# FY 2019-2020 PLAN AND BUDGET

# FOR THE EXPENDITURE OF REVENUES AVAILABLE FROM THE BOARD OF REGENTS SUPPORT FUND

# WITH AN OVERVIEW OF RESULTS OBTAINED

**SUBMITTED TO THE**

**GOVERNOR AND THE LEGISLATURE**

**IN ACCORDANCE WITH THE CONSTITUTIONAL PROVISIONS OF ARTICLE VII, SECTION 10.1**

**ADOPTED**

**January 14, 2019**

**BY THE**

**LOUISIANA BOARD OF REGENTS**

## TABLE OF CONTENTS

**TABLES AND SCHEDULES**



**ATTACHMENTS**

## OVERVIEW OF RESULTS
## Investment of Board of Regents Support Fund Money in Higher Education
## 1987 – 2018

- **$1.4 BILLION GENERATED IN EXTERNAL FUNDING ($2.19 FOR EACH BoRSF DOLLAR INVESTED IN COMPETITIVE GRANTS)** for grants and contracts through Federal, private, and industry sources

- **$423 MILLION GENERATED IN NON-STATE CONTRIBUTIONS FOR $284 MILLION IN BoRSF MATCHES ($1.48 FOR EACH BoRSF DOLLAR MATCHED)** for faculty and scholarship endowments

- **MORE THAN 3,500 EXTERNAL AWARDS** from Federal, private and other non-Support Fund sources

- **310 ENDOWED CHAIRS FOR EMINENT SCHOLARS** established at 25 campuses
  - Two hundred fifty-five (255) $1 million chairs
  - Fifty-two (52) $2 million chairs
  - Two (2) $3 million chairs
  - One (1) $4 million chair
  - Includes ninety-nine (99) chairs funded by special legislative appropriation

- **2,503 ENDOWED PROFESSORSHIPS** established at 40 campuses since FY 1990-91

- **349 UNDERGRADUATE, GRADUATE, AND WORKFORCE STUDENT SCHOLARSHIPS** endowed at 35 campuses since FY 2007-08

- **1,683 SUPERIOR GRADUATE FELLOWSHIPS** supported at 16 campuses

- **APPROXIMATELY 500 PATENTS FILED** during the grant period

- **MORE THAN 12,000 PUBLICATIONS** in peer-reviewed journals, scholarly monographs, and conference proceedings

- **EXPANDED MULTI-CAMPUS COLLABORATION** increases competitiveness for Federal R&D money

# PLAN AND BUDGET
# FOR THE EXPENDITURE OF REVENUES AVAILABLE FROM
# THE BOARD OF REGENTS SUPPORT FUND
# FISCAL YEAR 2019-2020

## PREFACE

A sound educational system at all levels and in all disciplines which is well supported on a consistent basis is crucial to achieving the two higher education goals established in the Constitutional amendment which created the Louisiana Education Quality Support Fund (hereinafter referred to as the Board of Regents Support Fund): enhancing academic programs and units and promoting economic development. The four programs of the Board of Regents Support Fund (BoRSF) pursue separate but related strategies in the quest to achieve these goals. Since its inception in 1986, the BoRSF has evinced a broad and long-range commitment to building and maintaining strength across all academic disciplines and, in so doing, to promoting economic development through the enhancement of higher education in general. As higher education becomes more focused on defined education and workforce missions, the BoRSF is adjusting to target funding to these priority areas and ensure that the most critical needs and priorities of the State, systems, and campuses are supported in ways that enhance higher education and contribute to Louisiana's economic growth.

## I. INTRODUCTION

According to Article VII, Section 10.1 of the Louisiana Constitution, at least sixty days prior to each regular session of the Legislature the Board of Regents must submit to the Governor and the Legislature a proposed plan and budget for the expenditure, during the coming fiscal year, of money available to higher education from the Board of Regents Support Fund. Higher education's portion of these funds may be spent for "any or all" of the following purposes: (1) endowment of chairs for eminent scholars; (2) recruitment of superior graduate students; (3) carefully defined research efforts; and (4) enhancement of the quality of academic, research, or agricultural departments or units within a post-secondary institution.

### 1.1 BOARD OF REGENTS SUPPORT FUND REVENUE PROJECTION, FY 2019-20

The base revenue amount used in the FY 2019-20 BoRSF Plan and Budget is $20,000,000, reflecting the most recent projection of the Revenue Estimating Conference ($20,000,000), as well as recent earnings levels.

### 1.2 BUDGET RATIONALE AND PREAMBLE

In deliberations about the Board of Regents Support Fund Plan and Budget for FY 2019-20 and the Fund's structure in future years, the Board recognized several issues:

- Continuing high demand for drastically reduced Support Fund resources under all program components along with increases in proposal quality and outstanding results achieved;

- The State's expanding emphasis on economic development and diversification, particularly related to 21st-century innovation industries and student preparation for the workforce;

- Greater need for strategic investment in research and workforce development areas related to campus, system, Board of Regents, and State priorities;

- Demand from campuses, foundations, and donors for endowment matching significantly beyond available Support Fund resources;

- Increasing importance of data collection, analysis, and evaluation to inform decision making; and

- Attention, especially during a period of continuing budgetary challenges, to constitutionally defined Support Fund goals, objectives, and restrictions.

It is vital that cores of strength be maintained in and across the four interrelated Support Fund components. While the Board has increased funding available for endowment matching, which now comprises approximately half of all available first-year funding, to encourage private philanthropy, it is also mindful that significant reductions already taken across Support Fund grant programs could jeopardize the programs' viability; further reductions will impair the impact and quality of the Support Fund as a whole, and its ability to achieve mandated goals. In addition, endowed chairholders, professors, and graduate and undergraduate students must have basic infrastructure and equipment, strong educational and training opportunities, and supportive cutting-edge facilities and research across priority departments and units in order to achieve the results expected of them. It is therefore imperative to balance matching funds for endowments with monies for competitive grants across the Enhancement and R&D programs.

### 1.3 ADOPTION OF FY 2019-20 PLAN AND BUDGET

The following Plan and Budget for FY 2019-20 were adopted by the Board of Regents at its meeting of January 14, 2019.

## 2. LONG-RANGE PLANNING AND EVALUATION

### 2.1 LONG-RANGE PLANNING

In FY 1987-88 the Board of Regents determined that, in addition to the Constitutionally required annual plan and budget, which set forth short-term programmatic goals and fiscal objectives, long-range plans were needed to accomplish the interrelated purposes and goals of the Support Fund. Short-term activities outlined in the annual plans and budgets could then be shaped by these long-term goals.

The first long-range plan evolved from a white paper prepared by the Louisiana Stimulus for Excellence in Research (LaSER) Committee. Titled *Strategic Plan for Higher Education's Portion of the Louisiana Education Quality Support Fund*, it was adopted in 1988. Cognizant of changes in economic conditions which affected academic issues, the Board in 1993 adopted a revised plan: *Board of Regents Support Fund Long-Range Strategic Plan for Higher Education*. It maintained the central themes and strategies of the earlier plan, adjusted to reflect changing conditions and lessons learned. In 1999 the Board adopted a second revised plan to guide the Support Fund through FY 2005-06. In the wake of Hurricanes Katrina and Rita, the Board extended that Strategic Plan through FY 2006-07 and at its meeting of June 22, 2006 adopted a new Strategic Plan to begin in FY 2007-08. This Plan continued the approach of balancing continuity based on effectiveness with revisions reflecting lessons learned.[1]

[1] Copies of the 1988, 1993, 1999, and 2007 Strategic Plans are available in the Board's office and at https://web.laregents.org/program-evaluations-2/strategic-planning/.

In light of dramatic declines in Support Fund earnings, totaling more than 40% since 2008, as well as changing circumstances in higher education in Louisiana, the Board of Regents undertook a review and restructuring of the BoRSF in 2016. Campuses at all levels, higher education systems, and other stakeholders were provided with numerous opportunities to assist in shaping the Support Fund for the future through participation in meetings of the two advisory committees constituted in Board of Regents policy, as well as extensive circulation of concepts and drafts. In November 2016 the Board adopted a revised structure, organized around current and prospective campus, system, and statewide strengths and needs, as well as individual campus roles, scopes, missions, and priorities. This revised structure formed the basis for the FY 2017-18 Plan and Budget and was implemented for that fiscal year's competitive cycle; the adopted structure remains in place for FY 2019-20. As implementation continues, the Regents will monitor outcomes and make any changes needed to boost the impact of the Support Fund's limited dollars.

## 2.2 LONG-RANGE EVALUATION

From the first Strategic Plan in 1988, methods have been in place for assessment of the long-range impacts of the Board of Regents Support Fund, including levels of success attained by individual funded projects and the programs and subprograms through which funding is awarded. In the early years, program and project success was evaluated annually by the BoRSF Planning Committee using programmatic assessments provided by external reviewers and annual and/or final reports submitted by project directors. In FY 1990-91, the Board undertook a systematic evaluation process, concluding in an evaluation by a distinguished panel of out-of-state experts in 1994. At that time, the panel concluded that the BoRSF was efficiently administered, was effectively addressing some of the State's economic development and higher education infrastructure needs, and had been successful in attracting Federal funds to the State.

As Support Fund operations continued in the 1990s, the need for comprehensive and regular assessment of programmatic benefits became evident and the Board accordingly adopted processes by which this could be accomplished. Over the past two decades, numerous programmatic evaluations have been conducted, which have yielded significant insights into Support Fund operations and revisions to maximize the benefits to higher education of programmatic expenditures:

- The 1998 Endowed Chairs review culminated in the March 1999 adoption of the Board of Regents Endowed Chairs Policy, which significantly strengthened a program with already impressive accomplishments.

- The FY 1999-2000 comprehensive review of the Endowed Professorships Subprogram led to the adoption, in December 2000, of the Board of Regents Endowed Professorships Policy, improving and focusing that Subprogram.

- The FY 2000-01 review of the Recruitment of Superior Graduate Students Program led to the January 2002 adoption of recommendations designed to elevate the program's accomplishments.

- The 2009 review of Endowed Chairs resulted in policy and program revisions implemented during the FY 2009-10 review process.

- The FY 2001-02 and 2010-11 reviews of the Research and Development Program yielded powerful evidence of the program's success as well as recommendations for improvement.

- During 2016, comprehensive assessment by the Board of Regents and higher education stakeholders of Support Fund priorities and programs in the context of the changing landscape for higher education in Louisiana led to adoption and implementation of a revised structure for the Fund as a whole. It is important to retain the new structure for a few years before considering additional changes, to monitor how revisions are working and whether desired outcomes are being achieved.

## 3. AN OVERVIEW OF RESULTS OBTAINED

Significant benefits are accruing to the State as a result of the Support Fund investment in higher education. The results reported are even more impressive when one understands that: (1) realization of the full benefit of investment in higher education is a long-term proposition, and results evolve over a period of many years; (2) reported results include **only benefits derived during the life of the grants awarded**, and do not attempt to measure the many benefits which accrue after the conclusion of relatively short-term BoRSF contracts; and (3) no specific benefits beyond the initial private match are claimed as a result of faculty endowment subprograms, and no specific research support or external grants are attributed to the Recruitment of Superior Graduate Students Program. Programmatic evaluations have led the Board to adopt reporting mechanisms that do, however, enable measurement of external funding success related to BoRSF components.

### 3.1 STATEWIDE RESULTS

* **$1.4 billion in grant and contract funding has been generated** from Federal, private, and industry sources from the BoRSF's investment in Enhancement and R&D awards, thereby significantly increasing the total monies available for higher education in Louisiana. This represents a **return during the grant period of $2.19 for every Support Fund dollar invested** in competitive grants since the inception of the programs. The figure reflects only external funds generated during the life of the awards; additional revenues are and will continue to be generated after award completion.

* **Approximately $423 million in non-State contributions, matched by more than $284 million from the Support Fund, have been provided** to Louisiana institutions to establish endowed chairs, professorships, and graduate, undergraduate, and two-year workforce scholarships. The market value of BoRSF-matched endowment accounts is almost $1 billion.

* **More than 3,500 grants and/or contracts have been awarded** to Louisiana post-secondary institutions from external funding agencies directly and indirectly as a result of BoRSF investments, and Louisiana's competitiveness for federal funding has increased, as reflected in a growth of research expenditures by 9% over the last decade.

* **Increased institutional collaboration has resulted from Support Fund investments, as evidenced by an unbroken stream of multi-million dollar, multi-institutional Federal grants awarded over the past three decades to the Board of Regents on behalf of statewide university consortia for research initiatives.** Their purpose is to increase research capacity and success, as well as the amount of

Federal research and development money awarded to Louisiana scientists and engineers. (See descriptions of statewide awards in Attachment I.)

* **Approximately 500 patents related to BoRSF-supported research have been filed** during the life of the awards.

## 3.2 RESULTS FROM SELECTED PROJECTS

Attachment II contains brief summaries of the achievements of selected recent projects funded across Support Fund components.

## 4. LEVERAGING BoRSF MONEY, EXPANDING BoRSF OPPORTUNITIES, AND PROMOTING MULTI-INSTITUTIONAL COOPERATION AND COLLABORATION

The Board began co-sponsoring research projects with the National Science Foundation (NSF) and supporting the development of scientific research and educational infrastructure in Louisiana under NSF's Experimental Program to Stimulate Competitive Research (EPSCoR) during FY 1988-89. In FY 1991-92 the Board dedicated a portion of Board of Regents Support Fund monies as matching commitments for two statewide, multi-institutional initiatives to be submitted in national competitions for Federal funds in areas that coincided with constitutionally prescribed BoRSF activities: the NSF LaSER Advanced Development Proposal (ADP) and the Louisiana Systemic Initiatives Program (LaSIP) in Math and Science Education.[2] The reasons for, and goals of, these matching commitments were fourfold:

- To continue and accelerate the leveraging of Federal money with BoRSF investments for statewide collaborative proposals;

- To expand opportunities available through BoRSF programs;

- To augment infrastructure development begun under BoRSF programs, which is necessary to enable Louisiana's postsecondary campuses to compete with greater success for Federal funding; and

- To promote multi-institutional collaboration and cooperation among Louisiana's colleges, universities, and K-12 schools.

The FY 1991-92 Board of Regents Support Fund Plan and Budget described the dedication of BoRSF money as State matching commitments for these multi-year Federal grant proposals (in preparation during FY 1990-91) under the auspices of the Board. Each proposal required significant State matching money as a condition of funding.

[2] Details of these awards are included in Attachment I.

## 4.1 FUNDED PROPOSALS: JOINT BoRSF/FEDERAL PROGRAMS WITH STATEWIDE IMPACT

The Board was successful in the early NSF EPSCoR competitions, and these efforts encouraged continued pursuit of competitive Federal research and educational dollars from NSF and a variety of other agencies including the National Aeronautics and Space Administration (NASA), the Department of Defense (DOD), the Department of Energy (DOE), the Department of Commerce, the Environmental Protection Agency (EPA), and the National Institutes of Health (NIH). Support Fund obligations for these Federal grants appear below in Table I. A more detailed description of each grant, including the Federal funds received, is in Attachment I.

The Board's decision to leverage the Support Fund by targeting matches for Federal grant opportunities has borne significant fruit. It has enabled the State to progress from receiving minimal support from NSF for research collaborations in the 1980s, to the current environment, in which Louisiana is among the elite of EPSCoR states in successful federally sponsored grants and research activities.

**Table I**
**Federal Matching Grants Subprogram**
**For Joint State and Federal Projects with Systemic and/or Statewide Impact**
**By Types of Support Fund Activity, Monetary Commitment, and Duration**

| Federal Grant | Type of Support Fund Activity | Amount of Annual Matching Commitment | Amount of Total Matching Commitment | FYs in which Commitment is Applicable | Total Length of Commitment in Years |
|---|---|---|---|---|---|
| NSF/EPSCoR[3] LaSER Implementation | TR ENH: 30%<br>R&D: 70% | Yr. 1 $685,043<br>Yr. 2 440,202<br>Yr. 3 191,791 | $1,317,036 | 1988-89 through 1990-91 | 3[3] |
| NSF/SI LaSIP | TR ENH, UG ENH, PLEx: Pro-rata | $1 Million | $5 Million | 1991-92 through 1995-96 | 5 |
| NSF/EPSCoR LaSER Advanced Development Program | TR ENH: 1/3<br>GR FEL: 1/3[4]<br>ITRS: 1/3 | $1.2 Million | $4.8 Million | 1991-92 through 1994-95 | 4 |
| NASA/LaSPACE | RCS: 60%<br>GR FEL: 40%[4] | $100,000 | $500,000 | 1991-92 through 1995-96 | 5 |
| NSF/SI LaCEPT | TR ENH: 100% | $500,000 | $2.5 Million | 1992-93 through 1996-97 | 5 |
| DOE/EPSCoR Implementation | TR ENH: 60%<br>RCS: 40% | $519,795 | $1,039,590 | 1993-94 through 1994-95 | 2 |

[3] The thirteen research projects that were a part of the first NSF EPSCoR award received Board of Regents Support Fund money for two years prior to receiving NSF support in January of 1989 (FY 1988-89), for a total of five years and $3,374,355 in Board of Regents Support Fund money. This table reflects only years three through five of Board of Regents Support Fund money (or $1,317,036), since only that period of State support that coincides with Federal Support can be counted as part of the State's matching commitment. (See Section 4.1.)

