1056-65-1849 **Thomas F. Russell*** (trussell@nsf.gov), Office of Integrative Activities, National Science Foundation, 4201 Wilson Blvd., Suite 1270, Arlington, VA 22230. *Eulerian-Lagrangian methods for multiphase multicomponent transport.*

Transport in porous media is often advection-dominated. This leads to efforts to incorporate Lagrangian techniques into numerical schemes, in order to overcome CFL limitations, numerical dispersion, and non-physical oscillations. In multiphase transport, these efforts are made easier by working with an adjoint system, whose natural interpretation is in terms of mass movement rather than wave propagation. The talk will explain this in the context of Eulerian-Lagrangian methods for multiphase multicomponent transport and will outline some recent developments. (Received September 22, 2009)