

REPORT OF THE FINAL PANEL

BOARD OF REGENTS SUPPORT FUND

RESEARCH COMPETITIVENESS SUBPROGRAM

FY 2009-10

BACKGROUND INFORMATION

One-hundred fifty-four research proposals requesting a total of \$8,499,214, in first-year funds were submitted for funding consideration in fiscal year (FY) 2009-10 to the Research Competitiveness Subprogram (RCS) of the Board of Regents Support Fund (BORSF) R & D Program. Six disciplines were eligible, including the biological sciences, chemistry, computer and information sciences, earth and environmental sciences, engineering "B" (i.e., industrial, materials, mechanical, and other engineering), and health & medical sciences.

THE REVIEW PROCESS

To conduct as thorough, objective, and expert a review as possible on such a large number of applications within the Board's monetary constraints and time frame, a three-phase review process was adopted.

Phase I: In Depth Mail Review

During mid-to-late November 2009, the Board of Regents' Sponsored Programs staff solicited the assistance of three hundred eight reviewers to accomplish Phase I of the review process. Each proposal was subjected to in-depth mail reviews for scientific and technical merit by two out-of-state professionals possessing expertise in the specific field of the proposal under review. Reviewers also evaluated the principal investigator's potential for achieving national competitiveness in the proposed research area, as well as the PI's and the institution's existing capabilities to implement the project. These evaluations were forwarded to each member of the appropriate subject area panel as soon as received by the Board's staff.

Phase II: In Depth Review by Subject Area Panel

In Phase II of the review process the one hundred fifty-four proposals were distributed among seven subject area panels, corresponding to the six general disciplines eligible for funding consideration in FY 2009-10. Two biological sciences panels were used because a large number of proposals were submitted in this subject area. One biological sciences subject area panel reviewed proposals related (but not limited) to human biology, cell/molecular biology, virology, and immunology; the other biological sciences proposals were related (but not limited) to ecology, pharmacognosy, microbiology, genetics and natural biology. Each panel was composed of two to four out-of-state experts with broad expertise in the disciplines represented by the proposals, as well as familiarity with the goals and tenets of an EPSCoR-type program.¹ Using the criteria set forth in the FY 2009-10 R & D Request for Proposals (RFP), panel members worked individually and then collaboratively by telephone and email to decide which proposals in their subject area met all four eligibility requirements (i.e., the applicant and the proposal fit the EPSCoR mold; the proposal contained a significant research component; the proposal had the potential to make fundamental [basic] research contributions; and the research topic fit one of the six eligible disciplines as defined in the RFP). In this second phase of the review process, each subject area panel member acted as "primary discussant" for an assigned portion of the proposals and completed an in

¹RCS is modeled after the National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR). NSF EPSCoR programs currently exist in 24 states, the Virgin Islands, and Puerto Rico.

depth, consensual critique form for each of his/her assigned proposals after discussing its relative merits and shortcomings with the other panel members. Through a telephone conference, the subject area panel members jointly ranked the proposals in the order in which they believed that the proposals should be funded. The panel carefully scrutinized the budgets of those proposals ranked high enough to merit serious consideration for funding and recommended modifications where appropriate.

Phase III: Final Panel Review and Interdigitation of Recommended Proposals

In Phase III of the review process a final panel (hereafter referred to as the “Panel”), composed of three senior out-of-state professionals whose expertise spans the eligible disciplines and who possess comprehensive experience with EPSCoR-type programs, convened during March 5 and 6, 2010, in Baton Rouge, Louisiana, in the offices of the Board of Regents to discuss and compare the various groups of top-ranked proposals and, ultimately, to interdigitate the rankings of the various proposals across the subject areas. None of these individuals was associated with any other phase of the review process.

The three principal criteria used by the Panel in making its funding recommendations were as follows: (1) the appropriateness of the applicant to this program; (2) the scientific and technical merit of the proposed research, utilizing national standards of excellence; and (3) the proposal’s identification of barriers to the principal investigator’s national competitiveness and presentation of a convincing plan for overcoming such barriers. Additional factors considered by the Panel included the current national pool of funds available for the type of research being proposed, the appropriateness of the budget request, and the relevance of the proposed research to the State of Louisiana. Seventy-four proposals were discussed at length during this two-day meeting.

