FY 2017-2018 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 9, 2017

BY THE

BOARD OF REGENTS

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- **$1.219 BILLION GENERATED IN EXTERNAL FUNDING ($2.02 FOR EACH BoRSF DOLLAR INVESTED)** for grants and contracts through Federal, private, and industry sources

- **$400 MILLION GENERATED IN NON-STATE CONTRIBUTIONS FOR $270 MILLION IN BoRSF MATCHES ($1.48 FOR EACH BoRSF DOLLAR MATCHED)** for faculty and scholarship endowments

- **3,377 EXTERNAL AWARDS** from Federal, private and other non-Support Fund sources

- **320 ENDOWED CHAIRS FOR EMINENT SCHOLARS** established at 26 campuses
  - Two hundred sixty-nine (269) $1 million chairs
  - Forty-nine (49) $2 million chairs
  - One (1) $3 million chair
  - One (1) $4 million chair
  - Includes ninety-nine (99) chairs funded by special legislative appropriation

- **2,392 ENDOWED PROFESSORSHIPS** established at 40 campuses since FY 1990-91

- **228 UNDERGRADUATE, GRADUATE, AND WORKFORCE STUDENT SCHOLARSHIPS** endowed at 31 campuses since FY 2007-08

- **1,616 SUPERIOR GRADUATE FELLOWSHIPS** supported at 16 campuses

- **MORE THAN 400 PATENTS FILED** during the grant period

- **11,046 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 2017-2018

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 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 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 university.

1.1 BOARD OF REGENTS SUPPORT FUND REVENUE PROJECTION, FY 2017-18

The base revenue amount used in the FY 2017-18 BoRSF Plan and Budget is $22,000,000, reflecting divergent projections of the Revenue Estimating Conference ($25,950,000) and the Treasury ($16,500,000) and recent earnings levels.

1.2 BUDGET RATIONALE AND PREAMBLE

In deliberations about the Board of Regents Support Fund Plan and Budget for FY 2017-18 and the Fund's structure in future years, the Board recognized several issues:

- Continuing high demand for Support Fund resources under all four program components along with increases in proposal quality and outstanding results achieved, including substantial leveraging of non-State dollars through federal and private grants, private-sector partnerships, and endowment contributions;

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

- 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 continual 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 have jeopardized the programs' viability; further reductions will impair the overall 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, making it imperative to balance matching funds for endowments with monies for competitive grants across the Enhancement and R&D programs.

1.3 ADOPTION OF FY 2017-18 PLAN AND BUDGET

The following Plan and Budget for FY 2017-18 were adopted by the Board of Regents at its meeting of January 9, 2017.

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 strategic 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 carefully researched 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 third 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]

In light of dramatic declines in Support Fund earnings, totaling approximately 40% to date, as well as changing circumstances in higher education in Louisiana, the Board of Regents undertook a review and restructuring of the Support Fund 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 forms the basis for the FY 2017-18 Plan and Budget.

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, as well as 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. Beginning in FY 1990-91, the Board implemented a systematic evaluation process, with the first such evaluation conducted by a distinguished panel of out-of-state experts in spring of 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.[2]

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.

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

- 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 endorsements 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.

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 brief Support Fund 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 for 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

* **$1.219 billion in grant and contract funding has been generated** from Federal, private, and industry sources from the BoRSF's investment in Enhancement, R&D, and Graduate Fellows awards, thereby significantly increasing the total monies available for higher education in Louisiana. This represents a **return during the grant period of $2.02 for every Support Fund dollar invested** 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 completion of the awards.

* **Approximately $400 million in non-State contributions, matched by more than $270 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.

* **3,377 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.

* **Increased institutional collaboration has resulted from Support Fund investments, as evidenced by the multi-million dollar, multi-institutional Federal grants awarded 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 awards in Attachment I.)

- **More than 400 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 BOARD OF REGENTS SUPPORT FUND MONEY, EXPANDING BOARD OF REGENTS SUPPORT FUND 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.[3] The reasons for, and goals of, these matching commitments were fourfold:

- To continue and accelerate the leveraging of Federal money with BoRSF investments, as is consistently accomplished by principal investigators of individually funded projects;

- 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.

4.1 FUNDED PROPOSALS: JOINT BOARD OF REGENTS SUPPORT FUND/FEDERAL PROGRAMS WITH STATEWIDE IMPACT

The Board was successful in the early NSF EPSCoR competitions, and these efforts encouraged a continued quest for 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