[4] Because of the nature of the Graduate Fellows Program, money for this component is committed in the fiscal year prior to expenditure. For this reason, the first year's Graduate Fellows portion of matching funds committed to a particular project was usually actually charged to Enhancement or R&D, or prorated between the two program components.

| Federal Grant | Type of Support Fund Activity | Amount of Annual Matching Commitment | Amount of Total Matching Commitment | FYs in which Commitment is Applicable | Total Length of Commitment in Years |
|---|---|---|---|---|---|
| DOD/EPSCoR Planning | TR ENH: 100% | $25,000 | $25,000 | 1993-94 | 1 |
| NASA/EPSCoR Implementation | TR ENH: 50%<br>RCS: 25%<br>GR FEL: 25% [2] | $500,000 | $1.5 Million | 1994-95 through 1996-97 | 3 |
| 1993 DEPSCoR Implementation | TR ENH: 50%<br>RCS: 25%<br>GR FEL: 25% [2] | Yr. 1 $166,666<br>Yr. 2 166,666<br>Yr. 3 166,667 | $500,000 | 1994-95 through 1996-97 | 3 |
| NSF/SI Teaching Scholars | TR ENH: 100% | $ 50,000 | $250,000 | 1994-95 through 1998-99 | 5 |
| NSF/EPSCoR LaSER Systemic Initiatives | TR ENH: 60%<br>UG ENH: 10%<br>R&D: 20%<br>GR FEL: 10% [2] | $1 Million | $3 Million | 1995-96 through 1997-98 | 3 |
| DOE/EPSCoR Implementation Renewal | TR ENH: 10%<br>R&D: 70%<br>GR FEL: 20% [2] | $800,000 | $3.2 Million | 1995-96 through 1998-99 | 4 |
| NSF/SI LAMP | TR ENH: 100% | Yr.1 $200,000<br>Yrs. 2-5 500,000 | $2.2 Million | 1995-96 through 1999-2000 | 5 |
| NASA LaSPACE Renewal | RCS: 50%<br>GR FEL: 50% [2] | $100,000 | $400,000 | 1996-97 through 1999-2000 | 4 |
| 1995 DEPSCoR Implementation | TR ENH: 50%<br>R&D: 25%<br>GR FEL: 25% [2] | Yr. 1 $551,439<br>Yr. 2 311,740<br>Yr. 3 311,972 | $1,175,151 | 1996-97 through 1998-99 | 3 |
| NSF/SI LaSIP Renewal | TR ENH: 100% | $1 Million | $5 Million | 1996-97 through 2000-01 | 5 |
| NASA/EPSCoR Implementation Renewal | TR ENH: 50%<br>RCS: 25%<br>GR FEL: 25% [2] | $500,000 | $1 Million | 1997-98 through 1998-99 | 2 |
| NSF/SI Delta Rural SI | TR ENH: 100% | $200,000 | $1 Million | 1997-98 through 2001-02 | 5 |
| LaCEPT Supplemental | TR ENH: 100% | $100,000 | $300,000 | 1998-99 through 2000-01 | 3 |
| 1997 DEPSCoR Implementation | TR ENH: 50%<br>R&D: 25%<br>GR FEL: 25% [2] | $250,000 | $750,000 | 1997-98 through 1999-2000 | 3 |
| NSF/EPSCoR New Cooperative Agreement | TR ENH: 75%<br>R&D: 25% | $1 Million | $3 Million | 1998-99 through 2000-01 | 3 |
| 1999 DEPSCoR Implementation | TR ENH: 100% | Yr. 1 $65,998<br>Yr. 2 61,900<br>Yr. 3 61,900 | $189,798 | 1999-2000 through 2001-02 | 3 |
| EPSCoT | TR ENH: 100% | $300,000 | $300,000 | 1999-2000 | 1.5 |
| NASA/EPSCoR Continuation Funding | TR ENH: 100% | $250,000 | $250,000 | 1999-2000 | 1 |

| Federal Grant | Type of Support Fund Activity | Amount of Annual Matching Commitment | Amount of Total Matching Commitment | FYs in which Commitment is Applicable | Total Length of Commitment in Years |
|---|---|---|---|---|---|
| NASA/EPSCoR Preparation Grant | TR ENH: 100% | $100,000 | $100,000 | 1999-2000 | 1 |
| NASA LaSPACE Continuation | TR ENH: 100% | $200,000 | $1 Million | 2000-01 through 2004-05 | 5 |
| EPA/EPSCoR 2000 | TR ENH: 100% | Yr. 1 $255,261<br>Yr. 2 244,739 | $500,000 | 1999-2000 through 2000-01 | 2 |
| LAMP Phase II | TR ENH: 100% | $500,000 | $2.5 Million | 2000-01 through 2004-05 | 5 |
| NSF/EPSCoR Research Infrastructure Improvement | TR ENH: 100% | $1 Million | $3 Million | 2001-02 through 2003-04 | 3 |
| NASA/EPSCoR 2000 | TR ENH: 100% | $700,000 | $2.1 Million | 2001-02 through 2003-04 | 3 |
| EPA/EPSCoR 2001 | TR ENH: 100% | Yr. 1 $250,000<br>Yr. 2 244,542 | $494,542 | 2002-03 through 2003-04 | 2 |
| NSF/EPSCoR Research Infrastructure Improvement II | TR ENH: 100% | $1 Million | $3 Million | 2003-04 through 2005-06 | 3 |
| DOE/EPSCoR Implementation 2004 | TR ENH: 100% | $400,000 | $1.2 Million | 2004-05 through 2006-07 | 3 |
| NASA/EPSCoR 2000 Renewal | TR ENH: 100% | $493,280 | $986,560 | 2004-05 through 2005-06 | 2 |
| LAMP Phase III | TR ENH: 100% | $500,000 | $2.5 Million | 2005-06 through 2009-10 | 5 |
| NASA LaSPACE Continuation II | TR ENH: 100% | $200,000 | $1 Million | 2005-06 through 2009-10 | 5 |
| NASA/EPSCoR 2006 - Infrastructure | TR ENH: 100% | $125,000 | $375,000 | 2006-07 through 2008-09 | 3 |
| NASA/EPSCoR 2006 - Research 1 | TR ENH: 100% | $250,000 | $750,000 | 2006-07 through 2008-09 | 3 |
| NASA/EPSCoR 2006 - Research 2 | TR ENH: 100% | $250,000 | $750,000 | 2006-07 through 2008-09 | 3 |
| NSF EPSCoR Cyber RII | TR ENH: 100% | $1 Million | $3 Million | 2006-07 through 2008-09 | 3 |
| DOE EPSCoR Implementation Renewal | TR ENH: 100% | $400,000 | $1.2 Million | 2007-08 through 2009-10 | 3 |
| NASA EPSCoR 2009 - Research 3 | TR ENH: 100% | $250,000 | $750,000 | 2009-10 through 2011-12 | 3 |
| NASA EPSCoR 2009 - Infrastructure | TR ENH: 100% | $125,000 | $375,000 | 2009-10 through 2011-12 | 3 |
| NASA EPSCoR 2009 - Research 4 | TR ENH: 100% | $250,000 | $750,000 | 2009-10 through 2011-12 | 3 |
| NSF EPSCoR RII Track 1 Proposal | TR ENH: 100% | $2 Million | $10 Million | 2009-10 through 2013-14 | 5 |

| Federal Grant | Type of Support Fund Activity | Amount of Annual Matching Commitment | Amount of Total Matching Commitment | FYs in which Commitment is Applicable | Total Length of Commitment in Years |
|---|---|---|---|---|---|
| NASA LaSPACE Renewal | TR ENH: 100% | $250,000 | $1.25 Million | 2010-11 through 2014-15 | 5 |
| LAMP Phase IV | TR ENH: 100% | $500,000 | $2.5 Million | 2010-11 through 2014-15 | 5 |
| NASA EPSCoR 2009 - Research 5 | TR ENH 100% | $250,000 | $750,000 | 2011-12 through 2013-14 | 3 |
| NASA EPSCoR Research Infrastructure | TR ENH 100% | $125,000 | $375,000 | 2012-13 through 2014-15 | 3 |
| NASA EPSCoR 2009 - Research 6 | TR ENH 100% | $250,000 | $750,000 | 2012-13 through 2014-15 | 3 |
| NASA EPSCoR - Research 7 | TR ENH 100% | $250,000 | $750,000 | 2013-14 through 2015-16 | 3 |
| DOE EPSCoR Implementation 2014 | TR ENH 100% | $500,000 | $500,000 | 2014-15 | 1 |
| NASA EPSCoR - Research 9 | TR ENH 100% | $250,000 | $750,000 | 2015-16 through 2017-18 | 3 |
| NASA EPSCoR Research Infrastructure | TR ENH 100% | $125,000 | $375,000 | 2015-16 through 2017-18 | 3 |
| NSF EPSCoR RII Track 1 Proposal | TR ENH: 100% | $800,000 | $4 Million | 2015-16 through 2019-20 | 5 |
| NASA LaSPACE Continuation | TR ENH: 100% | $250,000 | $750,000 | 2015-16 through 2017-18 | 3 |
| NASA EPSCoR - Research 10 | TR ENH 100% | $250,000 | $750,000 | 2016-17 through 2018-19 | 3 |
| DOE EPSCoR Implementation Renewal | TR ENH 100% | $500,000 | $500,000 | 2017-18 | 1 |
| NASA EPSCoR - Research 11 | TR ENH 100% | $250,000 | $750,000 | 2017-18 through 2019-20 | 3 |
| NASA EPSCoR - Research 12 | TR ENH 100% | $250,000 | $750,000 | 2018-19 through 2020-21 | 3 |
| NASA EPSCoR Research Infrastructure Fourth-Yr. Extension | TR ENH 100% | $125,000 | $125,000 | 2018-19 | 1 |
| NASA LaSPACE Fourth-Yr. Extension | TR ENH: 100% | $250,000 | $250,000 | 2018-19 | 1 |
| NASA EPSCoR - Research 13 (Pending) | TR ENH 100% | $250,000 | $750,000 | 2019-20 through 2021-22 | 3 |
| NASA EPSCoR Research Infrastructure (pending) | TR ENH 100% | $125,000 | $375,000 | 2019-20 through 2021-22 | 3 |
| NASA LaSPACE Fifth-Yr. Extension (pending) | TR ENH: 100% | $250,000 | $250,000 | 2019-20 | 1 |

## 4.2 PENDING PROPOSALS

NASA's Space Grant program, called LaSPACE in Louisiana, solicited proposals for fifth-year extensions to current projects as the agency continues to reorganize this program. In addition, the NASA EPSCoR Program annually issues a Cooperative Agreement Notice (CAN) soliciting university-based research activities which will make significant contributions to the strategic research and development priorities of NASA and to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State. The CAN was released on September 6, 2018 with a proposal due date of December 7. Louisiana has submitted a proposal for consideration for the federal fiscal year 2019 competition.

NASA also announced a new Research Infrastructure Development (RID) competition during fiscal year 2019-20. The goal of this program is to develop research capacity in space/aerospace fields by developing collaborations between NASA scientists and engineers and the Louisiana research community. Louisiana submitted a proposal in June 2018 which, if awarded, will provide funding for another three-year project.

It is anticipated that $625,000 will be required in FY 2019-20 to provide match to successful new projects funded through NASA. The funds are included as new awards in the Federal Matching Grants component of the Enhancement Program (see Section 5.5.1).

## 4.3 MULTIDISCIPLINARY AND MULTI-INSTITUTIONAL PROPOSALS IN SUPPORT FUND PROGRAM COMPONENTS

The Board has long recognized the potential of multidisciplinary and/or multi-institutional projects to enhance academic quality and promote economic development, as well as to make the most prudent use of scarce State funds and promote resource sharing. Accordingly, the Board has encouraged these kinds of proposals since the inception of the Board of Regents Support Fund, not only as part of the joint Federal/State efforts described in Section 4.1 of this Plan and Budget, but also in proposals submitted under traditional BoRSF program components. The Board's support of such proposals has helped to seed the Louisiana Academic Library Network (LaLINC) project, which as the Louisiana Library Network (LOUIS) has computerized databases and linked academic libraries throughout the State, and the Louisiana Optical Network Infrastructure (LONI), a critical tool for Louisiana's research competitiveness.

To further emphasize its belief in the potential of multidisciplinary, multi-institutional efforts to achieve BoRSF goals and promote the best interests of the State, the Board has specifically encouraged, through requests for proposals and long-range planning documents, the submission of collaborative proposals that promise statewide benefits. The Board reaffirms its encouragement of multidisciplinary and/or multi-institutional proposals across all Support Fund program components for FY 2019-20. Reflecting this emphasis, beginning with its FY 2000-01 budget, the Board has set aside funds each year from the Traditional Enhancement Subprogram for the funding of these types of projects. Consistent with the growing emphasis placed on interdisciplinary research throughout the academic community and the large numbers of quality proposals submitted each year in the Multidisciplinary Enhancement category, the Board increased the funds available for awards in this category to $950,000 in the FY 2004-05 Plan and Budget. The funding level for Multidisciplinary Enhancement in subsequent years was calculated as a percentage of the Traditional Enhancement budget (20%). This percentage calculation continues as part of the Departmental Enhancement Subprogram. Any unexpended Multidisciplinary funds will revert to discipline-based Departmental Enhancement (see Section 5.5.5).

# 5. BOARD OF REGENTS SUPPORT FUND PROGRAM COMPONENTS

## 5.1 BUDGETARY CONTINGENCIES

If in FY 2019-20 the income received for the higher education portion of the Board of Regents Support Fund is greater than the $20,000,000 projected, additional revenues shall be allocated to existing programs as approved by the Board. In the event that earnings are lower than projected, proportionate cuts shall be taken in first-year amounts allocated for proposals across all competitive programs and subprograms. If cuts to competitive programs must be taken at a level that threatens their viability, consideration shall be given to reductions in Endowed Professorships after all eligible campuses have received the matches guaranteed in Board policy. Except as noted above, only after all first-year funds budgeted for competitive programs and subprograms have been eliminated shall any necessary reductions be taken in the non-competitive endowment subprograms, federal matching commitments, or prior contractual obligations.

## 5.2 ENDOWED CHAIRS FOR EMINENT SCHOLARS - $1,220,000

The Endowed Chairs for Eminent Scholars Program, introduced in 1987, is designed to enhance the recruitment and retention of distinguished faculty at higher education institutions throughout Louisiana. Beginning in 1990, the program was budgeted at an annual level of at least $3.2 million. Legislative supplemental appropriations, beginning in FY 1995-96 and continuing in several subsequent years, enabled the funding of 99 additional chairs. Through FY 2017-18, 310 chairs are matched at twenty-five institutions, and the program has generated a total endowment corpus (including non-State match) of $371 million. Comprehensive reviews conducted in 1993, 1998 and 2009 led to significant strengthening of the program.

The program pairs a 60% private-sector contribution with a 40% Board of Regents match to endow a chair to be filled by an exemplary scholar. The Board endows chairs in any discipline in $1-million increments: $1 million total endowment ($600,000 match/$400,000 BoRSF); $2 million total endowment ($1.2 million match/$800,000 BoRSF); and $3 million total endowment ($1.8 million match/$1.2 million BoRSF). Higher endowments are encouraged, generally established by combining existing matched Chairs or incremental requests for BoRSF match. Fifty-two (52) of the 310 chairs are matched at the $2 million level, two (2) at $3 million, and one (1) at $4 million.

A policy providing “Special Provisions for Public Four-Year Campuses with Fewer than Three Eminent Scholars Chairs,” adopted in 2001, allowed public four-year institutions with fewer than three chairs to invert the 60:40 ratio of private funds/BoRSF, but retained the principle of competition without favor. Through FY 2005-06, when the special provisions expired, nine chairs (three from Northwestern State University, two from Louisiana State University Shreveport, and one each from Grambling State University, Louisiana State University of Alexandria, Southern University and A&M College, and Southern University at New Orleans) were funded under its aegis. One additional inverse-ratio chair from Southern University at New Orleans was funded under special circumstances in FY 2006-07.

