FY 2010-2011 PLAN AND BUDGET

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

WITH AN OVERVIEW OF PRELIMINARY RESULTS OBTAINED

SUBMITTED TO THE

GOVERNOR AND LEGISLATURE

IN ACCORDANCE WITH THE CONSTITUTIONAL PROVISIONS OF

ARTICLE VII, SECTION 10.1

ADOPTED

January 7, 2010

BY THE

BOARD OF REGENTS

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LIST OF CHARTS

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ATTACHMENTS

OVERVIEW OF RESULTS

from the
Investment of Board of Regents Support Fund Money in Higher Education, 1987 - 2009

- **$776,246,748 GENERATED IN NEW EXTERNAL FUNDING** (through 6/30/2009)
  From federal, private, and other non-Support Fund sources

- **AN ADDITIONAL $288,380,000 GENERATED IN EXTERNAL CONTRIBUTIONS**
  For Endowed Chairs and Professorships

- **2,782 EXTERNAL AWARDS**
  From federal, private, and other non-Support Fund sources

- **259 $1 MILLION CHAIRS AND 35 $2 MILLION CHAIRS** for eminent scholars endowed at 24 universities

- **2,188 $100,000 PROFESSORSHIPS** endowed at 34 campuses

- **1:1.58 RATE OF RETURN** for all projects funded since 1987
  For every Support Fund dollar invested, $1.58 has been returned to the State

- **192 PATENTS ISSUED; 172 PATENT APPLICATIONS PENDING**

- **9,582 PUBLICATIONS** in refereed journals

- **LaSIP** (Regents/BESE/NSF/Louisiana Legislature) produces rising student scores on statewide tests

- **EXPANDED UNIVERSITY COLLABORATION** to increase research competitiveness for federal R&D money

PLAN AND BUDGET
FOR THE EXPENDITURE OF REVENUES AVAILABLE FROM
THE BOARD OF REGENTS SUPPORT FUND
FISCAL YEAR 2010-2011

PREFACE

The Governor, Legislature, and public should recognize that a sound educational system at all levels and in all disciplines--which is well-supported on a consistent basis--is crucial to enhancing academic programs and units and promoting economic development, the two goals of the Constitutional amendment which created the Louisiana Education Quality Support Fund (hereinafter referred to as Board of Regents Support Fund). The four programs of the Board of Regents Support Fund (BoRSF) pursue different 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 strengthen all disciplines and, in so doing, to promote long-term economic development through the enhancement of higher education in general. Competition in the Research and Development (R & D) Program has generally been restricted to those disciplines where the promotion of basic and applied research is essential for near-term economic development, although, beginning in FY 2004-05, one of the R & D subprograms has focused on research efforts in the arts, social sciences, and humanities. (See section 5.4 below.)

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 SREB Doctoral Scholars Program); (3) carefully defined research efforts (the R & D Program, including the Research Competitiveness Subprogram, the Industrial Ties Research Subprogram, and the Awards to Louisiana Artists and Scholars [ATLAS] Subprogram); and (4) enhancement of the quality of academic, research, or agricultural departments or units within a university (the Enhancement Program, including the Traditional Enhancement Program, the Undergraduate Enhancement Program, the Endowed Professorships Program, the Enhancement Program for Two-Year Institutions, the Louisiana Systemic Initiatives Program [LaSIP], the Undergraduate Scholarships Program, and the Post-Katrina Support Fund Initiative). A more extensive discussion of the Board's use of the Support Fund to ameliorate the effects of Hurricane Katrina and Rita appears in Section 5.5.7 of this Plan and Budget.

1.1 BOARD OF REGENTS SUPPORT FUND PROJECTION, FY 2010-2011

$33,000,000 is used as the base amount in budgeting the FY 2010-11 BoRSF Plan and Budget.

1.2 BUDGET RATIONALE AND PREAMBLE

In deliberations about the Board of Regents Support Fund Plan and Budget for FY 2010-2011, the Board again noted the persistence of four related Support Fund issues requiring long-range strategic planning:

- steadily increasing demands 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 $1.58 in non-State money for every Support Fund dollar awarded;

- the State's expanding emphasis on economic development and diversification;

- unusually great and increasing demands for resources to create endowments--for eminent scholars, professorships, and first-generation undergraduate scholarships; and,

- the need for improved data collection and enhanced evaluation to better inform decision making

Additionally, the Board continues to direct some money from Support Fund programs to assist higher education institutions in the recovery and rebuilding efforts necessitated by the hurricanes. Nevertheless, it is vital that robustness be maintained in all four interrelated Support Fund components. While the Board lauds the growth in private philanthropy reflected in the increased applications for endowed chairs, professorships, and undergraduate scholarships, the Regents are 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 infrastructural equipment, supportive cutting-edge research in affected departments and units, and top quality graduate students in order to achieve the results expected of them.

1.3 ADOPTION OF FY 2010-2011 PLAN AND BUDGET

The following plan and budget for FY 2010-2011 were adopted by the Board of Regents at its meeting of January 7, 2010.

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. The short-term activities outlined in the annual plans and budgets could then be shaped by these long-term goals.

The first such 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, titled 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 changing conditions and lessons learned from experience. 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 the FY 2007-08 through FY 2013-14 Strategic Plan . The current Plan continues the approach of balancing continuity based on effectiveness, with revisions reflecting "lessons learned."*

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*Copies of the 1988, 1993, 1999, and 2007 Strategic Plans are available in the Board's office.

2.2 LONG-RANGE EVALUATION

To ensure that the Board of Regents Support Fund achieves its goals, the Board, beginning in FY 1990-91, implemented a systematic comprehensive evaluation process. This process involved four stages: (1) collection of background information; (2) submission to the Board by project directors of annual and/or final project reports; (3) submission of additional information one year after project termination; and (4) an evaluation by out-of-state experts of individual projects as well as the overall program. In the spring of 1994 such an evaluation was conducted by a distinguished panel of out-of-state experts. The Panel concluded that the Board of Regents Support Fund Program "is effectively and efficiently administered, that it is addressing some of the State's economic development and higher education infrastructure needs, and that it has been successful in attracting federal funds to the State."*

With the opportunity to see the various Support Fund programs in operation over a period of years, new insights have been gained. Accordingly, the Board engaged in a thorough revision of the long-range evaluation system. That process began with the comprehensive review of the Endowed Chairs Program during the summer and fall of 1998. The Endowed Chairs review culminated in the March, 1999 adoption of the Board of Regents Endowed Chairs Policy, which further strengthened a program with already impressive accomplishments. Similarly, 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 adoption in January, 2002 of recommendations designed to elevate the program's accomplishments. The FY 2001-02 review of the Research and Development Program led to recommendations intended to improve and strengthen this already highly successful program. In each instance, insights from the review led to the adoption of measures that will further strengthen these programs and thus maximize their positive impact on Louisiana higher education.

The evaluative cycle was begun anew during FY 2008-09 as a distinguished team of experts again comprehensively assessed the Eminent Scholars for Endowed Chairs Program, resulting in revisions that will begin in this year's (FY 2009-10) review process. The R & D Program is being comprehensively evaluated during FY 2009-10, with other Support Fund programs to be assessed in future years on a rotating basis.

3. AN OVERVIEW OF PRELIMINARY RESULTS OBTAINED

Significant benefits have begun to accrue to the State as a result of the investment of this money 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 final results only become obvious after 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 to affected institutions after the conclusion of the relatively brief time of 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.

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

*This Panel's report is available in the Board's office.

3.1 STATEWIDE RESULTS

* **$1,064,626,748 billion in external funds has been generated** from Federal, private, and industrial sources as a result of the Board of Regents Support Fund investment in higher education, thereby significantly increasing the total monies available for higher education. This represents a **return of $1.58 for every Board of Regents Support Fund dollar awarded** to higher education since the inception of the programs. The figure reflects only dollars generated during the life of the awards--additional revenues were/will be generated after the expiration of the awards.

* **Increased collaboration and coordination of efforts between Regents and BESE**, as evidenced by the renewal of the $37 million joint LaSIP effort to reform K-12 and undergraduate instruction in math and science, the subsequent funding of the Delta Rural Systemic Initiative, and the joint efforts of the two boards to improve education through the Blue Ribbon Commission on Teacher Quality. (See Attachment I for descriptions of these projects.) Those collaborative efforts also contributed to the funding of Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) by the U.S. Department of Education for $15 million from 2002 - 2008. The GEAR UP Program received a new $18 million award in 2008, with the extension set to run through 2014.

* **2,782 grants and/or contracts have been awarded** to Louisiana universities from external funding agencies directly as a result of Board of Regents Support Fund 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 those projects that were successfully commercialized are protected by a patent and/or license. Additionally, **almost 60% of all completed projects reported significant to moderate industrial interaction.**

* **Increased institutional collaboration has resulted, as evidenced by the multi-million dollar, multi-institutional grants awarded to the Board of Regents on behalf of statewide university consortia for research reform initiatives.** Their purpose is to increase the amount of federal research and development money awarded to Louisiana scientists and engineers statewide. (See descriptions of awards in Attachment I.)

