

FIRST Louisiana

**Fostering Innovation through
Research in Science and Technology
in Louisiana**

A Framework for a Science and Technology Plan for Louisiana

Post 11/23 Comments

- Reference NIH IDeA as well as NSF EPSCoR
- Encourage interaction between NSF and biomedical scientists
- Add institutional investments to State investments in Purpose slide
- Emphasize “Talents” in Foundational Sciences title
- Add “earth sciences” or “geosciences” in foundational level; eliminate “cognitive”
- Emphasize interconnections of materials/nano, comp/IT, and biosci/biotech
- Add focus on energy including nuclear and discovery/production
- Add something to do with the environment and coastal sciences
- Add transport phenomena & chemical transformations in Core Technology
- Change petro-materials to materials and chemicals in Emerging Frontiers
- Emphasize “facilities” to infrastructure investments under Building Blocks
- Emphasize alignment with federal funding priorities in strategies
- Add faculty start-up packages and faculty retention to strategies
- Add cross-campus and multi-state initiatives to strategies
- Emphasize plans for enhancing communications and fostering inter-institutional and interdisciplinary R&D in strategies
- Adjust implementation timeline slide

Science & Technology Planning

Purpose

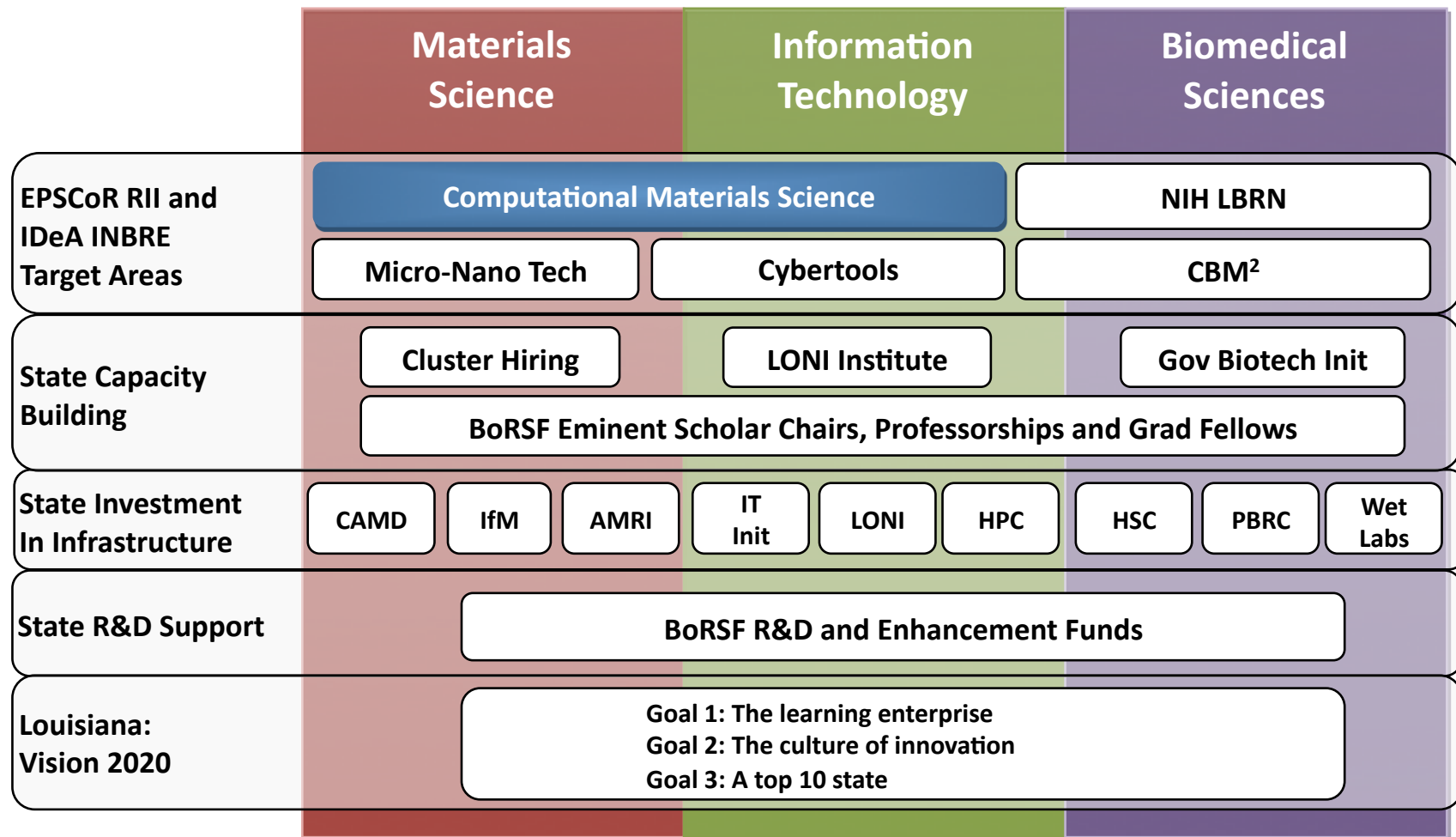
- Responds to national EPSCoR/IDeA program expectations
- Supports Regents' Research Master Planning
- Guides institutional strategic planning efforts
- Aligns institutions to facilitate research capacity building in areas of long-term importance to LA
- Guides future strategic investments in R&D
- Aligns State R&D and innovation strategies