During the first years of the program’s operation, chairs were matched on a “first-come, first-served” basis. This approach was replaced in 1993 by a competitive process to ensure that the highest quality chairs with the greatest potential for impact are funded. The competition established to determine endowment awards is rigorous and highly selective. A panel of out-of-state experts reviews proposals on an annual basis,

recommending for funding those most representative of and able to achieve the goals of the program. Stringent rules governing the selection of the faculty recipient are designed to ensure his or her excellence. An endowed chair must be filled through a national search and the committee conducting the search must include at least one individual recognized as an expert in the field of the chair but not affiliated with the institution, the private donor, or the Board of Regents. While a chair recipient may be selected from within the affected campus, this should occur infrequently and only when a national search has documented the national and/or international eminence of the prospective chairholder.

As the national search guarantees the past reputation of the chairholder, periodic performance reviews of the chairholder are intended to assure continued accomplishment. As verified by these reviews, chairholders are required to maintain highly productive records of scholarly and/or creative endeavor, exceptional teaching, recruitment and mentoring of high-quality students, leadership activities, and economic development activity.

As part of the restructuring of the Support Fund, the Board adopted a policy that, for all future competitions, requires that endowed chairs for which match is requested be aligned with the submitting campus's role, scope, mission, and strategic priorities. This practice will ensure that these highly influential chairs are established in the areas of greatest strength and/or greatest need on the campus.

Traditionally $3,220,000 has been budgeted annually for the Endowed Chairs category; severe funding constraints caused by sharp declines in Support Fund income required that the FY 2013-14 Endowed Chairs budget be reduced by 25%, to a level of $2,420,000. In FY 2014-15, given the number of vacant existing chairs and the significant backlog in requests for State match in the Endowed Professorships Subprogram, the budget for Endowed Chairs was reduced to $2,020,000. Though the traditional $3,220,000 budget was restored in FY 2015-16, continuing declines in Support Fund income again required a reduction in the FY 2016-17 budget level, to $2,020,000. To accommodate ongoing budget challenges and backlogs in Endowed Professorships, the budget level was further reduced in FY 2017-18, to $1,620,000. Persistent revenue shortfalls and Professorships demand resulted in an additional reduction in FY 2018-19, to $1,220,000; this budget level shall be retained in FY 2019-20, including $1,200,000 for endowment matching and $20,000 for competitive review.

## 5.3 RECRUITMENT OF SUPERIOR GRADUATE STUDENTS - $3,459,000

The Recruitment of Superior Graduate Students component provides fellowships and endowment matching to select departments to attract and retain top-quality students in their graduate programs. Through FY 2017-18, the Board of Regents has funded 1,683 graduate fellowships to a spectrum of departments at sixteen institutions in Louisiana. More than 90% of all awards have been made to science, technology, engineering, and mathematics programs and, in addition, about 10% of fellowships have been awarded to programs specifically targeting in-service K-12 teachers in mathematics and science disciplines pursuing master's degrees in education. Fellowships have clearly helped a large number of students to pursue graduate education, but each fellowship is expensive – over four years averaging $100,000 in BoRSF funding plus tuition waivers provided by the campus – and its impact is limited to the single student recipient.

In FY 2015-16, the Board established a subprogram to match endowments for Superior Graduate Student Scholarships. Such endowments will provide a permanent source of support affecting generations of students.

### 5.3.1 Traditional and BoR/SREB Graduate Fellowships

The Traditional Graduate Fellows (GF) Subprogram has been part of the Graduate Fellows Program since its inception; the Board became a full participant in the Southern Regional Education Board (SREB)-State Doctoral Scholars Program in FY 2007-08 and, as a result, established the Board of Regents/SREB Graduate Fellowships to Promote Diversity Subprogram (BoR/SREB), adding it to the Graduate Fellows component. The Traditional Subprogram primarily supports excellent doctoral-level fellows, but also allows stipends for students at master's-level programs of distinction. The BoR/SREB Subprogram, a continuation of the Perkins Doctoral Fellows Program established in response to the Louisiana Consent Decree, offers successful colleges and universities fellowships to build diversity in graduate programs by recruiting and retaining excellent underrepresented minority doctoral candidates. The Traditional GF and BoR/SREB Subprograms provide a comprehensive opportunity for departments and universities across the State to receive assistance in the recruitment, training and support of high-quality graduate students. Given their expense and limited impact, the Board determined that graduate student support would be better provided through R&D and Enhancement awards with broader purpose, so the standalone fellowship subprograms were suspended for new awards beginning in FY 2017-18. In consideration of the structure of the program and the unfunded one-year recruitment year provided, an additional competition for Traditional Graduate Fellows went forward in FY 2016-17, with individual awards approved in April 2017; funds for these awards were approved in the FY 2016-17 Plan and Budget and represented the year one prior commitments in the FY 2018-19 plan and budget. No new monies are included in the FY 2019-20 Plan and Budget.

The 2,774,000 budgeted for these Subprograms in FY 2019-20, therefore, is entirely for previous obligations, including: (a) $934,500 for funding of graduate fellows who began their course of study in AY 2016-17; (b) $1,042,000 for graduate fellows who began their course of study in AY 2017-18; (c) $797,500 for graduate fellows who began their course of study in AY 2018-19.

### 5.3.2 Endowed Superior Graduate Student Scholarships

In September 2014, the Board of Regents approved establishment of the competitive BoRSF Endowed Superior Graduate Student Scholarships Subprogram, enabling campuses to enhance support for graduate and first professional degree students through permanent endowments which combine non-State contributions and Support Fund match. Endowed Superior Graduate Student Scholarships are established to assist departments, units, colleges, and/or campuses to recruit, retain, and graduate excellent graduate and first professional degree candidates as well as post-doctoral research fellows. Though all disciplines are eligible, priority is given to scholarships for students in a) high-demand professional master's and first professional degrees which target Louisiana's workforce needs and b) professional experiential opportunities substantially related to those workforce needs.

The funding of an endowed graduate scholarship requires the eligible college or university to raise at least $60,000 from non-State sources, to be matched by $40,000 from the Support Fund, thus establishing an endowed graduate scholarship valued at a minimum of $100,000. Income from the permanent endowment may be used for direct benefit of the appointed student(s), to support scholarships and fellowships as well as experiential opportunities including internships, externships, research and conference travel, and field work.

Based on severely reduced funding across the Support Fund, and high demand for matching in other endowment subprograms in the Support Fund, the Endowed Superior Graduate Student Scholarships

Subprogram budget for FY 2019-20 is $685,000, including $680,000 for endowment matching and $5,000 for proposal review by an external consultant(s). This funding level may be revisited in future fiscal years as the Subprogram becomes established, long-term demand for matching funds is better understood, prior-year requests in other endowment programs are addressed, and Support Fund revenues increase.

## 5.4 CAREFULLY DEFINED RESEARCH EFFORTS - $5,636,741

Board of Regents Support Fund Research and Development subprograms have consistently been highly successful in positioning faculty for non-State research funding, promoting economic development, and bringing major scholarly and creative works to the marketplace. In addition to contributing to knowledge, understanding, and practical deployment of ideas, projects funded through these subprograms also bring a significant flow of federal and private-sector dollars to Louisiana in support of university-based research. A recent survey of completed projects indicated that the average return for one dollar of Support Fund research investment is approximately $10.50. Due to the success of these initiatives and their significant benefits to the State, it is important to retain them with minimal changes.

A total of $3,236,741 is required during FY 2019-20 to honor prior commitments for multi-year projects in the BoRSF Research and Development (R&D) Program. Since most research projects are multi-year endeavors, the Board has historically been conservative in recommending an increase in funds dedicated for new research projects in the R&D Program.

### 5.4.1 Research Competitiveness Subprogram (RCS)

RCS is a stimulus initiative directed toward those researchers who are at the threshold of becoming competitive in the Federal R&D marketplace. It is designed to assist these researchers to overcome the barriers that have prevented them from competing successfully at the national level for R&D funds. RCS is also focused only on those researchers who clearly show strong potential for enhancing their competitive status within the limited time span of a Board of Regents Support Fund grant. The one-year component of RCS emphasizes short-term seed funding to prepare research projects on the cusp of competitiveness for submission to and success in competitive Federal programs. In every year since the Subprogram's inception, far more Louisiana university researchers who fit this funding profile have submitted quality research proposals to RCS than the Board has been able to support and encourage with funding.

Disciplines eligible to compete for research funds in the RCS are restricted to the sciences and engineering (as defined by the National Science Foundation), agriculture, life sciences, and health and medical sciences. Most disciplines are eligible on a staggered, two-years-on, two-years-off cycle; however, three disciplines accorded the highest priority for economic development in Louisiana (biological, computer & information, and earth & environmental sciences) are targeted for funding annually. The eligibility cycle for RCS, including rotating disciplines eligible in FY 2019-20, is specified in Schedule I.

**SCHEDULE I: ELIGIBILITY OF DISCIPLINES* IN THE RESEARCH COMPETITIVENESS SUBPROGRAM (RCS)**

**GROUP I - ELIGIBLE EVERY YEAR**

Biological Sciences
Computer & Information Sciences
Earth & Environmental Sciences

**GROUP II - ELIGIBLE IN FYs 2018-19, 2019-20**

Agricultural Sciences
Engineering A (Chemical, Civil, Electrical, etc.)
Mathematics
Physics & Astronomy
Social Sciences

**GROUP III - ELIGIBLE IN FYs 2020-21, 2021-22**

Chemistry
Engineering B (Industrial, Materials, Mechanical, etc.)
Health & Medical Sciences

*The listing of those sub-disciplines included in these larger groupings is in Attachment III.

Given the success of RCS in preparing faculty for competitiveness in the federal R&D marketplace, the Board has made every effort to fund this Subprogram at the highest possible level. The amount devoted to RCS for first-year awards was set at $1,500,000 in FY 1999-2000, a level maintained for several years. Beginning in FY 2006-07 and continuing through FY 2009-10, the amount budgeted for first-year awards was reduced to $1,350,000 to facilitate funding of the Post-Katrina Support Fund Initiative. The funding level was restored in FY 2010-11 to $1,500,000. Due to persistent declines in revenue in combination with lower projected income in the BoRSF, in FY 2011-12 and FY 2012-13 the funding level was again reduced to $1,350,000. Additional significant declines in revenue projections required that first-year funding for RCS be further reduced in FY 2013-14, to a level of $865,000. In FY 2014-15, lower levels of prior commitments and Federal matching obligations allowed monies for first-year funding in RCS to be restored to $1,350,000; this budget level was maintained between FY 2015-16 and FY 2017-18. For FY 2018-19, due to continued declines in Support Fund revenues, the RCS first-year budget was further reduced to $1,250,000. In FY 2019-20, based on decreased funds needed for prior commitments in Graduate Fellows programs, a total first-year budget of $1,300,000 is recommended, providing opportunities for both single-year and multi-year (up to three years) projects.

### 5.4.2 Industrial Ties Research Subprogram (ITRS)

The principal goal of the Industrial Ties Research Subprogram (ITRS) is to fund research proposals which have significant near-term potential for contributing to the development and diversification of the Louisiana economy. Accordingly, all proposals and funded projects must demonstrate strong interest from and continued involvement of the private sector and/or non-State public agencies. Because ITRS also functions as a stimulus initiative, funded projects should either (a) bring about significant near-term Federal or private-sector funding of research with commercial applications or (b) enhance or establish a Louisiana business or industry

that will attract significant external revenues to the State. The Proof-of-Concept/Prototyping (PoC/P) Initiative, consolidated with ITRS in FY 2016-17, provides support for faculty developing products and ideas for the marketplace, enabling faculty who have completed the research phases of their investigations to pursue proof-of-concept work and prototype development, to prepare products for testing and the market.

To ensure that investments align as much as possible with State and higher education priorities, projects are encouraged chiefly in the five priority areas identified by the Louisiana Department of Economic Development and higher education research leaders and adopted by the Board of Regents in 2015: Advanced Manufacturing and Materials, Clean Technology and Energy, Coastal and Water Management, Digital Media and Enterprise Software, and Life Sciences and Bioengineering. So no opportunities with the potential to promote economic development and diversification are overlooked, the Board allows funding in other research areas, provided a persuasive, well-documented case is made in the proposal for a project's major contributions to the State and economic development. Further, the Board continues to encourage university/industry initiatives through cooperation with the Governor's Economic Development Cabinet and with related entities such as the Louisiana Department of Economic Development and the Louisiana Innovation Council. Through its Advisory Committee for the Advancement of Research in Louisiana (ACARL), the Board regularly reassesses research priority areas and needs related to economic development.

Though it has resulted in a number of projects with significant economic benefits (see Attachment II), ITRS has also presented some challenges. Louisiana's relatively undiversified industrial economy and dearth of large industrial-based corporations (only two Fortune 500 companies – CenturyLink and Entergy – and relatively few industries with substantial in-state capacity for R&D spending) have made it difficult for university faculty to foster meaningful partnerships with State-based industries. The Board significantly reduced the funding level for ITRS to reflect this reality; the amount available for first-year funding of this component was set at $650,000 for several years. To make funds available for the Post-Katrina Support Fund Initiative, the amount was further reduced by 10%, to a first-year level of $585,000, for FY 2006-07 through FY 2009-10. The funding level was restored to $650,000 in FY 2010-11. In FY 2011-12, the funding level was again reduced by 10%, to $585,000, to accommodate lower projected income in the BoRSF; this funding level was retained in FY 2012-13. Continued declines in revenue projections required that first-year funding for ITRS be further reduced in FY 2013-14, to a level of $375,000. In FY 2014-15, due to decreases in prior commitments and Federal matching obligations, monies for first-year funding in ITRS were restored to $585,000; this budget level was maintained in FY 2015-16 for the traditional ITRS component.

The Opportunities for Partnerships in Technology with Industry (OPT-In) program, established in FY 2011-12 by Louisiana EPSCoR as part of its NSF Track 1 award, provided industrial partnership awards similar in focus to ITRS, but more limited in scope and duration, as well as funds for proof-of-concept and prototype development. During its years of operation through EPSCoR, OPT-In funded 41 projects with an annual allocation of $350,000 from the Support Fund match to the Track 1 award. Now the Proof-of-Concept/Prototyping (PoC/P) Initiative and directly funded through the BoRSF, this ITRS component exclusively targets products and ideas which are near to commercialization or transfer to the marketplace.

In FY 2016-17, the activities and objectives of ITRS and PoC/P were consolidated to ensure both innovation and partnership continue to be supported; in FY 2017-18, the consolidated budget was set at $800,000 to reflect an anticipated increase in demand for research funding directly related to economic development. This consolidated approach was retained in FY 2018-19, though budget constraints and flat demand required a reduction of first-year funding to $750,000; a similar first-year budget level of $750,000 is

recommended for FY 2019-20, reflecting both continuing low revenues in the Support Fund and a relative lack of demand in these initiatives compared with other BoRSF grant programs.

### 5.4.3 Awards to Louisiana Artists and Scholars (ATLAS) Subprogram

The ATLAS Subprogram provides support for major scholarly and artistic productions with potential to have a broad impact on a regional and/or national level. ATLAS awards facilitate completion of manuscripts for publication and/or mounting of creative productions including recordings, performances, and gallery shows. The Subprogram allows the State to profit from its rich cultural traditions and makes Louisiana faculty members' expertise and creativity in these disciplines well known both nationally and internationally.

ATLAS, modeled after the internationally famous John Simon Guggenheim Memorial Foundation Fellowships, was inaugurated at a funding level of $500,000 in FY 2004-05. The funding level for this Subprogram remained at $500,000 for FY 2005-06, but was reduced to $450,000 in FY 2006-07 and subsequent years in order to make funds available for the Post-Katrina Support Fund Initiative. The funding level was restored to $500,000 in FY 2010-11. In FY 2011-12, given lower projected income in the BoRSF, the funding level was again reduced by 10%, to $450,000, a level retained in FY 2012-13. ATLAS funds were further reduced in FY 2013-14, to a level of $285,000, to accommodate additional substantial declines in projected Support Fund income. In FY 2014-15, due to decreases in prior commitments and Federal matching obligations, monies for first-year funding in ATLAS were restored to $450,000 and maintained in FY 2015-16. Given ongoing Support Fund revenue declines, in FY 2016-17, the budget was reduced to $350,000 and then to $330,000 in FY 2017-18. Continuing fiscal stresses lead to a further reduction, to $300,000, in FY 2018-19. In FY 2019-20, based on extremely high demand and project quality paired with decreased funds needed for prior commitments in Graduate Fellows programs, a total first-year budget of $350,000 is recommended

### 5.4.4 Summary of FY 2019-20 Research and Development Allocations

| | | |
|---|---|---|
| Prior Commitments (RCS and ITRS only): | | $3,236,741 |
| New Awards: | RCS | $1,300,000 |
| | ITRS | $ 750,000 |
| | ATLAS | $ 350,000 |
| **R&D PROGRAM TOTAL** | | **$5,636,741** |

### 5.5 ENHANCEMENT OF THE QUALITY OF DEPARTMENTS OR UNITS - $9,039,875

**NOTE:** Matching commitments for all Federal Matching Grants Subprogram proposals are accommodated through the Enhancement Program. The Board has elected to operate in this manner due to (a) the uncertainty of a proposal's potential success in the national competition for Federal funds; (b) the difficulty and uncertainty surrounding moving money from one BoRSF program budget to another, once budgeted in the prior year's appropriation process; and (c) the fact that all projects of this nature contain elements, in varying degrees, that enhance academic departments and units at colleges and universities.

