

FY 2014-2015 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

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- I. Funded Proposals: Joint Federal/State Programs with Statewide Impact
- II. Results of Selected Projects
- III. Taxonomy of Disciplines

OVERVIEW OF RESULTS

Investment of Board of Regents Support Fund Money in Higher Education 1987 - 2013

- ◆ **\$1,232,760,012 GENERATED IN EXTERNAL FUNDS**
 - **\$858,445,416 in new external funding** (through 6/30/2013) from Federal, private and other non-Support Fund sources
 - **\$374,314,596 in non-State contributions** for Endowed Chairs, Endowed Professorships, and First-Generation Endowed Undergraduate Scholarships
- ◆ **3,060 EXTERNAL AWARDS** from Federal, private and other non-Support Fund sources
- ◆ **314 ENDOWED CHAIRS FOR EMINENT SCHOLARS** established at 26 campuses
 - Two hundred sixty-six (266) \$1 million chairs
 - Forty-eight (48) \$2 million chairs
 - Includes ninety-nine (99) chairs funded by special legislative appropriation
- ◆ **2,262 ENDOWED PROFESSORSHIPS** established at 39 campuses
- ◆ **80 UNDERGRADUATE SCHOLARSHIPS** endowed at 18 campuses since FY 2007-08
- ◆ **1,514 SUPERIOR GRADUATE FELLOWSHIPS** supported at 16 campuses
- ◆ **1:1.61 RATE OF RETURN** for all projects funded since 1987
 - For every Support Fund dollar invested, \$1.61 has been returned to the State during the life of the awards
- ◆ **206 PATENTS ISSUED, 195 PATENT APPLICATIONS PENDING** during the life of the awards
- ◆ **10,215 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 2014-2015**

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. All disciplines are eligible to compete in the Graduate Fellows, Enhancement, and Endowed Chairs programs, thus reflecting the Board's 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. The Research and Development (R&D) Program has primarily supported those science and technology disciplines in which basic and applied research generate near- and long-term economic development and diversification in Louisiana, as well as contribute to fundamental knowledge.

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 (hereinafter referred to as the Endowed Chairs Program); (2) recruitment of superior graduate students (the Graduate Fellows Program, including Traditional Graduate Fellows, Graduate Fellowships for Teachers, and the BoR/SREB Doctoral Scholars Program); (3) carefully defined research efforts (the Research and Development Program, including the Research Competitiveness Subprogram, the Industrial Ties Research Subprogram, and the Awards to Louisiana Artists and Scholars Subprogram); and (4) enhancement of the quality of academic, research, or agricultural departments or units within a university (the Enhancement Program, including Traditional Enhancement, Undergraduate Enhancement, the Enhancement Program for Two-Year Institutions, the Federal Matching Grants Program, the Endowed Professorships Program, and the Endowed Undergraduate Scholarships Program for First-Generation College Students).

1.1 BOARD OF REGENTS SUPPORT FUND REVENUE PROJECTION, FY 2014-15

The base revenue amount used in the FY 2014-15 BoRSF Plan and Budget is \$23,500,000. The official projection of the Revenue Estimating Conference, as well as estimates from the State Treasurer, current and historic trends, Board policies and interpretations of the Board's Finance Section, were considered in deriving this base funding level.

1.2 BUDGET RATIONALE AND PREAMBLE

In deliberations about the Board of Regents Support Fund Plan and Budget for FY 2014-15, the Board recognized several issues requiring long-range strategic planning:

- Steadily increasing demand for Support Fund resources under all four program components with concomitant increases in proposal quality and outstanding results achieved, including the leveraging **during the grant period** of \$1.61 in non-State money for every Support Fund dollar awarded;

- The State's expanding emphasis on economic development and diversification, particularly related to 21st-century innovation industries;
- Greater emphasis on strategic investment in research through the Fostering Innovation Through Research in Science and Technology for Louisiana (FIRST Louisiana) statewide plan as well as the 2011 Board of Regents Master Plan;
- The need for improved data collection and enhanced evaluation to better inform decision making; and
- Attention, especially during a period of continuing budgetary challenges, to constitutional restrictions on supplanting State appropriations with Support Fund dollars.

It is vital that strength be maintained in and across all four interrelated Support Fund components. While the Board lauds the private philanthropy reflected in applications for endowed chairs, professorships, and undergraduate scholarships, it is also mindful that significant cuts in budgets for Enhancement, R&D and Recruitment of Superior Graduate Students would jeopardize the viability of these components and hence impair the overall quality of the Support Fund programs. Endowed chairholders and professors must have basic infrastructure and equipment, supportive cutting-edge research across departments and units, and top-quality graduate students in order to achieve the results expected of them, making it imperative to balance matching funds for endowments with monies for competitive grants in the Enhancement, R&D and Graduate Fellows programs.

1.3 ADOPTION OF FY 2014-15 PLAN AND BUDGET

The following Plan and Budget for FY 2014-15 were adopted by the Board of Regents at its meeting of December 5, 2013.

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 required 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

2.2 LONG-RANGE EVALUATION

From the first Strategic Plan in 1988, strategies have been in place for assessment of the Board of Regents Support Fund to determine its long-range impacts, as well as levels of success attained by individual funded projects and the programs 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 based on four elements: (1) collection of background information; (2) submission of annual and/or final reports by project directors; (3) submission of additional information one year after project termination; and (4) evaluation by out-of-state experts of individual projects and overall programs. In the spring of 1994 such an evaluation was conducted by a distinguished panel of out-of-state experts. At that time, the panel concluded that the BoRSF was effectively and efficiently administered, was 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 more comprehensive and regular assessment of programmatic benefits became evident. Accordingly, the Board conducted a thorough revision of the long-range evaluation system, adopting a cyclical process by which Support Fund programs could be assessed. Though the process began during the summer and fall of 1998 with the comprehensive review of the Endowed Chairs Program, the cyclical approach was codified in the 1999 BoRSF Strategic Plan. This first Endowed Chairs review and subsequent programmatic evaluations yielded significant benefits to Support Fund components:

- 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 Program led to the adoption, in December 2000, of the Board of Regents Endowed Professorships Policy, providing for the improvement of that program.
- The FY 2000-01 review of the Recruitment of Superior Graduate Students Program led to the January 2002 adoption of recommendations designed to elevate the program's accomplishments.
- The FY 2001-02 review of the Research and Development Program yielded a powerful endorsement of the program's success as well as recommendations for improvement.

In each instance, insights from programmatic reviews led to the adoption of measures that further strengthened these Support Fund components and thus maximized their positive impact on Louisiana higher education.

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 evaluation cycle was begun anew during FY 2008-09, as a distinguished team of experts again comprehensively assessed the Endowed Chairs for Eminent Scholars Program. This review resulted in policy and program revisions implemented during the 2009-10 review process, which are already yielding benefits. Other Support Fund programs will be assessed in future years, with all components subject to comprehensive review on a periodic basis.

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 herein 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 the Endowed Chairs for Eminent Scholars Program, and no specific 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.

Annual and/or final reports have been used since the inception of the BoRSF to monitor the progress of all projects. A few of the most significant achievements are described in the following sections.

