



Southern University and A&M College

Presented to

Oak Ridge National Laboratory
Mentor-Protégé Day

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Southern University and A&M College
OFFICE OF RESEARCH
and Strategic Initiatives

Largest HBCU (Historically Black College and Universities) System in the country

Five Institutions, located on three campuses:

Baton Rouge Campus

New Orleans Campus

Shreveport Campus

Law Center

Agricultural Research Center

System Facts

1881 opened in New Orleans, La

1890 Agricultural and Mechanical

Department established

1891 recognition as a Land Grant College

Southern University



Agricultural & Mechanical College

What is Southern's **NEW** Energy and Environment?

- Southern's push toward "New Energy and Environment" is fostered by the university's desire to develop a strong, collaborative, self-sustaining research and education
- Infrastructure in the areas of climate change, alternative fuels, bio-fuels development and analysis, clean energy vehicles, and energy and environmental impact and assessment. Dual degree programs with international universities will once again be utilized to meet this goal.

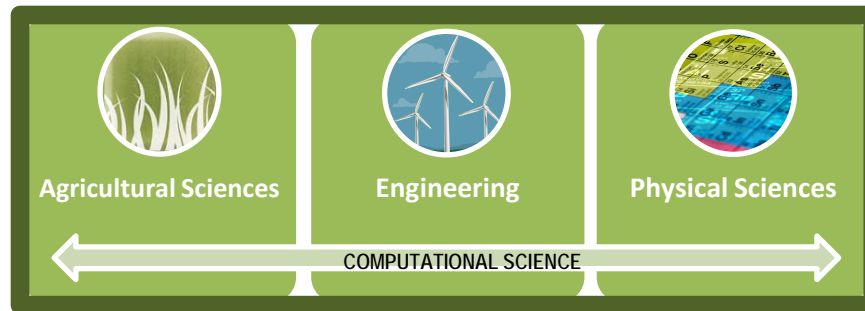
Leading the way...

- Southern University is placing its energy focus on assisting the world in creating clean, renewable and alternative forms of energy through new research and applications.

