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Dong Li (dli@math.uiowa.edu), Department of Mathematics, 15 McLean Hall, The University of Iowa, Iowa City, IA 52242-1419, and **Kun Zhao*** (kzhao@mbi.osu.edu), 1735 Neil Ave, 381 Jennings Hall, The Ohio State University, Columbus, OH 43210. *Quantitative behavior of a parabolic-hyperbolic chemotaxis model.*

In this talk, recent progress on the quantitative behavior of classical solutions for a hyperbolic-parabolic system describing repulsive chemotaxis will be reported. It is shown that classical solutions to the Cauchy problem of the model exist globally in time for large initial perturbations around constant equilibrium states and the solutions tend to the constant states as time goes to infinity which predicts the phenomenon of collapse in chemotaxis. Moreover, explicit decay rates of the perturbations are identified when the initial perturbations are small. In particular, a striking result concerning the frequency-dependent decay rate is established based on a novel Fourier method. (Received January 23, 2011)