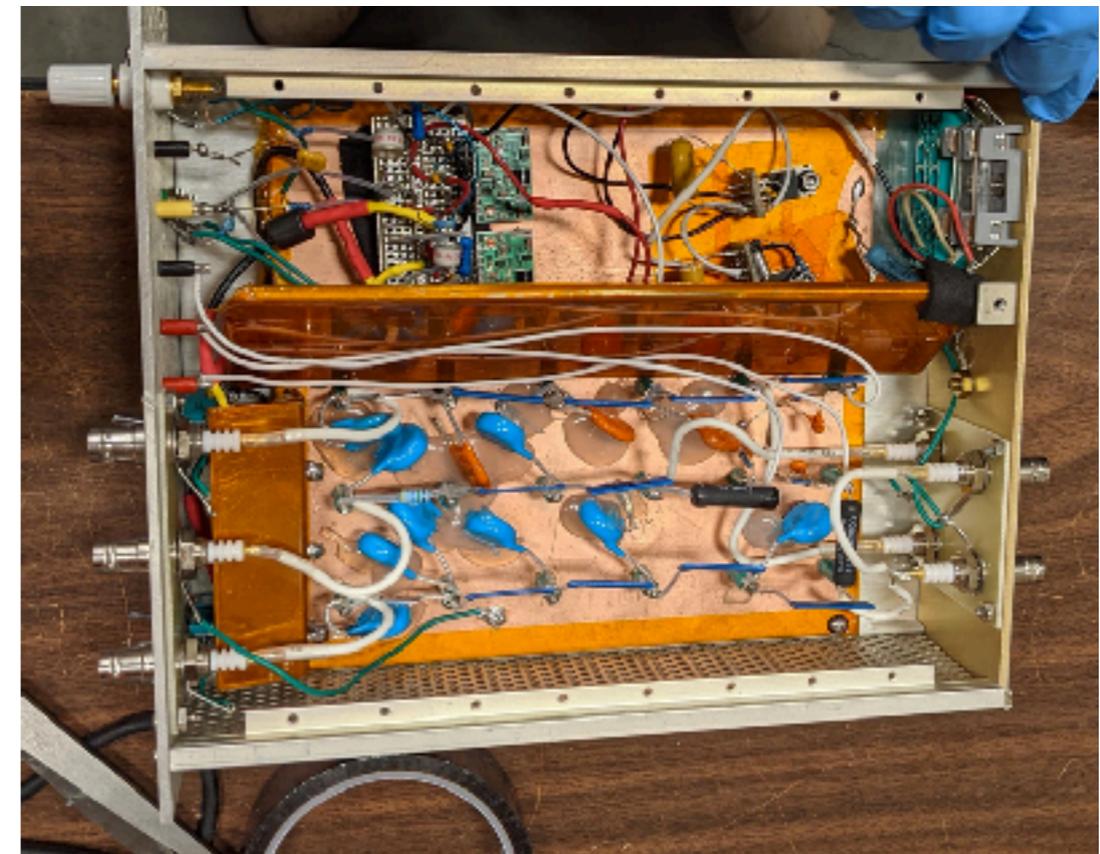
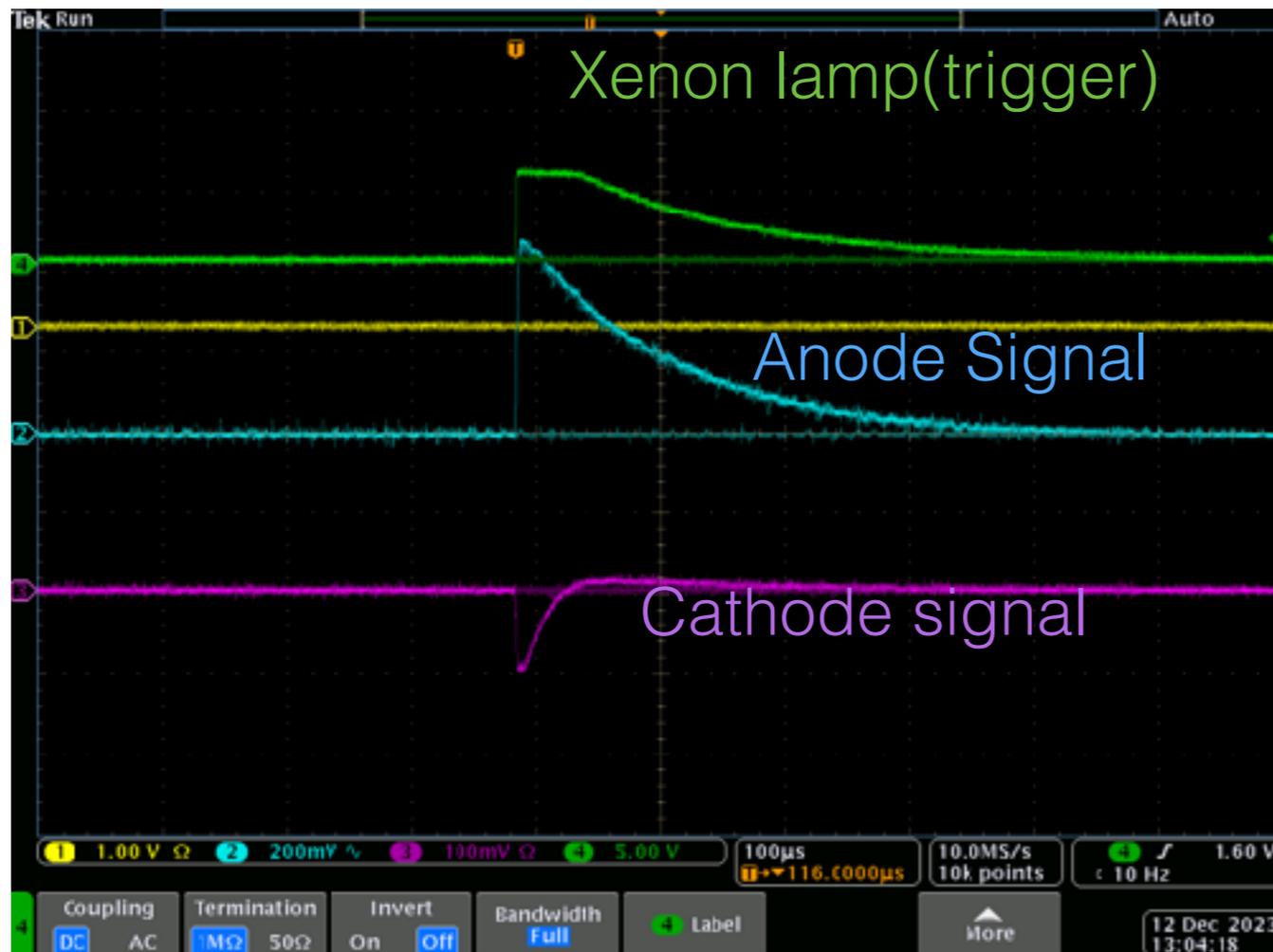
# PrM Performance under Vac.

- Signal observed from PrM
- Starts to observe signal with no bias voltage on the cathode
- With -5V on the cathode, +200V on the anode, both signal observed
- One of the preamp signal outputs is significantly lower



# PrM Performance under Vac.

- The signal on the cathode can easily saturate the pre-amp with bias voltage slight above -5V
- The two pre-amp electronics are exchangeable and same observation when swapping the channels
- The pre-amp #1 has a lower output
- Consulted with UCI colleague, most likely due to wire connection issue inside the electronics box
- Debugging the electronics box following the steps from Jianming
- In the worst scenario, the channel with lower amplitude can be used for the cathode with calibration with known electronics pulse



# LAr Filling Plan

- ▶ **Planning document on Google Doc:**
  - Still aiming for LAr fill by the end of this year
  - Document available on [https://docs.google.com/document/d/1JMK52c\\_B59K-FxYff\\_xQGPXfWVEh2adOVI5HIVr\\_mqo/edit](https://docs.google.com/document/d/1JMK52c_B59K-FxYff_xQGPXfWVEh2adOVI5HIVr_mqo/edit)