

DEPARTMENT OF  
**PHYSICS &  
ASTRONOMY**

**Physics & Astronomy**  
Colloquium

---

**Dr. Artur Apresyan**

Fermilab

**3:30 - 4:30 p.m. | Tuesday, March 4**

**Science Building 234**

**Development of high precision 4D-trackers for  
future experiments**

I will present recent progress towards the development of 4D-trackers with high granularity in position and time. As future colliders move to higher energy collisions, with increased particle occupancy, the need for 4D (space+time) tracking systems becomes extremely important to maintain the optimal event reconstruction. Tracking detectors capable of achieving timing resolution around 10 ps and 5-10  $\mu\text{m}$  spatial resolution are needed for many proposed future colliders, including the FCC-ee/hh, Muon colliders, and the Electron-Ion Collider (EIC). I will present our recent progress towards achieving these specifications through development of 3D-integrated sensors, advanced ASICs and monolithic active pixel sensors (MAPS).

**Refreshments at 3 p.m. | SC 103**