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

(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 research-related grants and 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[1] LaSER Implementation	TR ENH: 30% R&D: 70%	Yr. 1 $685,043 Yr. 2 440,202 Yr. 3 191,791	$1,317,036	1988-89 through 1990-91	3[1]
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 GR FEL: 1/3[2] ITRS: 1/3	$1.2 Million	$4.8 Million	1991-92 through 1994-95	4
NASA/LaSPACE	RCS: 60% GR FEL: 40%[2]	$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% RCS: 40%	$519,795	$1,039,590	1993-94 through 1994-95	2
DOD/EPSCoR Planning	TR ENH: 100%	$25,000	$25,000	1993-94	1
NASA/EPSCoR Implementation	TR ENH: 50% RCS: 25% GR FEL: 25% [2]	$500,000	$1.5 Million	1994-95 through 1996-97	3
1993 DEPSCoR Implementation	TR ENH: 50% RCS: 25% GR FEL: 25% [2]	Yr. 1 $166,666 Yr. 2 166,666 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% UG ENH: 10% R&D: 20% GR FEL: 10% [2]	$1 Million	$3 Million	1995-96 through 1997-98	3
DOE/EPSCoR Implementation Renewal	TR ENH: 10% R&D: 70% 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 Yrs. 2-5 500,000	$2.2 Million	1995-96 through 1999-2000	5

[1] 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.)

[2] 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.

Table I (Continued)

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	RCS: 50% GR FEL: 50% [2]	$100,000	$400,000	1996-97 through 1999-2000	4
1995 DEPSCoR Implementation	TR ENH: 50% R&D: 25% GR FEL: 25% [2]	Yr. 1 $551,439 Yr. 2 311,740 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% RCS: 25% 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% R&D: 25% GR FEL: 25% [2]	$250,000	$750,000	1997-98 through 1999-2000	3
NSF/EPSCoR New Cooperative Agreement	TR ENH: 75% R&D: 25%	$1 Million	$3 Million	1998-99 through 2000-01	3
1999 DEPSCoR Implementation	TR ENH: 100%	Yr. 1 $65,998 Yr. 2 61,900 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
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 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 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

Table I (Continued)

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
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
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

Table I (Continued)

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
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
NASA EPSCoR - Research 11 (Pending)	TR ENH 100%	$250,000	$750,000	2017-18 through 2019-20	3
DOE EPSCoR Implementation 2017 (Pending)	TR ENH 100%	$500,000	$500,000	2017-18	1

4.2 PENDING PROPOSALS

The NASA EPSCoR Program annually issues a Cooperative Agreement Notice (CAN) research announcement for 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. Proposals from Louisiana faculty will be submitted to respond to this announcement in March 2017. It is anticipated that $250,000 will be required in FY 2017-18 to provide match to a successful new project funded through NASA EPSCoR.

Louisiana received a three-year U.S. Department of Energy (DOE) EPSCoR research implementation grant in August 2014. This grant, to improve academic research infrastructure in key energy-related science and technology areas identified as important for the State, is now eligible for a three-year renewal application, to be submitted in February 2017. It is anticipated that $500,000 will be required in FY 2017-18 as match to the DOE renewal grant.

Funds for these NASA and DOE EPSCoR projects 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 resources. 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 have helped to seed the Louisiana Academic Library Network (LaLINC) project, which has computerized databases and linked academic libraries throughout the State, and the establishment of the Louisiana Optical Network Initiative (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, in its most recent solicitation for proposals, as well as in the 1993, 1999, 2007, and 2016 strategic planning efforts, the Board has specifically encouraged the submission of collaborative proposals which promise statewide benefits. The Board reaffirms its encouragement of multidisciplinary, multi-institutional proposals across all Support Fund program components for FY 2017-18. 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 will continue in the FY 2017-18 Plan and Budget, 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 2017-18 the income received for the higher education portion of the Board of Regents Support Fund is greater than the $22,000,000 projected, additional revenues shall be allocated 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. 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 Endowed Professorships Subprogram, federal matching commitments, or prior contractual obligations.

5.2 ENDOWED CHAIRS FOR EMINENT SCHOLARS - $1,620,000

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. Since 1990, the program has typically been 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, have enabled the funding of 99 additional chairs. Through FY 2015-16, 320 chairs are matched at twenty-six institutions, and the program has generated a total endowment (including non-State match) of $376 million. Comprehensive reviews conducted in 1993, 1998 and 2009 led to significant strengthening of the program.

The program pairs a 60% private-sector match with a 40% Board of Regents award 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. Forty-nine (49) of the 320 chairs matched have been at the $2 million level and two (2) have combined multiple matched endowments to create a $3 million chair and a $4 million chair, respectively.

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, Endowed Chairs for which match is requested must 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 continuing budget challenges and backlogs in Endowed Professorships, the budget level is further reduced in FY 2017-18, to $1,620,000.

5.3 RECRUITMENT OF SUPERIOR GRADUATE STUDENTS - $4,390,500

The Recruitment of Superior Graduate Students component, also called the Graduate Fellows Program, provides fellowships and endowment matching to select departments to attract and retain top-quality students in their graduate programs. Through FY 2016-17, the Board of Regents has funded 1,616 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 2016-17, 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, though at a lower level than fellowships.

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) Minority 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 eliminated beginning in FY 2017-18. An additional competition for Traditional Graduate Fellows is ongoing in FY 2016-17, with individual awards to be approved in April 2017; funds for these awards were approved in the FY 2016-17 Plan and Budget to begin in FY 2018-19.

