**Hybrid Physics Division Seminar**

**Prof. Camillo Mariani**

**Virginia Tech**

*Jefferson Lab e-Ar Scattering Experiment: Summary of Our Journey*

**Abstract:**

The E12-14-012 experiment performed at Jefferson Lab Hall A has collected exclusive electron scattering data (e, e’p) for 2 targets, argon and titanium, in parallel kinematics with a beam energy of 2.222 MeV, an electron scattering angle of 21.5 deg and a proton angle of 50 degrees. I will present the first comprehensive analysis of the collected data and report the first differential cross section measurements for (e, e'p) in argon and titanium. In the first part of this talk I will also describe the importance of this data for current and future neutrino oscillation experiments that aim to measure the charge-parity (CP) symmetry and to identify the neutrino mass hierarchy. Throughout the talk we will rediscover the importance of nuclear physics and its influence in describing the neutrino interactions with matter.

Wednesday, March 15th @ 11 AM – 12 PM

CEBAF Center Auditorium

[**Zoom Link Here**](https://jlab-org.zoomgov.com/j/1600656386?pwd=L2NYbWlITkZzSjc4NGl0eXFsTURLdz09)