3.1 STATEWIDE RESULTS

- * **\$1,232,760,012 in external funds have been generated** from Federal, private, and industry sources as a result of the Board of Regents Support Fund's investment in higher education, thereby significantly increasing the total monies available for higher education. This represents a **return of \$1.61 for every Support Fund dollar invested** in higher education 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 expiration of the awards.
- * **3,060 grants and/or contracts have been awarded** to Louisiana post-secondary institutions from external funding agencies directly as a result of BoRSF investments.
- * An analysis performed by the Louisiana Department of Economic Development concluded that, for all completed Industrial Ties Research Subprogram projects, **48% had either been successfully commercialized or were in the process of commercialization**. Forty-five percent (45%) of projects that were successfully commercialized are protected by a patent and/or license. Additionally, **almost 60% of all completed projects reported moderate to significant industrial interaction**.
- * **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 reform 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.)
- * **206 patents have been issued, with another 195 applications pending** during the life of the awards.

3.2 RESULTS FROM SELECTED PROJECTS

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

3.3 MULTIPLIER EFFECTS

Using the input/output table constructed by the Bureau of Economic Analysis in the U. S. Department of Commerce and housed in the Department of Economics at LSU, one can estimate the multiplier effects of such an infusion of new dollars on the Louisiana economy in terms of new revenues, income, and jobs for its citizens.

Effects of the \$1,232,760,012 in external funds generated from Board of Regents Support Fund projects are estimated as follows:³

- **Approximately \$2.54 billion in new revenues to Louisiana firms and organizations;**
- **Approximately \$1.03 billion in new income for Louisiana citizens; and**
- **Approximately 44,938 new jobs for Louisianans.**

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. These initiatives were the NSF LaSER Advanced Development Proposal (ADP) and the Louisiana Systemic Initiatives Program (LaSIP) in Math and Science Education.⁴ 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 Support Fund projects described in Attachment II of this Plan and Budget;
- To expand opportunities available through Support Fund programs;
- To augment the building of infrastructure begun under traditional BoRSF programs, which is necessary to enable Louisiana's universities to compete with greater success for Federal research money; and

³These estimates were determined through application of a formula developed by Dr. Loren Scott of LSU-Baton Rouge, who authored "The Impact on the Louisiana Economy of \$66.5 Million in Outside Research Funding at LSU," January 1990.

⁴Details of these awards are included in Attachment I.

- 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 competitions described above, and these efforts encouraged a continued quest for competitive Federal research and educational dollars from the National Science Foundation (NSF) and a variety of other agencies including the National Aeronautics and Space Administration (NASA), the Department of Defense (DOD), the Department of Energy (DOE), the Department of Commerce, the Environmental Protection Agency (EPA), and the National Institutes of Health (NIH). Support Fund obligations for these Federal grants appear below in Table I. A more detailed description of each grant, including the Federal funds received for each, can be found 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 Program
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 must be 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

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 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
NASA EPSCoR - Research 8 (Pending)	TR ENH 100%	\$250,000	\$750,000	2014-15 through 2016-17	3

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. In the past, the CAN has been issued late in the calendar year. Proposals from Louisiana faculty will be submitted to respond to this announcement in fall 2013.

It is anticipated that \$250,000 will be required in FY 2014-15 to provide match to successful projects funded through NASA EPSCoR. The funds are included as a new award in the Federal Matching Grants component of the Enhancement Program (see Section 5.5).

4.3 MULTIDISCIPLINARY, 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 the traditional BoRSF program components. The best known manifestations of the Board's support of proposals of this type are an \$800,000 Enhancement award to provide initial funding to the Louisiana Academic Library Network (LaLINC) project, which has computerized databases and linked academic libraries throughout the State, and an award of \$3,500,000 to support the efforts of the Louisiana Optical Network Initiative (LONI).

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 and 2007 revisions of the Strategic Plan, the Board specifically encouraged the submission of collaborative proposals which would yield statewide benefits. Beginning with its FY 2000-01 budget, and continuing in FY 2014-15, the Board has set aside funds each year from the Traditional Enhancement Program for the funding of these types of projects. The Board reaffirms the eligibility and encourages the submission of

multidisciplinary, multi-institutional proposals in all Support Fund program components for FY 2014-15. 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 of Traditional Enhancement, 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 has since been calculated as a percentage of the Traditional Enhancement budget (20%). This percentage calculation will continue in the FY 2014-15 Plan and Budget. Any unexpended Multidisciplinary funds will revert to discipline-based Traditional Enhancement (see Section 5.5).

5. BOARD OF REGENTS SUPPORT FUND PROGRAM COMPONENTS

5.1 BUDGETARY CONTINGENCIES

If in FY 2014-15 the income received for the higher education portion of the Board of Regents Support Fund is greater than the \$23,500,000 projected, the additional revenues shall be allocated to the Endowed Professorships program to assist in addressing the backlog in match requests. In the event that reductions are necessary, they shall be accommodated through a proportionate reduction in the first-year amounts allocated for competitive proposals in Enhancement and R&D Program components.

5.2 ENDOWED CHAIRS FOR EMINENT SCHOLARS - \$2,020,000

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 2012-13, 314 chairs are matched at twenty-six institutions, and the program has generated a total endowment (counting private match) of \$362 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 at three levels: \$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). Forty-eight (48) of the 314 chairs matched have been at the \$2 million level. Beginning in FY 2009-10, chair applications have also been permitted at the \$3 million level, though none has yet been received.

“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-Alexandria, Southern University-Baton Rouge, 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 peer reviews of the chairholder are intended to assure continued accomplishment. Chairholders are held to standards of performance which require that they maintain highly productive records of scholarly and/or creative endeavors, exceptional teaching, recruitment and mentoring of high-quality students, leadership activities, and enhancement of the State's economy.

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 program, the budget for Endowed Chairs will be reduced to \$2,020,000, providing funds for five \$400,000 matching "slots" plus \$20,000 in consultant costs.

5.3 RECRUITMENT OF SUPERIOR GRADUATE STUDENTS - \$3,614,000

The Recruitment of Superior Graduate Students component, also called the Graduate Fellows Program, provides resources to select departments to attract and retain top-quality students in their graduate programs. Through FY 2012-13, the Board of Regents has provided 1,514 graduate fellowships to a spectrum of departments at sixteen institutions in Louisiana. About 10% of these fellowships have been awarded to programs specifically targeting in-service K-12 teachers in mathematics and science disciplines pursuing master's degrees in education. While the full economic and cultural benefits of these fellowships are difficult to quantify, it is clear that the program has contributed highly educated employees to Louisiana business and industry, expert teachers at levels from kindergarten to college, and a community of enthusiastic, energetic, and dedicated students to further the educational and research agendas of colleges and universities across the State.

The Traditional Graduate Fellows (GF) and Graduate Fellowships for Teachers (GFT) subprograms have been part of the Graduate Fellows Program since 1993. 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 Minority 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 GFT Subprogram offers support to pre- and in-service teachers seeking master's degrees in science and/or mathematics. To apply for a GFT award, an applicant institution must offer a master's program that can be completed in one academic year plus an additional summer, to allow teachers to finish within a single academic year's sabbatical from the classroom. GFT fellowship recipients, further, must pledge to teach in a Louisiana school system for at least one year after completing the master's degree, to ensure that Louisiana students reap some of the benefits of the State's support of these teachers. The BoR/SREB Subprogram, a continuation of the Perkins Doctoral Fellows Program established in response to the Louisiana Consent Decree, offers successful universities fellowships to build diversity in graduate programs by recruiting and retaining

excellent minority doctoral candidates. The Traditional GF, GFT, 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.