The $3,470,500 budgeted for these Subprograms in FY 2017-18, therefore, is almost entirely for previous obligations, including: (a) $647,500 for fourth-year funding of graduate fellows who began their course of study in AY 2014-15; (b) $693,500 for third-year funding of graduate fellows who began their course of study in AY 2015-16; (c) $1,069,500 for funding of second-year graduate fellows who began their course of study in AY 2016-17; (d) $1,060,000 for funding of graduate fellows who will begin their course of study in AY 2017-18.

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 to support scholarships and fellowships as well as experiential opportunities including internships, externships, research and conference travel, and field work.

Based on demand in the initial year, reduced funding across the Support Fund, and demand for backlog matching in Endowed Professorships, the Endowed Superior Graduate Student Scholarships Subprogram budget for FY 2017-18 is $920,000. This funding level may be revisited in future fiscal years as the Subprogram becomes established, demand for matching funds is better understood, and Support Fund income increases.

5.4 CAREFULLY DEFINED RESEARCH EFFORTS - $5,862,467

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 contribute to 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 $3,382,467 is required during FY 2017-18 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

time span of a Board of Regents Support Fund grant. 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. The one-year component of RCS emphasizes short-term seed funding to prepare research projects for submission to and success in competitive Federal programs.

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, 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 2017-18, is specified in Schedule I.

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

GROUP I - ELIGIBLE EVERY YEAR

Biological Sciences
Computer and 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 2017-18, 2020-21

Chemistry
Engineering B (Industrial, Materials, Mechanical, etc.)
Health and 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 seven 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, due to lower levels of prior commitments and Federal matching obligations, monies for first-year funding in RCS were restored to $1,350,000; this budget level was maintained

in FY 2015-16 and FY 2016-17. For FY 2017-18, the RCS first-year budget will be retained at $1,350,000 and provide 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 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, and regularly reassesses research priority areas and needs through the Board's Master Plan Research Advisory Committee.

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 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) component, 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. This consolidated approach is retained in FY 2017-18, and the budget increased to $800,000, with the possibility of additional increases in future years pending review of project results and funding demand, as well as completion of existing commitments to programs and projects established under the previous Support Fund structure.

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. In FY 2016-17, the budget was again reduced, to $350,000; this funding level will be further reduced in FY 2017-18 to $330,000, to accommodate demand for backlog matching in Endowed Professorships.

5.4.4 Summary of FY 2017-18 Research and Development Allocations

Prior Commitments (RCS and ITRS only):		$3,382,467
New Awards:	RCS	$1,350,000
	ITRS	$ 800,000
	ATLAS	$ 330,000
R&D PROGRAM TOTAL		**$5,862,467**

5.5 ENHANCEMENT OF THE QUALITY OF DEPARTMENTS OR UNITS - $9,392,401

NOTE: Matching commitments for all Federal Matching Grants Subprogram proposals for which Federal approval has not been received as of the date of submission of the affected Plan and Budget will be 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 departments and units 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 $9,392,401 to the Enhancement Program in FY 2017-18. Thus, approximately 44% of the total program funds available in FY 2017-18 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 $2,725,000 of the $9,392,401 budgeted for Enhancement awards in FY 2017-18 will be required to honor prior commitments for multi-year projects and new and prior-year matching for Federal projects. Of this amount, $300,000 has been budgeted for potential second-year commitments for two-year proposals to be approved in FY 2016-17 under the Traditional Enhancement Subprogram. Traditional Enhancement proposals submitted in this fiscal year are currently undergoing competitive external review and the Board will make funding decisions in April or May of 2017. In addition, a total of $2,425,000 is needed to meet the State's matching commitments in seven 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, $6,667,401 will be available for new Enhancement projects submitted for funding consideration in FY 2017-18. 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. Significantly, 54% of the total funds available for new awards will be dedicated to Enhancement subprograms. (See Table II, "An Overview of Board of Regents Support Fund Budgetary Allocations by Program Component, FY 2017-18" 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). The Board has also matched Enhancement monies to obtain federal grants that implement and sustain statewide education reform efforts. Between 1987 and 2016, federal programs awarded more than $380 million to joint federal/State initiatives, for which the BoRSF provided match of $90 million. Budget levels for federal matching are determined by known demand – upcoming federal competitions and program policies and regulations defining what must and may be matched by the State.

A total of $2,425,000 has been pledged as the State's matching commitment under jointly funded Board of Regents Support Fund/Federal Matching Grants in FY 2017-18, including: (a) $125,000 for the third year of the NASA EPSCoR Research Infrastructure project; (b) $250,000 for the third year of the NASA EPSCoR

Research 9 project; (c) $800,000 for the third year of the NSF Research Infrastructure Improvement (RII) Track 1 project; (d) $250,000 for the third year of the NASA LaSPACE continuation; (e) $250,000 for the second year of the NASA EPSCoR Research 10 project; (f) $250,000 for the first year of the NASA EPSCoR Research 11 project; and (g) $500,000 for the DOE EPSCoR Implementation 2017 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, a level 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. In 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, as well as the urgent 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. 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 must provide funds to continue matching an existing backlog of $40,000 slots, including 33 unmatched since 2012, 121 slots accrued during 2014-2016, and any additional slots for which non-State contributions are received prior to the termination of the previous match level on June 30, 2017. A total of $3,000,000 is budgeted in FY 2017-18: $1,680,000 for new slots and $1,320,000 to match the 33 slots backlogged since 2012. Any unclaimed funds from the $1,680,000 required for new guaranteed slots shall be distributed equally among campuses with previously backlogged slots.

