

# LAPPD Verification



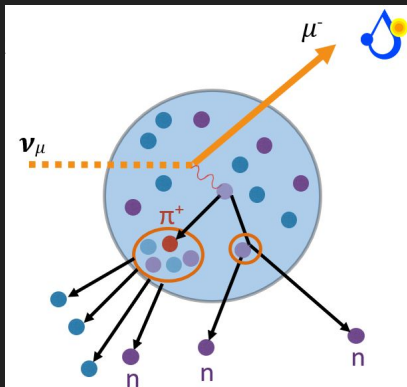
James Morrissette

# What is A.N.N.I.E.?

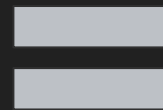
Accelerator Neutrino Neutron Interaction Experiment

Goals:

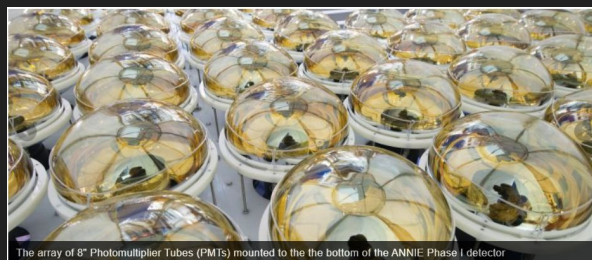
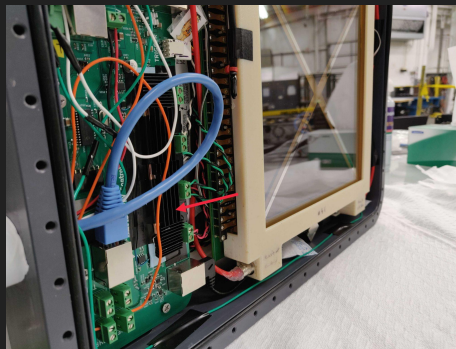
1. Better understand Neutrino-nucleus interactions.
2. Demonstrate new technologies, such as LAPPDs and chemical enhancements to the water.



Emission

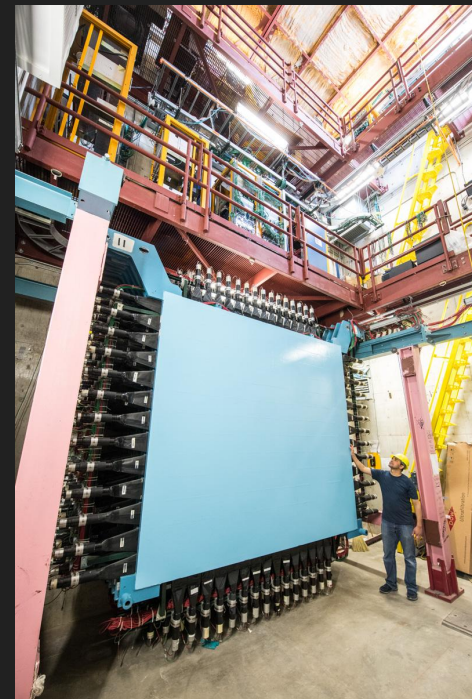
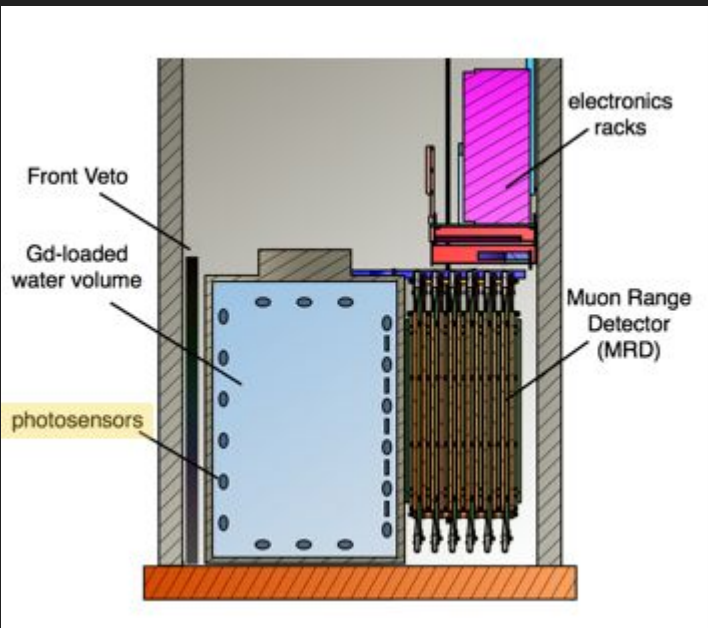