* **192 patents have been issued, and another 172 applications are pending.**

3.2 RESULTS FROM SELECTED PROJECTS

See Attachment II for brief summaries of the achievements of several selected projects.

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 that such an infusion of new dollars creates on the Louisiana economy in terms of new revenues, income, and jobs for Louisianians.

The effect of the $1,064,626,748 billion in new revenues generated from Board of Regents Support Fund projects is estimated as follows:*

- **approximately $2.19 billion in new revenues to Louisiana firms and organizations;**
- **approximately $893.5 million in new income for Louisiana citizens; and**
- **approximately 38,750 new jobs for Louisianians.**

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 decided to dedicate a portion of the Board of Regents Support Fund monies as matching commitments for two new statewide, multi-institutional initiatives to be submitted in national competitions for Federal funds in areas which coincide with Constitutionally prescribed Board of Regents Support Fund activities. The reasons for, and goals of, this decision were fourfold:

- To continue and accelerate the leveraging of Federal money with Board of Regents Support Fund investments--as is being accomplished by principal investigators of individually-funded Board of Regents Support Fund projects described in Attachment II of this Plan and Budget;
- To expand opportunities available under the Board of Regents Support Fund Programs;
- To reinforce the building of infrastructure that had begun under the traditional Board of Regents Support Fund Programs, which is necessary to enable Louisiana's universities to compete more successfully for Federal research money; and,
- To promote multi-institutional collaboration and cooperation among Louisiana's colleges and universities.

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

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

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

The Board was successful in the competitions described above. These efforts served to solidify a partnership between the Support Fund and the National Science Foundation. This partnership has grown over the years to include relationships with the National Aeronautics and Space Administration, the Department of Defense, the Department of Energy, the Department of Commerce, the Environmental Protection Agency, and the National Institutes of Health. Support Fund obligations for these federal grants appear below in chart form. (See Chart I.) A more detailed description of each grant, including the federal funds received from each, can be found in Attachment I.

The Board's decision to augment the Support Fund by using a part of it to pursue federal matching grants opportunities has borne significant fruit. It has enabled the State to progress from a point in 1985-86 at which it could not receive even minimal support from NSF for research collaborations to the current situation, which finds Louisiana among the elite of EPSCoR states in terms of successful research-related activities.

CHART 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* 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*
NSF/SI LaSIP	TR ENH, UG ENH, PLEx: Prorata	$1 Million	$5 Million	1991-92 through 1995-96	5
NSF/EPSCoR LaSER Advanced Development Program	TR ENH: 1/3 GR FEL: 1/3** ITRS: 1/3	$1.2 Million	$4.8 Million	1991-92 through 1994-95	4
NASA/ LaSPACE	RCS: 60% GR FEL: 40%**	$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%**	$500,000	$1.5 Million	1994-95 through 1996-97	3
1993 DEPSCoR Implementation	TR ENH: 50% RCS: 25% GR FEL: 25%**	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%**	$1 Million	$3 Million	1995-96 through 1997-98	3
DOE/EPSCoR Implementation Renewal	TR ENH: 10% R&D: 70% GR FEL: 20%**	$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
NASA LaSPACE Renewal	RCS: 50% GR FEL: 50%**	$100,000	$400,000	1996-97 through 1999-2000	4
1995 DEPSCoR Implementation	TR ENH: 50% R&D: 25% GR FEL: 25%**	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%**	$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

CHART I (CONTINUED)

FEDERAL GRANT	TYPE OF SUPPORT FUND ACTIVITY	AMOUNT OF ANNUAL MATCHING COMMITMENT	TOTAL MATCHING COMMITMENT	FYs IN WHICH COMMITMENT IS APPLICABLE	TOTAL LENGTH OF COMMITMENT IN YEARS
LaCEPT Supplemental	TR ENH: 100%	$100.000	$300.000	1998-99 through 00-01	3
1997 DEPSCoR Implementation	TR ENH: 50% R&D: 25% GR FEL: 25%**	$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	$1.000.000	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 04-05	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 03-04	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
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 09-10	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 2008-2009	3
NASA/EPSCoR 2006 - Research 1	TR ENH: 100%	$250,000	$750,000	2006-07 through 2008-2009	3
NASA/EPSCoR 2006 - Research 2	TR ENH: 100%	$250,000	$750,000	2006-07 through 2008-2009	3
NSF EPSCoR Cyber RII	TR ENH: 100%	$1 Million	$3 Million	2006-07 through 2008-2009	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	3

CHART I (CONTINUED)

NASA EPSCoR 2009 - Infrastructure (Pending)	TR ENH 100%	$125,000	$375,000	2009-10 through 2011-12	3
NASA EPSCoR 2009 - Research 4 (Pending)	TR ENH 100%	$250,000	$750,000	2009-10 through 2011-12	3
NSF EPSCoR RII Track 1 Proposal (Pending)	TR ENH 100%	$2 Million	$10 Million	2009-10 through 2013-14	5
NASA LaSPACE Renewal (Pending)	TR ENH 100%	$250,000	$1.25 million	2010-11 through 2014-15	5
LAMP Phase IV (Pending)	TR ENH 100%	$500,000	$2.5 million	2010-11 through 2014-15	5

*The 13 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 chart 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 4.1.1.)

** 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 two program components. (Chartlpb10 C:JW and 10-11P/B)

4.2 PENDING PROPOSALS

The NASA EPSCoR program supports two components: (1) a "core" infrastructure development component and a research component; and (2) a research component. One research component was awarded in 2009; it is expected that the core infrastructure component and a second research component will be awarded in 2010, utilizing the remainder of the matching funds committed to this program.

NSF EPSCOR issued a solicitation for an expanded Research Infrastructure Improvement Track-1 (RII Track-1) award in 2009. The project duration was increased from three to five years, and the maximum annual award was increased from $3 million to $4 million. The Board submitted a proposal in response to this solicitation in October, 2009. The results from this competition are expected in the spring of 2010.

The NASA Space Grant program (called LaSPACE in Louisiana) promotes scientific research, workforce development, and public outreach to develop and strengthen research capabilities in aerospace-related areas, contributing to the overall research infrastructure, science and technology capabilities, graduate and undergraduate education and economic development of the State. It is expected that NASA will issue a new solicitation for the next five-year phase of LaSPACE in late 2009. Results from this competition will be announced in the spring of 2010.

The National Science Foundation (NSF) issued a solicitation for Phase IV of the Louis Stokes Alliance for Minority Participation (called LAMP in Louisiana). The LAMP program seeks to increase the quality and quantity of students successfully completing science, technology, engineering and mathematics (STEM) baccalaureate degree programs, and increasing the number of students interested in, academically qualified for and matriculated into programs of graduate study. The Board submitted a proposal in response to this solicitation in October, 2009. Results from this competition are expected in the spring of 2010.

4.3 SPECIAL EFFORTS TO PROMOTE THE SUBMISSION OF MULTI-DISCIPLINARY, MULTI-INSTITUTIONAL PROPOSALS

The Board has long recognized the potential of multi-disciplinary 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 in the joint Federal/State efforts described in Section 4.1 of this Plan and Budget, but also in the proposals submitted under the traditional Board of Regents Support Fund Program components. The best known manifestations of the Board's support of proposals of this type are an $800,000 award to fund the Louisiana Academic Library Network (LaLINC) proposal, which has computerized databases and linked academic libraries throughout the State, and one award of $3,500,000 to help support the efforts of the Louisiana Optical Network Initiative (LONI).

To further emphasize its belief in the potential of multi-disciplinary, multi-campus efforts to achieve Board of Regents Support Fund goals and promote the best interests of the State, in its most recent solicitation for proposals, as well as in the 1993, 1999, and 2006 revisions of the Strategic Plan, the Board specifically encouraged the submission of collaborative efforts which would provide statewide benefits. Beginning with its FY 2000-01 budget, and continuing in FY 2010-11, the Board has set aside funds from the Traditional Enhancement program each year for the funding of these types of projects. The Board reaffirms the eligibility and encourages the submission of multi-disciplinary, multi-institutional proposals in all Board of Regents Support Fund Program

components for FY 2010-2011. Consistent with the increased emphasis being placed on interdisciplinary research throughout the academic community and the increase of quality proposals submitted in this category, the Board first increased the funds available for awards in this category to $950,000 in the plan and budget for FY 2004-05. The $950,000 level has been maintained since, but is pegged as a percentage of the Traditional Enhancement budget (20%) in the FY 2010-11 plan and budget . Any unexpended multi-disciplinary money will revert to discipline-based Traditional Enhancement. (See Section 5 below.)

5. BOARD OF REGENTS SUPPORT FUND PROGRAM COMPONENTS

5.1 BUDGETARY CONTINGENCIES

If Board of Regents Support Fund money for higher education is greater than the $33,000,000 projected, overages shall be returned to the Traditional Enhancement Program until its allocation reaches $8,000,000. Any amount thereafter shall be returned to the Enhancement components and the Research and Development subprograms on a pro-rata basis. In the event that reductions are necessary, they shall be accommodated through a proportionate reduction in the first-year amounts allocated for proposals in the Enhancement and R & D Program components.