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.

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 is further reduced in FY 2017-18, to $650,000. This funding level will 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 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 either because the assistance provided under the Taylor Opportunity Program for Students (TOPS) is not sufficient to make college affordable for them or because they 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, and have been admitted to the institution awarding the scholarship. Each four-year institution was guaranteed one $40,000 endowed scholarship fund challenge grant annually to match a private/institutional contribution of $60,000. Each two-year institution was guaranteed one $20,000 endowed scholarship fund challenge grant annually to match 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 terminated the Subprogram while retaining opportunities for campuses to target Support Funds to high-need students through the Departmental Enhancement Subprogram. Accordingly, in FY 2017-18 a total of $380,000 is budgeted to clear backlogged and new applications received by the June 30, 2016 Subprogram termination date. Any unclaimed funds remaining after all slots are matched, if any, shall be used to match additional requests in the Endowed Two-Year Workforce Scholarships Subprogram.

5.5.5 Departmental Enhancement

Since 1987, the Traditional Enhancement Subprogram has 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, student success initiatives, service learning projects, and colloquia presented by outstanding out-of-state scholars.

Throughout the history of Traditional Enhancement, 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 Traditional 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, multiyear projects (3-5 years) and small, short-term awards to target a specific need.

After deducting all previous and projected commitments for other components of the Enhancement Program, $2,637,401 remains for the first year of projects submitted in the first competition of the Departmental Enhancement Subprogram, including the Multidisciplinary component (see Section 4.3), during FY 2017-18. 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. Further, the Board may use money from the BoRSF Reserve Fund to preserve the integrity of this vital component.

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 indicates that opportunities must still be provided across all academic disciplines on a rotating basis. Schedule II indicates the discipline eligibility cycle previously used for Traditional Enhancement; some variation of this cycle will be adopted for Departmental Enhancement during its initial years, and will be revisited as demand and need are clarified.

SCHEDULE II: ELIGIBILITY OF DISCIPLINES* IN THE TRADITIONAL ENHANCEMENT SUBPROGRAM

GROUP I

Agricultural Sciences
Arts
Earth/Environmental Sciences
Engineering A (Chemical, Civil, Electrical, etc.)
Health and Medical Sciences

GROUP II

Business
Chemistry
Education
Mathematics
Physics/Astronomy

GROUP III

Biological Sciences
Computer and Information Sciences
Engineering B (Industrial, Materials, Mechanical, etc.)
Humanities
Social Sciences

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

5.5.6 Summary of FY 2017-18 Enhancement Allocations

Prior Commitments:	Traditional and Undergraduate Enhancement	$ 300,000
	Federal Matching Grants	$1,675,000
New Awards:	Federal Matching Grants	$ 750,000
	Endowed Professorships	$3,000,000
	Endowed Two-Year Workforce Scholarships	$ 650,000
	Endowed First-Generation Scholarships	$ 380,000
	Departmental Enhancement	$2,637,401
ENHANCEMENT PROGRAM TOTAL		**$9,392,401**

5.6 ADMINISTRATIVE EXPENSES - $734,632

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 $734,632 to be expended in this category during FY 2017-18.

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
Graduate Fellows	$ 15,000

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 are added to the regular allocation to preserve the $400,000 matching units necessary for the endowments.

6. OVERVIEW OF FY 2017-18 BUDGETARY ALLOCATIONS BY PROGRAM COMPONENT

Table II provides an overview of FY 2017-18 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 2017-18

	TOTAL SUPPORT FUND ALLOCATION	ALLOCATION FOR NEW PROJECTS	ALLOCATION FOR PRIOR COMMITMENTS
ENDOWED CHAIRS	$ 1,620,000	$ 1,620,000	$ 0
GRADUATE FELLOWS	$ 4,390,500	$ 920,000*	$ 3,470,500
RESEARCH & DEVELOPMENT	$ 5,862,467	$ 2,480,000	$ 3,382,467
ENHANCEMENT**	$ 9,392,401	$ 7,417,401	$ 1,975,000
SUBTOTALS	$21,265,368	$12,437,401	$ 8,827,967
ADMIN. COSTS	$ 734,632		
GRAND TOTAL	**$22,000,000**		

*Because allocations for the Traditional and BoR/SREB Graduate Fellows Subprograms must be determined one to two years in advance of when students first arrive on campus, the FY 2017-18 allocation for new Traditional and BoR/SREB graduate fellowships was determined in FY 2015-16 and set forth for the first time in the FY 2016-17 Plan and Budget. These subprograms have been eliminated beginning in the FY 2017-18 funding cycle, so no new funds are required in this or future fiscal years.