Data



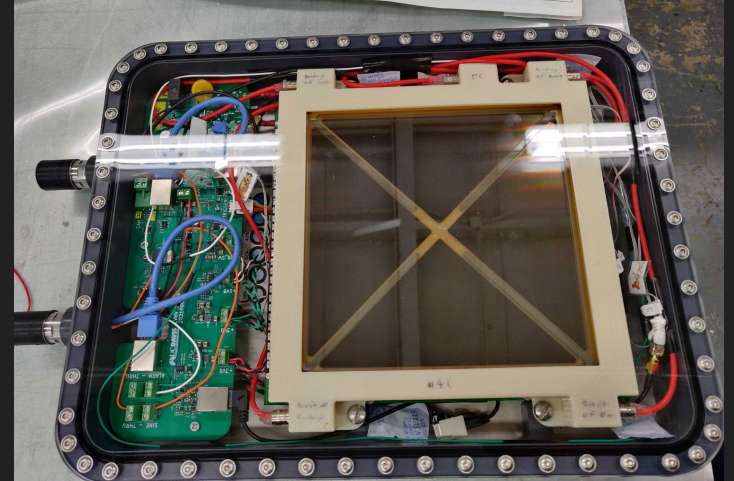
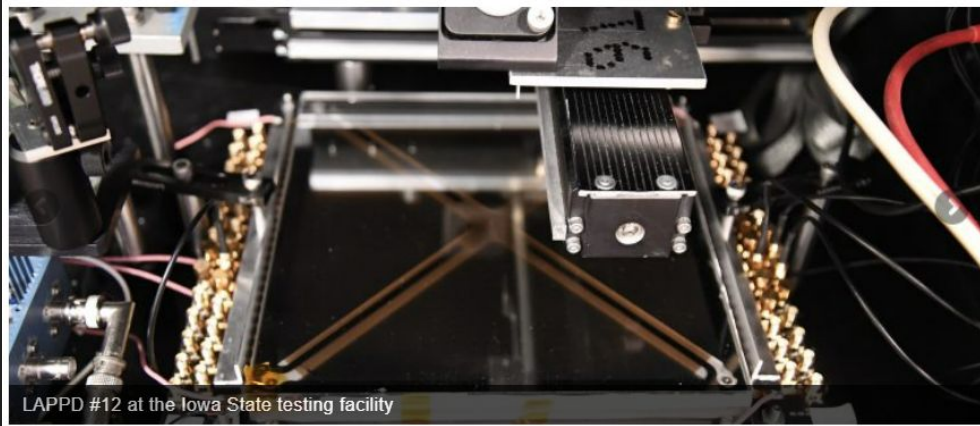
The array of 8" Photomultiplier Tubes (PMTs) mounted to the the bottom of the ANNIE Phase I detector