5.2 ENDOWED CHAIRS FOR EMINENT SCHOLARS - $3,220,000

Overview/Rationale

The Endowed Chairs for Eminent Scholars Program, introduced in 1987, is designed to enhance the recruitment and retention of distinguished university faculty at institutions throughout Louisiana. Through the 2008-2009 fiscal year, 294 chairs have been funded at twenty-four institutions, and the program has generated a total endowment (counting private match) of $329 million.

The program pairs a 60% private-sector match with a 40% Board of Regents award to endow a chair to be filled by a scholar of high renown and great ability. Historically the Board has endowed chairs at two levels: $1 million total endowment ($600,000 match/$400,000 BoRSF) and $2 million total endowment ($1.2 million match/$800,000 BoRSF). Thirty-five (35) of the 294 chairs awarded have been at the $2 million level. Beginning in FY 2009-10, chair applications will also be accepted at the $3 million level.

The competition established to determine endowment awards is rigorous and selective. A panel of out-of-state experts reviews proposals on an annual basis, and recommends 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 who is 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 may only be done 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 a continuing record of scholarly and creative endeavors, leadership activities, exceptional teaching, attraction of high-quality students and enhancement of the State's economy.

Important Historical Milestones

- Funds first awarded in 1987
- Has been budgeted at ≥$3.2 M since 1990
- "First-come, first-served" replaced by Competitive Process in 1993
- Legislative supplemental appropriations, beginning in FY 1995-96 and continuing in most years since then, have enabled the funding of 99 additional chairs
- Comprehensive Reviews conducted in 1993, 1998, and 2009; Recommendations adopted for significant strengthening, especially in 1999 and 2009
- "Special Provisions for Public Four-Year Campuses with Less than Three Eminent Scholars Chairs" adopted in 2001 - allowed public, four-year institutions with fewer than three chairs to invert the 60:40 private funds/public funds ratio, 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 Louisiana State University - Alexandria, Southern University - Baton Rouge, Southern University - New Orleans, and Grambling), were funded under its aegis. One additional proposal from Southern University - New Orleans was funded under special circumstances in FY 2006-07.

5.3 RECRUITMENT OF SUPERIOR GRADUATE STUDENTS - $4,115,000

The Recruitment of Superior Graduate Students (RSGS) Program provides resources to select departments to bring top-quality students to their graduate programs. Through the 2008-2009 fiscal year, the Board of Regents has provided over one thousand graduate fellowships to a spectrum of departments at fourteen institutions in Louisiana. About 10% of these fellowships have been awarded to programs specifically targeting in-service teachers in mathematics and science disciplines pursuing master's degrees in Education. While the economic and cultural impact of these fellowships is difficult to quantify, it is clear that the program has contributed highly educated employees to Louisiana 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 at colleges and universities across the State.

The Traditional Graduate Fellows and Graduate Fellowships for Teachers (GFT) subprograms have been part of RSGS since 1993. The Board became a full participant in the Southern Regional Education Board (SREB) Minority Scholars Program in FY 2007-08. The Traditional subprogram primarily supports excellent doctoral-level programs, 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 GFT awards, an applicant institution must offer a program that can be completed in one academic year plus an additional summer, to allow teachers to finish within a single year's sabbatical from the classroom. Fellowship recipients, further, must pledge to teach in a Louisiana school system for at least one year after completing the master's degree, to insure that Louisiana students reap some of the benefits of the State's support of these teachers. The GF, GFT, and SREB subprograms provide a comprehensive opportunity for departments across the State to receive assistance in the training and support of graduate students.

Timely implementation of the Graduate Fellows Program requires the following schedule: year one, awarding the grant; year two, recruiting by awardees of superior graduate students; and year three, disbursing funds committed under the grant. For example, colleges and universities that submit successful proposals during the current fiscal year (FY 2009-10) will have a full year (FY 2010-11) during which to recruit students who, in turn, will enroll in Louisiana universities' graduate programs for the first time in the fall of 2011 (FY 2011-12).

The $4,115,000 budgeted for this category for FY 2010-2011, therefore, is entirely for previous obligations, including: (a) $985,000 for fourth-year funding of graduate fellows who began their course of study in AY 2007-2008; (b) $959,000 for third-year funding of graduate fellows who began their course of study in AY 2008-2009; (c) $996,000 for funding of second-year graduate fellows who began their course of study in AY 2009-2010; and (d) $1,150,000 for funding of graduate fellows who will begin their course of study in AY 2010-2011. This information is included in the current year's plan to notify the Governor and the Legislature that an amount of approximately $4.1 million will have been committed from the FY 2011-2012 Support Fund prior to the time that the annual plan and budget are submitted for that year.

In keeping with the conceptual framework to use Support Fund money to enhance all areas of higher education, all disciplines are eligible to compete in the Graduate Fellows Program. Those disciplines accorded a higher priority for Louisiana's economic development are eligible to compete every year. To determine the eligibility of specific disciplines in the Graduate Fellows Program for FY 2010-2011, see Chart II.

CHART II

ELIGIBILITY OF DISCIPLINES* IN THE GRADUATE FELLOWS PROGRAM

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 2006-07, 2008-09, 2010-2011, 2012-13

Agriculture
Business
Education, including Literacy
Mathematics

Group III - ELIGIBLE IN FY 2007-08, 2009-2010, 2011-12 , 2013-14

Arts
Humanities
Social Sciences

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*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 revision of the Strategic Plan.

5.4 CAREFULLY DEFINED RESEARCH EFFORTS - $5,650,000

A total of approximately $3,000,000 will be required during FY 2010-11 to honor prior commitments for multi-year projects in the Board of Regents Support Fund 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 $2.8 million 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 Funds available, but primarily as a result of the matching commitments required for federal grants.

The Research Competitiveness Subprogram 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 for first-year awards to this subprogram was increased to $1.5 million in FY 1999-2000 and has been maintained since except in those years when ominously low economic forecasts mandated mid-year budget cuts. 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 first-year level of $1,500,000 will be restored for FY 2010-11.

The Industrial Ties Research Subprogram has resulted in a number of projects with significant economic benefits (see Attachment II), but has not enjoyed a pattern of unbroken success. Louisiana's relatively undiversified industrial economy and its 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 industries based in the State. The Board has significantly reduced the funding level for this subprogram to reflect this reality, with the amount available for first-year funding of this component stabilized at $650,000 for several years. To free up funds for the Post-Katrina Support Fund Initiative, the amount was further reduced (by 10% to a first-year level of $585,000) in FY 2006-07. This level was maintained through FY 2009-10. The funding level for FY 2010-11 will be restored to $650,000.

While the Board has focused the R & D Program almost exclusively on the sciences, mathematics, and engineering, the Regents remain cognizant of their 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. This subprogram, modeled after the internationally famous Guggenheim Foundation Program, was inaugurated at a funding level of $500,000 FY 2004-05. The funding level for this subprogram, now named the Awards to Louisiana Artists and Scholars (ATLAS) subprogram, remained at $500,000 for FY 2005-06, but was reduced in FY 2006-07 to $450,000 in order to free up funds for the Post-Katrina Support Fund Initiative. The $450,000 level was maintained through FY 2009-10. The funding level for FY 2010-11 will be restored to $500,000.

A more detailed discussion of the R & D subprograms for which relevant historical data exists appears below.

5.4.1 Research Competitiveness Subprogram (RCS)

The 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 basic 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 basis; however, three disciplines which are accorded the highest priority for economic development (biological, computer/information, and earth/environmental sciences) are targeted for funding annually. To determine the eligibility of specific disciplines in the RCS for FY 2010-11 see Chart III.

CHART III

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 2006-07, 2007-08, 2010-11, 2011-12

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

Group III - ELIGIBLE IN FYs 2008-09, 2009-10, 2012-13, 2013-14

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

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*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 the 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 the ITRS also functions as a stimulus subprogram, 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 would be overlooked, the Board has, since1993, opened competition in the ITRS to proposals from any and 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.

5.4.3 Awards to Louisiana Artists and Scholars (ATLAS) Subprogram

The Awards to Louisiana Artists and Scholars (ATLAS) Subprogram provides support for major scholarly and artistic productions with potential to have a broad impact on a regional and/or national level. The Support Fund awards are accompanied by paid sabbaticals from the faculty members' institutions which facilitate the completion of manuscripts for publication and/or provide recognition for the efforts of artists, playwrights, choreographers, composers, etc. The subprogram allows the State to profit from its rich cultural traditions and makes Louisiana's expertise and creativity in these disciplines known to the rest of the nation.

5.4.4 Summary of FY 2010-11 Research and Development Expenditures

Prior Commitments (RCS and ITRS only)		$3,000,000
New Awards -	RCS	$1,500,000
	ITRS	$ 650,000
	ATLAS	$ 500,000
R & D PROGRAM TOTAL		**$5,650,000**

5.5 ENHANCEMENT OF THE QUALITY OF DEPARTMENTS OR UNITS - $18,978,741

NOTE: Matching commitments for all Federal Matching Grants Program proposals for which Federal approval has not been received as 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 because of (a) the uncertainty of a proposal's potential success in the national competition for Federal funds, (b) the Board's policy that any unexpended money in the Chairs, Graduate Fellows, and/or R&D program components annually revert to Traditional Enhancement for new awards in that component, (c) the difficulty and uncertainty surrounding moving Board of Regents Support Fund money from one Board of Regents Support Fund Program component budget to another, once budgeted in the prior year's appropriation process, and (d) 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 the goals of the other three Program components. For this reason, the Board shall dedicate $18,978,741 to the Enhancement Program in FY 2010-11. Thus, approximately 58% of the total funds available for awards in FY 2010-11 have been dedicated to this component, reflecting the Board's strong commitment to the program under which the majority of the State's colleges and universities are most competitive and successful.