The Panel was informed that approximately \$1,350,000 had been budgeted to fund the first year of work of the RCS projects. Utilizing the criteria described previously, the Panel recommended thirty-one proposals, totaling \$1,359,967 in first-year funds, which it strongly believed were worthy of support and placed them in the “Priority One” category in **Appendix A**. Two additional proposals were also rated “Priority One,” in the event that additional money becomes available or that one or more of the higher-ranked applicants declines an award. The first fourteen proposals in Appendix A are ranked “1” (i.e., first). In the Panel’s opinion, these proposals are of nearly equal merit, and the order in which these proposals are listed is arbitrary. Proposals ranked fifteen through thirty-three are listed in descending order of merit for funding.

The budgets for each of the thirty-three proposals rated as “Priority One” were scrutinized closely and, in most cases, adjusted downward to reflect the minimum amount of funds necessary to accomplish the proposed research. The Panel emphasizes, however, that in no case was a budget reduced to the point where the scientist or engineer could not accomplish the research proposed in the application.

Several other highly meritorious proposals considered at the final panel meeting but, for a variety of reasons, not recommended for funding, are listed in **Appendix B**. (See Appendix B, which lists proposals placed in the Priority One category by the subject area panels that were not recommended by the Panel). The fact that a proposal considered by the final panel was not recommended for funding should not, in itself, be interpreted to mean that the application fell just below the cutoff for funding. Each applicant whose proposal is listed in Appendix B should closely review the reviewers’ comments (see Appendix F) before making the decision to resubmit a proposal to this program.

Appendix C lists those proposals that were ranked Priority Two by the subject area panels but not recommended for funding by the final panel. In general, the proposals listed in **Appendix C** were considered scientifically sound, but possessed one or more problems that precluded a recommendation for funding, such as poor or unconvincing identification of barriers to national competitiveness; a scope of work either too broad or poorly defined; and/or research proposed in an area where few federal dollars are currently expended.

The Panel observes that several other proposals, although not recommended for funding by the Panel, deserve notice. **Appendix D** lists proposals that were considered meritorious (Priority Three) by the subject area panels, but which were not rated highly enough to be included in the Priority Two list. Applicants whose projects are listed in **Appendices C and D** are encouraged to review the consultants' and reviewers' comments and, if appropriate, revise their applications and resubmit them when their research topics are again eligible.

Appendix E gives comments and funding stipulations for each of the thirty-three proposals highly recommended for funding.

Appendix F provides specific comments made by the consultants applicable to those proposals listed in Appendix B, as mentioned above.

Appendix G lists the out-of-state experts who served as full members of the final and subject area panels.

Appendix H summarizes all proposals submitted for funding consideration to the RCS and provides the following information for each proposal: proposal number, title, discipline, institution and department, principal and co-principal investigators, and BORSF funds requested.

FINAL PANEL COMMENTS AND RECOMMENDATIONS

The Research Competitiveness Subprogram of the Board of Regents Support Fund is designed to help those researchers in Louisiana who have strong potential to become nationally competitive for research funding from federal granting agencies. The Panel compliments the Board of Regents and the State of Louisiana on the establishment of such a quality program. It is the consensus of the Panel that this program has helped to establish a number of principal investigators who, in turn, have been able to support graduate students in their scientific and engineering studies through outside funding. It should be noted that through beneficial comments provided in each level of review, the process itself enhances the possibilities of success for proposals originating from researchers within the State of Louisiana who submit applications to a wide variety of funding sources. Moreover, the out-of-state scientists who reviewed and provided constructive criticism of this year's proposals are made aware of the scientific and engineering endeavors taking place in Louisiana and are impressed with the State's attempts to improve the research climate for its scientists and engineers through this program.

To the Applicants:

1. Barriers to Competitiveness. Despite the repeated emphasis placed on this criterion in the RFP, some applicants continue to ignore this program requirement. This year, as in past years, a number of applicants failed to present an argument indicating how a Board of Regents Support Fund award would remove the applicant's barriers to national competitiveness. In several proposals it appeared that the principal investigator was already nationally competitive and had significant external competitive funding. For other proposals, the barriers to national competitiveness were so great that funding the proposal would not overcome these barriers within the limits of the program (i.e., three years). The ratings of those proposals not in compliance with program guidelines were lowered accordingly.

