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David Adalsteinsson* (david@amath.unc.edu), 312 Phillips Hall, Department of Mathematics, UNC Chapel Hill, Chapel Hill, NC 27599. *Coupling Cut cell methods and Level set methods in cellular signaling.*

Biological cells need to be able to sense and responds to their environment. The signaling pathways used to accomplish this represent complex spatial temporal dynamical systems. To study these systems we are developing numerical methods that couple level and cut cell methods to solve a reaction diffusion problem in complex moving geometries. This is work in progress with Wanda Strychalski and Tim Elston. (Received September 14, 2008)