Approximately $8,223,820 of the $18,978,741 budgeted for Enhancement awards in FY 2010-2011 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 2009-10 under the Traditional and/or Undergraduate Enhancement programs. Traditional and Undergraduate Enhancement proposals are currently undergoing competitive external review and the Board will make funding decisions about them in April or May of 2010. A total of $2,625,000 has been promised as the State's matching commitment under two current jointly-

funded Board of Regents Support Fund/Federal Matching Grants, including: (a) $2,000,000 for the second year of the NSF EPSCoR RII project; and (b) $625,000 for the second year of the NASA EPSCoR project.* Additionally, $500,000 is reserved for the fifth year of the current LaSIP project, and $4,798,820 is reserved for the fifth year of Post-Katrina Support Fund Initiative projects initially funded in FY 2006-07.

After deducting these projected commitments for multi-year enhancement projects and the commitments and projected commitments for Federal matching opportunities, $10,004,921 will be available for new enhancement projects submitted for funding consideration in FY 2010-11. Maintenance of the highest possible budgetary allocations to the Enhancement Programs is particularly important, because: (a) the Enhancement Programs build the infrastructure at universities which is critical to the success of the other three Support Fund programs; and (b) not only are the Enhancement Programs the ones in which all universities are eligible to compete, they are also the ones under which the majority of campuses most successfully compete. Significantly, 65% of the total funds available for new awards will be dedicated to the Enhancement Program. (See Chart V, "Overview of FY 2010-11 Board of Regents Support Fund Budgetary Allocations by Program Component" in Section 6 of this Plan and Budget.)

5.5.1 Undergraduate Enhancement Program

Some colleges and universities without sizeable graduate programs have not been aggressive in submitting enhancement proposals. To continue to affirm the principle that improvement of infrastructure is essential at all academic levels, the Board shall dedicate $1,800,000 to improve education at the primarily undergraduate institutions.

Prerequisites for participation in the Undergraduate Enhancement Program are as follows: (1) the campus may not offer more than two doctoral programs; and (2) the department applying may not offer a doctoral degree. It should be noted that 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 for FY 1992-1993 and beyond. The Board took this action to promote maximum participation by primarily undergraduate campuses in this Program.

Participation in the Undergraduate Enhancement Program does not preclude campuses from competing for other Enhancement money, and quality considerations continue to form the basis for all funding decisions. The same rotation of disciplines (Chart IV) and types of projects eligible under the Traditional Enhancement Program are also eligible in the Undergraduate Enhancement Program, and the same regulations apply to proposals. Surplus amounts not awarded in the Undergraduate Program 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 Program in FY 1990-91, and 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 external sources, to be matched by $40,000 from the Support Fund, thus establishing an endowed professorship valued at a minimum of $100,000.

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*A summary of the funded proposals referenced above may be found in Attachment I.

Since its inception the Board has been concerned that too many eligible campuses were not reaping the benefits possible through the Endowed Professorships Program. 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 has also encouraged campuses to maximize efforts to attain matching funds for endowments from private philanthropic sources. In the Endowed Professorships Policy which emanated from the FY 1999-2000 comprehensive review of the program, the Board adopted the following strategy to broaden inclusiveness:

> **Beginning in FY 2001-02, the campuses listed below, which have received fewer than five professorships since inception of the program, will receive $60K from the Support Fund, to be matched with $40K in private funds.** Once a campus has attained five professorships, it will no longer be eligible for funding under this ratio, and will revert to the $60K private:$40K Support Fund ratio.

1. Baton Rouge Community College
2. Bossier Parish Community College
3. Grambling State University
4. LSU-Eunice
5. River Parishes Community College
6. South Louisiana Community College
7. Southern University-New Orleans
8. Southern University-Shreveport

The Board initially set aside $580,000 from the Reserve Fund to accommodate this special funding. The eight campuses listed above will require a total of 29 professorships to enable each to have five funded professorships. 29 X $20,000 (the difference in 60:40 versus 40:60) = $580,000. Additional money was set aside for this purpose to accommodate Louisiana Delta Community College and Southern University - Baton Rouge Law Center in FY 2003-04, and, effective in FY 2005-06, L. E. Fletcher Technical Community College and Sowela Technical Community College. This special provision expired at the end of FY 2008-09.

This year, as in previous years, the Board searched diligently to identify money in the Support Fund to continue this Program. Measured against the pressing financial needs of higher education, every component of the Support Fund is severely underfunded. Consequently, each dollar used to fund new programs means that fewer dollars are available for critical needs elsewhere. Nevertheless, due to the overriding imperative to strengthen faculty at colleges and universities statewide, the fact that this Program enhances and promotes recruitment and retention of outstanding faculty, and the ever-increasing success of campuses statewide in raising private matching funds, the Board of Regents shall continue to fund the Endowed Professorships Program during FY 2010-11 at the level of $2,680,000. These funds will enable each four-year campus to endow two professorships, and each two-year campus to endow one professorship, assuming that private matching monies can be secured and all regulations can be met. The money "saved" by reserving only one professorship per two-year institution per year is used in the manner described in the Section 5.5.3.

5.5.3 <u>Enhancement Program for Two-Year Institutions</u>

The Board's belief that improvement of educational quality is essential at all academic levels and in all disciplines drove the establishment, beginning in FY 2002-03, of the Enhancement Program for Two-Year Institutions. The absence of federal calls in FY 2002-03 for grants requiring a state match enabled the Board to use the funds normally made available for federal matching opportunities to "jump-start" the two-year institutions, particularly those which had recently joined the Louisiana higher education system.

Campuses eligible for participation in this program are Baton Rouge Community College, Bossier Parish Community College, Delgado Community College, L. E. Fletcher Technical Community College, Louisiana Delta Community College, LSU-Eunice, Nunez Community College, River Parishes Community College, South Louisiana Community College, Southern University-Shreveport, and Sowela Technical Community College. Campuses 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 prioritize successful proposals.

It is the Board's belief 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 must undertake. Cognizant that all or most of the funds devoted to this purpose in FY 2002-03 were likely to revert to the Federal Matching Grants Program in future years, the Board has attempted to provide a financial foundation for the continuance of the subprogram. To wit, the Board has modified its policy for the disbursal of funds for endowed professorships (described in Section 5.5.2 above) so that at least $440,000 per year will be available to sustain this program. Additional funds will continue to be taken from the Traditional Enhancement Program. One million dollars ($1,000,000) was allotted to this program in FY 2003-04, and the FY 2004-05 allocation was raised to $1,200,000 and 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. The $1,200,000 level will be restored for FY 2010-11. Any unexpended funds will revert to the Traditional Enhancement Program.

5.4 The Louisiana Systemic Initiatives Program (LaSIP)

The Louisiana Systemic Initiatives Program (LaSIP) first competed successfully for National Science Foundation (NSF) funding in 1991. At that time it received $10 million from NSF, matched by $5 million each from the Board of Regents and the Board of Elementary and Secondary Education (BESE). The project involves K-12 reforms which require leadership from colleges and universities, as well as revisions in teacher education programs. LaSIP was one of only two statewide initiatives (Connecticut) which received a five-year renewal in 1996. Federal support ended in FY 2000-01. From the beginning, NSF emphasized that Federal money would only be used to seed the project, with the major continuing financial commitment to emanate from state and/or private sources.

During its ten-year existence LaSIP was repeatedly cited by NSF as a model program. The project's exemplary nature was a major contributing factor in the 1996 renewal. Further, LaSIP has achieved significant results statewide in the improvement of student scores on both criterion-referenced and norm-referenced tests. It has the potential to be a major resource for school districts throughout the State in achieving accountability goals.

Mindful that the federal funding stage for this project was drawing to a close, the Board determined that the educational reform impulse at once spearheaded and buttressed by LaSIP should not die. Accordingly, the Board committed $500,000 per year for five years, beginning in FY 2001-02, to continue LaSIP activities. The money came from the Reserve Fund, and was contingent upon the provision of a like sum annually from BESE and supplemental funding from the Legislature. Both the Regents and BESE approved five-year renewals at $500,000 per year for the Program at their meetings in January, 2006. Since FY 2006-07, the Regents contribution to this program has come from the Board of Regents Support Fund Plan and Budget. $500,000 will again be devoted to LaSIP during FY 2010-11.