2. Profile of Applicant. The Panel scrutinized the applicant's past funding levels and took into consideration the principal investigator's research productivity, particularly in the past three to five years. In some instances, proposals were submitted by nationally competitive faculty who had recently lost funding, but who gave no indication that they faced barriers to competitiveness that needed addressing. As stipulated in the RFP, junior researchers at the threshold of becoming competitive were given priority over senior researchers who are changing fields.

In some cases, proposals ranked highly by reviewers during Phases I and II contained no information about the applicant or lacked a history of funding. In such cases, reviewers cannot sufficiently evaluate the applicant's profile for eligibility. Therefore, the Panel could not recommend the proposal for funding.

3. Format, Syntax, and Appearance of Application. In several cases, research ideas suffered greatly because the proposals were not well written. From the finished products presented to the Panel (i.e., the proposals), it also appears that some investigators did not sufficiently appreciate the competitive nature of the RCS. Applicants should be made aware that no more than twenty-five per cent of the proposals submitted to this program will be funded with the money available, and that every year the number of excellent proposals far exceeds the funds available. Applications containing numerous spelling and typographical errors were viewed more critically than other applications, because an evident lack of care went into their preparation.
4. Requests for Equipment. As stated in the RFP, the R & D program is not an equipment grants program. Equipment may be requested only in the context of the particular research initiative proposed. It is the applicant's responsibility to justify the uniqueness of the equipment and/or software requested under the aegis of this program. With respect to computing equipment and software, it is the firm belief of the Panel that items such as personal computers, laptops, and standard word processing and data crunching software packages should be provided to faculty by their institutions. Board of Regents Support Fund money should be used only to support the acquisition of special peripherals and software that are specific to and justified by the proposed research.
5. Proposal Submission History. In several cases the Panel found it very helpful to have a detailed record tracking the submission of the proposal to other funding agencies. Also, as indicated in the RFP, if the project had been reviewed previously by another granting agency, it greatly enhanced the current proposal's chances of obtaining RCS funding if copies of these reviews were included, along with an explanation of any revisions that were made in the current application and a further explanation of how RCS support would help to overcome the problems identified by federal and/or other reviewers.
6. Funds Requested for Travel and Release Time. The Panel noted that requests for support for travel and faculty release time frequently were poorly justified and itemized. Such requests should be carefully justified and detailed in future proposals.
7. Requests for Post-doctoral Researchers and Graduate Research Assistants. The subject area panels noted that some proposals requested funds for post-doctoral researchers instead of graduate assistants, but did not provide an adequate explanation or justification of the need for the more expensive post-doctoral researchers. Because BORSF funds are quite limited, the Panel recommends that principal investigators request funding for the less costly graduate assistants, unless a compelling need for assistance from one or more post-doctoral researchers can be demonstrated.

8. General Comments.

- a) The Panel agreed that, at a minimum, a successful proposal must contain the following:
- (1) A precisely identified research problem or statement of a research hypothesis;
 - (2) A section describing the importance of solving the research problem;
 - (3) Evidence that the identified research problem is new and unresolved;
 - (4) A section describing the precise research methodology to be used;
 - (5) A section detailing expected results and future contributions;
 - (6) A discussion of the state and/or national implications of this research and identification of prospective future funding sources; and
 - (7) An assessment of the barriers that prevent the principal investigator from competing successfully for federal funding. This assessment should incorporate items 1-6 in a manner that will convince the reviewers that BORSF support of this investigator for up to three years will enable the PI to secure federal R & D dollars for the PI's research endeavors.
- b) Applicants whose proposals have been declined two or more times are encouraged to seek assistance in proposal/grant writing from a mentor or an established, nationally competitive investigator in the same field, perhaps at a nearby institution.
- c) Applicants whose proposals were submitted and declined for the first time this year should look to the reviewer comments for guidance in strengthening future proposals.
- d) Inexperienced principal investigators are helped by workshops on the preparation of research proposals. It would be beneficial if the institutions developed mentor programs, in which competitive scientists assisted these investigators in the preparation of good proposals. Mentors could also review the proposals prepared by junior investigators and suggest ways to strengthen these proposals. The Panel continues to be impressed by a marked improvement in the quality of proposals submitted by faculty from undergraduate teaching-oriented public and private institutions.
- e) A number of top-ranked proposals were submitted by scientists who are clearly already nationally competitive. The Panel believes that it is inappropriate to use limited Board resources to support such scientists, even if these PIs were marginally changing research directions. It should also be noted that some highly ranked proposals were submitted by scientists who had already received three years of BORSF R & D support. In those cases where three years of previous BORSF R&D support did not enable the PI to become nationally competitive, the Panel found it difficult to recommend or justify additional support when so many other equally worthy applicants had yet to receive BORSF R & D funds. In the Panel's view, three years of BORSF R & D support should enable a scientist to become nationally competitive, if the research area is capable of attracting support from national funding agencies. Therefore, all proposals recommended for funding by the Panel are believed to have strong potential for overcoming the barriers that have prevented the submitting scientists from achieving national competitiveness.

