



# Come learn about the Optically Segmented Approach to the Single Volume Scatter Camera Project

## Why are we doing this?

In order to achieve order of magnitude increase in double scatter efficiency, we need to resolve interactions with  $O(1\text{cm}/1\text{ns})$  precision.

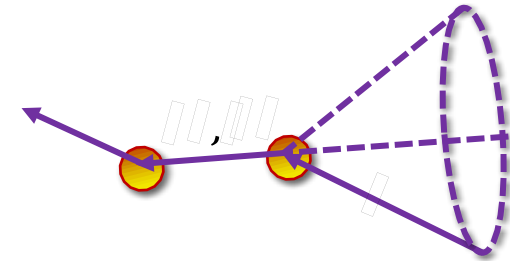
## How are we doing this? The optically segmented approach!

- Prior single bar results indicated this was feasible with  $5 \times 5 \times 200 \text{ mm}^3$  EJ-204 Teflon-wrapped bars
- First results from complete 64 bar system show decreased precision... come find out why!
- Other notable results: electronic cross talk SiPM array

## What have we done so far? Second OS prototype aims to solve issues with modularity

- Improved calibration procedures
- Custom SiPM arrays/acquisition electronics address electronic cross talk

- Several modules undergoing calibrations



*A double-scatter event in which the neutron has originated from an angle  $\cos \theta = \sqrt{E'_n/E_n}$  in relation to the axis defined by the two scatters, where  $E_n$  is the incoming neutron energy and  $E'_n = (1/2) m(\Delta d/\Delta t)^2$  is the neutron energy after the first interaction*

