

# Meson Photoproduction Dynamics with the GlueX Experiment

The GlueX experiment is poised to further our understanding of light mesons, particularly in search of exotic hybrids predicted among light unflavored mesons. Measurements of the production distribution of pseudoscalars with an 8.2-8.8 GeV linearly polarized photon beam can provide theoretical insight into the production mechanisms for these exotic hybrids mesons. The distribution of angle between photon beam polarization plane and pseudoscalar meson production plane allows one to construct a beam asymmetry that gives understanding into the relative amplitudes of the quasi-particles exchanged with the proton target in such reactions. We report beam asymmetry measurements for  $\pi^0$ ,  $\pi^-$ ,  $\eta$ , and  $\eta'$  photoproduction. These are the first measurements of  $\eta$  and  $\eta'$  beam asymmetries and provide improved measurements of  $\pi^0$  and  $\pi^-$  systems. Comparisons to several model predictions will be made.