NSF S&T Directives

The State S&T Plan should guide:

- State-wide research goals and directions for future research competitiveness
- Research infrastructure advancements
- Faculty retention and recruitment efforts
- Partnerships with businesses and entrepreneurs
- S&T education and workforce development
- Long-term sustainability
- Accountability

Louisiana's Strategic Investments in Core Technology Areas: Past & Present



Challenges

- Louisiana universities have not achieved the level of competitive federal funding success as many other states
- Louisiana has little industry-based R&D
- Louisiana has a limited history and success in commercialization of technologies
- Louisiana has limited access to experienced technology entrepreneurs and private capital

Opportunities

- Louisiana has built very good R&D infrastructure in core enabling science and technology areas (materials, cyber, biotech)
- Louisiana researchers have over two decades of successful multi-institutional research collaborations
- Louisiana citizens have traditionally had an entrepreneurial culture

Louisiana's Science and Technology Plan

Vision:

By 2025, Louisiana's Universities will lead the State's dynamic innovation economy through the advancement of Science and Technology research and education

S&T Framework and Definitions

High Growth Target Industry

- Transformative industry sectors that address State and national needs and opportunities where the State is poised to respond.

Core Industry S&T Sectors

- Existing industry sectors with some critical mass that could undergo growth through strategic research and innovation.

Translational Research Domains

- Research areas that are of strategic importance to Louisiana and/or the nation. Enhanced competitiveness is achieved through applications of enabling science and technologies.

Core Enabling S&T Research

- Multi-disciplinary areas for cutting-edge research and for innovation that can impact existing and emerging industries. Statewide capabilities exist because of prior strategic investments.

21st Century Building Blocks

- Building blocks for new advances driven by scientific discoveries of the 20th century.

Foundational Sciences

- Basic and applied sciences that lay the foundation for long-term sustainability of the academic and innovation enterprise. Long-term competitiveness is achieved through hiring and retaining top talent.