Energy and Environmental Initiatives

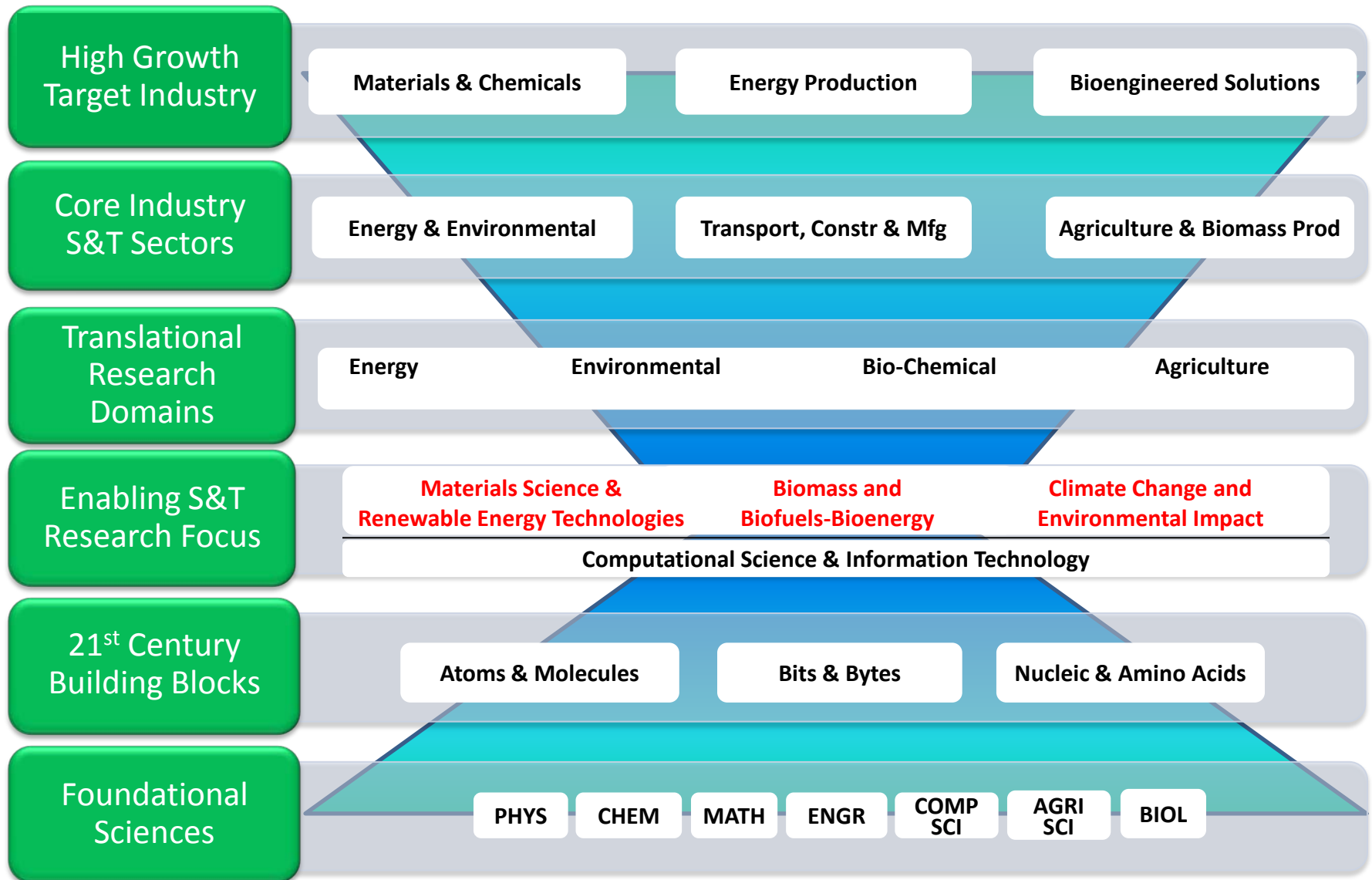
- Southern University Advanced Materials Research Laboratory (SUAMRL)
- Environmental Engineering and Sciences Laboratory
- Southern University Advanced Materials Research Laboratory (SUAMRL)
- HBCU-UP ACE: The New Energy Workforce
- Louisiana Concurrent Senate Resolution No. 13 (2009)
- Clean Power and Energy Research Consortium (CPERC)
- Gulf States – Ecological Observation Network
- Partnership with Oak Ridge National Laboratory

The **NEW** Energy Workforce: Sustainable Materials, Energy and Technology



Basic sciences that will lay the foundation for development of this initiative within the SU STEM enterprise are Agricultural Sciences, Engineering, and Physical Sciences, which will combine to support three primary research thrusts – Materials Science & Energy Technologies; Biomass Conversion, Biofuels & Bioenergy; and Climate Change & Environmental Impact. Computational Science & Information Technology will serve as an undergirding connection throughout.

Energy for Sustainability S&T Framework and Definitions



Energy for Sustainability S&T Framework and Definitions

- **Research on Material Science & Renewable Energy Technologies**

- The SU Advanced Materials Research Laboratory (AMRL) and NSF CREST Center of Infrastructure Composites (CIC) have long been engaged in research on advanced materials focused toward reducing cost of energy production in applications such as fuel cells, fossil fuel extraction technologies and increasing energy efficiency in existing power generation gas turbine technologies.

- **Biomass and Biofuels-Bioenergy Research**

- The SU AgCenter has a history of involvement with several research initiatives that will be of great value to our proposed project – including, assessing the capability of existing crops for providing sugars to a potential ethanol industry in Louisiana, development of energy cane, and the performance of economic feasibility studies using Louisiana crops as feedstocks for biofuels production Partnership with Oak Ridge National Laboratory. Researchers in the Civil and Environmental Engineering (CEE) departments have been active with research directed toward assessing techniques for the conversion of biogases produced from municipal landfills into pipeline-quality methane sources. Additionally, SU's CEE researchers have been investigating optimization approaches to anaerobic reactor operations for increasing methane production.

- **Research on Climate Change and Environmental Impact:**

- At SU, studies focus on climate change impacts and energy use; feedstock CO₂ sequestration potential and carbon storage potential; spatially dependent impacts such as soil erosion and nutrient releases; and impact of biofuel production on forest health, air pollution, or fire risk. In addition, a number of research projects within the Departments of Chemistry and Environmental Toxicology probe the effects of different chemicals on the environment. The scope of those projects covers a number of environmental venues including indoor and outdoor climates.