Implementation of the Traditional GF and GFT subprograms requires the following schedule:

- Year One: Award of the grant by the Board of Regents
- Year Two: Recruitment by awardees of superior graduate candidates
- Year Three: Enrollment of recruited students and initial disbursement of funds committed under the grant

For example, colleges and universities that submit successful proposals during the current fiscal year (FY 2013-14) will have a full year (FY 2014-15) during which to recruit students who, in turn, will enroll in Louisiana universities' graduate programs and receive the Board of Regents Support Fund fellowship for the first time in the fall of 2015 (FY 2015-16). The BoR/SREB Subprogram, in contrast, does not require that fellowships be used for recruitment, so makes funds available in the fiscal year immediately following the award announcement (e.g., in FY 2014-15 for awards made in FY 2013-14).

The \$3,614,000 budgeted for this category for FY 2014-15, therefore, is almost entirely for previous obligations, including: (a) \$758,000 for fourth-year funding of graduate fellows who began their course of study in AY 2011-12; (b) \$1,012,000 for third-year funding of graduate fellows who began their course of study in AY 2012-13; (c) \$1,032,500 for funding of second-year graduate fellows who began their course of study in AY 2013-14; (d) \$786,500 for funding of graduate fellows who will begin their course of study in AY 2014-15; and (e) \$25,000 for review of proposals submitted during FY 2014-15. In addition to outlining prior commitments in the Graduate Fellows Program in FY 2014-15, this information also notifies the Governor and the Legislature that an amount of approximately \$3.62 million will have been committed from the FY 2015-16 Support Fund budget prior to the submission of the annual plan and budget for that year.

In keeping with the conceptual framework that encourages the use of Support Fund money to enhance all areas of higher education, all disciplines are eligible to compete in the Traditional GF Subprogram. Those disciplines accorded a higher priority for Louisiana's economic development are eligible to compete every year. The eligibility cycle for Traditional GF, including disciplines eligible in FY 2014-15, is specified in Schedule I.

SCHEDULE I: ELIGIBILITY OF DISCIPLINES* IN THE TRADITIONAL GF SUBPROGRAM

GROUP I - ELIGIBLE EVERY YEAR

Biological Sciences
Chemistry
Computer and Information Sciences
Earth/Environmental Sciences
Engineering A and B
Health/Medical Sciences**
Physics/Astronomy

GROUP II - ELIGIBLE IN FYs 2012-13, 2014-15, 2016-17

Agriculture
Business
Education, including Literacy
Mathematics

GROUP III - ELIGIBLE IN FYs 2013-14, 2015-16, 2017-18

Arts
Humanities
Social Sciences

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

**Effective with the Board action of June 22, 1995, the LSU Health Sciences Centers in New Orleans and Shreveport and the Tulane University Health Sciences Center are permitted to submit a maximum of three proposals each when Health and Medical Sciences is an eligible category. Health and Medical Sciences was made eligible each year in the 1999 and 2007 Strategic Plans.

5.4 CAREFULLY DEFINED RESEARCH EFFORTS - \$4,620,000

A total of approximately \$2,235,000 will be required during FY 2014-15 to honor prior commitments for multi-year projects in the Board of Regents Support Fund 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. Allocations for new awards in the R&D Program peaked at approximately \$2,800,000 in FY 1990-91. The budget for new R&D projects was reduced in FY 1991-92, in part because of a slight drop in total Support Fund monies available, but primarily as a result of the matching commitments required for Federal grants.

The Research Competitiveness Subprogram (RCS) has been consistently successful since its inception in FY 1986-87. Accordingly, 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 increased to \$1,500,000 in FY 1999-2000 and was maintained at that level for seven years. Beginning in FY 2006-07 and continuing through the FY 2009-10 Plan

and Budget, the amount 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 reductions 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 the decrease in prior commitments and Federal matching obligations, monies for first-year funding in RCS will be increased to \$1,350,000.

The Industrial Ties Research Subprogram (ITRS), though it has resulted in a number of projects with significant economic benefits (see Attachment II), has also presented some challenges. Louisiana's relatively undiversified industrial economy and dearth of large industrial-based corporations (only one Fortune 500 company 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 the decrease in prior commitments and Federal matching obligations, monies for first-year funding in ITRS will be increased to \$585,000.

While the R&D Program historically has been focused almost exclusively on the sciences, mathematics, and engineering, the Board remains cognizant of its responsibility, elucidated in each strategic plan since 1988, to improve the quality of education "at all levels in all disciplines." The comprehensive review of the R&D Program during FY 2001-02 documented the need for a subprogram with emphasis on the arts, social sciences, and humanities. The Subprogram, 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, now named Awards to Louisiana Artists and Scholars (ATLAS), 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 the decrease in prior commitments and Federal matching obligations, monies for first-year funding in ATLAS will be increased to \$450,000.

5.4.1 Research Competitiveness Subprogram (RCS)

RCS is a stimulus program directed only 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 directed only to 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. 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 (biological, computer/information, and earth/environmental sciences) are targeted for funding annually. The eligibility cycle for RCS, including disciplines eligible in FY 2014-15, is specified in Schedule II.

SCHEDULE II: ELIGIBILITY OF DISCIPLINES* IN THE RESEARCH COMPETITIVENESS SUBPROGRAM

GROUP I - ELIGIBLE EVERY YEAR

Biological Sciences
Computer and Information Sciences
Earth/Environmental Sciences

GROUP II - ELIGIBLE IN FYs 2010-11, 2011-12, 2014-15, 2015-16, 2018-19

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

GROUP III - ELIGIBLE IN FYs 2012-13, 2013-14, 2016-17, 2017-18

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

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

5.4.2 Industrial Ties Research Subprogram (ITRS)

The principal goal of ITRS is to fund research proposals that 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 by the private sector and/or non-State public agencies. Because ITRS also functions as a stimulus program, 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.

To ensure that no opportunities with the potential to promote economic development and diversification are overlooked, the Board has, since 1993, opened competition in ITRS to proposals from all research areas. Further, the Board has attempted 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.

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 the completion of manuscripts for publication and/or the 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.

5.4.4 Summary of FY 2014-15 Research and Development Expenditures

<u>Prior Commitments (RCS and ITRS only):</u>		\$2,235,000
<u>New Awards:</u>	RCS	\$1,350,000
	ITRS	\$ 585,000
	ATLAS	<u>\$ 450,000</u>
R&D PROGRAM TOTAL		<u>\$4,620,000</u>

5.5 ENHANCEMENT OF THE QUALITY OF DEPARTMENTS OR UNITS - \$12,403,706

NOTE: Matching commitments for all Federal Matching Grants Program proposals for which Federal approval has not been received as of the date of submission of the affected Plan and Budget will be accommodated from 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 Board of Regents Support Fund 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. For this reason, the Board shall dedicate \$12,403,706 to the Enhancement Program in FY 2014-15. Thus, approximately 55% of the total program funds available in FY 2014-15 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 \$1,675,000 of the \$12,403,706 budgeted for Enhancement awards in FY 2014-15 will be required to honor prior commitments for multi-year projects. Of this amount, \$300,000 has been budgeted for potential second-year commitments for two-year proposals to be approved in FY 2013-14 under the Traditional and/or Undergraduate Enhancement programs. Traditional and Undergraduate 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 2014. A total of \$1,625,000 has been pledged as the State's matching commitment under six jointly funded Board of Regents Support Fund/Federal Matching Grants, including: (a) \$250,000 for the fifth year of the NASA LaSPACE project; (b) \$500,000 for the fifth year of the LAMP Phase IV project; (c) \$250,000 for the third year of the NASA EPSCoR Research 6 project; (d) \$125,000 for the third

year of the NASA EPSCoR Research Infrastructure project; (e) \$250,000 for the second year of the NASA EPSCoR Research 7 project; and (f) \$250,000 for the first year of the NASA EPSCoR Research 8 project.