To the Board of Regents:

1. Limitations on Salary Requests and Requests for Post-Doctoral Researchers. The Panel strongly believes that the investigators funded through the RCS should be involved actively (i.e., play a “hands-on” role) in their research. For this reason, some requests for post-doctoral researchers were declined when budgets were reviewed. In most cases the Panel recommended Board funding for only one month’s summer salary for principal investigators. The Panel believes that the institutions should be strongly encouraged to provide release time to their investigators. The institutional provision of release time provides tangible evidence to reviewers and the Board that the institution is committed to the research endeavors of its investigators and frees up Board funds that would otherwise be committed to salary support, thereby helping to ensure that the maximum number of excellent projects will be funded.

2. Limitations on Overall Funding Requests. In no year of the RCS’s operation have the funds available sufficed to fund all proposals worthy of support. The Panel must cut proposal budgets significantly each year to ensure that the maximum possible number of worthy projects is funded. Therefore, the Panel strongly recommends that the Board maintain the existing overall cap on the amount of funds that may be requested (\$200,000 over a three-year period).

APPENDIX A

RCS PROPOSALS HIGHLY RECOMMENDED FOR FUNDING (PRIORITY ONE)

<u>Rank</u>	<u>Proposal No.</u>	<u>Institution</u>	<u>Recommended BORSF 1st Year Funds</u>	<u>Recommended BORSF 2nd Year Funds</u>	<u>Recommended BORSF 3rd Year Funds</u>
1	017A	LSU-BR	\$44,430	\$42,703	\$41,233
1	113A	TULANE	\$57,416	\$56,251	\$51,595
1	035A	LSU-BR	\$41,045	\$26,925	\$27,325
1	090A	Southeastern	\$39,529	\$35,029	\$35,029
1	140A	ULM	\$39,626	\$37,329	\$34,038
1	150A	UNO	\$44,125	\$44,125	\$44,125
1	148A	UNO	\$56,621	\$56,621	\$23,535
1	080A	LA-TECH	\$48,061	\$46,604	\$46,604
1	083A	LOYOLA	\$37,755	\$37,755	\$37,005
1	018A	LSU-BR	\$35,668	\$34,650	\$34,650
1	077A	LA-TECH	\$37,934	\$37,810	\$37,810
1	099A	Southeastern	\$54,136	\$53,366	\$51,116
1	068A	LSU-SHREV	\$30,453	\$30,453	\$30,453
1*	047A	LSU-BR	\$46,455	\$46,455	\$46,455
15	060A	LSUHSC-NO	\$35,687	\$35,687	\$35,687
16	139A	ULM	\$49,475	\$34,670	\$34,670
17	145A	UNO	\$40,892	\$40,892	\$40,892
18	048A	LSU-BR	\$51,158	\$49,683	\$48,229
19	136A	ULL	\$48,614	\$44,025	\$44,025
20	040A	LSU-BR	\$61,135	\$61,135	-----

***Note: The status of the availability of funds for those proposals below the line is uncertain at this time.**

APPENDIX A (continued)

