ALEPSCoR-RII-3 Strategic Plan: Enhancing Alabama’s Research Capacity in Nano/Bio Science and Sensors

(ALEPSCoR-RII-3 performance period: 2008-2013 | Strategic Plan updated December 2008)

The ALEPSCoR RII award from NSF (2008-2013) will create an integrated, statewide partnership among multiple academic institutions (AAMU, Auburn, Tuskegee, UA, UAB, UAH, and USA).

ALEPSCoR-RII-3 aims to enhance research capacity and competitiveness in the emerging, interdisciplinary area of nano/bioscience and sensors.
This partnership is designed to foster research, education, and workforce development through funding of the following centers:

**Alabama Center for Nanostructural Materials (ACNM)** will develop new nanostructured materials with enhanced thermal, physical, mechanical, and biodegradable properties.

**Center for Cellular and Environmental Signal Transduction (CECST)** will provide model biosystems to facilitate the development of nanomaterials and nanoscale devices.

**Center for Optical Sensors and Spectroscopy (COSS)** will develop new optical and molecular sensing technologies for applications in environmental monitoring, counter-terrorism, and industrial process control.

**Center for Interdisciplinary Discovery via Engineered Nanofabrication (CIDEN)** will apply cutting-edge nanoengineering to develop molecular sensors, regimented nanomaterials and nanostructures with applications in chemical, biological, and thermo-electric devices.

**Alabama EPSCoR Outreach Initiative (AEOI)** will coordinate, and collect data on, education, diversity, outreach/partnering, and workforce development efforts in the State.
This Strategic Plan, consisting of an executive summary and detailed objectives and strategies, sets forth the trajectory for implementation of ALEPSCoR-RII-3. The Strategic Plan also reaffirms the linkages between ALEPSCoR-RII-3 and the state’s science and technology-related research and education goals and directions. The objectives and strategies presented in the next section were developed by the ALEPSCoR-RII-3 leadership team in collaboration with NSF EPSCoR (via a two-day session held November 3-4, 2008, and subsequent interactions). The objectives, strategies, and accompanying timelines are organized into six major subsections that parallel the key elements of the NSF EPSCoR RII program:

1. **Research and Education** – including objectives, strategies, and timelines related to identifying and implementing collaborative projects between multiple centers, multi-center education and training programs, and integration of ALEPSCoR-RII-3 with other NSF-funded centers and State-supported research and development programs.

2. **Cyberinfrastructure** – including objectives, strategies, and timelines related to using cyberinfrastructure tools to link the four centers under one umbrella, thereby integrating statewide research and education efforts.

3. **Diversity** – including objectives, strategies, and timelines related to realizing institutional, disciplinary, and demographic diversity objectives in science, technology, engineering, and mathematics (STEM) areas.

4. **Outreach and Communication** – including objectives, strategies, and timelines related to identifying and targeting the dissemination of research and educational advances made by the ALEPSCoR centers to institutions at all levels throughout the state.

5. **Evaluation and Assessment** – including objectives, strategies, and timelines related to internal and external evaluation of ALEPSCoR-RII-3 with the purpose of identifying milestones and deliverables and documenting how these have been achieved.

6. **Sustainability** – including objectives, strategies, and timelines related to seeking external support at the individual investigator, center, and inter-center level, and related to recruiting and retaining young and early career investigators in the state.