Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Physics motivation for the Nose-Cone Calorimeter Upgrade to the PHENIX Forward Spectrometers KENNETH BARISH, UC Riverside, PHENIX FORWARD UPGRADE COLLABORATION — The nose-cone calorimeter upgrade to the PHENIX forward spectrometers aims to add capabilities at forward rapidity in order to: (a) significantly extend the acceptance for high p_T jet-photon measurements (jet tomography) in A+A, (b) increase our capabilities to measure the production quarkonium states in A+A collisions by giving sensitivity to the χ_c through the $J/\psi + \gamma$ channel and by providing a trigger with increased rejection for $\psi \to \mu\mu$, (c) study nucleon structure in nuclei at high parton densities in p+A collisions through the measurement of photons and neutral pions in the forward region, and (d) significantly extend the kinematic reach of PHENIX's ΔG measurement for the prompt photon channel. The nose cone calorimeters, which will cover $0.9 < |\eta| < 3.0$, will be tungsten-silicon sampling calorimeters with an electromagnetic and shallow hadronic compartment. They will expands PHENIX's kinematical coverage for jets, inclusive neutral pions, electrons, and photons to forward rapidity and are designed to take advantage of the highest luminosity p+p, d+A, and A+A collisions. In this talk, we will discuss the physics motivation of the upgrade.

Kenneth Barish
UC Riverside

Date submitted: 25 May 2005 Electronic form version 1.4