After weighing interrelations among the four components of the Support Fund, the Board has concluded that enhancement of the instructional and research infrastructure of academic, research, and agricultural departments and units, the entities leading higher education's core mission, remains a fundamental need, essential to accomplishing goals of the other three BoRSF components and the BoRSF as a whole. For this reason, the Board shall dedicate $9,039,875 to the Enhancement Program in FY 2019-20. Thus, approximately 46% of the total program funds available in FY 2019-20 have been dedicated to this component. This reflects the Board's strong commitment to Enhancement, which provides competitive opportunities to all Support Fund-eligible colleges and universities in the State.

Approximately $3,294,150 of the $9,039,875 budgeted for Enhancement awards in FY 2019-20 will be required to honor prior commitments for multi-year projects and new and prior-year matching for Federal projects. Of this amount, $1,369,150 has been budgeted for multi-year projects, both ongoing and awarded in FY 2018-19, funded under the Departmental Enhancement Subprogram. In addition, a total of $1,925,000 is required to meet the State's matching commitments in current and pending federal programs (see Section 5.5.1).

After deducting these projected commitments for multi-year Enhancement projects and the prior and projected obligations for Federal matching opportunities, $5,745,725 will be available for new Enhancement projects submitted for funding consideration in FY 2019-20. Maintenance of the highest possible budgetary allocations to the Enhancement subprograms is particularly important because: (a) Enhancement subprograms build infrastructure at higher education institutions, which is critical to the success of the other three Support Fund programs; and (b) all higher education institutions are eligible to compete and the majority of campuses most successfully compete in Enhancement subprograms. Enhancement is the only component of the Support Fund through which every eligible campus has received funding. Reflecting need, demand, and breadth of access to funding, then, 59% of the total funds available for new awards will be dedicated to Enhancement subprograms. (See Table II, "An Overview of Budgetary Allocations by Program Component, FY 2019-20" in Section 6 of this Plan and Budget.)

### 5.5.1 Federal Matching

Federal matching leverages Support Fund monies to compete for funds from federal research programs, particularly through the Experimental Program to Stimulate Competitive Research (EPSCoR), an initiative to address disparities in provision of federal research funding across states. The Board has also matched Enhancement monies to obtain federal grants that implement and sustain statewide education reform efforts. Between 1987 and 2018, federal programs awarded more than $385 million to joint federal/State initiatives, for which the BoRSF provided match of approximately $93 million. Budget levels for federal matching are determined by known demand – upcoming regular federal competitions and program policies and regulations defining what must and may be matched by the State.

A total of $1,925,000 has been pledged as the State's matching commitment under jointly funded Board of Regents Support Fund/Federal Matching Grants in FY 2019-20, including: (a) $800,000 for the fifth year of the NSF Research Infrastructure Improvement (RII) Track 1 project; (b) $250,000 for the third year of the NASA EPSCoR Research 11 project; (c) $250,000 for the second year of the NASA EPSCoR Research 12 project; (d) $250,000 for the first year of the NASA EPSCoR Research 13 project; (e) $250,000 for the fifth-year continuation of NASA LaSPACE; and (f) $125,000 for the first year of the NASA EPSCoR Research Infrastructure Development project.

### 5.5.2 Endowed Professorships

The Endowed Professorships Subprogram was incorporated into the Enhancement component in FY 1990-91. Funds were first allocated to match professorships in FY 1991-92. The funding of an endowed professorship requires the college or university to raise funds from non-State sources, to be matched by the BoRSF at a defined ratio, thus establishing an endowed professorship valued at a minimum of $100,000.

Following the Subprogram's initial implementation the Board became concerned that too many eligible campuses were not reaping its benefits. One manifestation of this concern appeared in the FY 1995-96 Plan and Budget, when the Board first allowed campuses to use Federal funds as the matching source for one endowed professorship per year. The Board also encouraged campuses to maximize efforts to attain matching funds for endowments from private philanthropic sources. Almost all Support Fund-eligible campuses now hold at least one matched Endowed Professorship.

This year, as in previous funding cycles, the Board searched to identify money in the Support Fund to support both new and previously submitted but unmatched applications. Measured against pressing financial needs throughout higher education, every component of the Support Fund is severely underfunded. Consequently, each dollar used to fund endowments means that fewer dollars are available for critical, immediate needs elsewhere. In FY 2010-11 and in several previous years, the Board funded the Endowed Professorships Subprogram at a level of $2,680,000, sufficient to endow two $40,000 professorships at each four-year and special purpose campus and one $40,000 professorship at each two-year campus. During several years campuses were able to receive more than two professorships when slots were unclaimed. In addition, in FY 1995-96 and numerous subsequent years, the Legislature approved special appropriations to fund unmatched professorships.

Given recent changes in the markets which have led to limited returns on these smaller endowments, along with critical needs throughout the higher education community and steady declines in Support Fund income, the Board reduced funding for the Endowed Professorships Subprogram during FY 2011-12 to the level of $1,560,000, an amount equivalent to one slot per eligible campus, though available monies were sufficient to continue matching two slots per four-year campus based on requests for match. The level of one $40,000 match per four-year and two-year campus was retained in FY 2012-13, though the funding amount was increased to $1,600,000 to accommodate the addition of Northshore Technical Community College as a Support Fund-eligible institution and the Board continued to maintain its matching of guaranteed slots. Also in FY 2012-13, the Treasury realized an additional $5,000,000 in revenue, which the Board dedicated entirely to matching the Endowed Professorships backlog, to fund an additional 125 $40,000 slots. The funding level of $1,600,000 was maintained in FY 2013-14, while the Board continued to identify mechanisms to fund the remaining backlog. To help address the challenge, the Subprogram was funded at a level of $2,800,000 in FY 2014-15. With backlogs cleared at all but one campus, the previous budget level of $1,600,000 was restored in FY 2015-16. To accommodate additional campuses eligible for Professorships matching, the budget level was increased to $2,000,000 in FY 2016-17.

As part of the restructuring of the Support Fund in 2016, Endowed Professorships' history and performance were assessed, as well as the Subprogram's continued viability as the Support Fund's expendable earnings continue to decline even while demand for matching dollars increases. The Board of Regents determined that the ratio of non-State contributions to public match should increase to 4:1 ($80,000 non-State contribution matched with $20,000 BoRSF) to enable matching of more slots, continuation of the non-

competitive distribution of available monies, and retention of a funding guarantee of two slots per eligible campus per year. The Board shall annually assess the impact of this change and make adjustments as necessary.

In addition to the requirement of $1,680,000 in matching funds to match at a rate of two $20,000 slots per eligible campus, the FY 2017-18 Endowed Professorships budget of $3,000,000 provided funds to continue matching an existing backlog of $40,000 slots, dating to 2012. All remaining backlogged slots were matched in FY 2017-18, though campuses continue to submit more requests than the Support Fund can match with available resources.

Also as a result of restructuring and severe revenue declines, in 2016 the Board of Regents approved suspension of the Endowed First-Generation Undergraduate Scholarships Subprogram, which had been operational since 2007 (see Section 5.5.4). Based on widespread need across higher education for support for this student population, as well as donor interest in assisting the State to serve these students, in 2019-20 it is recommended to restore this matching opportunity as a component of Endowed Professorships. If a campus wishes to solicit donations for first-generation scholarships, it may do so as part of its guarantee of two $20,000 matches in Professorships.

A total of $2,000,000 is budgeted in FY 2019-20 for both new and previously submitted requests. Any unclaimed funds from new guaranteed slots shall be distributed equally among campuses with slots awaiting match. No funding will be specifically set aside for First-Generation Scholarships, but matching will be determined by campus assessments of their priorities and preferences, as reflected in the rank-order list of all Endowed Professorship and First-Generation Scholarship match requests submitted during the funding cycle.

### 5.5.3 BoRSF Endowed Two-Year Student Workforce Scholarships

The Board's commitment to improvement of educational quality at all academic levels and in all disciplines drove the establishment, in FY 2002-03, of the Enhancement Subprogram for Two-Year Institutions. The Subprogram, open to all community and community technical colleges as well as the Louisiana Community and Technical College System, provided enhancements for academic and student access and success activities supporting the joint missions of two-year campuses to provide general academic preparation for post-secondary programs and workforce training to meet local and regional needs. During the Subprogram's operation, a competitive peer-review process was used to assess and prioritize proposals for funding.

In December 2014 the Board of Regents approved a new direction for Support Fund monies targeted to community and community technical campuses, to better align funding with a focus on Louisiana's critical workforce shortages in four- and five-star job areas. The Board established the competitive Endowed Two-Year Student Workforce Scholarships Subprogram, enabling two-year campuses to provide academic and training support for students enrolled in degree and certificate programs related to these workforce needs. Since the program's inception, 41 scholarship funds have been matched at 12 eligible campuses.

Funding for the first year of the BoRSF Endowed Two-Year Student Workforce Scholarships Subprogram was $1,100,000. In FY 2016-17, reflecting reductions across the Support Fund and limited demand in the Subprogram's first year, the budget level was reduced to $800,000. Given persistent declines in Support Fund revenues, along with increased demand for backlog matching in Endowed Professorships, the budget level was further reduced in FY 2017-18, to $650,000; demand below this level in the previous year led to a budget of $600,000 for FY 2018-19, and for the first time requests for match exceeded funds available. Because

demand remains well below that in other BoRSF endowment matching opportunities, this funding level is retained in FY 2019-20, but may be revisited in future fiscal years as the Subprogram becomes established, demand for matching funds is clarified, and Support Fund revenue increases.

### 5.5.4 Endowed Undergraduate Scholarships for First-Generation College Students

The State faces a well-documented crisis in terms of educating its future workforce. According to statistics provided by the National Center for Higher Education Management Systems (NCHEMS), for every 100 public school students entering the ninth grade this fall only about 62 will graduate from high school four years hence. Forty will enter college immediately after graduation, and a meager fifteen of these will earn a degree or certificate within 150% of the standard time to completion. Research indicates that this massive "pipeline leakage" is due primarily to socioeconomic factors. Many worthy Louisiana students are now effectively denied the opportunity for a postsecondary education due to many factors: need-based aid is severely limited, assistance provided under the merit-based Taylor Opportunity Program for Students (TOPS) is not sufficient to make college affordable for them, and students approach but fall short of satisfying all of the requirements necessary to qualify for TOPS.

In FY 2007-08, the Board implemented a merit- and need-based subprogram to help address this funding gap. To be eligible, students must be Louisiana residents who are "first-generation" college students (i.e., neither parent has earned a baccalaureate degree), have been awarded the Federal Pell grant or otherwise document unmet financial need, and have been admitted to the institution awarding the scholarship. Each four-year institution was guaranteed one $40,000 endowed scholarship match annually to a private/institutional contribution of $60,000. Each two-year institution was guaranteed one $20,000 endowed scholarship match annually to a private/institutional contribution of $30,000. Proceeds established/enhanced a permanent endowed scholarship fund. Interest earnings from the fund(s) are awarded at the discretion of the institution to eligible students and may be divided among multiple recipients, provided that each student receives at least $1,000 per year in scholarship funds through the endowment. In addition to scholarship proceeds, institutions must provide student recipients with structured support through active and engaged advising, as well as meaningful campus employment of at least ten hours per week over and above the scholarship.

As part of the restructuring of the Support Fund, the First-Generation Scholarships Subprogram was carefully assessed. It was determined that the Subprogram's ability to address defined goals is limited, due to the targeting of funds to individual students and the minimal amounts of earnings available for award to students. The Board suspended the Subprogram while retaining opportunities for campuses to target Support Funds to high-need students through the Departmental Enhancement Subprogram, and received a total of $1,320,000 in match requests by the June 30, 2017 Subprogram suspension date. Accordingly, in FY 2017-18 a total of $380,000 was budgeted to help clear backlogged applications; an additional $320,000 was budgeted in FY 2018-19. For FY 2019-20, $640,000 is recommended to clear the remaining slots awaiting match. Because different campuses have different missions and priorities, and first-generation student populations are extremely important to Louisiana's educational attainment and future, an opportunity to pursue matches for first-generation scholarships is reintroduced as a component of the Endowed Professorships program in FY 2019-20 (see Section 5.5.2).

### 5.5.5 Departmental Enhancement

Since 1987, competitive grants programs in Enhancement, including Traditional, Undergraduate, and Two-Year Campus programs, have been instrumental in maintaining and developing the capacities and quality of academic, research, and agricultural departments and units, providing funding for acquisition of instructional and research equipment as well as a broad array of curriculum revision projects, academic success initiatives, service learning projects, and colloquia presented by outstanding out-of-state scholars.

Throughout the history of Enhancement grant competitions, proposals have been developed and submitted by individual investigators and groups of faculty, and generally have reflected the ideas of the proposal developers rather than a holistic assessment of the needs and direction(s) of a department, unit, center, or other larger academic group on the campus. While this approach has yielded good results and hundreds of highly successful projects, it does not enable and encourage strategic thinking on the part of the larger department or unit as to what investments will propel it forward in directions of value to the students, campus, State, private industry, and/or other stakeholders.

In addition, a founding principle of Enhancement has been support for all disciplines at all levels, which has yielded a very broad distribution of funds without consideration of the roles, scopes, missions, and priorities of submitting campuses. As Support Fund revenues continue to shrink, the broad but shallow approach of providing support across all areas limits the impact that funds can have in the areas of greatest need and emphasis for the campuses, systems, and State.

These considerations led the Board to modify Traditional Enhancement, to create a Departmental Enhancement Subprogram, with funding to be aligned with campus roles, scopes, missions, and priorities. In this new approach, a formally constituted academic, research, or agricultural organizational unit must develop proposals based on its strategic needs, potential for future enhancement or growth, alignment of activities with broader goals and priorities of the campus, and projected impact. Three types of proposals, defined by the proposed impact of the investment – primarily educational, primarily workforce, and primarily research – will be considered, with the expectation that many projects will seek to combine all three types in a single project to launch the department forward in a holistic way. Opportunities will be available for both large-scale, multi-year projects (3-5 years) and one-year awards to target one or more specific needs.

After deducting all previous and projected commitments for other components of the Enhancement Program, $2,505,725 remains for the first year of projects submitted in the FY 2019-20 competition of the Departmental Enhancement Subprogram, including the Multidisciplinary component (see Section 4.3). This amount may increase from the Plan and Budget as submitted if allocated money is not fully expended in one of the other Enhancement Program components.

Though applicants will be required to demonstrate the alignment of projects with campus role, scope, mission, and priorities, the wide variety of campuses and priorities across the State and demand in previous competitions indicate that opportunities must still be provided across all academic disciplines on a rotating basis. Schedule II indicates the discipline eligibility cycle for Departmental Enhancement during its initial years; this cycle may be revisited as higher education priorities, demand, and need are clarified and refined.

## SCHEDULE II: ELIGIBILITY OF DISCIPLINES* IN THE DEPARTMENTAL ENHANCEMENT SUBPROGRAM

**CYCLE I – ELIGIBLE IN FYs 2017-18, 2019-20**

Engineering B (Industrial, Materials Mechanical)
Biological Sciences
Health and Medical Sciences
Physics
Social Sciences
Humanities
Agricultural Sciences
Astronomy
Targeted Workforce (Programs leading directly to Louisiana jobs)

**CYCLE II – ELIGIBLE IN FYs 2018-19, 2020-21**

Engineering A (Chemical, Civil, Electrical)
Chemistry
Computer and Information Sciences
Business
Education
Earth and Environmental Sciences
Arts
Mathematics
Targeted Workforce (Programs leading directly to Louisiana jobs)

* Attachment III provides a listing of sub-disciplines included in these larger groupings.

