Summary

We propose to integrate the Georgia Tech's nonlinear science program with other strong engineering, medicine and life sciences programs in Atlanta - at GT, Emory, Georgia State and others - by establishing a *Physics Frontier Center in Nonlinear Science.* We envision a program in which fundamental concepts of nonlinear dynamics will impact these disciplines through three Major Research Components:

- Complex dynamics and chaos in classical and quantum systems
- Dynamics of spatially extended systems
- Nonlinear dynamics in biology

Given the unifying nature of nonlinear science, the Center's key mission will be to foster cross-disciplinary education across science and engineering fields. The Center will serve as a regional, national and international focal point for applying methods of nonlinear science to an expanding set of research fields, by sponsoring an innovative outreach program that includes hosting visiting researchers from academic and industrial settings as well as lecturing by Center members at a wide range of regional scientific, educational, minority, and industrial sites throughout the Southeast.