RCS PROPOSALS HIGHLY RECOMMENDED FOR FUNDING

21	125A	ULL	\$42,975	\$31,708	\$26,209
22	127A	ULL	\$36,149	\$36,149	\$36,149
23	108A	SU-BR	\$40,212	\$36,212	\$36,212
24	115A	TULANE	\$56,666	\$56,666	\$56,666
25	053A	LSU-BR	\$50,458	\$49,458	\$48,458
26	056A	LSUHSC-NO	\$25,631	\$25,631	\$25,631
27	074A	LA-TECH	\$48,484	\$46,984	\$46,984
28	058A	LSUHSC-NO	\$41,028	\$41,028	\$41,028
29	073A	LA-TECH	\$41,598	\$41,598	\$41,503
30	038A	LSU-BR	\$35,036	\$35,036	\$35,036
31	025A	LSU-BR	\$41,515	\$31,515	\$31,515
32	095A	Southeastern	\$38,498	\$36,148	\$35,648
33	028A	LSU-BR	<u>\$42,068</u>	<u>\$37,746</u>	<u>\$34,708</u>
TOTALS			\$1,440,533	\$1,358,047	\$1,240,223

APPENDIX B

**MERITORIOUS PROPOSALS RANKED PRIORITY ONE BY THE
SUBJECT AREA PANELS AND CONSIDERED BY THE FINAL PANEL
BUT NOT RECOMMENDED FOR FUNDING (4)**

008A 039A 063A 135A

Note: These proposals are not listed in rank order of merit. The Panel's comments on these proposals are provided in Appendix F. Mail and subject area panel reviews for each proposal will also be provided to the applicants in July 2010.

APPENDIX C

**MERITORIOUS PROPOSALS RANKED PRIORITY TWO
BY THE SUBJECT AREA PANELS AND CONSIDERED BY THE FINAL PANEL
BUT NOT RECOMMENDED FOR FUNDING (37)**

001A	049A	084A	130A
003A	050A	085A	132A
013A	054A	107A	133A
020A	057A	114A	134A
022A	062A	116A	137A
026A	065A	117A	146A
027A	066A	122A	151A
033A	069A	124A	-----
034A	075A	126A	-----
046A	076A	128A	-----

Note: These proposals are not listed in rank order of merit. The mail and subject area panel reviews for each proposal will be provided to the applicants in July 2010.

APPENDIX D

**PROPOSALS RANKED PRIORITY THREE OR DECLARED INELIGIBLE (*)
BY THE SUBJECT AREA PANELS AND NOT RECOMMENDED FOR FUNDING (80)**

002A	029A	064A	094A	119A
004A	030A	067A	096A	120A
005A	031A	070A	097A	121A
006A	032A	071A	098A	123A
007A	036A	072A	100A	129A
009A	037A	078A	101A	131A
010A	041A	079A	102A	138A
011A	042A	081A	103A	141A
012A	043A	082A	104A	142A
014A	044A	086A	105A	143A
015A	045A	087A	106A	144A
016A	051A	088A	109A	147A
019A	052A	089A	110A	149A
021A	055A	091A	111A	152A
023A	059A	092A	112A	153A
024A	061A	093A	118A	154A

Note: These proposals are not listed in rank order of merit. The mail and subject area panel reviews for each proposal will be provided to the applicants in July 2010.

**APPENDIX E
COMMENTS AND FUNDING STIPULATIONS
ON PROPOSALS HIGHLY RECOMMENDED FOR FUNDING
(PRIORITY ONE)**

General Comments and Stipulations

This section provides comments and stipulations set forth as conditions of funding for the thirty-three proposals highly recommended for awards by the Panel. The Panel would again like to emphasize that it considered the first fourteen proposals to be of relatively equal merit and, therefore, the order in which they have been listed is arbitrary. Proposals ranked fifteen through thirty-three are listed in descending order of merit for funding.

In some instances the Panel deleted funds for research associates and post-doctoral researchers. The Panel believes that the principal investigators themselves should conduct a significant portion of the proposed research and that BORSF funds should first support graduate students who will benefit from scientific and/or engineering training.