After deducting these projected commitments for multi-year enhancement projects and the prior and projected obligations for Federal matching opportunities, \$10,478,706 will be available for new Enhancement projects submitted for funding consideration in FY 2014-15. Maintenance of the highest possible budgetary allocations to the Enhancement programs is particularly important because: (a) Enhancement programs 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 programs. Significantly, 71% of the total funds available for new awards will be dedicated to Enhancement programs. (See Table II, "An Overview of Board of Regents Support Fund Budgetary Allocations by Program Component, FY 2014-15" in Section 6 of this Plan and Budget.)

5.5.1 Undergraduate Enhancement Program

Some colleges and universities without sizeable graduate programs have difficulty competing against larger universities with greater resources and as a result were, in the early years of the Support Fund, less aggressive in submitting Enhancement proposals. To continue to affirm the principle that improvement of infrastructure is essential at all academic levels, the Board established a special Enhancement component for primarily undergraduate institutions. In recent years, \$1,620,000 has been annually allocated to improve education at these campuses. Severe budget constraints caused by declining income in the Support Fund required that the first-year funding level for FY 2013-14 be reduced to \$1,030,000. In FY 2014-15, due to the decrease in prior commitments and Federal matching obligations, monies for first-year funding in Undergraduate Enhancement will be increased to \$1,600,000.

Prerequisites for participation in the Undergraduate Enhancement Program are as follows: (1) to be eligible, the applying campus may not offer more than two doctoral programs, and (2) the applying department may not offer a doctoral degree. The maximum number of doctoral programs a campus may offer and still be eligible to participate in the Undergraduate Enhancement Program was lowered from ten in FY 1991-92 to two in FY 1992-93 and beyond. The Board took this action to promote maximum participation in this program by primarily undergraduate campuses.

Participation in Undergraduate Enhancement does not preclude campuses from competing for other Enhancement funds, and quality considerations continue to form the basis for all funding decisions. The same rotation of disciplines (Schedule III) and types of projects eligible under the Traditional Enhancement Program, as well as the same regulations for proposal submission, also apply in Undergraduate Enhancement. Funds not awarded in Undergraduate Enhancement will be transferred to the Traditional Enhancement Program.

5.5.2 Endowed Professorships Program

This program was created by the Board and incorporated into the Enhancement component in FY 1990-91. Funds were first allocated to endow professorships in FY 1991-92. The funding of an endowed professorship requires the 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 professorship valued at a minimum of \$100,000.

Following the program's inception 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 years, 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 Program 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 several 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 Program during FY 2011-12 to the level of \$1,560,000, sufficient to fund only one slot per eligible campus, though available funds were sufficient to continue funding 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 matches of guaranteed slots. Also in FY 2012-13, the Treasury realized an additional \$5,000,000 in revenue, which the Board dedicated to the backlog of Endowed Professorships to fund an additional 125 matching 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 extensive backlog in requests for match in Endowed Professorships, the program will be funded at a level of \$2,800,000 in FY 2014-15 while maintaining funding guarantees of two \$40,000 matches per four-year and special purpose campus, and one \$40,000 match per two-year campus.

5.5.3 Enhancement Program for Two-Year Institutions

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 Program for Two-Year Institutions. The absence in FY 2002-03 of Federal calls for grants requiring a State match enabled the Board to use funds normally made available for matching opportunities to "jump-start" the two-year institutions, particularly those which had recently joined the Louisiana higher education system.

Thirteen campuses, as well as the Louisiana Community and Technical College System, are eligible for participation in this program: Baton Rouge Community College, Bossier Parish Community College, Central Louisiana Technical Community College, Delgado Community College, L. E. Fletcher Technical Community College, Louisiana Delta Community College, LSU-Eunice, Northshore Technical Community College, Nunez Community College, River Parishes Community College, South Louisiana Community College, Southern University-Shreveport, and Sowela Technical Community College. Eligible campuses and the Louisiana Community and Technical College System participated during the spring of 2002 in the development of rigorous criteria which parallel, to the degree feasible, the criteria used in other BoRSF Enhancement components. A competitive peer-review process is used to assess and prioritize proposals for funding.

The Board has concluded that proceeding in this manner will provide not only an opportunity for the two-year institutions to participate meaningfully in the BoRSF, but also an invaluable training experience in the grant writing and capacity building that all institutions of higher education should and must undertake. Cognizant that most or all of the BoRSF monies dedicated to this Subprogram in FY 2002-03 were likely to revert to the Federal Matching Grants Program in future years, the Board provided a financial foundation for the continuance of the Subprogram by modifying its policy for the disbursement of funds for endowed professorships (described in Section 5.5.2 above). By guaranteeing two-year campuses only one endowed professorship match per year, the Board ensured that at least \$440,000 per year would be available to sustain this program. Additional funds were taken from the Traditional Enhancement Program. In FY 2003-04, \$1,000,000 was allotted to the Enhancement Program for Two-Year Institutions, and its FY 2004-05 allocation was raised to \$1,200,000. The \$1,200,000 level was maintained for FY 2005-06. The FY 2006-07 level of \$1,080,000 reflected a reduction of 10% to provide funds for the Post-Katrina Support Fund Initiative, and was sustained in subsequent years. In the FY 2010-11 Plan and Budget, the \$1,200,000 funding level was restored. Given lower income projections for the BoRSF, the lower first-year funding level of \$1,080,000 was reinstated for FY 2011-12 and retained in FY 2012-13. Additional significant declines in income required that first-year funding be further reduced in FY 2013-14, to a level of \$695,000. In FY 2014-15, due to the decrease in prior commitments and Federal matching obligations, monies for first-year funding in the Enhancement Program for Two-Year Institutions will be increased to \$1,100,000. Any unawarded funds will revert to the Traditional Enhancement Program.

5.5.4 Endowed Undergraduate Scholarship Program 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 58 will graduate from high school four years hence. Only 38 will enter college immediately after graduation, and a meager eleven 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 TOPS Program 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 the TOPS Program.

In FY 2007-08, the Board implemented a merit- and needs-based program to help address this situation. 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 is guaranteed one \$40,000 endowed scholarship fund challenge grant annually to match a private/institutional contribution of \$60,000. Each two-year institution is guaranteed one \$20,000 endowed scholarship fund challenge grant annually to match a private/institutional contribution of \$30,000. Proceeds will be used to establish/enhance 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 program funds. 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. The program will be funded at a level of \$1,000,000 during FY 2014-15.

