

# **ACCELERATOR SEMINAR**

## **“High Bunch Charge Measurements in the Cornell Photoinjector”**

***Colwyn Gulliford,  
Cornell University***

This talk focuses on recent transverse emittance and longitudinal current profile measurements of high bunch charge (100 – 2000 pC) beams produced in the DC gun-based Cornell Photoinjector. In these measurements, the cathode thermal emittance dominates the final 95% emittance measured at 9-9.5 MeV for bunch charges up to 300 pC. The agreement between optimized 3D space charge simulations and measurement will be discussed, as well as the relationship between the quality of the initial transverse laser distribution and the final measured and simulated optimal emittances for charges up to 1 nC. Finally, a brief discussion on the most recent high average current experiments will be given.

**Thursday, April 16, 2015  
11:00 a.m.  
CEBAF Center, Room L102**

**Coffee before seminar beginning at 10:45 a.m.**