The Panel strongly recommends that **prior to funding each proposal recommended for an award, the Board of Regents ascertain whether the principal investigator has obtained significant research support from another external funding source, such as a major foundation or federal granting agency.** Several scientists have proposals pending before such agencies or foundations. The Final Panel believes that some of these scientists are so close to achieving national competitiveness for research funding that they are likely to receive these requested funds. **In cases where a principal investigator obtains a commitment of significant external funding prior to receipt of an RCS award, the RCS award should be vacated and the funds thereby released should be used to support other deserving projects in the RCS or other component(s) of the Board of Regents Support Fund. Any principal investigator who receives notice of external funding after an award is contracted will be expected to report the notice of external funds in accordance with Section X of the RCS grant contract.**

Although the Panel reduced the budgets of most projects recommended for funding, the Panel did not reduce any budget to such an extent that achievement of a project's goals or execution of its work plan would be impaired. Therefore, **no reductions in the scope of work plans of projects recommended for funding should be allowed.** If the work plan submitted for a project does not correspond in scope to that of the original proposal, the award should be vacated and funds thereby made available should be used to fund other worthy projects in the RCS or other R&D subprogram(s) of the Board of Regents Support Fund.

The types and amounts of institutional match pledged in a proposal played a significant role in determining whether that proposal was recommended for funding. **Therefore, unless specifically stated in the funding stipulations of a project recommended for funding, no reductions in the types or amount of institutional match pledged in the original proposal should be permitted.** If the types or amounts of institutional match for a project recommended for funding are reduced, and unless such reductions are specifically authorized by the funding stipulations for that grant, the award should be vacated and funds thereby made available should be used to fund other worthy projects in the RCS or other R&D subprogram(s) of the Board of Regents Support Fund.

Appendix E (continued):

PROPOSAL NO. 017A

RANK: 1

TITLE: Development of Finite Elements for Response and Response Sensitivity Analysis of Reinforced Concrete Structures Retrofitted with Externally-bonded Fiber Reinforced Polymers

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Michele Barbato

COMMENTS: The proposed research seek to develop efficient algorithms for nonlinear finite element (FE) response/response sensitivity analysis (RSA) of reinforced concrete (RC) structures retrofitted with externally-bonded (EB) fiber reinforced polymers (FRPs). EB FRPs are widely employed for retrofit of RC structures. Reliable methods for performance prediction of retrofitted RC structures are essential in ensuring their economic and safe retrofit. Nonlinear FE analysis allows realistic simulation of structural response and, integrated with appropriate structural reliability methods, accurate prediction of structural performance. Integration of FE and structural reliability analysis often requires efficient and accurate computation of FE response sensitivities to modeling and design parameters. During the last two decades great advances have been achieved in nonlinear FE modeling of EB FRP-retrofitted RC structures. Computationally efficient methods are still needed for accurate FE response and response sensitivity analysis of these composite mechanical systems. The PI proposes to extend the Direct Differentiation Method (DDM) for FE RSA to EB FRP-retrofitted RC structures.

The PI is a Ph.D. graduate (2007) in Structural Engineering from the University of California, San Diego. Since October 2007, he has been an assistant professor in the Department of Civil and Environmental Engineering at Louisiana State University. The PI is well qualified to perform the proposed work.

It is recommended that the proposed budget be slightly reduced to limit travel support to \$1,500/year resulting in a year one budget of \$44,430. A budget of \$42,703 is recommended in year two and \$41,233 in year three.

The PI has (3) pending proposals:

- NIST- “Autonomic Health Monitoring System for Infrastructure Sustainability” in the amount of \$637,061;
- NIST- “Community Resilience to Hurricane Hazard: Assessment of Wind and Storm Surge Loss for Residential Buildings” in the amount of \$1,184,493;
- NSF- “A New Class of Stochastic Earthquake Ground Motion Modules: The Record-And-Location (REAL) Models” in the amount of \$224,455.

Should the PI receive funding for any one of the pending proposals he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$44,430

Year 2: \$42,703

Year 3: \$41,233

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 113A

RANK: 1

TITLE: Molecular Regulation of Cortical Synapse Development

INSTITUTION: Tulane University

PRINCIPAL INVESTIGATOR: Benjamin Hall

COMMENTS: Development of the mammalian neocortex involves elaboration of a network containing billions of neurons and requires the formation of trillions of synapse. Understanding this process is essential for defining strategies to treat neurodevelopmental disorders such as autism. N-Methyl D Aspartate (NMDA) neurotransmitter receptors (NMDARs) control many aspects of cortical development and function. Interestingly, the protein subunit composition of the NMDAR is strongly regulated during development. The PI has shown that NR2B-containing NMDARs can play an important restrictive role during synapse formation: suppressing synapse maturation at immature sites. This provides a mechanism by which NMDARs may act to prevent over-strengthening of inappropriate contacts during circuit development *in vivo*.