**Enhancement figures also 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. **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. **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. **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. **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 **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 **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 **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 **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 **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 **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 **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 **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 **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 **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 **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 **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. **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 **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 **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. **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 **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 **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. **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 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 **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 **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 **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. **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. **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.) **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 **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. **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 **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 **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 **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. **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 **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. **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. **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 **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. **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. **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. **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. **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 – FY2017-18	NNX15AH82H	NASA	3 years	$1,375,000	$750,000

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 – FY2017-18	NNX15AK33A	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.
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.

ATTACHMENT II

Board of Regents Support Fund
Results of Selected Projects

ENHANCEMENT

A Traditional Enhancement award at **Louisiana Tech University** has enabled the campus to further its position as a national leader in nanotechnology and maintain industry-standard facilities. Through the grant, Louisiana Tech acquired a Dynamic Light Scattering system, state-of-the-art in nanotechnology research and education, and commonly used in the private sector. Annually approximately 100 students will have access to this "gold standard" equipment for training and research, and several faculty members' research programs will be impacted. *{LEQSF(2014-15)-ENH-TR-07; Dennis O'Neal, PI}*

An award made to **SOWELA Technical Community College** through the Enhancement Program for Two-Year Institutions has helped to implement a more comprehensive chemistry and physics curriculum through the addition of modern lab equipment and collaborations with McNeese State University faculty. Equipment purchased with grant funds resulted in major improvements to SOWELA's laboratory programs, giving students an opportunity to participate actively in research projects. As a result, the students, along with the PI, presented a poster at the 2013 American Chemical Society Conference in New Orleans. The partnership with McNeese expanded the reach of the project, enabling the two campuses to align their science lecture programs, resulting in a more consistent learning process for students and smoother transition for students intending to transfer to four-year programs. *{LEQSF(2012-13)-ENH-PEN-16; James Mendez, PI}*

An Undergraduate Enhancement project at **LSU Alexandria** is training the next generation of high-tech workers and researchers, using Support Fund monies to acquire new equipment for the labs supporting undergraduate chemistry courses. Purchase and installation of a differential scanning calorimeter and a deionized water system have provided the faculty with an opportunity to demonstrate thermodynamic concepts in a hands-on manner. In addition, the equipment improves the ability of approximately 80 students annually to conduct basic experiments in lab classes and better prepare themselves for the workplace and graduate programs. *{LEQSF(2014-15)-ENH-UG-07;Katie Whitaker, PI}*

With support from a Traditional Enhancement award, **Tulane University** has created a semester-long course through which Biomedical Engineering students learn to conduct translational research and device development as members of integrated teams. Called "Grand Challenges in Biomedical Engineering", the course helps prepare students to become professional members of research and development groups. In addition to the new course, the department also enhanced existing "domain" classes to reinforce the relationship between fundamental engineering and

science, coupled with physiology, as the foundation of translational research in biomedical engineering. From this increased emphasis on research commercialization, Tulane has recently submitted three proposals to Federal agencies to continue growing the translational focus of the department and degree program. *{LEQSF(2012-13)-ENH-TR-25; Donald Gaver, PI}*

Undergraduate Enhancement funding is helping **Southern University at New Orleans** faculty improve training in business by supporting enhanced educational experiences for students. The grant permitted SUNO to equip two classrooms with Smart podiums and computer- and portable-device-ready workstations, as well as add 21 computers to a student laboratory. Beyond the business courses, these upgrades provided additional resources for courses across the campus, including computer information systems, social work, and childhood teaching and learning, as well as helping to prepare departments for accreditation reviews. *{LEQSF(2014-15)-ENH-TR-22; Frank Martin, PI}*

The University of Louisiana at Lafayette has used a Traditional Enhancement grant to acquire a fluorescence spectrophotometer for use in both research and teaching. In the first year following its installation, more than 200 undergraduate students enrolled in chemistry, biology, and engineering courses used the equipment, as well as students in research-intensive classes. In this short time, work using the equipment has led to five published papers and curriculum revisions across a variety of disciplines to incorporate the spectrophotometer. *{LEQSF(2014-15)-ENH-TR-28; Wu Xu, PI}*

A Traditional Enhancement award at **Pennington Biomedical Research Center** provided funds to purchase three hybrid detectors for incorporation into an existing confocal microscope. These detectors add sensitivity to the existing microscope, facilitating live cell and whole mount image capture. The new sensitivity has allowed investigators to image whole mouse embryos; currently efforts are underway to leverage the detectors to include whole mouse brain imaging, as well as other organs of interest to local and regional research communities. This is an important enhancement to the core facility which not only provides Pennington faculty with added capacity to generate data for research publications, intellectual property development, and pre-clinical experiments, but also encourages multidisciplinary partnership and facility sharing. Several researchers from the LSU Chemistry Department have already made use of the core's capabilities, and Pennington expects other external faculty to follow. *{LEQSF(2012-13)-ENH-TR-20; David Burk, PI}*

