Specific heat of underdoped high $T_c$ superconductors from phenomenological models. J. P. F. LEBLANC, E. J. NICOL, University of Guelph, J. P. CARBOTTE, McMaster University — Inspired by phenomenological models for the pseudogap state, for example, the model of Yang, Rice and Zhang[1], we have calculated the specific heat for the underdoped cuprate superconductors. Results will be shown for both the pseudogap and superconducting state as a function of doping. Comparison between models and with experiment will be made. [1] K.Y. Yang, T.M. Rice and F.C. Zhang, Phys. Rev. B 73, 17541 (2006).