### 5.5.6 Summary of FY 2019-20 Enhancement Allocations

| | | |
|---|---|---|
| Prior Commitments: | Departmental Enhancement | $1,369,150 |
| | Federal Matching Grants | $1,300,000 |
| New Awards: | Federal Matching Grants | $ 625,000 |
| | Endowed Professorships | $2,000,000 |
| | Endowed Two-Year Workforce Scholarships | $ 600,000 |
| | Endowed First-Generation Scholarships | $ 640,000 |
| | Departmental Enhancement | $2,505,725 |
| **ENHANCEMENT PROGRAM TOTAL** | | **$9,039,875** |

### 5.6 ADMINISTRATIVE EXPENSES - $644,384

Act 675 of 1989 established the following restrictions with respect to the amount of Support Fund money that may be used to administer BoRSF programs:

> No more than 3% of the annual total amount appropriated to each board or eight hundred thousand dollars, whichever is smaller, shall be appropriated for such purposes to each board, subject to a thorough review with the goal of limiting such costs to those necessary and proper…

This legislation was modified by Act 698 of 2001, which specifies:

> Costs attributable to the Board of Regents for use of external peer-review consultants for purposes of review, evaluation, and assessment of program proposals are recognized as costs appropriately borne by the respective Support Fund programs and shall be paid from the category of expenditure related to the program for which the review, evaluation, and assessment applies.

Act 703 of 2006 further allows the Board of Regents Support Fund administrative budget to be determined by formula:

> No more than three percent of the average annual amount of actual expenditures…for the most recent three previous fiscal years for which actual expenditures are available shall be appropriated for such [administrative] purposes.

This formula yields an actual amount of $644,384 to be expended in this category during FY 2019-20.

Each program component whose expenditures are itemized in sections 5.2 through 5.5 of this Plan and Budget will incur expenditures for professional services of out-of-state consultants, estimated as follows:

| | |
|---|---|
| Endowed Chairs for Eminent Scholars | $ 20,000 |
| Research and Development | $135,000 |
| Enhancement | $ 85,000 |
| Recruitment of Graduate Students | $ 5,000 |

The amounts estimated above will be deducted from the total amounts available for expenditure in respective program components. Estimated consultant costs for the Endowed Chairs for Eminent Scholars Program and Endowed Superior Graduate Student Scholarships (Recruitment of Graduate Students component) are added to the regular allocation to preserve the matching units necessary for the endowments.

## 6. OVERVIEW OF FY 2019-20 BUDGETARY ALLOCATIONS BY PROGRAM COMPONENT

Table II provides an overview of FY 2019-20 Board of Regents Support Fund budgetary allocations for new projects and previous commitments.

**TABLE II**

| **AN OVERVIEW OF BOARD OF REGENTS SUPPORT FUND BUDGETARY ALLOCATIONS BY PROGRAM COMPONENT, FY 2019-20** | | | |
|---|---|---|---|
| | **TOTAL SUPPORT FUND ALLOCATION** | **ALLOCATION FOR NEW PROJECTS** | **ALLOCATION FOR PRIOR COMMITMENTS** |
| ENDOWED CHAIRS | $ 1,220,000 | $ 1,220,000 | $ 0 |
| GRADUATE FELLOWS | $ 3,459,000 | $ 685,000 | $ 2,774,000 |
| RESEARCH & DEVELOPMENT | $ 5,636,741 | $ 2,400,000 | $ 3,236,741 |
| ENHANCEMENT* | $ 9,039,875 | $ 6,370,725 | $ 2,669,150 |
| SUBTOTALS | $19,355,616 | $10,675,725 | $ 8,679,891 |
| ADMIN. COSTS | $ 644,384 | | |
| **GRAND TOTAL** | **$20,000,000** | | |

*Enhancement figures include funds used for Federal Matching Grants opportunities.

# ATTACHMENT I

# FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **NSF/LaSER: The Louisiana EPSCoR Program** | FY1989-90 – FY1992-93 | STI-8820219 | NSF | 3 years | $1,945,312 | $3,374,355 |
| **Participating Institutions:** A significant number statewide; grant funds awarded on a competitive basis.<br>**Description/Purpose:** 1) To increase the competitiveness of Louisiana scientists and engineers in the Federal R & D marketplace, 2) to effect permanent improvements in the quality of science and engineering in Louisiana, 3) to develop human resources in Louisiana in the sciences and in engineering, and 4) to ensure that improvements achieved continue with State and/or private support beyond the end of the grant period. | | | | | | |
| **NSF LaSER Advanced Development Proposal (ADP)** | FY1991-92 – FY1994-95 | EHR-9108765 | NSF | 3 years | $3,700,000 | $4,800,000 |
| **Participating Institutions:** A significant number statewide, organized into research clusters; grant funds awarded on a competitive basis.<br>**Description/Purpose:** 1) To increase the competitiveness of Louisiana scientists and engineers in the Federal R & D marketplace, 2) to effect permanent improvements in the quality of science and engineering in Louisiana, 3) to develop human resources in Louisiana in the sciences and in engineering, and 4) to ensure that improvements achieved continue with State and/or private support beyond the end of the grant period. | | | | | | |
| **Louisiana Systemic Initiatives Program (LaSIP) in Math and Science Education** | FY1991-92 – FY1995-96 | TPE-9150043 | NSF | 5 years | $10,000,000 | $10,000,000 ($5 million each from Regents and BESE) |
| **Participating Institutions:** A significant number statewide; grant funds awarded on a competitive basis.<br>**Description/Purpose:** To reform statewide – from kindergarten through college – methods of instruction and learning in mathematics, science, and engineering education. | | | | | | |
| **NASA Training Grant (LaSPACE)** | FY1991-92 – FY1995-96 | NGT-40039 | NASA | 4 years | $600,000 | $500,000 (NASA and BOR portions awarded directly to LSU) |
| **Participating Institutions:** A consortium of sixteen campuses; grant funds awarded on a competitive basis.<br>**Description/Purpose:** To develop the infrastructure for aerospace research to competitive levels, while improving the quality of aerospace research and education. | | | | | | |
| **Louisiana Collaborative for Excellence in the Preparation of Teachers (LaCEPT) Program** | FY1992-93 – FY1996-97 | DUE-9255761 | NSF | 5 years | $4,000,000 | $2,500,000 |
| **Participating Institutions:** Centenary, Grambling, LSU A&M, LSU-S, LA Tech, Loyola, McNeese, Nicholls, ULM, NSU, SLU, SUBR, SUNO, ULL, UNO, Xavier<br>**Description/Purpose:** To improve the quality of undergraduate teacher preparation programs in mathematics and science and to increase substantially the number of mathematics and science educators. | | | | | | |
| **U.S. Department of Energy/EPSCoR Program** | FY1993-94 – FY1994-95 | DE-FC02-91ER75669 | DOE | 2 years | $1,039,590 | $1,039,590 |
| **Participating Institutions:** Grambling LA Tech, LSU A&M, Loyola, McNeese, SUBR, Tulane, ULL, ULM, UNO, Xavier<br>**Description/Purpose:** To develop the infrastructure for energy and energy-related research in Louisiana, while improving the quality of energy research and education in the State and encouraging human resource development in this area. This proposal was the result of a one-year $99,454 planning grant awarded to the Board by DOE. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **Defense Experimental Program to Stimulate Competitive Research (DEPSCoR) Planning Program** | FY1993-94 | DAAH04-93-G-0466 | DOD | 1 year | $50,000 | $25,000 |
| **Participating Institutions:** A significant number statewide<br>**Description/Purpose:** To prepare a statewide plan for increasing the State's capacity to perform defense-related research and technology transfer. | | | | | | |
| **1993 DEPSCoR Implementation Program** | FY1994-95 – FY1996-97 | Grant Numbers vary | DOD | 3 years | $2,400,000 | $500,000 |
| **Participating Institutions:** Dillard, Grambling, LSU A&M, LSUHSC-NO, SUBR, SUNO, Tulane, ULM, UNO, Xavier<br>**Description/Purpose:** To conduct research and educate scientists and engineers in Louisiana in areas important to national defense. | | | | | | |
| **NASA EPSCoR Program** | FY1994-95 – FY1996-97 | NCCW-0059 | NASA | 3 years | $1,500,000 | $1,500,000 |
| **Participating Institutions:** Dillard, LA Tech, LSU A&M, LSU Ag, LUMCON, McNeese, SUBR, Tulane, UNO, Xavier<br>**Description/Purpose:** 1) To improve the infrastructure for aerospace-related research and education in Louisiana, and increase the State's capability to perform federally-funded aerospace research; and 2) to support three multi-institutional research cluster projects. | | | | | | |
| **NSF Teaching Scholars Program** | FY1994-95 – FY1998-99 | DUE-9255761 (Supplement) | NSF | 5 years | $500,000 | $250,000 |
| **Participating Institutions:** Centenary, LA Tech, Loyola, Nicholls, SLU, SUBR, SUNO, ULL, ULM, UNO, Xavier<br>**Description/Purpose:** To increase the number of minority teachers by providing a financial supplement to the Teaching Scholars program for Historically Black Colleges and Universities (HBCUs). | | | | | | |
| **NSF/EPSCoR LaSER Systemic Improvement Program (SI)** | FY1995-96 – FY1997-98 | OSR-9550481 | NSF | 3 years | $4,400,000 | $3,000,000 |
| **Participating Institutions:** Grambling LA Tech, LSUHSC-S, LSU A&M, Loyola, SUBR, SUNO, Tulane, ULL, UNO, Xavier<br>**Description/Purpose:** 1) To stimulate systemic and sustainable improvements in the science and technology enterprise by creating centers of research excellence in the State, improving the infrastructure for scientific and engineering research and education in Louisiana, and enhancing human resources development in the sciences and engineering, thereby increasing the State's capability to perform federally-funded research of economic importance to Louisiana; and 2) to create real and meaningful research linkages between the State's Historically Black and Majority White Campuses and Universities through Joint Faculty Appointments. This proposal continued the efforts begun under the EPSCoR ADP award described above. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **Building Research Partnerships with Audio/Video Conferencing Facilities** | FY1996-97 – FY1998-99 | EPS-9632665 | NSF | 2 years | $494,198 | $0 |
| **Participating Institutions:** LA Tech, LSU A&M, LSU Ag, LSUHSC-NO, NSU, SLU, SUBR, Tulane, ULL, ULM, UNO<br>**Description/Purpose:** To promote research partnerships by establishing an inter-institutional audio/video (A/V) research communications network across Louisiana. The A/V network will enhance collaborative exchanges within and among the State's EPSCoR and EPSCoR associated schools and to promote new research partnerships by eliminating geographical (distance/separation) barriers. | | | | | | |
| **LaSERnet II Backbone for Institutions of Higher Education in Louisiana** | FY1997-98 – FY1999-00 | EPS-9720147 | NSF | 2 years | $552,893 | $0 |
| **Participating Institutions:** LA Tech, LSU A&M, LSUHSC-S, LSUHSC-NO, SLU, SUBR, Tulane, ULL, ULM, UNO<br>**Description/Purpose:** To provide researchers in the State with a high-speed intra-state backbone for sharing resources and access to broad-band (Internet II) service and direct vBNS (very Broadband Network Service) connectivity. | | | | | | |
| **U.S. Department of Energy/EPSCoR Program Renewal** | FY1995-96 – FY1998-99 | DE-FC02-91ER75669 | DOE | 4 years | $3,473,402 | $3,200,000 |
| **Participating Institutions:** Grambling LA Tech, LSU A&M, Loyola, McNeese, SUBR, Tulane, ULL, ULM, UNO, Xavier<br>**Description/Purpose:** 1) To increase research competitiveness and capabilities of Louisiana scientists and engineers in areas of importance to the State and the U.S. Department of Energy; 2) to educate and recruit individuals, especially minorities and women, to work in these areas in Louisiana; 3) to provide new technologies that lead to economic development in the State; and 4) to support three multi-institutional research cluster projects. | | | | | | |
| **Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP) Program** | FY1995-96 – FY1999-00 | HRD-9550765 | NSF | 5 years | $5,944,914 | $2,249,280 |
| **Participating Institutions:** Dillard, Grambling, LUMCON, LSU A&M, McNeese, Nunez, SUBR, SUNO, SUSBO, Tulane, ULL, UNO<br>**Description/Purpose:** To increase the number of underrepresented minorities receiving B.S. degrees in science, engineering, and mathematics in Louisiana from the baseline rate of 610 annually to an annual rate of 1,110. | | | | | | |
| **NASA LaSPACE Renewal Program** | FY1996-97 – FY1999-00 | NGT-40039 | NASA | 4 years | $600,000 | $400,000 (NASA and BOR portions awarded directly to LSU) |
| **Participating Institutions:** A consortium of sixteen campuses; grant funds awarded on a competitive basis<br>**Description/Purpose:** To continue the development of the infrastructure for aerospace research to competitive levels, while improving the quality of aerospace research and education. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **Louisiana Systemic Initiatives Program (LaSIP) Renewal in Math and Science Education** | FY1996-97 – FY2000-01 | ESR-9634088 | NSF | 5 years | $7,000,000 | $10,000,000 ($5 million each from Regents and BESE) |
| **Participating Institutions:** A significant number statewide; grant funds awarded on a competitive basis.<br>**Description/Purpose:** To continue the education reform efforts begun under the original LaSIP program. | | | | | | |
| **1995 DEPSCoR Implementation Program** | FY1996-97 – FY1998-99 | Grant Numbers vary | DOD | 3 years | $2,350,303 | $1,500,000 |
| **Participating Institutions:** LSU A&M, LSUHSC-NO, SLU, Tulane<br>**Description/Purpose:** To continue previous efforts to conduct research and educate scientists and engineers in Louisiana in areas important to national defense, thus improving the State's research infrastructure. | | | | | | |
| **NASA EPSCoR Program Renewal** (2 years) | FY1997-98 – FY1998-99 | NCC5-167 | NASA | 2 years | $1,000,000 | $1,000,000 |
| **Participating Institutions:** Dillard, LA Tech, LSU A&M, LSU Ag, LUMCON, McNeese, SUBR, Tulane, UNO, Xavier<br>**Description/Purpose:** A renewal program to 1) continue to improve the infrastructure for aerospace-related research and education in Louisiana, and increase the State's capability to perform federally-funded aerospace research; and 2) to continue the support of three multi-institutional research cluster projects. | | | | | | |
| **Delta Rural Systemic Initiative in Science, Mathematics, and Technology** | FY1997-98 – FY2001-02 | ESR-9700041 | NSF | 5 years | $10,000,000 ($2.46 million is Louisiana's share) | $2,000,000 (divided equally between BOR and BESE) |
| **Participating Institutions:** A significant number; all campuses are eligible to compete.<br>**Description/Purpose:** To complement and supplement current statewide math and science education reform initiatives such as LaSIP and LaCEPT. A tri-state effort involving Louisiana, Mississippi, and Arkansas, it concentrates on professional development programs for teachers, pre-service enhancement programs for educators, leadership institutes for administrators, and acquisition of supportive hardware and software in an effort to impact 64 counties and/or parishes (22 school districts in 21 parishes within Louisiana) that are rural and have major economic problems. | | | | | | |
| **Louisiana Collaborative for Excellence in the Preparation of Teachers (LaCEPT) Program Supplemental Award** | FY1998-99 – FY2000-01 | DUE-9816194 | NSF | 3 years | $600,000 | $300,000 |
| **Participating Institutions:** Grambling, LSU A&M, LSU-S, LA Tech, Loyola, Nicholls, NSU, SLCC, SLU, SUBR, SUNO, ULL ULM, UNO, Xavier<br>**Description/Purpose:** To improve the quality of undergraduate teacher preparation programs in mathematics and science and to increase substantially the number of mathematics and science educators; to evaluate the effectiveness of the initial five-year award (FYs 1993-98). | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **1997 DEPSCoR Implementation Program** | FY1997-98 – FY1999-00 | Grant numbers vary | DOD | 3 years | $1,770,504 | $750,000 |
| **Participating Institutions:** LSU A&M, Tulane, ULL<br>**Description/Purpose:** To continue previous efforts to conduct research and educate scientists and engineers in Louisiana in areas important to national defense, thus improving the State's research infrastructure. | | | | | | |
| **NSF/EPSCoR New Cooperative Agreement (NCA)s** | FY1998-99 – FY2000-01 | EPS-9720652 | NSF | 3 years | $3,000,000 | $3,000,000 |
| **Participating Institutions:** A significant number statewide; grant funds awarded on a competitive basis.<br>**Description/Purpose:** 1) To enhance the competitiveness of science and engineering (S&E) faculty of the State's higher education institutions by making them more competitive in gaining national research and development support, engaging them in science and technology transfer activities with business and industry, and helping them educate effectively large numbers of S&E students at both graduate and undergraduate levels; 2) to create real and meaningful linkages between the State's HBCUs and MWCUs through the Joint Faculty Appointments Program; and 3) to foster economic development in the state by facilitating, through various initiatives, interaction between business & industry, universities, and state government. This proposal continued the efforts begun under the EPSCoR ADP and SI awards previously described. | | | | | | |
| **1999 DEPSCoR Implementation Program**<br>3 years | FY1999-00 – FY2001-02 | Grant numbers vary | DOD | 3 years | $1,459,473 | $189,798 |
| **Participating Institutions:** LSU A&M, LA Tech, UNO<br>**Description/Purpose:** As in past DEPSCoR awards, the individual research projects funded through this award enhance the statewide research infrastructure improvement efforts. | | | | | | |
| **Experimental Program to Stimulate Competitive Technology (EPSCoT)** | FY1999-00 – FY2000-01 | 60NANB9D0005 | Dept. of Commerce | 2 years | $250,000 | $300,000 |
| **Participating Institutions:** A significant number statewide<br>**Description/Purpose:** To develop and implement regional and statewide strategies to accelerate commercialization of university-based technologies, thus contributing to the economic development of the State. | | | | | | |
| **NASA EPSCoR Program Continuation Funding** | FY1999-00 | NCC5-167 | NASA | 1 year | $400,000 | $250,000 |
| **Participating Institutions:** Dillard, LA Tech, LSU A&M, LSU Ag, LUMCON, McNeese, SUBR, Tulane, UNO, Xavier<br>**Description/Purpose:** A renewal program to 1) continue to improve the infrastructure for aerospace-related research and education in Louisiana, and increase the State's capability to perform federally-funded aerospace research; and 2) to continue the support of three multi-institutional research cluster projects. This award is the sixth-year continuation of the NASA EPSCoR Program and NASA EPSCoR Program Renewal previously described. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **NASA EPSCoR Preparation Grant Program** | FY1999-00 | NCC5-393 | NASA | 1 year | $225,000 | $100,000 |
| **Participating Institutions:** A significant number statewide. Funds are competitively awarded.<br>**Description/Purpose:** To allow Louisiana researchers to initiate contacts and promote collaborative research programs with NASA Centers and Enterprises, and begin research activities in areas of strategic importance to NASA in preparation for submission of a statewide proposal to NASA EPSCoR in 2001. | | | | | | |
| **NASA LaSPACE Continuation** | FY2000-01 – FY2004-05 | NGT5-40115 | NASA | 5 years | $1,281,250 | $1,000,000 |
| **Participating Institutions:** A consortium composed of sixteen campuses; grant funds are awarded on a competitive basis.<br>**Description/Purpose:** This award continues the efforts begun under the original LaSPACE program and the LaSPACE renewal described previously. | | | | | | |
| **EPA EPSCoR 2000 Program –Coastal Monitoring** | FY1999-00 – FY2000-01 | R-82778501-0 | EPA | 2 years | $483,939 | $500,000 |
| **Participating Institutions:** LUMCON, Tulane (all data obtained will be made available to scientists and students throughout the state.)<br>**Description/Purpose:** To establish and maintain a series of instrument platforms by which university scientists can monitor environmental variables in coastal Louisiana for research and educational needs, thus increasing the State's capability to compete for and perform federally-funded environmental research. | | | | | | |
| **Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP) Phase II** | FY2000-01 – FY2005-06 | HRD-000272 | NSF | 5 years | $5,000,000 | $2,500,000 |
| **Participating Institutions:** Dillard, Grambling, LUMCON, LSU A&M, McNeese, Nunez, SUBR, SUNO, SUSBO, Tulane, ULL, UNO<br>**Description/Purpose:** To continue to increase the number of underrepresented minorities in Louisiana receiving B.S. degrees in science, engineering, and mathematics. | | | | | | |
| **NASA EPSCoR Preparation Grant Program Renewal** | FY2000-01 | NCC5-393 | NASA | 1 year | $225,000 | $0 |
| **Participating Institutions:** A significant number statewide. Funds are competitively awarded.<br>**Description/Purpose:** To continue the efforts described above for the NASA EPSCoR Preparation Grant. | | | | | | |
| **NASA EPSCoR Program Continuation Funding (year seven)** 1 year | FY2000-01 | NCC5-167 | NASA | 1 year | $400,000 | $0 |
| **Participating Institutions:** Dillard, LA Tech, LSU A&M, LSU Ag, LUMCON, McNeese, SUBR, Tulane, UNO, Xavier<br>**Description/Purpose:** This award is the seventh-year continuation of the NASA EPSCoR Program previously described. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **Video to the Desktop: A Louisiana Model** | FY2000-01 – FY2001-02 | EPS-0083089 | NSF | 2 years | $494,450 | $0 |
| **Participating Institutions:** LA Tech, LSU A&M, LSU Ag, LSUHSC-NO, LSUHSC-S, NSU, SLU, SUBR, Tulane, ULL, ULM, UNO<br>**Description/Purpose:** To promote research partnerships by establishing an inter-institutional H.323 research communications (videoconferencing) network, which will operate over existing Internet lines instead of over telephone lines, and allow desktop-to-desktop multimedia communications. | | | | | | |
| **Louisiana EPSCoR Research Infrastructure Improvement (RII)** | FY2001-02 – FY2003-04 | EPS-0092001 | NSF | 3 years | $9,000,000 | $3,000,000 |
| **Participating Institutions:** A significant number statewide, including LA Tech, LSUHSC-NO, UNO, Grambling, LSU A&M, SUBR, Tulane, Xavier, NSU, ULM. A portion of the grant funds will be awarded on a continuing, competitive basis<br>**Description/Purpose:** This award funds the “Micro/Nano Technologies for Advanced Physical, Chemical, and Biological Sensors” research consortium in addition to a variety of initiatives to enhance the competitiveness of science and engineering (S&E) faculty of the State’s higher education institutions. This proposal continues the efforts begun under the EPSCoR ADP, SI, and NCA awards previously described. | | | | | | |
| **NASA EPSCoR 2000** | FY2001-02 – FY2003-04 | NCC5-573 | NASA | 3 years | $2,100,000 | $2,100,000 |
| **Participating Institutions:** LSU A&M, LUMCON, Tulane, Dillard, ULL, UNO, Xavier. A portion of the grant funds will be awarded on a continuing, competitive basis.<br>**Description/Purpose:** 1) To develop and strengthen long-term academic research enterprises that will make significant contributions to the strategic research and technology priorities of NASA and, in turn, to contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State; and 2) to support three multi-institutional research projects. | | | | | | |
| **EPA EPSCoR 2001 Program – Climate Change** | FY2002-03 – FY2003-04 | R-82642001-0 | EPA | 2 years | $494,195 | $494,542 |
| **Participating Institutions:** LUMCON, UL-Lafayette, LSUBR<br>**Description/Purpose:** To enhance Louisiana's capability for understanding and predicting the effects of climate change on the state’s coastal ecosystems, thus increasing the State’s capability to compete for and perform federally-funded environmental research. | | | | | | |
| **Louisiana’s Strategic Infrastructure Improvement (LSII)** | FY2003-04– FY2005-06 | EPS-0346411 | NSF | 3 years | $9,000,000 | $3,000,000 |
| **Participating Institutions:** A significant number statewide, including LSU A&M, LSUHSC-NO, SUBR, Tulane, ULL, ULM, UNO, Xavier. A portion of the grant funds will be awarded on a continuing, competitive basis.<br>**Description/Purpose:** This award funds the “Center for Bio-Modular Multi-Scale Systems” in addition to a variety of initiatives to enhance the competitiveness of science and engineering (S&E) faculty of the State’s higher education institutions. This proposal continues the efforts begun under the EPSCoR ADP, SI, NCA, and RII awards previously described. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **NASA EPSCoR 2000 Renewal** | FY2004-05 – FY2005-06 | NCC5-573 | NASA | 2 years | $986,236 | $986,560 |
| **Participating Institutions:** LSU A&M, LUMCON, Tulane, Dillard, ULL, UNO, Xavier. A portion of the grant funds will be awarded on a continuing, competitive basis. **Description/Purpose:** A two-year renewal of the NASA EPSCoR 2000 Program to 1) To develop and strengthen long-term academic research enterprises that will make significant contributions to the strategic research and technology priorities of NASA and, in turn, to contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State; and 2) to support multi-institutional research projects. | | | | | | |
| **DOE EPSCoR Implementation 2004** | FY2004-05 – FY2006-07 | DE-FG02-04ER46136 | DOE | 3 years | $1,200,000 | $1,200,000 |
| **Participating Institutions:** ULL, LSU A&M, SUBR **Description/Purpose:** To develop the infrastructure for energy and energy-related research in Louisiana, while improving the quality of energy research and education in the State and encouraging human resource development in this area. This award funds the multi-institutional, multidisciplinary research project entitled “Ubiquitous Computing and Monitoring System (UCoMS) for Discovery and Management of Energy Resources.” | | | | | | |
| **LAMP Phase III** | FY2005-06 – FY2009-10 | HRD-0503362 | NSF | 5 years | $2,500,000 | $2,500,000 |
| **Participating Institutions:** Dillard, Grambling, LUMCON, LSU A&M, McNeese, Nunez, SUBR, SUNO, SUSBO, Tulane, ULL, UNO **Description/Purpose:** To continue to increase the number of underrepresented minorities in Louisiana receiving B.S. degrees in science, engineering, and mathematics, and to transition at least 30% of these graduates to graduate school by 2010. | | | | | | |
| **NASA LaSPACE Continuation II** | FY2005-06 – FY2009-10 | NNG05GH22H | NASA | 5 years | At least $1,280,000 | $1,000,000 |
| **Participating Institutions:** A consortium composed of sixteen campuses; grant funds are awarded on a competitive basis. **Description/Purpose:** This award continues the efforts begun under the original LaSPACE program and the LaSPACE renewals described previously. | | | | | | |
| **NASA EPSCoR Phase 3** | FY2006-07 – FY2011-12 | NNX07AL03A, NNX07AT62A, NNX07AT67A | NASA | 6 years | $2,175,000 | $2,250,000 |
| **Participating Institutions:** LSU A&M, SUBR. A portion of the grant funds will be awarded to these and other institutions on a continuing, competitive basis. **Description/Purpose:** 1) To develop and strengthen long-term academic research enterprises that will make significant contributions to the strategic research and technology priorities of NASA and, in turn, to contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State; and 2) to support two research projects of particular interest to NASA, one studying adhesively bonded joints in composite structures and one focusing on high-energy astrophysics. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **Louisiana EPSCoR Research Infrastructure Improvement (CyberRII)** | FY2006-07 – FY2008-09 | EPS-0701491 | NSF | 3 years | $9,000,000 | $3,000,000 |