Funding from the Enhancement Program for Two-Year Institutions has helped **Louisiana State University Eunice** to establish an Assessment Center to test students in math, English composition, and reading. In just its first year, the Center gave more than 900 assessments to 600 students using ACT's COMPASS system. The upgrade to COMPASS, a computerized assessment system, enabled LSUE to replace the ACT ASSET pencil and paper assessment,

which was more than 20 years old. COMPASS allows for better, more accurate placement of students in entry-level math and English courses, resulting in fewer students being placed in the first developmental math course. This provides a significant benefit, decreasing time to degree and expenses to the student, the institution, and the State. Also improved was student performance in and satisfaction with developmental math courses. Success rates increased by 9-15% and students were able to move through their developmental education much more quickly. These preliminary results have positioned LSUE for national recognition, with the Vice Chancellor for Academic Affairs and the project PI presenting project work at the annual meeting of the Southern Association of Colleges and Schools Commission on Colleges in December 2014. *{LEQSF(2013-14)-ENH-PEN-06; Paul Fowler, PI}*

A principal investigator at **Nicholls State University** has used a Traditional Enhancement award to create an optimal classroom environment for the teaching of mathematics, with tools for collaborative learning to prepare teacher-candidates. The classroom emphasizes hands-on experience while incorporating fundamental pedagogical elements necessary to implement high-value, high-impact math instruction. In the first year, the program affected 200 students and eight faculty members, and will increase its annual impact to 300 students and eleven teachers in subsequent years. During the grant year, the passage rates of elementary education majors improved dramatically for mathematics content courses, promising better trained and more competent subject-area experts in Louisiana classrooms. *{LEQSF(2014-15)-ENH-TR-14; DesLey Plaisance, PI}*

An Undergraduate Enhancement award has enabled **Dillard University** to secure much-needed instrumentation for use in histology courses as well as faculty and student research. Prior to these purchases, lab exercises had been limited to studying prepared slides; with the enhancement, students receive hands-on training in tissues processing, embedding, staining, and several other techniques routinely used by histotechnicians. And the impact of the equipment extends beyond histology courses to microbiology, cell biology, human physiology, environmental biology, ecology, research methodology, and biology research. As a result, students have access to the instruments in a variety of courses to learn methods and techniques essential to successfully pursue job opportunities in health, medical, and biological sciences fields. In addition, the instrumentation has assisted the PI in developing a research program that could enable a new partnership with scientists in New York and offer highly valuable real-world research experiences for students working with the PI. *{LEQSF(2013-14)-ENH-UG-02; Julie Basu Ray, PI}*

Northwestern State University has used an Undergraduate Enhancement award to create courses in a high-demand technology area exploding in the marketplace: mobile application development for portable devices. To do this, Enhancement funding helped to provide equipment and supplies for a new, hands-on laboratory that enables instructors to teach the skill sets

necessary for this work, as well as provides opportunities for faculty interested in creating apps. Particularly crucial is the availability of Macintosh desktop computers, which allow students and faculty to work on the popular iOS platforms used by iPhones and iPads. This facility not only provides students with training in tools and technologies in high demand in industry, but also encourages faculty and students to think in an entrepreneurial way about their work and their futures. *{LEQSF(2014-15)-ENH-TR-17; Jack Russell, PI}*

A Traditional Enhancement award at **Louisiana State University and A&M College** has helped to establish a cybersecurity laboratory on campus, allowing students and faculty to study methods to detect and defend against cyber threats. The lab, equipped with dedicated servers, client systems, and computers, provides a safe environment to study cyber attacks without exposing data systems used for other purposes. The lab enables investigators and students to quickly set up computers to model various situations in which an electronic system might be compromised, then study attack methods, defensive responses, and forensics. Three refereed journal articles by lab-affiliated faculty have already appeared in highly prestigious academic journals. A high-tech tool for an increasingly important field of study, the lab has also proven attractive to students interested in cybersecurity and cyber threats; increased student participation in research is expected as the lab is completed and library resources are developed. *{LEQSF(2012-13)-ENH-TR-04; David Koppelman, PI}*

RESEARCH AND DEVELOPMENT

Research Competitiveness Subprogram (RCS)

With the help of RCS funding, a research group at **Louisiana State University and A&M College** has been able to participate in the Long-Baseline Neutrino Experiment (LBNE), a major collaborative initiative housed at Fermilab to explore key questions in particle physics and astrophysics, some of the most fundamental questions about the physical universe. As a result of the RCS project, LSU researchers gained significant exposure, and the PI was elected convener of LBNE's Cross Sections and Nuclear Models working group. An undergraduate student working with the program received a summer internship at Fermilab, and both the PI and Co-PI have given numerous invited lectures and presentations both nationally and internationally. In 2014 the research group, along with other faculty at LSU, secured a competitively awarded Department of Energy grant totaling almost $6 million to study neutrino oscillations, which will keep LSU at the forefront of fundamental physics research. *{LEQSF(2011-14)-RD-A-11; Martin Tzanov, PI}*