5.5.5 Endowed Undergraduate Scholarship Program for First-Generation College Students

The State faces a well-documented impending 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 56 will graduate from high school four years hence. Only 33 will attend college, and only 22 will receive a baccalaureate degree within six years of college entry. Research indicates that this massive "pipeline leakage" is due primarily to socioeconomic factors. Many worthy Louisiana students are now effectively denied this opportunity either because the assistance provided under the TOPS program is not sufficient to make a college education affordable for them or because they approach but fall short of satisfying all of the requirements necessary to qualify for the TOPS program.

The Board has now implemented a merit- and needs-based program to address this situation. Eligible students must be Louisiana residents who are "first-generation" college students (neither parent has earned a baccalaureate degree), who have been awarded the federal Pell grant, and have been admitted to the institution awarding the scholarship. Each four-year institution will be guaranteed one (1) $40,000 endowed scholarship fund challenge grant annually to match a private/institutional contribution of $60,000. Each two-year institution will be guaranteed one (1) $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. The interest earnings from the fund(s) will be 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 will provide student recipients with structured support through active and engaged advising, and institutions will provide students with meaningful campus employment of at least ten (10) hours per week over and above the scholarship. The program will again be funded at the level of $1,000,000 during FY 2010-11.

5.5.6 Traditional Enhancement Program

Based on its continuing review of academic programs, coupled with evaluation of Board of Regents Support Fund projects, the Board anticipates that the acquisition of research and instructional equipment will remain indefinitely as the area of greatest need in the Enhancement Program. Indeed, during the first three years in which the Board of Regents Support Fund 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 of selected non-scientific and non-engineering disciplines for the first time. Some types of enhancement requests other than instrumentation include, for example, curriculum revision projects and colloquia to be presented by outstanding out-of-state scholars.

In an attempt to limit the commitment of future Board of Regents Support Fund money, in FY 1989-90 the Board further decided that equipment can 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 in duration; (2) no project may request more than $50,000 in the second year; and (3) a limit of $1 million will be placed on the total of all second-year commitments in the Traditional Enhancement Program. This year, the Board decided to continue to allow the submission of Enhancement requests other than for instrumentation, with the same stipulations as adopted previously.

After deducting all previous and projected commitments for other components of the Enhancement Program, only $3,324,921 remains for new projects submitted in the Traditional Enhancement Program in FY 2010-11. This amount would increase from the Plan and Budget as submitted only if allocated money is not expended in one of the other Support Fund programs. However, as indicated in section 5.1, all funds in excess of $33,000,000 shall be placed in the Traditional Enhancement category until a funding level of $8,000,000 is reached. Further, the Board will use money from its Reserve Fund if possible to preserve the integrity of this vital component.

In keeping with the conceptual framework to use Support Fund money to enhance all areas of higher education, all disciplines are eligible to compete in the Traditional Enhancement Program on a rotating basis as set forth in the Strategic Plan. To determine the eligibility of specific disciplines for FY 2010-11, see Chart IV.

CHART IV

ELIGIBILITY OF DISCIPLINES* IN THE TRADITIONAL AND UNDERGRADUATE ENHANCEMENT PROGRAMS

GROUP I - ELIGIBLE IN FYs 2006-07, 2009-10, 2012-13

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

GROUP II - ELIGIBLE IN FYs 2007-08, 2010-2011, 2013-14

Business
Chemistry
Education
Mathematics
Physics/Astronomy

GROUP III - ELIGIBLE IN FYs 2008-09, 2011-2012

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

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

5.5.7 Post-Katrina Support Fund Initiative (P-KSFI)

The storms of August and September, 2005 decimated Louisiana and other sections of the Gulf Coast. In addition to the diaspora of its population, the State's economy, infrastructure, tax-base, and research, both basic and applied, have suffered. The affected region encompasses coastal areas unparalleled for the productivity of its natural resources, its diverse recreation, its unique culture(s), and the quality of its creative and performing arts. While the catastrophic dimensions of the storms would be difficult to overstate, the resulting situation did present an unprecedented opportunity for faculty and students to participate in the recovery and rebuilding of both urban and rural areas.

To facilitate this endeavor, the Board established, at its December 8, 2005 meeting, a five-year program to be funded through an annual allocation of approximately $5 million from the Board of Regents Support Fund. Although it involves the redirecting of substantial funds from established BoRSF programs, it is essential to addressing priorities that have emerged since the storms. Utilizing monies unspent in the FY 2005-06 competitions, in addition to budget adjustments in established programs and revised budget projections, the Initiative has significant potential for leveraging of BoRSF funds to attain federal and private monies. Thus, the total money available to the Initiative should ultimately exceed the approximate $5 million per year provided through the BoRSF.

Subsequent to the submission of the FY 2006-07 Plan and Budget, the Board's staff conducted several meetings with campus representatives, ultimately resulting in a call for White Papers from the campuses which indicated their priority needs, as well as their thoughts relative to the development of the Initiative. The Board's staff forwarded these White Papers to a panel of experts selected under the auspices of the American Academy for the Advancement of Sciences (AAAS). AAAS hosted interviews during September 2006 in which campus representatives responded to detailed questions arising from their White Papers.

AAAS issued final reports in November 2006 which recommended the following: (1) that the P-KSFI be subdivided into Primarily Research and Primarily Education subprograms and (2) that the disciplines eligible for funding be limited to biological sciences, material sciences, and information technology. After responses to the report were received from the campuses in December 2006, the Board ultimately approved the requests for proposals (RFPs) for the Initiative at its meeting of January 25, 2007.

Forty-one proposals were submitted in response to the RFPs. An intensely competitive peer-review process, multi-stage for primarily research proposals and single-stage for primarily education proposals, culminated in the awarding of $25,231,210 over a period of five years to eleven proposals involving participation from fifteen institutions of higher education. $4,798,820 of this amount will be expended in FY 2010-11. The performance of these projects will continue to be carefully monitored and evaluated by the Board. Annual reports from each project are required, and a comprehensive mid-course assessment is scheduled during the summer of 2010.

5.5.8 SUMMARY OF FY 2009-10 ENHANCEMENT EXPENDITURES

Prior Commitments -	Traditional and Undergraduate	$ 300,000
	Federal Matching Grants	$ 2,625,000
	LaSIP Renewal	$ 500,000
	Post-Katrina Initiative	$ 4,798,820
New Awards -	Federal Matching Grants	$ 750,000
	Undergraduate	$ 1,800,000
	Endowed Professorships	$ 2,680,000
	Two-Year Institutions	$ 1,200,000
	Endowed Undergraduate First Generation	$ 1,000,000
	Traditional	$ 3,324,921
ENHANCEMENT PROGRAM TOTAL		**$18,978,741**

5.6 ADMINISTRATIVE EXPENSES - $1,036,259

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

> 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.

Legislation passed during the 2006 Session allows an actual amount of $1,036,259 to be expended in this category during FY 2010-11.

Each program component whose expenditures are itemized in sections 5.3 through 5.5 of this Plan and Budget will incur expenditures for the professional services of out-of-state consultants estimated as follows:

Recruitment of Superior Graduate Students	$ 25,000
Research and Development	$150,000
Enhancement	$ 95,000

These amounts estimated above will be deducted from the total amounts available for expenditure in the respective program components. Estimated consultant costs for the Endowed Chairs for Eminent Scholars Program are added to the regular allocation in order to preserve the $400,000 units necessary for the endowments.

6. OVERVIEW OF FY 2010-2011 BUDGETARY ALLOCATIONS BY PROGRAM COMPONENT

The following chart provides an overview of FY 2010-2011 Board of Regents Support Fund budgetary allocations for new projects and previous commitments.

CHART V

AN OVERVIEW OF BOARD OF REGENTS SUPPORT FUND BUDGETARY ALLOCATIONS BY PROGRAM COMPONENT, FY 2010-11			
	TOTAL SUPPORT FUND ALLOCATION	**ALLOCATION FOR NEW PROJECTS**	**ALLOCATION FOR PREVIOUS COMMITMENTS**
ENDOWED CHAIRS	$ 3,220,000	$ 3,220,000	$ 0
GRADUATE FELLOWS	$ 4,115,000	$ 1,150,000*	$ 4,115,000
RESEARCH	$ 5,650,000	$ 2,650,000	$ 3,000,000
ENHANCEMENT**	$ 18,978,741	$ 10,754,921	$ 8,223,820
SUBTOTALS	$ 31,963,741		
ADMIN. COSTS	**$ 1,036,259**		
GRAND TOTAL	**$ 33,000,000**		

*Because allocations for the Graduate Fellows Program must be determined two years in advance of when students first arrive on campus, the FY 2010-2011 allocation for new graduate fellowships was determined in FY 2008-09 and set forth for the first time in the FY 2009-10 Plan and Budget. Thus, this allocation for new projects must come from the FY 2011-12 budget and has not been included in the subtotal and grand total figures in this chart. See Section 5.3 for a detailed explanation of the timing of the allocation process for this Board of Regents Support Fund Program component.

**Enhancement figures include funds used for Federal Matching Grants opportunities and for the Post-Katrina Support Fund Initiative.

ATTACHMENT I

Funded Proposals: Joint Federal/State Programs with Statewide Impact

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

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.						