# ANNIE Setup



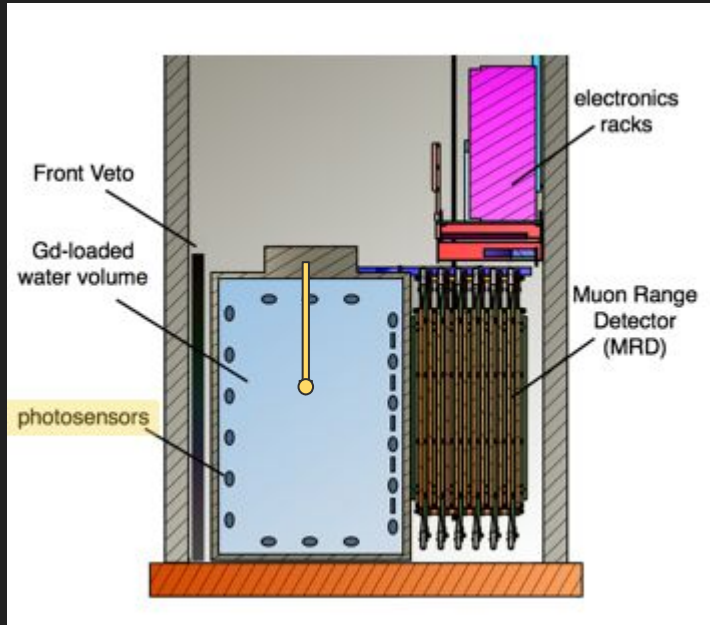
# What is an LAPPD?

Large Area Picosecond Photodetectors



A new type of Photodetector that enables detailed timing-based reconstruction of the primary neutrino interaction.

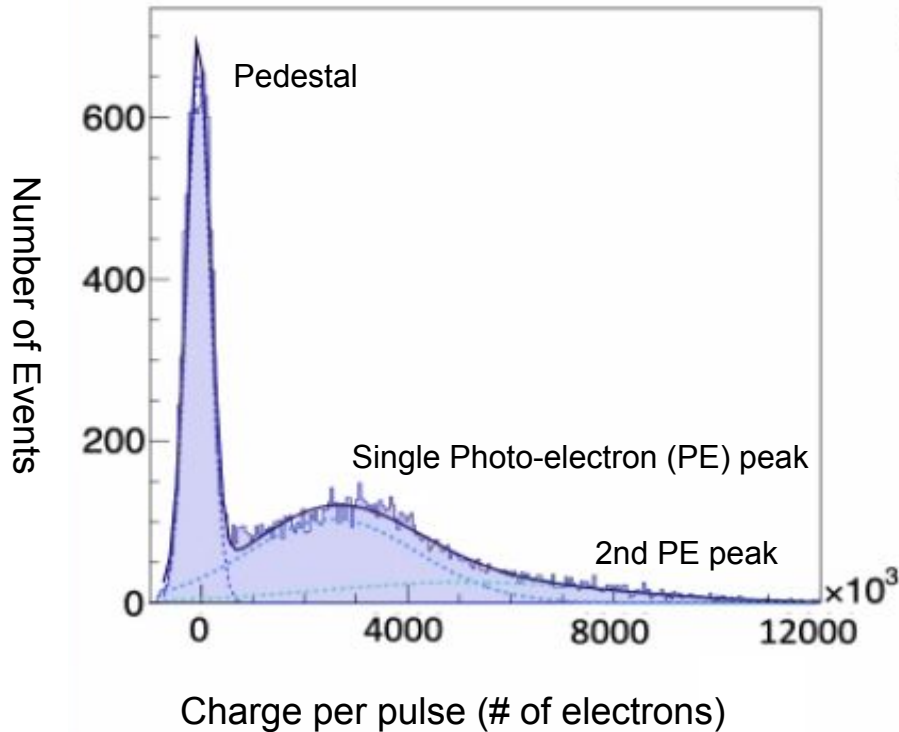
# What am I starting to work on?



Basic goals for the summer:

1. Understand single photon response of LAPPDs inside the detector using laser calibration data.
2. Compare calibration data to with older data taken using the test stand.

# How I will do that?



- Interested in understanding the shape of the single PE peak so we can estimate the detection efficiency of the LAPPD.
- The LAPPD in the detector has a high trigger threshold that cuts off some of the single PE distribution.
- We want to use older data to understand the shape of the distribution below that cut off

Thank you for your attention and time,

Are there any questions?