Computational Sciences and Engineering

- **Louisiana Optical Network Initiative (LONI)**
- **LONI Institute**
- **IBM Cloud Computing/HBCU Initiative**
- **Next Generation Composites CREST Center**
- **Center for Energy and Environmental Studies**
- **Clean Power and Energy Research Consortium (CPERC)**

- High performance computational biology and material science lab
 - set up and test CRON high speed optical fiber network at SU
 - perform simulations of selected novel electronic materials
 - provide mentoring and training for undergraduate and graduate students



Global Sustainability Initiative

GSI = Blending of Academics, Research, Business Partnering

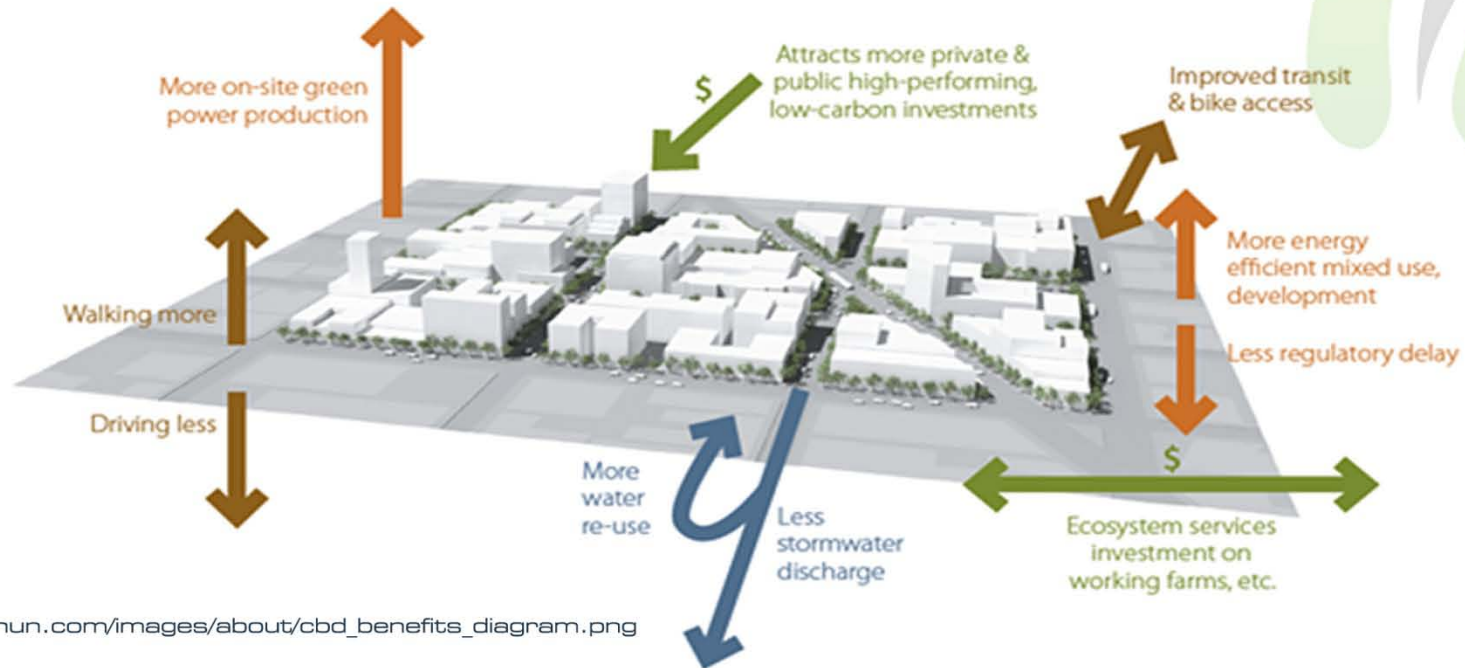




Global Sustainability Initiative

Building sustainable communities

Green Community Districts are model communities that will make a minimal impact on the carbon footprint, engage in smart energy solutions, and serve as easily replicable models



mithun.com/images/about/cbd_benefits_diagram.png



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Creating the **NEW!**

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