**Participating Institutions:** A significant number statewide, including LSU A&M, LSUHSC-NO, LA Tech, SUBR, Tulane, Tulane Health Sciences Center, Xavier, ULL, UNO. A portion of the grant funds will be awarded to these and other institutions on a continuing, competitive basis
**Description/Purpose:** The focus of this project is the development of multi-functional cyberinfrastructure (*CyberTools*) that will broadly enable significant advances in modern science and engineering. In addition, a variety of initiatives to enhance the competitiveness of science and engineering (S&E) faculty of the State's higher education institutions are also supported. This project continues the efforts begun under the EPSCoR ADP, SI, NCA, RII, and LSII awards previously described.

| | | | | | | |
|---|---|---|---|---|---|---|
| **DOE EPSCoR Implementation Renewal** | FY2007-08 – FY2009-10 | DE-FG02-04ER46136 | DOE | 3 years | $900,000 | $1,200,000 |

**Participating Institutions:** ULL, LSU A&M, SUBR
**Description/Purpose:** This is a three-year renewal of the DOE EPSCoR program, which seeks to develop the infrastructure for energy and energy-related research in Louisiana, while improving the quality of energy research and education in the State and encouraging human resource development in this area. This award funds the multi-institutional, multidisciplinary research project entitled "Ubiquitous Computing and Monitoring System (UCoMS) for Discovery and Management of Energy Resources."

| | | | | | | |
|---|---|---|---|---|---|---|
| **NASA EPSCoR 2009 Research 3** | FY2009-10 – FY2011-12 | NNX09AP72A | NASA | 3 years | $750,000 | $750,000 |

**Participating Institutions:** LSU A&M, SUBR.
**Description/Purpose:** Support for a research project to develop thermal barrier coatings with high reflectance in both the visible and infrared bandwidth to reduce the thermal radiation transport. Such nano-structured TBCs would make significant contributions to NASA's efforts to develop advanced thermal barrier systems for jet engine propulsion.

| | | | | | | |
|---|---|---|---|---|---|---|
| **NASA EPSCoR 2009 Research 4** | FY2009-10 – FY2011-12 | NNX10AP07A | NASA | 3 years | $750,000 | $750,000 |

**Participating Institutions:** LSU A&M, LA Tech, SUBR.
**Description/Purpose:** This research program will investigate existing and novel microorganisms with tolerances to cold, desiccation, and radiation as models for astrobiology. The expected outcomes include the development of fundamental astrobiological concepts and operational capabilities that would promote the success of future NASA-driven life detection missions, inform policies on planetary protection, and lay the foundation for a new space research enterprise in Louisiana.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Louisiana EPSCoR Research Infrastructure Improvement (LA-SiGMA)** | FY2009-10 – FY2013-14 | EPS-1003897 | NSF | 5 years | $20,000,000 | $10,000,000 |

**Participating Institutions:** A significant number statewide, including LSU A&M, Grambling, LA Tech, SUBR, Tulane, Xavier, and UNO. A portion of the grant funds will be awarded to these and other institutions on a continuing, competitive basis
**Description/Purpose:** The research component of the NSF EPSCoR project will create the *Louisiana Alliance for Simulation-Guided Materials Applications (LA-SiGMA).* Program objectives include: building the next generation of experimentally validated formalisms, algorithms, and codes for multiscale materials simulations; implementing them on present and next generation super-computers; and educating the next generation of a highly skilled workforce of materials scientists and engineers.

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **NASA LaSPACE Renewal** | FY2010-11 – FY2014-15 | NNX10AI40H | NASA | 5 years | At least $3,145,000 | $1,250,000 |
| **Participating Institutions:** A consortium composed of sixteen campuses; grant funds are awarded on a competitive basis.<br>**Description/Purpose:** This award continues the efforts begun under the original LaSPACE program and the LaSPACE renewals described previously. | | | | | | |
| **LAMP Phase IV (Senior-Level Alliance)** | FY2010-11 – FY2014-15 | HRD-1002541 | NSF | 5 years | $2,500,000 | $2,500,000 |
| **Participating Institutions:** Dillard, Grambling, LUMCON, LSU A&M, McNeese, Nunez, SUBR, SUNO, SUSBO, Tulane, ULL, UNO, Xavier<br>**Description/Purpose:** The purpose of the LAMP program is to increase the number of underrepresented minorities in Louisiana receiving degrees in science, engineering, and mathematics. Phase IV will continue a comprehensive set of institutional transformation and systemic mentoring activities, with special emphasis on the progression of minority STEM students to and through graduate school and their transition to research-based careers that include the professoriate. | | | | | | |
| **NASA EPSCoR 2009 Research 5** | FY2011-12 – FY2013-14 | NNX11AM17A | NASA | 3 years | $750,000 | $750,000 |
| **Participating Institutions:** LSU A&M, SUBR.<br>**Description/Purpose:** This research program will provide NASA with more durable, reliable, lighter, safer, and smarter composite sandwich structures, create knowledge and develop enabling technology in self-healing composite materials/structures, and enhance related research infrastructure and workforce training at LSU and SU. | | | | | | |
| **NASA EPSCoR 2009 Research 6** | FY2012-13 – FY2014-15 | NNX13AD29A | NASA | 3 years | $750,000 | $750,000 |
| **Participating Institutions:** UNO, LSU A&M, SUBR.<br>**Description/Purpose:** This research program will provide NASA with joint decision and estimation framework to enable heavier yet safer air traffic in the Next Generation Air Transportation System. This project will also enhance related research infrastructure and workforce training at UNO, LSU and SU. | | | | | | |
| **NASA EPSCoR Research Infrastructure** | FY2012-13 – FY2014-15 | NNX13AB14A | NASA | 3 years | $375,000 | $375,000 |
| **Participating Institutions:** LSU A&M. A significant portion of the grant funds will be awarded to other LA institutions on a continuing, competitive basis.<br>**Description/Purpose:** 1) To develop and strengthen long-term academic research enterprises that will make significant contributions to the strategic research and technology priorities of NASA and, in turn, to contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State; and 2) to support research projects of particular interest to NASA. | | | | | | |
| **NASA EPSCoR 2009 Research 7** | FY2013-14 – FY2015-16 | NNX13AN05A | NASA | 3 years | $750,000 | $750,000 |
| **Participating Institutions:** LA Tech, Grambling, ULL.<br>**Description/Purpose:** This research program will provide NASA with a means of assessing the impact of high-energy radiation on genetic material, which can be used to improve radiation risk analysis on space missions. This project will also enhance related research infrastructure and workforce training at LA Tech, Grambling, and ULL. | | | | | | |

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **DOE EPSCoR Implementation 2014** | FY2014-15 | DE-SC0012432 | DOE | 3 years | $4,949,000 | $500,000 |

**Participating Institutions:** LSU A&M, LA Tech, Tulane, UNO.
**Description/Purpose:** This research program seeks to establish unique capabilities among Louisiana faculty by using the advanced neutron scattering facilities at Oak Ridge National Laboratory to characterize complex materials. This project will also enhance related research infrastructure and workforce training in materials science at the participating universities.

| | | | | | | |
|---|---|---|---|---|---|---|
| **NASA LaSPACE Continuation** | FY2015-16 – FY2018-19 | NNX15AH82H | NASA | 3 years | $2,855,000 | $1,000,000 |

**Participating Institutions:** A consortium composed of sixteen campuses; grant funds are awarded on a competitive basis.
**Description/Purpose:** This award continues the efforts begun under the original LaSPACE program and the LaSPACE renewals described previously.

| | | | | | | |
|---|---|---|---|---|---|---|
| **NASA EPSCoR Research 9** | FY2015-16 – FY2017-18 | NNX15AM61A | NASA | 3 years | $750,000 | $750,000 |

**Participating Institutions:** LSU A&M, SUBR, Xavier, University of Puerto Rico.
**Description/Purpose:** This research program will help us better understand a component of lightning-producing storms called terrestrial gamma flashes, or TGFs. The project will also build research infrastructure at three minority institutions in two EPSCoR jurisdictions and train underserved minority students.

| | | | | | | |
|---|---|---|---|---|---|---|
| **NASA EPSCoR Research Infrastructure** | FY2015-16 – FY2018-19 | NNX15AK33A | NASA | 3 years | $500,000 | $500,000 |

**Participating Institutions:** LSU A&M. A significant portion of the grant funds will be awarded to other LA institutions on a continuing, competitive basis.
**Description/Purpose:** 1) To develop and strengthen long-term academic research enterprises that will make significant contributions to the strategic research and technology priorities of NASA and, in turn, to contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State; and 2) to support research projects of particular interest to NASA.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Louisiana EPSCoR Research Infrastructure Improvement (CIMM)** | FY2015-16 – FY2019-20 | OIA-154079 | NSF | 5 years | $20,000,000 | $4,000,000 |

**Participating Institutions:** A significant number statewide, including LSU A&M, Grambling, LA Tech, SUBR, and UNO. A portion of the grant funds will be awarded to these and other institutions on a continuing, competitive basis.

