Motivation

- **Economic**: Hurricane forecasts, wetland restoration, oil and gas, fisheries …
- **Science**: Rich multiscale/multiphysics problems, integrating coastal science, computer science, ecology, ….
- **Scope of work**: Dynamic coupling of CFD models (wave, surge, near-shore, ocean, …) Adaptive response to sensor and remote sensing data Dynamic Data Driven Application Systems Early Driver for CyberTools: dynamic resource allocation, portals, info services, ….
Activities

- Support for Dynamic Data Driven Application Systems (Allen, Chen)
  - DDDAS Toolkit for Cactus Framework
  - Coupled coastal models

- Support for Decision making (Iyengar, Brenner)
  - New AI algorithms for ensemble modeling
  - Rule based, neural networks, case-based, etc
  - Implemented into toolkits
People

- Gabrielle Allen (CS), Qin “Jim” Chen (Civil), Ram Iyengar (CS), Nat Brenner (CS)
- GA (Allen/Chen), GA (Iyengar, Brenner)
- Supporting Projects: SCOOP (NOAA/ONR), CoMI (DOD EPSCOR), DynaCode (NSF), UCOMS (DOE EPSCOR)
- CyberTools WPs:
  - WP1: On-demand scheduling and co-scheduling on LONI, data scheduling and management for forcing files
  - WP3: Real time, automated visualization of integrated data fields, model comparisons
  - WP4: CFD Toolkit and Cactus interfaces, SAGA, notification