Nanomaterials and engineered nanoparticles (ENPs) hold significant promise for various applications, including remediation of environmental damage, and have been used successfully at Superfund sites across the United States. Despite the benefits, however, little is known about environmental, health, and safety aspects of these materials once they are released into an

environment. An RCS researcher at **Southeastern Louisiana University** is playing a leadership role in developing exposure assessment models to estimate worker and public health risks associated with the handling of ENPs, helping to determine the consequences of deploying certain ENPs in remediation and to develop an understanding of which ENPs are good candidates for use. The importance of this research is reflected in the level of interest in scientific and industry communities: the PI has presented at four national conferences, chaired a national committee including representatives of numerous federal agencies, made local presentations to Louisiana agencies, and established significant collaborations with local, regional, national, and international organizations including the Environmental Protection Agency, Occupational Health and Safety Administration, and United Nations Environment Program. Ultimately research funded through the project is anticipated to provide guidelines and components of training modules and best practices for use by site managers and workers at Superfund sites. *{LEQSF(2011-14)-RD-A-22; Ephraim Massawe, PI}*

A principal investigator at **Tulane University** made significant advances in the development of synthetic agents to help control the activity of certain drugs, both in timing and in location, after they are administered. Such advances are particularly important for medical treatments like chemotherapy, which is effective in treating cancer but can be toxic to non-disease sites in the body, limiting its utility. Research such as this seeks mechanisms to target the treatments, to maximize their effectiveness while reducing or eliminating negative impacts throughout the body; this project has focused on achieving these outcomes through synthetic agents that target proteins in a controlled manner using specific trigger molecules. The PI has had remarkable technical and academic success, achieving all research goals and publishing three peer-reviewed manuscripts related to the project. This success has led to a patent application, currently pending, and approximately $1.5 million in funding from the National Institutes of Health to continue research into protein binders. *{LEQSF(2009-12)-RD-A-17; Janarthanan Jayawickramarajah, PI}*

Thanks in part to an RCS award, a principal investigator at **Louisiana Tech University** has established a competitive research program focused on a new and rapidly expanding field of optics called electromagnetic metamaterials (EMMs). The field – built on progress in nanofabrication and sub-wavelength optics – opens the possibility of manipulating light at will. The PI's experimental and computational studies of EMMs have applications in low-observability stealth technology (LOST) and dense optical media for development of microscopic light concentrators. During the RCS project, the PI has published 13 peer-reviewed journal articles and conference proceedings and given 10 regional, national, and international invited conference presentations, one at the prestigious CAREER Award Regional Forum. His work on stealth technology has been featured in the media in discussions of scientific progress toward making invisibility possible. In addition, the grant supported three graduate assistants

who conducted project research as part of their doctoral dissertations. *{LEQSF(2011-14)-RD-A-18; Dentcho Genov, PI}*

Computers, appliances, tools, and gadgets that employ sensors are already widely used and are expected to become ubiquitous in the coming years. Despite being in common use and a vital component of a multi-billion dollar industry, most sensors are simply a few lines of code, and more work is needed to develop software methodologies, algorithms, control software, and evaluation mechanisms. A principal investigator at the **University of Louisiana at Lafayette** has undertaken this challenge, and is making excellent progress toward creating a complex and complete sensor control system. The work has already attracted support from the National Science Foundation, as well as generated 15 publications including book chapters and a book. One doctoral and six master's students worked on special projects related to the PI's research, and three undergraduates, all of whom have since graduated, got hands-on research experience, invaluable in the STEM job market. *{LEQSF(2009-12)-RD-A-22; Ashok Kumar, PI}*

Through RCS funding, a principal investigator at **Louisiana State University and A&M College** is successfully pursuing research into surface plasmons – light waves that propagate along metal surfaces – which enable a wide variety of functions, including light guiding and manipulation at the nanoscale. This technology, though still in its infancy, holds significant promise across many applications: data storage, light generation, lithography, microscopy, photovoltaics, and biophotonics. The results of this project, investigating the effects of fabrication-related disorders on nanoplasmonic devices, represent important breakthroughs in integrated optics and optical information processing, fields already crucial to modern technology. The PI has leveraged his RCS research into an NSF Faculty Early Career Development (CAREER) Award, a highly prestigious award in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research. During the three-year grant period, the PI will receive $400,000 to develop and further the research begun through the RCS project. *{LEQSF(2009-12)-RD-A-08; Georgios Veronis, PI}*

Industrial Ties Research Subprogram (ITRS)

