



## Louisiana Science & Technology Plan Targets Research Priorities

*This edition of the LA EPSCoR newsletter features Louisiana's Science & Technology (S&T) plan, and is part two of two about the recent Industry-Academia Collaborative Workshop on energy and materials sponsored by LA EPSCoR and the Board of Regents.*

Workshop attendees representing industry and academia were introduced to the S&T plan, entitled "FIRST Louisiana: Fostering Innovation through Research and Innovation in Science and Technology in Louisiana," by guest academia speaker Dr. Leslie K. Guice, Vice President for Research and Development at Louisiana Tech University and Chair of the Louisiana EPSCoR Committee.

Designed to increase research productivity and build capacity in the state, FIRST Louisiana provides planning guideposts for the post-secondary research community and partners in industry and the public sector.

"If we are going to have higher education involved in the economic growth of the entire state of Louisiana, we need a plan for how we can use the resources available to us from the Federal, state and private sectors to get there," said Dr. Guice.

To build the plan, the vice presidents and vice chancellors for research and deans of engineering and science at universities around the state examined patterns of innovation on university campuses, EPSCoR leadership, partnerships with the private sector that are developing, and opportunities for growth. The resulting FIRST Louisiana plan was endorsed by a complete consensus at all of the universities and unanimously approved by the Louisiana Board of Regents.

Upon completion of Louisiana Economic Development's (LED) Blue Ocean initiative, a comparison

of both plans' target areas found them in complete alignment and fully supportive of the strategies that had been developed through the academic community.

"We believe that this science and technology plan serves as a great foundation that connects our research community with the economic growth opportunities of the state as developed through LED," said Guice.

The primary goals of FIRST Louisiana:

**Foundational Sciences:** Retain, cultivate and attract world class talent.

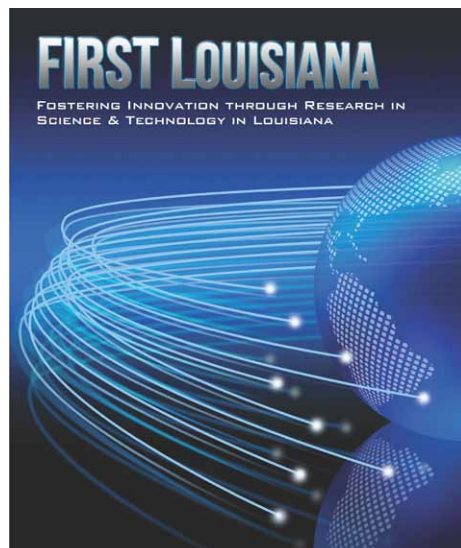
**21st Century Building Blocks:** Lay the foundation for sustained innovation by developing and maintaining leadership-class infrastructure and facilities for fundamental research.

**Core Enabling S&T Research:** Accelerate the growth of research and innovation centers of excellence in technology areas that are applicable to existing and emerging industry sectors.

**Translational Research Domains:** Link, leverage and build upon statewide research and development resources in areas that are of strategic importance to Louisiana and the nation.

**Core Industry S&T Sectors:** Enhance the competitiveness of core industry sectors through innovations from Louisiana's R&D enterprise.

**High Growth Target Industry:** Foster the growth of technology-based businesses in targeted areas aligned with university R&D strengths.



*FIRST Louisiana: Fostering Innovation through Research and Innovation in Science and Technology in Louisiana.*

Following his FIRST Louisiana presentation, Dr. Guice gave examples of Louisiana researchers in core enabling science and technologies sectors who have developed applications for industry and economic development:

**Dr. Yuri Lvov, Louisiana Tech University:**

Dr. Lvov specializes in layer-by-layer nanoassembly of materials in molecular thin layers to design materials with special properties. His initial focus was in the area of drug delivery and has recently licensed technology that provides controlled release of cancer fighting drugs.

After experimenting with local resources, Dr. Lvov found that his nanoassembly technology could be applied to pine tree pulp fiber to create new paper products. His spinoff company is now venturing into the roofing industry by using nano coatings to manufacture roofing felt with a higher percentage of recycled fiber.

*Dr. Quinglin Wu, LSU AgCenter:* Dr. Wu has developed a composite material product, called "Tiger Bullets," made out of local recycled plastic oil containers and fibers mixed with additives. This green product is used as a pretreatment for oil drilling fluid systems.

*Dr. Charlie O'Conner, University of New Orleans:* Dr. O'Conner is an eminent scholar and leader in advancing materials science and nanotechnology in Louisiana. One of his new areas of research is the development of nanoprisms which can be used to accelerate catalytic processes. His research has led to a number of partnerships at the Advanced Materials Research Institute (AMRI) and a startup company supporting the chemical and biotechnical industries.

*Drs. Mark Zappi and John Guillory, University of Louisiana Lafayette:* This research team specializes in gasifier modeling and has successfully launched a biofuel development company. In partnership with Cleco Power LLC, the team built a mass fed gasifier that not only will support research at ULL, but at all universities that are researching gasification of biomass products.

*Drs. Fred Enright, Bill Hansel, Carola Leuschner, et al:* This alliance from LSU Pennington Biomedical Research Center, LSU AgCenter and LSU A&M,

has launched a startup company called Esperance Pharmaceuticals. The company is developing targeted anti-cancer proteins that selectively kill cancer cells while leaving normal cells unharmed. Clinical trials for their products are underway and they have received significant private investment, including venture capital funding.

*Drs. John McLachlan and Matthew Burow, Tulane/Xavier Center for Bioenvironmental Research:* This research team has created a soybean compound that can be used in cancer therapeutics. They have launched a startup company that is developing biomedical foods to be used as

supplements or replacements for pharmaceuticals.

"If we can focus on supporting and bringing these kinds of teams together, a lot can happen in Louisiana," added Dr. Guice.

**Next steps for FIRST LA:**

- Link performance measures of the institutions to the plan;
- Engagement with the private sector;
- Refine and implement the strategies;
- Build support and pursue funding opportunities;
- Assess and improve over the long term.

To download a copy of FIRST Louisiana, visit: <http://goo.gl/B4MNq>