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

Title	Fiscal Years	Federal Award Number	Federal Agency	Duration	Federal Award Amt.	Support Fund Match
Building Research Partnerships with Audio/Video Conferencing Facilities	FY1996-97 – FY1998-99	EPS-9632665	NSF	2 years	$494,198	$0

Participating Institutions: LA Tech, LSU-BR, LSU Ag, LSUHSC-NO, NSU, SLU, SUBR, Tulane, ULL, ULM, UNO
Description/Purpose: To promote research partnerships by establishing an inter-institutional audio/video (A/V) research communications network across Louisiana. The A/V network will enhance collaborative exchanges within and among the State's EPSCoR and EPSCoR associated schools and to promote new research partnerships by eliminating geographical (distance/separation) barriers.

LaSERnet II Backbone for Institutions of Higher Education in Louisiana	FY1997-98 – FY1999-00	EPS-9720147	NSF	2 years	$552,893	$0

Participating Institutions: LA Tech, LSU-BR, LSUHSC-S, LSUHSC-NO, SLU, SUBR, Tulane, ULL, ULM, UNO
Description/Purpose: To provide researchers in the State with a high-speed intra-state backbone for sharing resources and access to broad-band (Internet II) service and direct vBNS (very Broadband Network Service) connectivity.

U.S. Department of Energy/EPSCoR Program Renewal	FY1995-96 – FY1998-99	DE-FC02-91ER75669	DOE	4 years	$3,473,402	$3,200,000

Participating Institutions: Grambling LA Tech, LSU-BR, Loyola, McNeese, SUBR, Tulane, ULL, ULM, UNO, Xavier
Description/Purpose: 1) To increase research competitiveness and capabilities of Louisiana scientists and engineers in areas of importance to the State and the U.S. Department of Energy; 2) to educate and recruit individuals, especially minorities and women, to work in these areas in Louisiana; 3) to provide new technologies that lead to economic development in the State; and 4) to support three multi-institutional research cluster projects.

Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP) Program	FY1995-96 – FY1999-00	HRD-9550765	NSF	5 years	$5,944,914	$2,249,280

Participating Institutions: Dillard, Grambling, LUMCON, LSU-BR, McNeese, Nunez, SUBR, SUNO, SUSBO, Tulane, ULL, UNO
Description/Purpose: To increase the number of underrepresented minorities receiving B.S. degrees in science, engineering, and mathematics in Louisiana from the baseline rate of 610 annually to an annual rate of 1,110.

NASA LaSPACE Renewal Program	FY1996-97 – FY1999-00	NGT-40039	NASA	4 years	$600,000	$400,000 (NASA and BOR portions awarded directly to LSU)

Participating Institutions: A consortium of sixteen campuses; grant funds awarded on a competitive basis
Description/Purpose: To continue the development of the infrastructure for aerospace research to competitive levels, while improving the quality of aerospace research and education.

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

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).						

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

Title	Fiscal Years	Federal Award Number	Federal Agency	Duration	Federal Award Amt.	Support Fund Match
1997 DEPSCoR Implementation Program	FY1997-98 – FY1999-00	Grant numbers vary	DOD	3 years	$1,770,504	$750,000

Participating Institutions: LSU-BR, Tulane, ULL
Description/Purpose: To continue previous efforts to conduct research and educate scientists and engineers in Louisiana in areas important to national defense, thus improving the State's research infrastructure.

NSF/EPSCoR New Cooperative Agreement (NCA)s	FY1998-99 – FY2000-01	EPS-9720652	NSF	3 years	$3,000,000	$3,000,000

Participating Institutions: A significant number statewide; grant funds awarded on a competitive basis.
Description/Purpose: 1) To enhance the competitiveness of science and engineering (S&E) faculty of the State's higher education institutions by making them more competitive in gaining national research and development support, engaging them in science and technology transfer activities with business and industry, and helping them educate effectively large numbers of S&E students at both graduate and undergraduate levels; 2) to create real and meaningful linkages between the State's HBCUs and MWCUs through the Joint Faculty Appointments Program; and 3) to foster economic development in the state by facilitating, through various initiatives, interaction between business & industry, universities, and state government. This proposal continued the efforts begun under the EPSCoR ADP and SI awards previously described.

1999 DEPSCoR Implementation Program 3 years	FY1999-00 – FY2001-02	Grant numbers vary	DOD	3 years	$1,459,473	$189,798

Participating Institutions: LSU-BR, LA Tech, UNO
Description/Purpose: As in past DEPSCoR awards, the individual research projects funded through this award enhance the statewide research infrastructure improvement efforts.

Experimental Program to Stimulate Competitive Technology (EPSCoT)	FY1999-00 – FY2000-01	60NANB9D0005	Dept. of Commerce	2 years	$250,000	$300,000

Participating Institutions: A significant number statewide
Description/Purpose: To develop and implement regional and statewide strategies to accelerate commercialization of university-based technologies, thus contributing to the economic development of the State.

NASA EPSCoR Program Continuation Funding	FY1999-00	NCC5-167	NASA	1 year	$400,000	$250,000

Participating Institutions: Dillard, LA Tech, LSU-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. This award is the sixth-year continuation of the NASA EPSCoR Program and NASA EPSCoR Program Renewal previously described.

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

Title	Fiscal Years	Federal Award Number	Federal Agency	Duration	Federal Award Amt.	Support Fund Match
NASA EPSCoR Preparation Grant Program	FY1999-00	NCC5-393	NASA	1 year	$225,000	$100,000

Participating Institutions: A significant number statewide. Funds are competitively awarded.
Description/Purpose: To allow Louisiana researchers to initiate contacts and promote collaborative research programs with NASA Centers and Enterprises, and begin research activities in areas of strategic importance to NASA in preparation for submission of a statewide proposal to NASA EPSCoR in 2001.

NASA LaSPACE Continuation	FY2000-01 – FY2004-05	NGT5-40115	NASA	5 years	$1,281,250	$1,000,000

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

EPA EPSCoR 2000 Program –Coastal Monitoring	FY1999-00 – FY2000-01	R-82778501-0	EPA	2 years	$483,939	$500,000

Participating Institutions: LUMCON, Tulane (all data obtained will be made available to scientists and students throughout the state.)
Description/Purpose: To establish and maintain a series of instrument platforms by which university scientists can monitor environmental variables in coastal Louisiana for research and educational needs, thus increasing the State's capability to compete for and perform federally-funded environmental research.

Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP) Phase II	FY2000-01 – FY2005-06	HRD-000272	NSF	5 years	$5,000,000	$2,500,000

Participating Institutions: Dillard, Grambling, LUMCON, LSU-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.

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.

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

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 will operate over existing Internet lines instead of over telephone lines, and allow desktop-to-desktop multimedia communications.

Louisiana EPSCoR Research Infrastructure Improvement (RII)	FY2001-02 – FY2003-04	EPS-0092001	NSF	3 years	$9,000,000	$3,000,000

Participating Institutions: A significant number statewide, including LA Tech, LSUHSC-NO, UNO, Grambling, LSU-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 will make significant contributions to the strategic research and technology priorities of NASA and, in turn, to contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State; and 2) to support three multi-institutional research projects.

EPA EPSCoR 2001 Program – Climate Change	FY2002-03 – FY2003-04	R-82642001-0	EPA	2 years	$494,195	$494,542

Participating Institutions: LUMCON, UL-Lafayette, LSUBR
Description/Purpose: To enhance Louisiana's capability for understanding and predicting the effects of climate change on the state's coastal ecosystems, thus increasing the State's capability to compete for and perform federally-funded environmental research.

Louisiana's Strategic Infrastructure Improvement (LSII)	FY2003-04– FY2005-06	EPS-0346411	NSF	3 years	$9,000,000	$3,000,000

Participating Institutions: A significant number statewide, including LSU-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.

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

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 – FY2008-09	NNX07AL03A, NNX07AT62A, NNX07AT67A	NASA	3 years	$1,625,000	$1,875,000

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 .

FUNDED PROPOSALS: JOINT FEDERAL/STATE PROGRAMS WITH STATEWIDE IMPACT

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

Participating Institutions: A significant number statewide, including LSU-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
Description/Purpose: The focus of this project is the development of multi-functional cyberinfrastructure (*CyberTools*) that will broadly enable significant advances in modern science and engineering. In addition, a variety of initiatives to enhance the competitiveness of science and engineering (S&E) faculty of the State's higher education institutions are also supported. This project continues the efforts begun under the EPSCoR ADP, SI, NCA, RII, and LSII awards previously described.

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

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

NASA EPSCoR Phase 3 Renewal	FY2009-10 – FY2011-12	NNX09AP72A,	NASA	3 years	$750,000	$750,000

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

ATTACHMENT II

Results from Selected Recent BoRSF Projects

Results from Selected Recent BoRSF Projects

ENHANCEMENT

In response to the local deepwater production industry's demand for more highly skilled production technicians, **Fletcher Technical Community College** collaborated with major production companies to develop and implement a fluid mechanics course and training laboratory required in the integrated production technology options of the certificate and associate of science degree of technical studies programs. With a $120,000 Enhancement grant from LEQSF, the project coordinator purchased equipment, virtual lab software, supplies and reference materials to establish a fluid mechanics laboratory. He also extended Fletcher's outreach efforts to high schools in order to stimulate interest in careers in oil and gas production, one of the two primary industry clusters in Terrebonne Parish.