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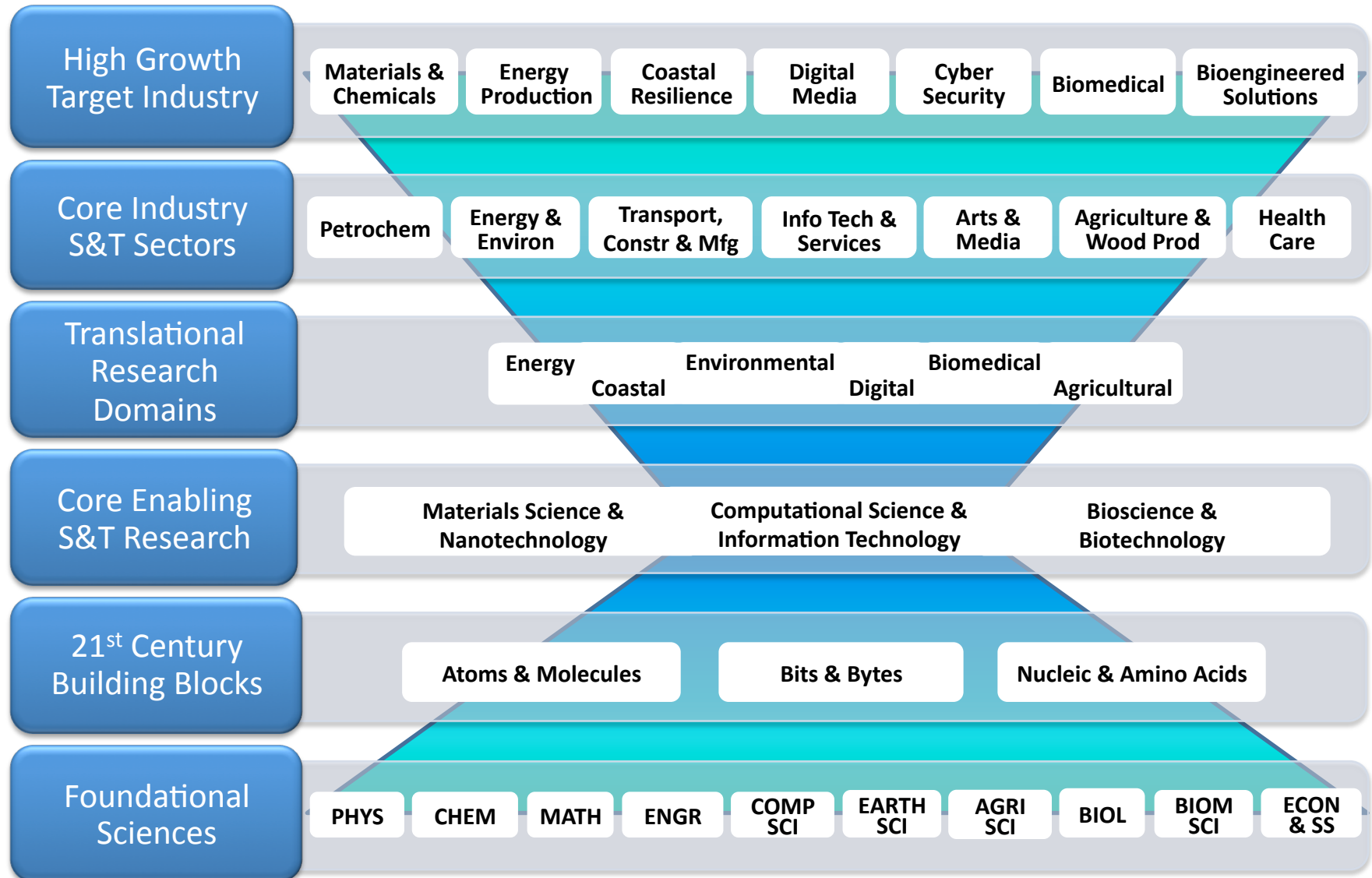
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S&T Framework and Definitions



S&T Primary Goals

High Growth Target Industry

- Foster the growth of technology-based businesses in targeted areas aligned with university R&D strengths

Core Industry S&T Sectors

- Enhance competitiveness of core industry sectors through innovations from Louisiana's R&D enterprise

Translational Research Domains

- Link, leverage and build upon statewide R&D resources in areas that are of strategic importance to Louisiana and the nation

Core Enabling S&T Research

- Accelerate growth of research and innovation centers of excellence in core technology areas that are applicable to existing and emerging industry sectors

21st Century Building Blocks

- Lay foundation for sustained innovation by developing and maintaining leadership-class infrastructure and facilities for fundamental research