5.5.5 Traditional Enhancement Program

Based on its continuing review of academic programs, coupled with evaluation of BoRSF projects and the rapid advancement of technology across all disciplines and levels of postsecondary education, the Board anticipates that the acquisition of instructional and research equipment will remain indefinitely as the area of greatest need in the Enhancement Program. During the first three years in which the BoRSF operated, instrumentation was the only type of request allowed in the Enhancement Program. Beginning in FY 1989-90, the Board invited the submission of other types of enhancement requests, due primarily to the eligibility for the first time of selected non-scientific and non-engineering disciplines. Types of non-instrumentation enhancement requests include curriculum revision projects, student success initiatives, service learning projects, and colloquia presented by outstanding out-of-state scholars.

In an attempt to limit the obligation of future BoRSF money, in FY 1989-90 the Board further decided that equipment may only be purchased in the initial year of a project and that, for projects which envision multi-year funding, the following stipulations apply: (1) no project may be of more than two years' duration; (2) no project may request more than \$50,000 in the second year; and (3) the total of all second-year commitments in the Traditional Enhancement Program may not exceed \$1 million. This year, the Board will continue to allow the submission of multi-year Enhancement requests, with the same stipulations as adopted previously.

After deducting all previous and projected commitments for other components of the Enhancement Program, \$3,978,706 remains for new projects submitted in the Traditional Enhancement Program, including the Multidisciplinary component (see Section 4.3), during FY 2014-15. 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.

In keeping with the conceptual framework of using Support Fund money to enhance all areas of higher education, all disciplines are eligible to compete in the Traditional and Undergraduate Enhancement Programs on a rotating basis as set forth in the Support Fund strategic plans. Schedule III indicates the discipline eligibility cycle, including those disciplines eligible in FY 2014-15.

**SCHEDULE III: ELIGIBILITY OF DISCIPLINES* IN THE TRADITIONAL AND
UNDERGRADUATE ENHANCEMENT PROGRAMS**

GROUP I - ELIGIBLE IN FYs 2012-13, 2015-16, 2018-19

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

GROUP II - ELIGIBLE IN FYs 2013-14, 2016-17, 2019-20

Business
Chemistry
Education
Mathematics
Physics/Astronomy

GROUP III - ELIGIBLE IN FYs 2011-12, 2014-15, 2017-18

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

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

5.5.6 Summary of FY 2014-15 Enhancement Expenditures

<u>Prior Commitments:</u>	Traditional and Undergraduate Enhancement	\$ 300,000
	Federal Matching Grants	\$ 1,375,000
 <u>New Awards:</u>		
	Federal Matching Grants	\$ 250,000
	Undergraduate	\$ 1,600,000
	Endowed Professorships	\$ 2,800,000
	Two-Year Institutions	\$ 1,100,000
	Endowed Undergraduate Scholarships	\$ 1,000,000
	Traditional	<u>\$ 3,978,706</u>
	ENHANCEMENT PROGRAM TOTAL	\$12,403,706

5.6 ADMINISTRATIVE EXPENSES - \$842,294

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 \$842,294 to be expended in this category during FY 2014-15.

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
Recruitment of Superior Graduate Students	\$ 25,000
Research and Development	\$135,000
Enhancement	\$ 85,000

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 units necessary for the endowments. Estimated costs for the review of Graduate Fellows subprograms are also added to the regular allocation since all funding for FY 2014-15 exists as prior commitments.

6. OVERVIEW OF FY 2014-15 BUDGETARY ALLOCATIONS BY PROGRAM COMPONENT

Table II provides an overview of FY 2014-15 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 2014-15			
	TOTAL SUPPORT FUND ALLOCATION	ALLOCATION FOR NEW PROJECTS	ALLOCATION FOR PREVIOUS COMMITMENTS
ENDOWED CHAIRS	\$ 2,020,000	\$ 2,020,000	\$ 0
GRADUATE FELLOWS	\$ 3,614,000	\$ 1,100,000*	\$ 3,614,000
RESEARCH & DEVELOPMENT	\$ 4,620,000	\$ 2,385,000	\$ 2,235,000
ENHANCEMENT**	\$12,403,706	\$ 10,728,706	\$ 1,675,000
SUBTOTALS	\$22,657,706	\$15,133,706	\$ 7,524,000
ADMIN. COSTS	\$ 842,294		
GRAND TOTAL	\$23,500,000		

*Because allocations for the Graduate Fellows Program must be determined two years in advance of when students first arrive on campus, the FY 2014-15 allocation for new graduate fellowships was determined in FY 2012-13 and set forth for the first time in the FY 2013-14 Plan and Budget. Thus, this allocation for new projects must come from the FY 2015-16 budget and has not been included in the subtotal and grand total figures in this table. See Section 5.3 for a detailed explanation of the timing of the allocation process for this Board of Regents Support Fund component.

**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-BR, 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-BR, 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.						

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT
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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-BR, 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-BR, 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-BR, 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.						

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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
<p>Participating Institutions: LA Tech, LSU-BR, LSU Ag, LSUHSC-NO, NSU, SLU, SUBR, Tulane, ULL, ULM, UNO</p> <p>Description/Purpose: To promote research partnerships by establishing an inter-institutional audio/video (A/V) research communications network across Louisiana. The A/V network enhances collaborative exchanges within and among the State's EPSCoR and EPSCoR associated schools and promotes new research partnerships by eliminating geographical (distance/separation) barriers.</p>						
LaSERnet II Backbone for Institutions of Higher Education in Louisiana	FY1997-98 – FY1999-00	EPS-9720147	NSF	2 years	\$552,893	\$0
<p>Participating Institutions: LA Tech, LSU-BR, LSUHSC-S, LSUHSC-NO, SLU, SUBR, Tulane, ULL, ULM, UNO</p> <p>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.</p>						
U.S. Department of Energy/EPSCoR Program Renewal	FY1995-96 – FY1998-99	DE-FC02-91ER75669	DOE	4 years	\$3,473,402	\$3,200,000
<p>Participating Institutions: Grambling LA Tech, LSU-BR, Loyola, McNeese, SUBR, Tulane, ULL, ULM, UNO, Xavier</p> <p>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.</p>						
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
<p>Participating Institutions: Dillard, Grambling, LUMCON, LSU-BR, McNeese, Nunez, SUBR, SUNO, SUSLA, Tulane, ULL, UNO</p> <p>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.</p>						
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)
<p>Participating Institutions: A consortium of sixteen campuses; grant funds awarded on a competitive basis</p> <p>Description/Purpose: To continue the development of the infrastructure for aerospace research to competitive levels, while improving the quality of aerospace research and education.</p>						

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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-BR, 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-BR, 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-BR, 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).						

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<p>Participating Institutions: LSU-BR, Tulane, ULL</p> <p>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.</p>						
NSF/EPSCoR New Cooperative Agreement (NCA)s	FY1998-99 – FY2000-01	EPS-9720652	NSF	3 years	\$3,000,000	\$3,000,000
<p>Participating Institutions: A significant number statewide; grant funds awarded on a competitive basis</p> <p>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.</p>						
1999 DEPSCoR Implementation Program 3 years	FY1999-00 – FY2001-02	Grant numbers vary	DOD	3 years	\$1,459,473	\$189,798
<p>Participating Institutions: LSU-BR, LA Tech, UNO</p> <p>Description/Purpose: As in past DEPSCoR awards, the individual research projects funded through this award enhance the statewide research infrastructure improvement efforts.</p>						
Experimental Program to Stimulate Competitive Technology (EPSCoT)	FY1999-00 – FY2000-01	60NANB9D0005	Dept. of Commer ce	2 years	\$250,000	\$300,000
<p>Participating Institutions: A significant number statewide</p> <p>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.</p>						
NASA EPSCoR Program Continuation Funding	FY1999-00	NCC5-167	NASA	1 year	\$400,000	\$250,000
<p>Participating Institutions: Dillard, LA Tech, LSU-BR, LSU Ag, LUMCON, McNeese, SUBR, Tulane, UNO, Xavier</p> <p>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.</p>						

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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 are 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-BR, McNeese, Nunez, SUBR, SUNO, SUSLA, 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-BR, LSU Ag, LUMCON, McNeese, SUBR, Tulane, UNO, Xavier Description/Purpose: This award is the seventh-year continuation of the NASA EPSCoR Program previously described.						