Key industry partners meet quarterly to review technology and programs and provide recommendations and suggestions. These include representatives from Chevron, Shell, BP, Anadarko, C&D Productions and Danos and Curole. The program instructor visited with industry partners and nine other companies to identify their training needs and took students on workplace field trips

A nursing skills laboratory complete with equipment, supplies and patient simulators is the result of an Enhancement grant to the **Louisiana Delta Community College** Division of Nursing. The simulators, which have real-life reactions to treatment, allow students to practice without harming real patients. Both the adult and pediatric simulators look, feel and act real and have an array of advanced features and breakthrough technology. Both are also wireless and tetherless and the pediatric model is portable. Used by the nation's most prestigious medical colleges and nursing programs, patient simulators help prepare students for the responsibilities and critical thinking abilities required of nurses and other healthcare members responding to critical events. The majority of associate degree nurses are known to remain in the geographic area in which they receive their training. This should maximize the positive impact on the area's economic development.

With the goal of improving teaching and research in bioinformatics, an Enhancement Grant to the **University of New Orleans** was used to establish a state-of-the art computational laboratory with 12 additional work stations at the Computer Science Departments Office/Lab facilities. A UNO-based instructional biochemistry/biomedical engineering lab was also established and a new course in bioinformatics was introduced in Spring 2009.

Hosting seminars for industry specialists with the view of seeking joint projects with their companies led to the formation and incorporation of a nano-pore* detector biotechnology company that went on to obtain a Round II award of $50,000 from the State's competitive LINC program. The project goals, which were all met, are enhancing opportunities in teaching and research, and promoting economic development via a pool of locally based bioinformatics/ machine-learning and biochemistry/biophysics expertise. *{LEQSF (2007-08)-ENH-TR-88} PI: Stephen Winters-Hilt.* (***Nanopore**: a small hole in a membrane that can be used as a single-molecule detector. Nanopores are making contributions to the understanding of polymer biophysics.)*

Moving Towards an Electronic Campus was the objective of a two-year Enhancement Grant to **River Parishes Community College,** which, in partnership with four technical colleges from Region 9, has established a web-based portal to support student access and success. The RPCC guiding principles are to: 1) Expand strategies to enroll first-generation students from under-represented populations; 2) Develop and implement innovative approaches to improve program completion and/or the transfer rate of students; 3) Initiate the beginning of an electronic campus in Region 9 technical colleges; 4) Develop strategies to improve financial, academic and career counseling; 5) Extend anytime, anywhere student-learning options through electronic delivery programs, and 6) Promote professional development to learn new student services skills that meet the needs of today's students through the use of new on-line technology. RPCC was so successful and believes so strongly in this project that the administration has dedicated financial resources to complete the next steps of the student portal.

Grambling State University's teaching and learning laboratories were improved with an LEQSF Enhancement grant used to enhance the institution's general, organic, practical inorganic and physical chemistry, biochemistry/molecular biology, and forensic chemistry labs, as well as those for instrumental analysis. The resulting undergraduate student projects included the development of new polymers for use in bullet-proof vests, new substances to stop hair loss, a catalyst to produce pharmaceutical precursors, and materials that mimic bone structure. An objective was to underscore how important it is to understand basic concepts for the development of new technologies, to make students aware of the many mathematical algorithms that are happening when they use their GPS, cellular phones, computers, TVs, etc. The goal: to produce future professionals who will apply chemistry in innovative ways because they understand the basic concepts required to generate new technology.

The supplies and accessory equipment purchased with the grant are also made available to train Louisiana teachers in summer workshops. In addition, they have boosted the university's capabilities to attract federal and private funds for teaching and research.

A Mobile Think Tank™ System lab was established under funding support by a previous (2006-07) LEQSF Enhancement grant awarded to the **Southeastern University** College of Business. An innovative computer-mediated meeting facility equipped with technology that can enhance decision making and problem solving processes, the Think Tank is a unique asset used to create a state-of-the-art learning environment. Users participate in activities such as brainstorming, capturing and organizing key thoughts for further analysis. It has been shown to enhance student participation.

The Think Tank System is so popular that Southeastern applied for and received another Enhancement grant to enhance the access and availability of additional licenses so faculty can use it to support a class of up to 55 (as opposed to 15), accommodate simultaneous meetings of small groups at the same time, and share this resource with other colleges within the university.

The Think Tank has also been employed by the local community. For example, sessions have been conducted for the Livingston Parish Chamber of Commerce, the Livingston Parish Workforce Enhancement Initiative, and the Northshore Excellence in Teaching with Technology Committee.

An LEQSF Enhancement grant was used to upgrade the Louisiana Agriclimatic Information System to provide an enhanced, reliable one-stop, full-service agricultural weather information system. Originally developed in 1982 by the **LSU Agricultural Center**, the statewide network of electronic weather stations processes and distributes detailed meteorological data relevant to users in agricultural production, natural resources management, environmental protection, and public safety. Each weather station observes air temperature, precipitation, wind speed and direction, relative humidity, barometric pressure, total shortwave and photosynthetic active radiation, and soil temperatures at various depths. Data are recorded at least every five minutes and hourly and daily summaries are generated. Raw data, tabular and graphical report are available on the Internet.

Critical improvements funded by the recent grant include 1) rain gauge sensors that detect rainfall and provide rain amount and intensity within one minute; 2) more durable and reliable gauges for recording the speed and direction of wind that can also withstand higher velocity winds; and 3) more durable and reliable temperature and relative humidity probes that can withstand Louisiana's high humidity. In addition, six stations with buried communications cable were upgraded to wireless radio frequency connectivity, preventing downtime due to downed communications lines and possible lightning strikes.

A light-weight portable weather station with a trailer tower unit was also developed to serve as a base structure to allow easy reconfiguration of sensors and data-logging equipment assembled on a per project basis. For example, during controlled burns, the system will have several wind monitors to capture wind profile data at varying heights.

The enhanced LAIS website (http://www.lsuagcenter.com/weather) provides a link between clients using the data and the weather station collecting data at a particular location. The amount of web traffic has doubled since March 2008. From that time to June 2009, the website had 14,664 visits from Louisiana, 7,310 from elsewhere in the United States, and 68 from foreign countries, for a total of 22,042 visits.

To further establish their reputations as two of the premier institutions for the study of Louisiana varieties of French and strengthen the productive collaboration between their programs, the French programs at **LSU** and **Tulane** used an Enhancement grant to launch high-quality, interactive online courses in Cajun French and Louisiana Creole. Designed for independent learners, the online courses focus on practical communicative language skills.

Particular emphasis is given to topics and grammatical structures in domains where the languages are most likely to be used. These include family cooking, hunting and fishing, social gatherings, farming and animal husbandry, and sickness and health. Ample opportunity is also offered for learners to hear recordings of native speakers.

A beta version of the first unit of the course was available on the Internet in the summer of 2009 for limited viewing by the developers and beta testers. Major activities include implementation of the originally designed web site, the final production, proofreading and modification of the content, a review of the site by testers unfamiliar with the project and its target languages, and fine-tuning of navigational and other aspects of the site's functionality.

A collaboration with a commercial foreign language software company that assists groups working to revitalize heritage languages will allow users to: 1) track their individual progress in learning vocabulary and 2) record and compare their voices with that of a native speaker.

The co-PIs, who are two of the authors of a recently published dictionary of Louisiana French, have given two national presentations on the project designed to preserve and develop Louisiana's rich but fragile cultural resources while at the same time facilitating public access to them.

Rebuilding and upgrading the **Louisiana Tech** Observatory equipment to state-of-the-art standards and replacing the observatory's existing roll-off roof with a computer-controlled dome were the objectives of an Enhancement grant. The facility is designed for undergraduate research by physics majors and potential majors, for teaching observational astronomy to teachers at the middle and high school levels, and for laboratory work in undergraduate astronomy survey classes.

The Observatory upgrades, which will help Louisiana Tech develop an active undergraduate research program, also provide the infrastructure needed to obtain National Science Foundation funds for the future purchase of a larger telescope. There is no other facility dedicated to undergraduate astronomical research in northern Louisiana.

PK-SFI

Some **Southeastern Louisiana University** science students are learning important business and technology entrepreneurship skills and getting first-hand experience in all aspects of the science world in a new program that puts them in charge of their own non-profit business. Funded initially by a five-year, $425,000 grant through the Post-Katrina Support Fund Initiative, the *Student Entrepreneurs as Active Leaders* (SEAL) program is a student-managed, faculty-supervised non-profit corporation that provides scientific services to area industrial clients. Based on a highly successful program at Virginia Commonwealth University, it is organized as part of Louisiana's Applied Polymer Technology Extension Consortium established in 2003 by the Louisiana Legislature to make university resources more accessible to the State's industries.

Typically, in an industrial setting, scientists or engineers working on a specific project or problem may come across an interesting opportunity that time prevents them from pursuing. With SEAL in place, an industrial firm can pose the question or problem to students who will further evaluate the issue and determine if it is something of value that the company may want to pursue further.

