FIRST Louisiana 2030 (2024 update)

Planning, planning, planning, you've heard it all. Rome wasn't built in a day; the best laid plans of mice and men often go awry; the most direct path from point A to point B is a straight line; and more. Aphorisms and the like just do not do justice to the complexity of planning a technologically relevant, even advanced society. Here, in this volume of the LA EPSCoR Newsletter, we will explore the logic behind our State's higher education science and technology plan, *Fostering Innovation through Research in Science & Technology in Louisiana* (*FIRST Louisiana 2030*), newly updated and approved by the Board of Regents in January 2024.

One conversation commonly overheard in Louisiana's public discourse of late is the issue of energy transition. This raises many questions for Louisiana. For example, how will offshore wind and liquid natural gas impact Louisiana's energy portfolio? How much carbon capture can Louisiana employ? What impact will these new technologies have on **Workforce Development**? Such questions illuminate a need for research-driven approaches to today's complex challenges in support of the State's growth. That is where the *FIRST Louisiana 2030* science and technology plan begins, with building **Foundations** for rigorous knowledge development. These foundations are not granite pillars carved from quarries, but human beings publicly invested in from before birth through higher education and into well-developed workforce institutions, a 20+ year endeavor. *FIRST Louisiana 2030* has laid out a plan for

developing Louisiana's intellectual prowess, actively building that human foundation and workforce that will follow.

Beyond the foundation are the tools, **Building Blocks**. Just like our ancient ancestors, the tools we use determine the outcome of our efforts and the quality of our lives. Will our outputs be sophisticated, perhaps even elegant, or will they be crude and blunt? This depends on our investment and usage strategies. In *FIRST Louisiana 2030*, a strong strategy for resource management is evident in one word: "shared". This comes in the form of shared: experimental R&D, computer & data, and data & research library infrastructures. This shared approach to infrastructure, after all no one can afford it alone, is the most critical strategic element of *FIRST Louisiana 2030*, leading onward to the next prong of the plan's approach, networks of excellence.

Here is a surprise: the research librarian has not read all the books in the library. The quantity of research available far exceeds the capacity of a single human being. It takes a network of knowledge professionals sharing expertise, experience, knowledge, and learning to build a multidisciplinary network of excellence. *FIRST Louisiana 2030* identifies five such **Networks of Excellence** in Louisiana:

- Materials and Manufacturing
- Bioscience and Biotechnology
- Energy Solutions

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- Environmental Solutions
- Cross-cutting: Data, Computational Science, and Cybersecurity

It is the existence of such ecosystems using shared instrumentation that provides Louisiana with a strategic workforce advantage.

The fourth element of the *FIRST Louisiana 2030* logic model is **Innovation and Incubation**, the burgeoning blossom of all the previous elements. This is where the rubber meets the road, where research meets implementation, and where planning becomes reality. By focusing on research domains both relevant to the strategic interests of the State and aligned with the interests of business and industry, *FIRST Louisiana 2030* establishes a conduit for broad-based success.

The final step is to **Target Industry Sectors**. Yes, it is true that we inherit

both our forebears' problems and their successes. This is no different when analyzing Louisiana's industry sectors. We must acknowledge the need for robust research infrastructure to support the continuing development of existing and new business and industry and their respective workforces, an exercise in perpetual motion.

Whether it comes during a front porch debate over the strength differential between steel- and wood-framed construction or during that moment of realization that a new treatment for diabetes is going to save a life, Louisiana research has skin in the game and a vision for tomorrow. For more information regarding Louisiana's science and technology planning, read the full text of *FIRST Louisiana 2030* at: https://rsi.laregents.edu/program-evaluations-2/state-st-plan/.

Science & Technology Framework

Target Industry Sectors
- Clean and Renewable Energy
- Advanced Manufacturing
- Healthcare Bioengineering
- Resilient Infrastructure

Innovation & Incubation
- Clean Energy
- Advanced Manufacturing
- Structural Integrity Assurance
- Biomedical and Healthcare Solutions
- Agriculture and Forestry Products
- Resilience and Disaster Recovery
- Coastal Restoration
- Cyber-Physical Systems

Networks of Exellence
- Energy Materials and Manufacturing
- Environmental Monitoring and Remediation
- Bioscience and Biotechnology
- Cross-cutting: Data, Computational Science, and Cybersecurity

Building Blocks
- Shared Experimental R&D Infrastructure
- Shared Computing and Data Infrastructure
- Shared Data and Research Libraries

Foundations
- STEM Disciplines
- Computer and Information Sciences
- Social, Behavioral, and Economic Sciences