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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-BR, 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 operates 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-BR, 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-BR, 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 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, ULL, 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-BR, 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.						

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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-BR, 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-BR, 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-BR, 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-BR, 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.						

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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
<p>Participating Institutions: A significant number statewide, including LSU-BR, 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</p> <p>Description/Purpose: The focus of this project is the development of multi-functional cyberinfrastructure (<i>CyberTools</i>) 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.</p>						
DOE EPSCoR Implementation Renewal	FY2007-08 – FY2009-10	DE-FG02-04ER46136	DOE	3 years	\$900,000	\$1,200,000
<p>Participating Institutions: ULL, LSU-BR, SUBR</p> <p>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."</p>						
NASA EPSCoR 2009 Research 3	FY2009-10 – FY2011-12	NNX09AP72A	NASA	3 years	\$750,000	\$750,000
<p>Participating Institutions: LSU-BR, SUBR.</p> <p>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.</p>						
NASA EPSCoR 2009 Research 4	FY2009-10 – FY2011-12	NNX10AP07A	NASA	3 years	\$750,000	\$750,000
<p>Participating Institutions: LSU-BR, LA Tech, SUBR.</p> <p>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.</p>						
Louisiana EPSCoR Research Infrastructure Improvement (LA-SiGMA)	FY2009-10 – FY2013-14	EPS-1003897	NSF	5 years	\$20,000,000	\$10,000,000
<p>Participating Institutions: A significant number statewide, including LSU-BR, 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</p> <p>Description/Purpose: The research component of the NSF EPSCoR project will create the <i>Louisiana Alliance for Simulation-Guided Materials Applications (LA-SiGMA)</i>. 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.</p>						

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT
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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-BR, 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-BR, 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-BR, 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-BR. 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.						

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT
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Title	Fiscal Years	Federal Award Number	Federal Agency	Duration	Federal Award Amt.	Support Fund Match
NASA EPSCoR 2009 Research 7	FY2013-14 – FY2015-16	NNX13AN05A	NASA	3 years	\$750,000	\$750,000

Last 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.

ATTACHMENT II

Board of Regents Support Fund Results of Selected Projects

ENHANCEMENT

An Undergraduate Enhancement award at **Nicholls State University** has helped to boost performance and student preparation in the unique Petroleum Services and Safety Technology program through strategic purchase of equipment and supplies. The Association of Technology, Management and Applied Engineering (ATMAE)-accredited Bachelor of Science curriculum integrates production, drilling, well-servicing, safety, and environmental management. The goal of Enhancement funding was to acquire critical laboratory equipment and supplies to improve students' understanding of the link between theory and practice, and to support lecture courses in Drilling Fluids, Reservoir Fluids, and Environmental Technologies. The project enabled the upgrading and renovation of three labs, completed during the grant year. The value of the project to regional industry is evident in an industry match of \$153,000 from the American Association of Drilling Engineers (AADE) and other private-sector partners to support additional equipment and supplies purchases, faculty equipment training, and industry symposia. *{LEQSF(2012-13)-ENH-UG-19; Michael Gautreaux, PI}*

An award made to **Baton Rouge Community College** through the Enhancement Program for Two-Year Institutions has helped to implement the Veterinary Technology program by providing the teaching equipment necessary to launch operations. In its first year, the program accepted 10 students, eight of whom graduated in 2013 with an Associate of Applied Science in Veterinary Technology degree. Between 2011 and 2013, enrollments have doubled. In addition, in April 2013, the Veterinary Technology program received Provisional Accreditation from the American Veterinary Medical Association Committee on Veterinary Technician Education and Activities. This is the highest accreditation awarded to new veterinary technology programs. *{LEQSF(2011-12)-ENH-PEN-01; Rebecca Adcock, PI}*

A Traditional Enhancement award at **Louisiana State University and A&M College** has enabled the Department of Chemistry Mass Spectrometry Unit to acquire a nanoflow high-performance liquid chromatography (HPLC) system. This equipment, as part of the Unit, is integrated with a suite of cutting-edge technology and available to researchers on the LSU campus as well as to academic and industrial users across the region on a cost basis. The system is already in high demand, with five projects – three at LSU, one at McNeese, and one at Louisiana Tech – identified as having an immediate need for it. In addition to its research applications, the equipment will be used across several advanced Chemistry and Biochemistry courses and labs. *{LEQSF(2012-13)-ENH-TR-03; Huang Ding, PI}*

A Traditional Enhancement project at **Tulane University** has provided hardware, software and programming services to support immersive experiential training in the Master of Management program focused on preparing students to work in the energy industry. The Board of Regents grant assisted the program to better integrate separate systems that simulate energy commodity markets and energy system operations. The simulations are unique, custom-coded software applications that simulate the activities of operations and trading in the energy (natural gas/oil) and electricity markets, which have been enhanced by added functionality provided by acquisitions through the grant. The result is a more realistic system that can better prepare students for productive careers in the energy industry. For the fall of 2013, its third year of operation, the program has enrolled 40 students. Upon graduation, these students will be a significant asset to local and regional oil and gas enterprises, supporting one of Louisiana's key economic development priorities. *{LEQSF(2011-12)-ENH-TR-28; Geoffrey Parker, PI}*

Louisiana State University Shreveport is working to maximize the opportunities presented by the **Louisiana Universities Marine Consortium** by establishing a link between the two institutions that will allow north Louisiana students to become involved in coastal research. The project bridges the hundreds of miles' distance between Shreveport and Cocodrie through compressed video courses and onsite summer courses at the Marine Center. This collaborative effort has allowed LSUS to create a new area of focus within its Department of Biological Sciences, expand its course offerings, address the needs of students interested in marine sciences, and facilitate additional grants and equipment purchases necessary to grow coastal and marine studies opportunities. Scientific study of Louisiana's coastline is of critical importance to the State's economy and culture, and through this important initiative LSUS has engaged scientific talent in the north of the State to assist in critical ongoing research. *{LEQSF(2010-12)-ENH-TR-10; Amy Erickson, PI}*

Undergraduate Enhancement funding is helping **Southern University at New Orleans** improve general microbiology, cell and molecular biology, and genetics teaching and research infrastructure through the purchase of equipment and supplies. Through the award, SUNO enhanced a functional research laboratory for faculty research as well as undergraduate student training. The new equipment has helped to provide a safer working environment in labs servicing Microbiology, Cell Biology, and Environmental Technology and additional resources for students in the mentoring program. The acquisition of a Millipore water purification system gives students hands-on experience with current technology, better preparing them to pursue advanced degrees in STEM fields and for the biotechnology work force. *{LEQSF(2012-13)-ENH-UG-28; Lisa Mims-Devezin, PI}*