"Like most chemical companies, we are constantly trying to develop new products and conduct research…SEAL students have done an excellent job of solving some of our burning questions," says Artie McKim, Technical Director of Gaylord Chemical Co. in Bogalusa.

In its second reporting period, seven SEAL students and two faculty worked on 10 projects for six clients, resulting in 17 written reports, five oral presentations to clients and three oral and six poster presentations at scientific meetings. The program was also featured in the national newsletter of the American Chemical Society,

"The SEAL students have been fantastic," adds Mr. McKim. "They are enthusiastic, proactive, young students with a high level of skill that some people even at the graduate level don't have. It's really neat to see students so excited about learning." *{LEQSF (2007-12)-ENH-*

RESEARCH & DEVELOPMENT

Research & Development: RCS

A team of **LSU Health Sciences Center** researchers has shown for the first time that a tiny piece of RNA* appears to play a major role in the development of invasive breast cancer and has also identified a gene that appears to inhibit invasive breast cancer. The research was published in the August 21, 2009 issue of the *Journal of Biological Chemistry*. The researchers, recipients of an LEQSF Research & Development grant, are the first to demonstrate that a novel microRNA** not only inactivates the gene which they found suppresses the growth of breast tumor cells, but also that it stimulates the breast cancer to invade other cells. They are in the process of confirming these results, which could result in an effective therapeutic approach to advance breast cancer treatment.

According to the American Cancer Society, over 192,000 new cases of invasive breast cancer are expected to occur among women in the U.S. during 2009 and about 1,900 new cases are expected in men. Breast cancer ranks second as a cause of cancer death in women. *{LEQSF*

*(*A nucleic acid, RNA is an essential cell component that carries DNA information to ribosomes for translation into protein. **MicroRNAs are a new class of small RNA molecules that play an important regulatory role in cell biology.)*

A team of **LSU** researchers has developed and implemented a research plan that will enable coastal scientists to efficiently process and analyze large scale data acquired from the satellites and sensors scattered across the Gulf Coast. The result will speed up data analysis for hurricane track predictions, storm surge modeling and coastal recovery. The goal is to set the guidelines required to automate and efficiently process the coastal data without any human intervention

from beginning to end. End-to-end processing for two large projects—one in petroleum engineering, the second in coastal hazard prediction— was completed and a Distributed Computing Research lab has been established at LSU.

The PI, who received a prestigious NSF CAREER award of $400,000 as a direct outcome of this project, is also heading an effort to use his experience in this and other similar projects to contribute to K-12 education. In January 2007, a team led by him received approval from the State Board of Elementary & Secondary Education to start a new science and technology-based K-12 charter school in the New Orleans area in August 2007. Participants in the latter include faculty from **Southern, Southeastern, SUNO** and the **LSU Health Sciences Center in New Orleans.**

The first work to develop radio frequency wireless interconnect for on-chip communication and nano-networking was a result of a Research & Development grant to the **University of Louisiana at Lafayette**. A partnership has been established with the IBM Austin Research Lab and extensive collaborations have been carried out in publications, invited talks and projects.

The PI received three National Science Foundation (NSF) awards totaling over $1.3 million. These included over $199,000 to establish a multi-disciplinary laboratory, a $500,000 NSF Major Research Instrumentation grant. and a prestigious NSF Faculty Early Career Development Award grant of over $621,000. The research could ultimately produce a scalable, cost-efficient, flexible and reusable chip infrastructure that would allow small devices to have more complex functions with fewer errors.

Establishing a truly integrated research and education program is a primary goal of this project, with ULL's Laboratory of Nanoelectronic Embedded Computing serving as the test bed for both research and course projects. With the emergence of embedded systems as the new centerpiece of mainstream computing, the national market is short of engineers and researchers with embedded system expertise. In order to build and enhance the students' professional knowledge and skills in this new high demand field, a new graduate level course has been developed and offered every fall semester. The PI has also had papers on the research findings published in two refereed journal articles and six conference proceedings.

R&D: ITRS

Research for a project funded by an LEQSF Research & Development grant will benefit the agricultural, plastics and building industries. The project's work addresses the problem of increased wood costs and competition of wood resources from traditional wood sectors and the resulting need to develop alternative fiber sources. The general goal of a team of **LSU Agricultural Center** researchers is to employ advanced technology to develop natural fiber polymer composites (NFPCs), which offer inherent technical advantages over conventional composites such as lower cost, lighter weight, competitive specific mechanical properties, reduced energy consumption, as well as embracing the "green" concept.

This research deals with natural fibers and recycled plastics as feedstock to make bio-composites. Combining wood/natural fibers with plastics manufactured in Louisiana to create value-added industrial products provides a perfect link between the State's agricultural, wood-based material, and petrochemical industries.

Progress has been made toward industrial development through work conducted with BP America Inc., to apply the composite technology developed from this project for recycling motor oil containers. Work has also been conducted in cooperation with Pro-log, LLC, as well as the Wallace Moulding & Millworks Co., which has built an extrusion plant in Columbia, LA to use recycled plastic for manufacturing wood plastics composites. In addition, a team has been formed among LSU researchers, BP Lubes, Pro-log, LLC, Wallace Mouldings, and the Louisiana Department of Economic Development to work on wood/natural fiber plastic composites for different applications. Two patent applications have been accepted and over $859,500 in external funding has been received..

Louisiana Tech researchers awarded an LEQSF Research & Development grant have elaborated a new technology of producing nano-composite wood fibers and integrating them into paper. The process is based on their pioneering in layer-by-layer polyelectrolyte nano-assembly, which allows stronger paper and better paper recycling, and on its application for recycling improvement. The main results include:

1) Fiber polyelectrolyte nano-coating with thickness control in the range of 5-50 nm *(one billionth of a meter micro millimeter)*

2) Elaboration of new paper making processes
3) Repairing broken fibers for better recycling
4) Customizing the technology for licensing patent promotion—two U.S. patients are pending.

The researchers have established close working relationships with area "small" container and roofing mills which have equipment in place for use for trials. The team's technology was successfully tested in the USDA Forestry Lab in Madison and Smurfit-Stone Papermill in Hodge, LA. A new start-up company, Nanopulp & Paper, LLC, has been established by the team in affiliation with Louisiana Tech. The company had already been awarded two Phase 1 SBRI grants from USDA and DoE and a proposal for a Phase 2 SBIR project for DoE was in the preparation stage as the LEQSF grant came to a conclusion.

The PI has given one national and three international presentations, published six refereed journal articles, and received $889,000 in external funding.

With increasing global energy demand and environmental concerns, the development of high-efficiency devices that can directly convert thermal energy into electricity is important for many military and civilian platforms. However, current technology is limited by low conversion efficiency and power density. Recent theoretical predictions and experimental exploration suggest that large improvements could be achieved by engineering the structure of such materials at nano-scale. Partnering with Toyota, the world's leading automobile manufacturer, a **Tulane University** team of researchers awarded an LEQSF Research & Development Grant proposed to fabricate high-efficiency thermoelectric devices based on hierarchical nano-wireless/silica nano-composites. Success of this research will allow direct conversion of thermal energy that is being wasted during engine combustion into electricity, leading to the success of second-generation hybrid vehicles.

One patent was awarded and three patent applications were accepted for research supported by this grant and a $300,000 award was received from Toyota. Highly committed to commercializing the research results, the team's researchers are still working on this project.

ATLAS

Two ATLAS recipients in the **Louisiana State University-Baton Rouge** History Department have each completed a major scholarly monograph that promises to influence ongoing debates on the nature of Islam and the relationship between eastern and western cultures. Published by Cambridge University Press and Brill, among the most prestigious academic presses, the books represent significant contributions to the scholarly literature of colonialism and cross-cultural understanding.

LA EPSCoR

The Board of Regents committed over $1 million annually to a Louisiana EPSCoR program that in 2007 was awarded a three-year $9 million grant from the National Science Foundation (NSF) for a major project involving nine campuses. The researchers are developing a multi-functional cyber infrastructure — CyberTools — to broadly enable significant advances in modern science and engineering. These CyberTools enhance the State's ability to formulate and test scientific hypotheses by improving methods to manage data, foster development of complex simulations, improve visualization, and mine data.

At the conclusion of its second year, the CyberTools project had received over $20 million in associated funding, with over $10 million more pending. Over 60 graduate and undergraduate students were involved in the research project.

Key administrative and faculty participants played a significant role in the development of both the Louisiana Optical Network Initiative (LONI) and the Louisiana State Science and Technology Plan for Higher Education. The CyberTools original Principal Investigator, Dr. Edward Seidel, was subsequently hired as Director of the NSF Office of Cyberinfrastructure, and a team of 13 researchers and students led by Co-PI Gabrielle Allen won first prize for its simulation of a black hole in an international competition held in Shanghai, China. It involved equations written by Albert Einstein that are so complex they can't be captured by conventional writing on paper.

The institutions involved in the LA EPSCoR project are **Louisiana State University-Baton Rouge, LSU Health Sciences Center-New Orleans, Louisiana Tech University,**

Southern University-Baton Rouge, Tulane University, Tulane University Health Sciences Center, University of New Orleans, and Xavier University.