A team of researchers at the **University of Louisiana at Lafayette** has used ITRS funding to assist a local inventor, Webster Pierce of Pierce Industries, LLC, in conducting extensive lab testing and design refinement of his modular shoreline protection/sediment protection system, the Wave Robber™. The system works by absorbing or reflecting most wave energy back into open water; it has been shown that 80-90% of wave height can be eliminated by the system, saving the shoreline from significant erosion and wear. While Mr. Pierce independently conducted some testing of the system, more refined and scientific testing was needed to move it to commercialization. University researchers focused on fabricating laboratory-scale models,

testing in the lab environment, analyzing results, confirming initial hypotheses, and developing design guidance and performance estimates for specific applications. While research and testing were ongoing, Mr. Pierce worked with the Louisiana Small Business Development Center to identify marketing potential and manufacturing alternatives. *{LEQSF(2011-14)-RD-B-07; Daniel Gang, PI}*

Through an ITRS project, a research group at **Louisiana Tech University** is working with private-sector partners in Louisiana and Texas to advance major research in anticorrosion coatings for steel that are able to withstand harsh deep sea water conditions. Clay nanotubes are a natural and less expensive material that can provide protection to industrial products from a variety of threats, including fire, water, and metal corrosion. One approved and two pending patents have already resulted from the research, and additional funding has been received from the U.S. Environmental Protection Agency and the National Science Foundation. In addition, several applications of the anticorrosion formulations developed through this project have been transferred to Louisiana and national industries for testing, with a very high potential for commercialization in the near future. *{LEQSF(2009-12)-RD-B-06; Yuri Lvov, PI}*

Researchers at **Louisiana State University and A&M College** are developing ways to monitor hydraulic fracturing processes, used extensively across the United States to release natural gas from rock using a mix of highly pressurized fluids, to ensure the safety of the process and mitigate risks of contaminating groundwater and other environmental hazards. The research is developing novel techniques for determining the size and extension of hydraulic fractures. Though typical fractures are very small, excessive fractures can be so large that they may reach to aquifers and other underground water resources, possibly causing contamination to drinking water in nearby communities. These events, while rare, have attracted significant public attention and could hinder shale gas industrial development in affected areas, including Louisiana. A method for monitoring drilling and preventing this kind of error is critical to the industry's growth. The PI's research, in partnership with Schlumberger, has improved accuracy in locating fractures through a novel, complex, and multilayered approach. ITRS results were successfully leveraged into an $180,000 grant from the Research Partnership to Secure Energy for America (RPSEA), a nonprofit group managing the Department of Energy's Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources Research and Development Program. *{LEQSF(2011-13)-RD-B-02; Arash Dahi Taleghani, PI}*

<u>Awards to Louisiana Artists and Scholars (ATLAS) Subprogram</u>

With help from an ATLAS grant, a member of the horn faculty at **Louisiana State University and A&M College** has completed a major new recording of music for trumpet and wind instruments. Featuring a combination of classical pieces and new compositions, the CD, titled *Redshift*, was recorded with the Dallas Wind Ensemble and has received high critical praise since

its release in September 2014. The CD's title track is the premiere recording of a major new trumpet concerto by LSU percussion faculty Brett William Dietz. *{LEQSF(2013-14)-RD-ATL-05; Brian Shaw, PI}*

An ATLAS principal investigator at the **University of Louisiana at Lafayette** is finishing work on a major study of the crawfish boat, a vital indigenous technology that shaped South Louisiana. His work embraces the development of the amphibious boat that helped to transform the culture and economy of the region as well as traditions within the landscape that sparked this transformation. The resulting book, *The Amazing Crawfish Boat*, will be published in February 2016 by the University of Mississippi Press as part of its Folklore Studies in a Multicultural World series *{LEQSF(2013-14)-RD-ATL-09; John Laudun, PI}*

A researcher at the **University of New Orleans** has completed the first full-length biography of the novelist Constance Fenimore Woolson, slated to be published by W.W. Norton in February 2016. A major nineteenth-century literary figure, both for her writing and her friendships with key artists such as the author Henry James, Woolson lived in and chronicled in a nuanced way significant pivotal events in U.S. and world history, including Reconstruction in the South and the generation of American expatriots in the late nineteenth century. In addition to ATLAS support, the Principal Investigator received a research grant from the National Endowment for the Humanities, affirming that this biography of Woolson is a significant contribution to American arts and letters. *{LEQSF(2012-13)-RD-ATL-11; Anne Boyd Rioux,,PI}*

LOUISIANA EPSCoR

In 2015 a consortium of researchers put Louisiana's growing advanced manufacturing and materials industries into the national spotlight, being awarded a highly competitive $20 million Track 1 grant from the National Science Foundation's Experimental Program to Simulate Competitive Research (EPSCoR). The grant will establish 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 will have 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 has also been successful in securing three additional federal awards. A $3.251 million collaborative award between Louisiana and Mississippi, funded through NSF EPSCoR Track 2, establishes 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, will develop and implement 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.

A third award, awarded $4.949 million from the Department of Energy's EPSCoR program paired with $500,000 in BoRSF matching, is in support of a project entitled "Building Neutron Scattering Infrastructure in Louisiana for Advanced Materials," which seeks to build 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 will 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