Louisiana State University and A&M College has used a Traditional Enhancement grant to create a digitized collection of U.S. Army Corps of Engineers publications and related historical collections. Throughout its 210-year existence, the Corps has played a vital role in the history

and economy of Louisiana. Its successes and failures continue to affect the daily lives of the citizens of the State as well as their economic and cultural well-being. Given the significance of the Corps and its activities to Louisiana, even today, it is important to maintain and curate the records it has generated, from technical reports to publications documenting research, experimentation, and projects. Equipment obtained through the Enhancement award, including scanners, a digital camera, and server space, has greatly increased the LSU Libraries' capacity to build this kind of digital collection systematically and digitize materials for easy access by researchers and others interested in the long history of the Corps in Louisiana. *{LEQSF(2012-13)-ENH-TR-07; Elaine Smyth, PI}*

A Traditional Enhancement award at **Southeastern Louisiana University** has assisted in providing increased opportunities for pre-service and in-service teachers to learn methods to engage students by creating learning environments that take advantage of all the senses. Through project resources, teachers and teacher candidates learn to integrate cutting-edge multi-sensory resources for instruction and provide students with multiple means of acquiring information, demonstrating knowledge, and engaging in learning and communicating. The multi-sensory environments acquired through the grant are in the process of being established; once they are in place, Southeastern will be the first university in the United States to house a Snoezelen Multi-Sensory Environment facility on its campus. The use of the facilities will be shared across the campus, providing opportunities for training, clinical practicums and research across a variety of disciplines. Within education, teachers and teacher candidates will gain valuable broad experience with learning through multi-sensory environments, and will be better equipped both for the classroom and to work with individual students with sensory issues like autism. *{LEQSF(2011-12)-ENH-TR-24; Colleen Klein-Ezell, PI}*

Funding from the Undergraduate Enhancement Program has helped **Louisiana State University Shreveport** to significantly improve laboratory training for students in genetics and related courses. The grant enabled LSUS to address specific instrumentation needs and implement modern hands-on experimentation for genetics, cell biology, molecular biology, applied biotechnology, functional genomics and proteomics, and research laboratory courses. The equipment provides essential support to LSUS's recently updated courses in a variety of fields serving students in pre-medicine, biology, education, and allied health sciences, all critical to Louisiana's continued economic and workforce development. The new equipment allows students to conduct inquiry-driven experiments, use technologically advanced instrumentation, and pursue state-of-the-art authentic molecular genetics investigations involving DNA, RNA and protein isolation, analysis and imaging. *{LEQSF(2012-13)-ENH-UG-14; Tara Williams-Hart, PI}*

A Traditional Enhancement award has enabled **Louisiana Tech University** to expand the possibilities for students interested in prototyping – developing conceptual, spatial, and

functional prototypes, as well as high-quality prototypes from a range of materials. The equipment purchased through the grant improved both the quality and safety of these processes and allowed students a cutting-edge experience identical or similar to what they will experience in the workforce. The additions to the prototyping lab provided through Enhancement monies included larger-scale CNC equipment that increased the quality and marketability of the students' learning, skills, and projects. Even in its first year, the equipment enabled a student group building a high-mileage vehicle to perform better in competitions, enhance its visibility and Louisiana Tech's, and make improvements that yielded additional sponsorship of the team. *{LEQSF(2012-13)-ENH-TR-14; Heath Tims, PI}*

A principal investigator at **Centenary College of Louisiana** has used an Undergraduate Enhancement award to contribute to the positive growth of the College's Communication program by matching its current curriculum and related resources to industry standards. Through Enhancement funding, the program has provided students with state-of-the-art digital film production and post-production equipment, enabling students to produce quality film work and gain competency with the tools they will encounter in professional production and post-production careers. Using equipment purchased through the grant, the spring 2013 Documentary Film class collected more than 25 hours of raw footage of the residency at Centenary of Collective Artists, a London-based theater troupe, and created two films which Collective Artists is now using for fundraising and publicity. *{LEQSF(2012-13)-ENH-UG-03; Susan Glaros, PI}*

The **University of New Orleans** has used a Traditional Enhancement award to expand and enhance the infrastructure of the Greater New Orleans Center for Information Assurance (GNOCIA) at UNO to enable cutting-edge research and instruction in computer security, digital forensics, and cloud computing. The project helped to bring qualitatively new research capabilities to GNOCIA, including the abilities to store and analyze in a safe environment large research collections of malware; to store and analyze large digital forensics data sets for research and instruction; and to develop and realistically test cyber defense mechanisms for large-scale virtualized and cloud environments. These capabilities relate directly to issues of global importance in our highly virtual society: electronic security, protection of privacy, and cloud data storage. The Support Fund enhancement provides tools essential to positioning UNO to compete for Federal awards and to play a significant role in ongoing cybersecurity research and development. *{LEQSF(2012-13)-ENH-TR-36; Vassil Roussev, PI}*

RESEARCH AND DEVELOPMENT

Research Competitiveness Subprogram (RCS)

With the help of RCS funding, a principal investigator at **Louisiana State University and A&M College** has built a nationally recognized research program investigating ultracold atomic gases. These gases provide a simple environment for studying one of the most important problems in

physics: understanding the collective behavior of particles in a quantum mechanical system. The PI's study provides an opportunity to discover fundamental principles of physics that will aid in understanding of novel electronic materials. 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 more than \$400,000 to develop and further the research begun through the RCS program. *{LEQSF(2008-11)-RD-A-10; Daniel Sheehy, PI}*

An RCS researcher at **Louisiana Tech University** has established a competitive program to help study and develop advanced alternative energy sources. In particular, this research is focused on solar energy harvesting, with a goal to develop a steam system operated from solar thermal energy using microelectromechanical systems (MEMS) devices. The RCS-funded project has been highly successful, leading to three international presentations and 16 publications, both conference proceedings and refereed journal articles. The strength of the PI's research has garnered more than \$500,000 in Federal funding, including a prestigious NSF Faculty Early Career Development (CAREER) Award. In addition to securing the PI's competitiveness, the research has encouraged in-state partnerships, particularly with UNO's Advanced Materials Research Institute (AMRI). The AMRI collaboration has already led to three major proposals to NSF and the U.S. Department of Energy (DOE). Finally, the research has provided significant foundational input to Louisiana Tech's Proof of Concept Center, funded through a DOE grant to establish mutually beneficial collaboration between university research and private industry and foster tech-driven economic development throughout the State. *{LEQSF(2009-12)-RD-A-13; Leland Weiss, 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 in 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 principal investigator 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 the **University of Louisiana at Monroe** has established a competitive research program focused on understanding the nature of proteins that cause autoimmune diseases such as rheumatoid arthritis. The approach taken in the research may yield designed molecules that could be developed as therapeutic agents not only for rheumatoid arthritis, a chronic and debilitating disease that affects nearly 1% of the world's population, but also other autoimmune diseases such as psoriasis, multiple sclerosis, and type-1 diabetes. Through the RCS grant period, the PI has established several collaborations that promise to advance the research, including one with the Mayo Clinic and a second with the LSU Agricultural Center. The Ag Center's peptide synthesis and protein purification facility will be particularly important in ongoing project work, and represents an excellent sharing of State resources across institutional boundaries. The preliminary data generated through the RCS award have already yielded an NIH grant and a second application to the U.S. Department of Defense. *{LEQSF(2009-12)-RD-A-23; Seetharama Satyanarayanajois, PI}*