**Description/Purpose:** The research component of the NSF EPSCoR project will create the *Consortium for Innovation in Manufacturing and Materials (CIMM).* The two main goals of the project are to 1) address challenges in high-throughput manufacturing of components with functional features ranging from microns to millimeters and beyond with high fidelity and repeatability and 2) focus on adaptive manufacturing of application-specific structures with a high degree of geometric and microstructural complexity and variability. In addition, the Consortium's workforce development program will provide advanced hands-on training in manufacturing-relevant skills for students in two- and four-year institutions.

| Title | Fiscal Years | Federal Award Number | Federal Agency | Duration | Federal Award Amt. | Support Fund Match |
|---|---|---|---|---|---|---|
| **NASA EPSCoR Research 10** | FY2016-17 – FY2018-19 | NNX16AQ93A | NASA | 3 years | $750,000 | $750,000 |

**Participating Institutions:** LSU A&M, SUBR.
**Description/Purpose:** This project will develop new polymer composite panels for in-service damage self-healing through (1) design, synthesis, characterization, and manufacturing of two-way shape memory polymers (2W-SMPs); (2) multiscale modeling of the smart composite structures; and (3) additive manufacturing using 3D printing and experimental evaluation of the smart composite panels for impact mitigation and in-service crack healing. This project was also designed to attract and retain a greater number of high caliber students, including underrepresented minority students, in STEM disciplines, and train a larger number of high caliber STEM students for NASA related industry.

| | | | | | | |
|---|---|---|---|---|---|---|
| **NASA EPSCoR Research 11** | FY2017-18 – FY2019-20 | N/A | NASA | 3 years | $750,000 | $750,000 |

**Participating Institutions:** LSU A&M, SUBR.
**Description/Purpose:** This research addresses the transport of carbon through the land-sea interface, and supports NASA's major strategic goal to advance understanding of Earth. The team proposes to investigate two contrasting coastal sites across the Mississippi River Delta: the Bataria Bay Region and the Wax Lake Delta region. Understanding these two contrasting environments which are under same climate conditions is critical to assess the role of delta systems in carbon export to the coastal oceans on a global scale.

| | | | | | | |
|---|---|---|---|---|---|---|
| **DOE EPSCoR Implementation Renewal** | FY2017-18 | DE-SC0012432 | DOE | 3 years | $4,938,95 | $500,000 |

**Participating Institutions:** LSU A&M, Tulane, UNO.
**Description/Purpose:** : This is a three-year renewal of the DOE EPSCoR LaCNS project which seeks to build on its prior success to attain a sustainable neutron scattering infrastructure capable of treating both soft and hard materials. This project will also enhance related research infrastructure and workforce training in materials science at the participating universities.

| | | | | | | |
|---|---|---|---|---|---|---|
| **NASA EPSCoR Research 12** | FY2018-19 – FY2020-21 | N/A | NASA | 3 years | $750,000 | $750,000 |

**Participating Institutions:** ULL.
**Description/Purpose:** The overarching goal of this project is to develop a waste management system, BIOSYS, that is energy- and oxygen-use neutral (produces as much or more of these resources than it consumes) and is capable of meeting treatment goals while producing additional life support resources. This project will also (a) position the project team as leading experts on in-space waste management strategies and (b) build a foundation of interest among current and future students in space-related STEM areas.

# ATTACHMENT II

# Board of Regents Support Fund
# Results of Selected Projects

**Following are brief synopses of several successful projects recently funded through Board of Regents Support Fund competitive grants programs. These represent just a small sample of the supplementary and enhancing activities made possible across higher education in Louisiana by distribution of these dollars.**

## ENHANCEMENT

**Baton Rouge Community College** used Two-Year Enhancement funding to complete a major expansion of their simulation lab for Nursing education. The expanded capabilities provide clinical experiences for students that were not available in hospitals' internship, lab and training programs. The project had a significant impact on practices in the nursing program, and the lab has been integrated into regular classwork. Nursing simulation software has been loaded on classroom computers to allow faculty to integrate simulation where appropriate into lecture to enhance students' critical thinking skills during content delivery and skills demonstrations. The new capabilities are leading to the creation of new classes, and positively contributed to an increase in the program's standing during a recent accreditation process. *{LEQSF(2015-16)-ENH-PEN-02; Toni Manogin, PI}*

With support from a Traditional Enhancement grant, a team at the Center for Advanced Microsystems and Devices (CAMD), housed at **Louisiana State University and A&M College**, purchased a new silicon drift X-ray detector. A tool used across many research areas, this addition has made CAMD's high-energy X-ray absorption spectroscopy beamline the busiest beamline at the facility. Its user base is diverse and expansive, attracting users from an array of departments from Geography and Anthropology to Mechanical Engineering. In a novel use, the detector was deployed in an archaeology workshop to demonstrate the power of X-ray fluorescence to illuminate our shared past. The project has, more generally, expanded CAMD's ability to measure difficult and realistic samples, and many more of them than with previous technology; the equipment is part of CAMD's plan to enhance X-ray absorption spectroscopic measurements covering a wider range of elements in the periodic table. In the short period immediately following installation, two peer-reviewed publications have resulted, with three more in review, and plans are already underway for federal research funding as well as the addition of another beamline at CAMD to further increase capacity. *{LEQSF(2016-17)-ENH-TR-07; Amitava Roy , PI}*

A Traditional Enhancement project at **Southern University at New Orleans** is helping to improve kindergarten readiness among Louisiana children and serve local community networks, particularly the New Orleans Early Education Network (NOEEN). Students in the SUNO

program receive critical training in birth-Kindergarten education, resulting in an Early Childhood Ancillary Certificate. The curriculum is extremely forward thinking, blending traditional classroom education with hands-on experiential learning and extensive digital training. Courses introduced as part of the certificate program are designed also as building blocks for associate's and baccalaureate degrees in early childhood education. The program was designed to be sustainable after BoRSF funding ends, with SUNO committing to offer a Birth to K baccalaureate degree and continuing the courses necessary for the Early Childhood Ancillary Certificate Program. The program's combination of practical training of educators with research and publications of finding ensures that the impacts will be both rooted in communities that need such interventions and broadly felt across the national audience of professional educators and researchers in this crucial area of study. In addition, links to urgent workforce needs in the local community are strong, with the program design supporting a direct pipeline feeding local students back into high-impact, high-need jobs within their own communities. *{LEQSF(2017-19)-ENH-TR-21; Jenita Hegwood, PI}*

Using Traditional Enhancement funding, a team at **Louisiana Tech University** has acquired gas chromatography and high-performance liquid chromatography instrumentation for its integrated chemistry/environmental science (ICES) laboratories. Available for both faculty and student research/training projects, the instruments allow separation and analysis of complex mixtures of hydrocarbons, crude oil, edible oils, and polymers, as well as many other organic compounds. In its first year, the project affected more than 270 students, both undergraduate and graduate, and 12 faculty members, allowing experiments to be introduced into the curricula of numerous courses as well as in less structured independent research, including several undergraduate mentorship projects. Beyond the campus, students' training in the use of this equipment is vital preparation for the workforce or for graduate school: these are among the most important pieces of equipment in STEM-related research and analysis, and hands-on training with state-of-the-art equipment gives students an edge in securing high-profile, high-impact positions. *{LEQSF(2017-18)-ENH-TR-13; Sven Eklund, PI}*

**Southeastern Louisiana University**, in partnership with **McNeese State University,** used Undergraduate Enhancement funding to leverage their individual resources to create a new degree in Health System Management. With its accelerated degree plan and career-based concentrations, the degree addresses many of the needs identified by hospital executives and human resource directors across the regions served by these institutions. The Enhancement grant allowed the campuses to purchase the necessary equipment to make distance learning possible, reducing the need for each campus to employ sufficient faculty on its own to teach all required courses. Creating Project COACH (Creating Opportunities for Access and Community Health) has further allowed participating departments to expand capacity to create a dedicated distance learning classroom and support access of all students to real-world-ready learning experiences. By leveraging these resources, the campuses assure that a key workforce demand in their communities, separated by more than a hundred miles, can be met. As important, graduates of

these programs will enter the workforce with the experience and training necessary to help Louisiana's health systems to modernize and advance. *{LEQSF(2016-18)-ENH-UG-20; Ann Carruth, PI}*

Through a Traditional Enhancement award, the **LSU Agricultural Center** was able to equip a complete Engineering Composite Laboratory for manufacturing wood-plastic composite materials. The lab is one of only a few in the country with state-of-the-art facilities for conducting wood/natural fiber-plastics composite and bio-based nanocomposite research. The availability of such a unique resource at LSU provides a strong foundation for faculty research in this important innovation area, as well as a resource for recruiting and retaining superior graduate and undergraduate students interested in materials research and development. Beyond its educational applications, research in this area is critical to industry and can lead to patentable technologies, new product development, and major partnerships with businesses both small and large. The potential is extremely high for this facility, along with the faculty expertise and availability of well-trained students to meet workforce needs, to drive investment in Louisiana as well as development of Small Business Innovation Research (SBIR) and other federally competitive proposals. *{LEQSF(2016-17)-ENH-TR-01; Qinglin Wu, PI}*

A Traditional Enhancement project at the **University of Louisiana at Lafayette** has helped the department to enhance four key collaborative learning spaces – the Innovation Lab, Science Methods Lab, Collaborative Learning Lab, and Math Methods Lab – to better prepare pre-service teachers in Early Childhood, Elementary, and Secondary Education. These improvements have already helped to improve faculty teaching, build student interest in the essential work of STEM education, and boosted faculty/student research into teaching effectiveness. During both semesters of project implementation, 150 pre-service teachers worked with approximately 300 children on design, engineering, math, and science lessons; following these workshops, 98% of the pre-service teachers reported feeling confident in teaching STEM content. Continuing the work initiated during the Enhancement project, summer programs will continue to provide teaching and learning opportunities on an annual basis to approximately 15 pre-service teachers and 200 children, as well as graduate students. Also as a result of the enhancement, faculty are piloting and training undergraduate and graduate students in innovative instructional strategies, that will engage and inspire K-12 students to pursue STEM learning and careers. *{LEQSF(2016-18)-ENH-TR-33; Douglas Williams, PI}*

**Louisiana State University and A&M College**, with assistance from a Traditional Enhancement award, was able to develop a new survey platform for coastal and estuarine environments. The observation platform is an essential tool in studying the impacts of severe weather and other phenomena on coastlines, wetlands, and barrier islands, all of critical importance to Louisiana. The platform enables faculty to revise curricula and instruction, providing students with more hands-on experience in the lab and in the field. Students will be able to get first-hand experience in studying the critical issues of land loss and changes in water

depth (bathymetry) using state-of-the-art techniques including artificial intelligence in optimal data collection, which will prepare students for research, graduate study, and faculty and industry positions. *{LEQSF(2016-17)-ENH-TR-05; Chunyan Li, PI}*

A Traditional Enhancement project at the **University of New Orleans** has enabled investigators to purchase a microwriter to enhance microfabrication capabilities, from design to fabrication. Several doctoral students and faculty have already used the instrument in work that has been or soon will be published. Two graduate students were even qualified to train other users throughout the department. In 2018, microwriting capabilities were integrated into the Materials Science laboratory course, and are now in use by undergraduate students, as well as faculty and graduate students. Experience with this high-tech tool is important for students pursuing manufacturing opportunities, as well as graduate study. The microwriter was also crucial to the Advanced Materials Research Institute's funding of its summer outreach efforts, allowing AMRI to raise private contributions with a pledge to print sponsor logos on silicon wafers. *{LEQSF(2016-17)-ENH-TR-34; Leszek Malkinski, PI}*

A faculty team at **Nicholls State University** has used Undergraduate Enhancement funding to equip arts programs with digital photography materials. All levels of photography education have benefitted from the purchase of specialized software for photo processing and manipulation, as well as computer workstations, scanners, printers, and smart displays. In particular, the purchase of digital cameras available to students to check out on short-term or semester-long bases has made it possible for more students to enroll in beginning photography courses and streamlined coursework, since so many students are using the same camera. The capacities provided by the grant have enabled Nicholls to better prepare students for the digital world, training them to make, process, and manipulate images in a fully digital setting. During the first two years of project implementation, more than 150 students and faculty used the equipment; while the majority were in photography courses, the equipment is also offered and used on a campus-wide basis, as well as used during community engagement days by the Department of Art. *{LEQSF(2016-17)-ENH-UG-12; Deborah Lillie, PI}*

## RESEARCH AND DEVELOPMENT

Research Competitiveness Subprogram (RCS)

The BoRSF Research Competitiveness Subprogram (RCS) provides funding to scientists on the verge of competitiveness for federal research funding, to help them overcome barriers and achieve success. Three RCS principal investigators – two at **Tulane University** and one at **Louisiana State University and A&M College** – have won CAREER awards, the most prestigious young investigator grant offered by the National Science Foundation. In total, these three five-year CAREER awards bring more than $1.7 million in federal research funding to Louisiana institutions. This represents a return on the RCS investment of more than $4.38 of

every $1 spent from the BoRSF. *{LEQSF(2015-18)-RD-A-23; Jiang Wei, PI; LEQSF(2016-19)-RD-A-07; Daniel Kuroda, PI; and LEQSF(2016-19)-RD-A-19; Eliot Kapit, PI}*

Louisiana has suffered more than its share of natural disasters, and we can be sure that more will come from the Gulf or other places in the future. An RCS researcher at the **University of Louisiana at Lafayette** is playing a leadership role in constructing cloud-based systems of disaster management, harnessing online resources to help communities in crisis. This approach will deploy multiple cloud networks to coordinate a variety of resources essential for disaster response, and to help capture and use crowd-sourced information such as video streams. The team has already designed an internal cloud to serve as a testbed infrastructure and developed methods to model randomness as well as efficient management of disasters. The research has already been featured in two leading academic journals in the field, and RCS funding has helped the team generate the preliminary results needed to compete for federal funding. In addition, the project has engaged both local and international faculty, as well as several graduate and undergraduate students who are receiving essential direct experience in STEM research. *{LEQSF(2016-19)-RD-A-25; Mohsen Amini Salehi, PI}*

With the help of RCS funding, a research group at **Louisiana State University and A&M College** is developing the data and human resources infrastructure to conduct investigations into the ability of crustaceans to adapt to environmental change, including heat and salinity shifts. In addition to its global significance, this work is of particular importance to the Louisiana fisheries industry, which has seen numerous challenges to its economic stability through environmental shifts, as well as the ongoing effects of storms and oil spills. The PI has already published numerous refereed articles on the research and secured a collaborative National Science Foundation grant for follow-on research. In total, the research has brought more than $500,000 in competitive funding to LSU, beyond the initial Support Fund investment. In addition, the PI's lab has been able to retain a graduate research assistant on a consistent basis, as well as several undergraduate students, who receive not only on-campus employment but also hands-on experience in STEM research. *{LEQSF(2015-18)-RD-A-06; Morgan Kelly, PI}*

