Shape coexistence in $^{68}$Ni S. SUCHYTA, S. LIDDICK, M. BENNET, N. LARSON, C. PROKOP, S. QUINN, A. SPYROU, MSU/NSCL, A. CHEMEY, A. SIMON, NSCL, T. OTSUKA, MSU/NSCL/CNS/U of T, Y. TSUNODA, U of T, N. SHIMIZU, CNS/U of T, M. HONMA, CMS/U of A, Y. UTSUNO, JAEA, V. TRIPATH, J. VONMOSS, FSU — $^{68}$Ni has been a focus of recent work aiming to understand the apparent rapid development of collectivity along neutron-rich $N =40$ nuclei, but despite many studies, is not entirely understood. The decay of the first excited $0^+$ state in $^{68}$Ni was investigated at the NSCL. Ions of $^{68}$Co were implanted into a planar germanium double-sided strip detector (GeDSSD). The beta decay of $^{68}$Co populated the first excited $0^+$ state in $^{68}$Ni and within hundreds of nanoseconds the decay of the first excited $0^+$ state was measured in the GeDSSD. Both the energy of the first excited $0^+$ state and the electric monopole transition strength from the first excited $0^+$ state were precisely determined. Comparisons to Monte Carlo Shell Model calculations suggest shape coexistence between spherical ground and oblate first excited $0^+$ states in $^{68}$Ni. The experimental results and theoretical interpretation will be presented.