Abstract for an Invited Paper
for the APR09 Meeting of
The American Physical Society

30 Years of the Cornell Electron Storage Ring
DAVID G. CASSEL, Cornell University

The Cornell Electron Storage Ring (CESR) began operation in 1979 with two experiments, CLEO and CUSB. Initially, CLEO and CUSB saw the Υ(1S) and Υ(2S) states that were discovered at Fermilab and confirmed at DESY, confirmed the Υ(3S) state, and demonstrated that it was narrow. Then the two collaborations discovered the Υ(4S) and found that it was significantly broader than the lower Υ states. This observation and CLEO’s discovery of enhanced lepton production at the Υ(4S) demonstrated that a new quark-antiquark threshold had been crossed and suggested that $\Upsilon(4S) \rightarrow B\bar{B}$ was the dominant decay mode of this new state. These discoveries ushered in the program of $B$ physics pursued successfully at DESY, CERN, Fermilab, SLAC, and KEK, as well as at CESR. As BaBar and Belle took over the field of $B$ physics at the $\Upsilon(4S)$, the CLEO collaboration turned its attention to the charm threshold region. I will describe some early discoveries at CESR, highlights of CLEO’s $B$ physics program with CESR at the $e^+e^-$ luminosity frontier, and recent CLEO results on charmonium and $D$ physics. Much of this report is based on a draft of an invited paper on this subject by Karl Berkelman, who tragically passed away before this conference. This paper is dedicated to his memory.