Thanks in part to an RCS award, a principal investigator at **Tulane University** has established a competitive research program focused on the critical fields of online security and virtual stealth attacks. The goal of the project is to use game theory and online learning to tackle fundamental challenges in achieving adaptive timing of security updates in the face of advanced attacks. Over the first two years of RCS funding, the PI made significant progress in the development of the algorithm and a new proactive defense approach. The success of the RCS-funded research has already yielded more than $500,000 in competitive National Science Foundation funding across two projects, in addition to several peer-reviewed conference papers. *{LEQSF(2017-19)-RD-A-15; Zizhan Zheng, PI}*

Industrial Ties Research Subprogram (ITRS) & Proof-of-Concept/Prototyping Initiative (PoC/P)

A team of researchers at the **University of Louisiana at Monroe** has used ITRS funding to study links between olive oil and prevention of diseases such as cancer and Alzheimer's, with an aim of understanding the link and developing an olive-oil-based food supplement. UL Monroe has already licensed the discovery to a Shreveport-based company and secured more than $250,000 in funding, including a Small Business Innovation Research (SBIR) grant from the National Institutes of Health to pursue commercialization of related products. A related oleocanthal-rich extra-virgin olive oil product, the first such to be publicly available, is expected to be introduced to the market later in 2018. *{LEQSF(2017-20)-RD-B-06; Khalid El Sayed, PI}*

Through a three-year ITRS project, research partners at **McNeese State University** are developing a significantly advanced shoreline protection design to improve erosion reduction and sediment retention, critical for preserving Louisiana's coast. The physics of shoreline protection is extremely dynamic and complex, and a full understanding of all the factors at play is essential to deploying activities to save this delicate ecosystem. Working with an industrial partner, the research team has undertaken extensive modeling, identified possible installation sites, and evaluated the research results obtained. The industry partner, The Cypress Group, is a start-up company that both works closely with the faculty researchers in providing technical details and support, and furnishes mentorship and hands-on opportunities to a group of six undergraduates and one graduate student engaged in the project. *{LEQSF(2016-18)-RD-B-06; Ning Zhang, PI}*

A team of researchers at **Louisiana State University and A&M College** are developing high-energy X-ray optics, to provide advanced imaging in both product development/manufacturing and clinical settings. The technology has already led to a spin-off company, Refined Imaging, and generated almost a half-million dollars in federal funding. Several federal agencies, including the National Science Foundation, the National Institutes of Health, the Department of Energy, and the Department of Defense, have shown strong interest in the research outcomes. A Small Business Innovation Research (SBIR) Phase I grant from the Department of Energy was funded in March 2018, supporting the link between the start-up company and the ongoing research that underpins the business. Refined Imaging is preparing a Phase II proposal and has already conducted more than 100 customer interviews, with more scheduled, demonstrating the high potential for successful commercialization of the research funded through PoC/P. *{LEQSF(2017-18)-RD-D-03; Leslie Butler, PI}*

Awards to Louisiana Artists and Scholars (ATLAS) Subprogram

A jazz composer and musician at **Loyola University New Orleans** has used ATLAS funding to complete and perform original compositions for piano and vibraphone. The works were

performed as part of a world tour, including stops in several Austrian and German cities, and a concert in New Orleans in April 2018. ATLAS funding allowed two acclaimed musicians to perform major new works in diverse venues and to advance jazz composition, an art form of particular significance to Louisiana and New Orleans, on the eve of its tricentennial. *{LEQSF(2017-18)-RD-ATL-06; Sanford Hinderlie, PI}*

An ATLAS principal investigator at **Louisiana State University and A&M College** has completed *Neon Visions: The Comics of Howard Chaykin*, the first book-length critical evaluation of Chaykin's influential but under-studied work. Chaykin, one of the most innovative and iconoclastic comic artists of the late twentieth century, had received limited critical attention, and this book brings a new perspective to his work, as well as challenging in a meaningful way general assumptions about the value of reading comics through a critical lens. *{LEQSF(2015-16)-RD-ATL-02; Brannon Costello, PI}*

**LOUISIANA EPSCoR**

In 2015 a consortium of researchers put Louisiana's growing advanced manufacturing and materials industries into the national spotlight through the award of a highly competitive $20 million Track 1 grant from the National Science Foundation's Experimental Program to Simulate Competitive Research (EPSCoR). The grant established the **Consortium for Innovation in Manufacturing and Materials (CIMM)**, a research collaboration among five of Louisiana's public universities: Louisiana State University and A&M College, Louisiana Tech University, Grambling State University, Southern University in Baton Rouge, and the University of New Orleans.

The five-year award is having a significant impact on the State, launching the next level of research and development for the materials and advanced manufacturing industries. Researchers will address the fundamental building blocks of metal and alloy materials on a scale ranging from millimeters down to nanometers. The overarching goal of CIMM is to accelerate manufacturing technology development by combining supercomputer modeling and simulation with physical experimentation in a shared specialized research lab.

Strategic investments over the past 20 years in experimental and computational materials research and infrastructure have yielded significant opportunities for long-term growth in Louisiana. CIMM directly capitalizes on the successes of Louisiana's 2010-15 NSF RII award, matched with $10 million from the Support Fund, which established the successful Louisiana Alliance for Simulation-Guided Materials Applications (LA-SiGMA).

Louisiana EPSCoR also holds several additional awards through federal programs. A $3.251 million collaborative award between Louisiana and Mississippi, funded through NSF EPSCoR Track 2, established the Smart MATerials Design, Analysis, and Processing (SMATDAP)

consortium to address the scientific, engineering, and educational training needs of the multibillion-dollar chemical and polymer industries in the Gulf Region. Participating Louisiana institutions include **Tulane University, Louisiana State University and A&M College, the University of New Orleans, and Xavier University of Louisiana**.

The NSF EPSCoR Track 3 award, led by **Louisiana Tech University** with participation of high schools and middle schools across the State, is developing and implementing Science, Technology, Engineering and Mathematics (STEM) discovery camps for students and teachers that can be replicated across the State. By focusing on teachers over a period of several years, the program will ultimately have a broad impact on significant numbers of students and improve education, training, and opportunities for industry in Louisiana.

An additional award, approximately $5 million from the Department of Energy's EPSCoR program paired with $500,000 in BoRSF matching, is a continuation of the highly successful project entitled "Building Neutron Scattering Infrastructure in Louisiana for Advanced Materials." The project is building a regional base of users of the Spallation Neutron Source (SNS) and the High Flux Isotope Reactor (HFIR) at the Oak Ridge National Laboratory. A collaborative effort led by **Louisiana State University and A&M College in partnership with Louisiana Tech, Tulane, and UNO**, the project continues to enable the training of highly talented students and postdocs, the next generation of neutron users, in synthesis and neutron scattering techniques.

# ATTACHMENT III

TAXONOMY OF DISCIPLINES
USED IN THE
BOARD OF REGENTS SUPPORT FUND PROGRAMS

## NATURAL SCIENCES - BIOLOGICAL

Agriculture
- 0101 Agricultural Economics
- 0102 Agricultural Production
- 0103 Agricultural Sciences
- 0104 Agronomy
- 0105 Animal Sciences
- 0106 Fishery Sciences
- 0107 Food Sciences
- 0108 Forestry and Related Sciences
- 0109 Horticulture
- 0110 Resource Management
- 0111 Parks and Recreation Management
- 0112 Plant Sciences (Except Agronomy, see 0104)
- 0113 Renewable Natural Resources
- 0114 Soil Sciences
- 0115 Wildlife Management
- 0199 Agriculture - Other

Biological Sciences
- 0201 Anatomy
- 0202 Biochemistry/Biophysics
- 0203 Biology
- 0204 Biometry
- 0205 Botany
- 0206 Cell and Molecular Biology
- 0207 Ecology
- 0208 Embryology
- 0209 Entomology and Parasitology
- 0210 Genetics
- 0211 Marine Biology
- 0212 Microbiology
- 0213 Neurosciences
- 0214 Nutrition
- 0215 Pathology
- 0216 Pharmacology
- 0217 Physiology
- 0218 Radiobiology
- 0219 Toxicology
- 0220 Zoology
- 0299 Biological Sciences - Other

## NATURAL SCIENCES -BIOLOGICAL (CONTINUED)

Health and Medical Sciences
- 0601 Allied Health
- 0602 Audiology and Speech Pathology
- 0603 Chiropractic
- 0604 Dental Sciences
- 0605 Environmental Health
- 0606 Epidemiology
- 0607 Health Science Administration
- 0608 Immunology
- 0609 Medical Sciences
- 0610 Nursing
- 0611 Optometry
- 0612 Osteopathic Medicine
- 0613 Pharmaceutical Sciences
- 0614 Podiatry
- 0615 Pre-Medicine
- 0616 Public Health
- 0617 Veterinary Science
- 0699 Health and Medical Sciences - Other

## NATURAL SCIENCES - PHYSICAL

Chemistry
- 0301 Chemistry, General
- 0302 Analytical Chemistry
- 0303 Inorganic Chemistry
- 0304 Organic Chemistry
- 0305 Pharmaceutical Chemistry
- 0306 Physical Chemistry
- 0399 Chemistry - Other

Physics and Astronomy
- 0801 Astronomy
- 0802 Astrophysics
- 0803 Atomic/Molecular Physics
- 0804 Nuclear Physics
- 0805 Optics
- 0806 Planetary Science
- 0807 Solid State Physics
- 0899 Physics and Astronomy - Other

NATURAL SCIENCES - COMPUTATIONAL

Computer and Information Sciences
0401 Computer Programming
0402 Computer Sciences
0403 Data Processing
0404 Information Sciences
0405 Microcomputer Applications
0406 Systems Analysis
0499 Computer Sciences - Other

Mathematical Sciences
0701 Actuarial Sciences
0702 Applied Mathematics
0703 Mathematics
0704 Probability and Statistics
0799 Mathematical Sciences - Other

NATURAL SCIENCES - EARTH/ENVIRONMENTAL

Earth, Atmospheric, and Marine Sciences
0501 Atmospheric Sciences
0502 Environmental Sciences
0503 Geochemistry
0504 Geology
0505 Geophysics and Seismology
0506 Paleontology
0507 Meteorology
0508 Oceanography
0599 Earth, Atmospheric, and Marine Sciences - Other
4403 Environmental Design
4405 Landscape Architecture

ENGINEERING - A

Engineering - Chemical
1001 Chemical Engineering
1002 Pulp and Paper Production
1003 Wood Science
1099 Chemical Engineering - Other

Engineering - Civil
1101 Architectural Engineering
1102 Civil Engineering
1103 Environmental/Sanitary Engr.
1199 Civil Engineering - Other

ENGINEERING - A (CONTINUED)

Engineering - Electrical and Electronics
1201 Computer Engineering
1202 Communications Engineering
1203 Electrical Engineering
1204 Electronics Engineering
1299 Electrical and Electronics Engineering - Other

ENGINEERING - B

Engineering - Industrial
1301 Industrial Engineering
1302 Operations Research
1399 Industrial Engineering - Other

Engineering - Materials
1401 Ceramic Engineering
1402 Materials Engineering
1403 Materials Science
1404 Metallurgical Engineering
1499 Materials Engineering - Other

Engineering - Mechanical
1501 Engineering Mechanics
1502 Mechanical Engineering
1599 Mechanical Engineering - Other

Engineering - Other
1601 Aerospace Engineering
1602 Agricultural Engineering
1603 Biomedical Engineering
1604 Engineering Physics
1605 Engineering Science
1606 Geological Engineering
1607 Mining Engineering
1608 Naval Architecture and Marine Engineering
1609 Nuclear Engineering
1610 Ocean Engineering
1611 Petroleum Engineering
1612 Systems Engineering
1613 Textile Engineering
1699 Engineering - Other

SOCIAL SCIENCES

Anthropology and Archaeology
1701 Anthropology
1702 Archaeology

Economics
1801 Economics
1802 Econometrics

Law (5102)

Political Science
1901 International Relations
1902 Political Science and Government
1903 Public Policy Studies
1999 Political Science - Other

Psychology
2001 Clinical Psychology
2002 Cognitive Psychology
2003 Community Psychology
2004 Comparative Psychology
2005 Counseling Psychology
2006 Developmental Psychology
2007 Experimental Psychology
2008 Industrial and Organizational Psychology
2009 Personality Psychology
2010 Physiological Psychology
2011 Psycholinguistics
2012 Psychometrics
2013 Psychopharmacology
2014 Quantitative Psychology
2015 Social Psychology
2099 Psychology - Other

Sociology and Social Work
2101 Demography
2102 Sociology
5001 Social Work

Social Sciences - Other
2201 Area Studies
2202 Criminal Justice/Criminology
2203 Geography
2204 Public Affairs and 4801 Public Administration
2205 Urban Studies and 4406 Urban Design
2299 Social Sciences - Other
4401 Architecture
4402 City and Regional Planning
4404 Interior Design

SOCIAL SCIENCES (CONTINUED)

Communications
4501 Advertising
4502 Communications Research
4503 Journalism and Mass Communication
4504 Public Relations
4505 Radio, TV and Film
4506 Speech Communication
4599 Communications - Other

Home Economics
4601 Consumer Economics
4602 Family Relations
4699 Home Economics - Other

Library and Archival Sciences
4701 Library Science
4702 Archival Science

ARTS

Arts - History, Theory, and Criticism
2301 Art History and Criticism
2302 Music History, Musicology, and Theory
2399 Arts - History, Theory, and Criticism - Other

Arts - Performance and Studio
2401 Art
2402 Dance
2403 Drama/Theatre Arts
2404 Music
2405 Design (including Industrial)
2406 Fine Arts
2499 Arts - Performance and Studio - Other

Arts - Other
2999A Arts - Other
5101A Interdisciplinary Programs

HUMANITIES

English Language and Literature
2501 English Language and Literature
2502 American Language and Literature
2503 Creative Writing
2599 English Language and Literature – Other

HUMANITIES (CONTINUED)

Foreign Language and Literature
2601 Asiatic Languages
2602 Foreign Literature
2603 French
2604 Germanic Languages
2605 Italian
2606 Russian
2607 Semitic Languages
2608 Spanish
2699 Foreign Languages - Other

History
2701 American History
2702 European History
2703 History of Science
2799 History - Other

Philosophy
2801 All Philosophy Fields

Humanities - Other
2901 Classics
2902 Comparative Language and Literature
2903 Linguistics
2904 Religious Studies; 4901 Religion; and 4902 Theology
2999H Humanities - Other
5101H Interdisciplinary Programs

EDUCATION

Education - Administration
3001 Educational Administration
3002 Educational Supervision

Education - Curriculum and Instruction
3101 Curriculum and Instruction

Education - Early Childhood
3201 Early Childhood Education

Education - Elementary
3301 Elementary Education
3302 Elementary-level Teaching Fields

EDUCATION (CONTINUED)

Education - Evaluation and Research
3401 Educational Statistics and Research
3402 Educational Testing Evaluation and Measurement
3403 Educational Psychology
3404 Elementary and Secondary Research
3405 Higher Education Research

Education - Higher
3501 Educational Policy
3502 Higher Education

Education - Secondary
3601 Secondary Education
3602 Secondary Level Teaching Fields

Education - Special
3701 Education of the Gifted
3702 Education of the Handicapped
3703 Education of Special Learning Disabilities
3704 Remedial Education
3799 Other Special Education Fields

Education - Student Counseling and Personnel Services
3801 Personnel Services
3802 Student Counseling

Education - Other
3901 Adult and Continuing Education
3902 Bilingual/Crosscultural Education
3903 Educational Media
3904 Junior High/Middle School Education
3905 Pre-Elementary Education
3906 Social Foundations
3907 Teaching English as a Second Language/Foreign Language
3999 Other Education Fields

BUSINESS

Accounting
- 4001 Accounting
- 4002 Taxation

Banking and Finance
- 4101 Commercial Banking
- 4102 Finance
- 4103 Investments and Securities

Business, Administration and Management
- 4201 Business Administration and Management
- 4202 Human Resource Development
- 4203 Institutional Management
- 4204 Labor/Industrial Relations
- 4205 Management Science
- 4206 Organizational Behavior
- 4207 Personnel Management
- 4299 Business Management - Other

Business - Other
- 4301 Business Economics
- 4302 International Business Management
- 4303 Management Information Systems
- 4304 Marketing and Distribution
- 4305 Marketing Management and Research
- 4399 Business Fields - Other