CHRIS KOTTKE, Northeastern University
Partial compactification and metric asymptotics of monopoles

I will describe a partial compactification of the moduli space, M_k, of $\mathrm{SU}(2)$ magnetic monopoles on $\mathbb{R}^3$, wherein monopoles of charge k decompose into widely separated 'monopole clusters' of lower charge going off to infinity at comparable rates. The hyperkahler metric on M_k has a complete asymptotic expansion, the leading terms of which generalize the asymptotic metric discovered by Bielawski, Gibbons and Manton in the case that the monopoles are all widely separated. This is joint work with M. Singer, and is part of a larger work in progress with R. Melrose and K. Fritzsch to fully compactify the M_k as manifolds with corners and compute their L^2 cohomology.