A principal investigator at the **University of Louisiana at Lafayette** made significant advances in establishing a competitive research program in geometry processing and analysis with a focus on geometric structures and their applications in the fields of computer graphics, computer vision, and wireless sensor networks. This is a new and fast-growing area of research that uses concepts from mathematics, computer science, and engineering to design efficient algorithms for the reconstruction, analysis, manipulation, and simulation of 3D geometry models. Preliminary results of the PI's research have been published in top-ranked journals and featured on the cover of *IEEE Transactions on Visualization and Computer Graphics*. Her research in computational geometry earned the PI an NSF Faculty Early Career Development (CAREER) Award in 2011, as well as other NSF funding. Based on preliminary results, moreover, she is actively working with other faculty to apply findings to other engineering fields. These collaborative activities have already yielded NSF funding for one project and two additional pending proposals. *{LEQSF(2009-12)-RD-A-21; Miao Jin, PI}*

Through RCS funding, a principal investigator at **Loyola University New Orleans** is successfully pursuing research into the origins of the universe, particularly numerical models that provide insight into the physics of the early universe. The research is highly theoretical, probing aspects of string theory/particle theory and quantum gravity, scientific theories at the center of studies of the universe's foundation. The PI has given numerous international presentations on research outcomes as well as published five refereed journal articles, demonstrating the significance of the research. Given the extremely complex and theoretical quality of the research, of major significance is the intense involvement of undergraduate students in the PI's work. Three students were supported through the RCS award, all of whom completed independent research projects. These students not only made a valuable contribution to the success of the PI's research; their own research skills greatly improved, leading to one student pursuing publication of his results. Through his ability and the mentorship of the PI, this student was able to present

his work at both student and international conferences and was accepted to a Research Experiences for Undergraduates program at Columbia University during summer 2013. *{LEQSF(2011-13)-RD-A-21; Tirthabir Biswas, PI}*

Industrial Ties Research Subprogram (ITRS)

A team of researchers at the **University of New Orleans** has used ITRS funding to pursue critical research related to the development of novel solar cells for energy harvesting. The research program was a collaboration between UNO's Advanced Materials Research Institute (AMRI), the National Renewable Energy Laboratory (NREL), and Nanoprism Technologies, Inc., combining expertise in nanomaterials, photovoltaic device fabrication, and optical testing to form a complete cycle of quantum nanocable growth and characterization, photovoltaic device fabrication and testing, and commercialization. To date, the research has generated 15 national and international presentations, 16 refereed journal articles, and a patent, accepted in October 2012. The nanowire array developed and patented by the research team could lead to a stable, efficient, and low-cost solar cell technology for solar energy harvesting, a critical step forward in increasing the utility of solar energy to address national and international energy needs. *{LEQSF(2008-11)-RD-B-10; Weilie Zhou, 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}*

A group of researchers at **Louisiana State University and A&M College** is developing fiber-reinforced polymer composite systems to act as lost circulation control material in the oil and gas industry. Lost circulation refers to the problem of drilling fluid lost into fractures of highly permeable areas in drilled formations. The economic impact of these losses is significant, totaling \$800 million per year. Lost circulation has also led to difficulties in securing production tests and samples, as well as decreased productivity by plugging production zones. To help address this problem, the project team has patented novel, economical polymer cellulosic fiber blends that provide improved performance and material handling. Two patents have been approved during the grant period, and the team continues testing and research. With further optimization and field application development, this technology could lead to a new class of

environmentally friendly highly marketable materials made in Louisiana. {LEQSF(2010-13)-RD-B-01; Qinglin Wu, PI}

Awards to Louisiana Artists and Scholars (ATLAS) Subprogram

With help from an ATLAS grant, an ethnomusicologist at **Tulane University** has completed a major new study of contemporary brass bands in New Orleans, both before and after Hurricane Katrina ravaged the city. Published in November 2013 by Duke University Press, *Roll With It* is a firsthand account of the lives of musicians in the Rebirth, Soul Rebels, and Hot 8 brass bands of New Orleans. This monograph is a significant contribution to the study of the intertwining of music, the lives of musicians, and the role of the brass bands in the vibrant, resilient culture of New Orleans. {LEQSF(2011-12)-RD-ATL-13; Matt Sakakeeny, PI}

An historian at **Louisiana State University and A&M College** has recently published a new study of the Krio, nineteenth-century descendants of freed slaves, as they made new lives for themselves in Sierra Leone. The book, published by Ohio University Press in 2013, provides a complex examination of West African history in the postabolition and colonial periods and a substantial reconsideration of previous, highly restricted scholarly approaches to the subject. In addition, the work serves as a broad introduction to West African history, accessible to lay readers as well as scholars. {LEQSF(2009-10)-RD-ATL-04; Gibril Cole, PI}

An ATLAS principal investigator at **McNeese State University** is finishing work on the first comprehensive history of the Women's Rights movement in Louisiana, 1960-1995. Two articles, parts of the monograph, have already been published or accepted for publication, one in a peer-reviewed journal and the other in an anthology. The complete manuscript, under contract with a major university press, is scheduled for completion in 2014. Given its scale and scope, the book promises to make a dramatic contribution to the historiography of feminism and the history of Louisiana during a critical era. {LEQSF(2012-13)-RD-ATL-06; Janet Allured, PI}

In summer 2011, a faculty member at **Lousiana State University and A&M College** completed a major sonic art and media performance project, including the composition and premiere performance of a new piece, *Perception*, at the Manship Theatre in Baton Rouge in 2012. The piece was subsequently performed at several international venues and conferences. In part as a result of the pieces composed and tools developed through the grant, LSU has been accepted to host the 2015 International Conference on New Interfaces for Musical Expression, the most prestigious conference in the field. {LEQSF(2011-12)-RD-ATL-01; Jesse Allison, PI}

LOUISIANA EPSCoR

The Board of Regents committed matching funds to a **Louisiana EPSCoR** program that in 2010 was awarded a five-year \$20 million grant from the National Science Foundation (NSF)—the largest single award ever made by NSF to Louisiana—for a major research and education project involving seven campuses. The researchers are leveraging existing statewide computational, experimental, and intellectual assets to design useful, cost-effective, and environmentally friendly new materials for specific tasks. The power of modern computers and sophisticated computational tools will enable researchers to develop and test these materials quickly and economically using simulations. The institutions involved in the project, known as the Louisiana Alliance for Simulation-Guided Materials Applications, or LA-SiGMA, include **Grambling State University, Louisiana State University – Baton Rouge, Louisiana Tech University, Tulane University, Southern University – Baton Rouge, the University of New Orleans, and Xavier University of Louisiana**. At the end of its third year of grant operation, LA-SiGMA continues to make significant progress toward project goals and has positioned faculty to compete successfully for additional Federal and private-sector funding.

Louisiana EPSCoR was also successful in securing two additional EPSCoR awards in 2010: a \$2.1 million Research Infrastructure Improvement (RII) Track 2 project that, in conjunction with researchers in Alabama and Mississippi, establishes the Northern Gulf Coast Hazards Collaboratory to address engineering design, coastal system response, and risk management of coastal hazards; and a \$1.2 million RII Cyberinfrastructure Connectivity (C2) project to connect **Xavier University of Louisiana** to the Louisiana Optical Network Initiative, or LONI. Xavier's connection to LONI was completed in fall 2012.

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