Foundational Sciences

- Retain, cultivate and attract world-class talent

Louisiana's S&T Plan

Strategic Focus Areas

High Growth Target Industry

Core Industry S&T Sectors

Strategic Research Domains

Core Enabling S&T Research

21st Century Building Blocks

Foundational Sciences

LA S&T Plan

Focus Area 1: Foundational Sciences

Goal

- Retain, cultivate and attract world-class talent

Primary Strategies

- Increase the number of eminently qualified research faculty
- Increase the number of STEM doctoral graduates
- Increase the pipeline of highly trained STEM students

Implementing Strategies

- Establish research mentoring programs for junior faculty
- Provide competitive start-up packages for faculty
- Plan and expand initiatives for recruiting endowed super-chairs
- Provide supplemental institutional doctoral Fellowships
- Expand undergraduate research experiences

LA S&T Plan

Focus Area 2: 21st Century Building Blocks

Goal

- Lay foundation for sustained innovation by developing and maintaining leadership-class infrastructure and facilities for fundamental research

Primary Strategies

- Plan expansion of shared-use infrastructure resources across institutions
- Maintain leadership-class research infrastructure

Implementing Strategies

- Identify needs and funding sources for developing and maintaining critical infrastructure
- Build major new shared-use research facilities
- Provide support for faculty, postdocs and students at shared-use facilities

LA S&T Plan

Focus Area 3: Core Enabling S&T Research

Goal

- Accelerate growth of research and innovation centers of excellence in core technology areas that are applicable to existing and emerging industry sectors

Primary Strategies

- Stimulate high-levels of innovation
- Pursue multi-institutional Center grants

Implementing Strategies

- Provide incentives for high levels of innovation
- Create clusters of innovation on and across campuses
- Promote innovative models for technology transfer and commercialization
- Establish collaborative multi-institutional R&D centers including industry partners

LA S&T Plan

Focus Area 4: Translational Research Domains

Goal

- Link, leverage and build upon statewide R&D resources in areas that are of strategic importance to Louisiana and/or the nation

Primary Strategies

- Target niche areas aligned with resources, strengths, needs and opportunities
- Invest resources to build capacity in areas of competitive advantage

Implementing Strategies

- Organize state, regional and national conferences in target areas
- Provide matching funding for major grant opportunities in target areas
- Promote multi-institution and multi-state R&D initiatives

LA S&T Plan

Focus Area 5: Core Industry Sectors

Goal

- Enhance competitiveness and success of core industry sectors through innovations from Louisiana's R&D enterprise

Primary Strategies

- Foster U/I/G collaborative R&D and stimulate innovation
- Encourage small-business formation to accelerate technology development

Implementing Strategies

- Establish a statewide entity for promoting and integrating U/I/G R&D
- Expand upon networking environments for academia and industry
- Institute an industry ties R&D grant program

LA S&T Plan

Focus Area 6: High Growth Target Industry

Goal

- Foster the growth of technology-based businesses in targeted areas aligned with university R&D strengths

Primary Strategies

- Establish high-tech industry sectors in emerging areas

Implementing Strategies

- Recruit early-stage entrepreneurial companies
- Stimulate entrepreneurial activities
- Develop and market intellectual property

Targeted Investment Strategies

High Growth Target Industry

- State innovation seed funds and tax credits
- Industry and investor funding
- Federal SBIR, STTR and TIP funding

Core Industry S&T Sectors

- Industry R&D funding
- State industrial ties funding and tax credits
- Federal technology transfer funds

Translational Research Domains

- EPSCoR/IDeA and other competitive federal grants
- BoRSF special initiatives
- Designated federal, state and industry funding
- Cluster Hires

Core Enabling S&T Research

- Institutional Investments
- BoRSF Enhancement
- Competitive federal grants

21st Century Building Blocks

- State-wide infrastructure investments
- Major shared equipment enhancements

Foundational Sciences

- Institutional Investments
- BoRSF Chairs, Professorships, Fellows and R&D
- Competitive federal grants