The PI proposes to test this hypothesis and determine how NR2B regulates cortical synapse development and circuit formation, *in vivo*. Unfortunately, complete genetic removal of the NR2B subunit is lethal. To overcome this limitation the PI will use two genetically modified mouse lines he has generated: 1) a 'conditional knockout', in which NR2B can be excised in a regionally specific manner and; 2) the NR2B subunit is genetically replaced by a different cortical subunit, NR2A.

The PI is Ph.D. graduate (2002) in Neurobiology and trained six years as a post doctoral fellow at Johns Hopkins Medical School /University of California San Diego. He is a recipient of a NARSAD young investigators award. The PI is well trained to conduct the proposed research.

The project budget appears somewhat inflated and should be reduced to limit supplies to \$12,000, for a year one budget of \$57,416. It is also recommended that year two and year three be funded at the level requested, i.e., \$56,251 and \$51,595, respectively.

The PI has (2) pending proposals:

- NSF - "Regulation of Cortical Development by the NR2B Subunit of the NMDA Receptor" in the amount of \$1,037,857;
- NIH - entitled "Molecular Mechanisms of Cortical Synapse Maturation" in the amount of \$341,684.

Should the PI receive funding for any one of the pending proposals he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$57,416

Year 2: \$56,251

Year 3: \$51,595

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSA NO. 035A

RANK: 1

TITLE: Quantifying Effects of Age and Gender on Vocal Fold Vibration by Using High-speed Digital Imaging and Phonovibrogram

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Melda Kunduk

COMMENTS: Approximately 3% to 9% of the U.S. population suffers from a voice disorder and this is likely to increase with our aging population. Current clinical procedures for diagnosing and treating voice disorders are highly subjective. There is great demand for quantitative measures to improve clinical assessment and treatment.

The PI seeks to develop the use of high-speed digital imaging technique (HSDI) and the objective image-processing tool, Phonovibrogram, to quantify normal vocal fold vibratory patterns. In this emerging field of examination to better understand pathology, the PI plans to define the baseline of normal for all ages and gender. This data will help validate these tools for both research and clinical practice. The overall objective is to determine the effects of age and gender on vocal fold vibratory behavior using high-speed digital imaging and the Phonovibrogram.

The PI needs to demonstrate preliminary data, successfully collaborate with experts in the field, and publish results to be competitive for federal funding. However, it should be noted there are numerous errors in the proposal and these cannot be present in a federal grant application.

It is recommended that the proposed budget be significantly reduced to provide one month summer salary for the PI and associated fringe benefits, for a year-one budget of \$41,045. A budget of \$26,925 is recommended for year two and year three should be funded at the level requested i.e. \$27,325.

Year 1: \$41,045

Year 2: \$26,925

Year 3: \$27,325

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 090A

RANK: 1

TITLE: Discovering Socially Valuable Trends by Extracting Personal Experiences from the Web

INSTITUTION: Southeastern Louisiana University

PRINCIPAL INVESTIGATOR: Aron Culotta

COMMENTS: The dramatic growth of user-generated online content such as message forums, blogs and social networking sites presents a novel opportunity for text mining methods to discover actionable knowledge from the Web. The specific research objectives of this proposal are: (1) to implement and evaluate a machine learning-based approach to extract instances of user-reported experiences (such as having a sore throat); (2) to determine whether pre-processing methods to correct spelling and grammar mistakes improve the accuracy of this extractor and; (3) to implement and evaluate robust quantification methods to calculate the overall frequency of an experience.

The PI has recently submitted a proposal to NIH which although well received was criticized for a lack of preliminary results. The RCS program can enable the PI to become more competitive by providing funding to conduct initial research in this area and to develop a working prototype of the system, resulting in a much stronger proposal in the future. The proposal is well written and barriers to becoming nationally competitive were clearly identified.

The budget can be significantly reduced to provide one month summer salary for the PI and associated fringe benefits, resulting in a year-one budget of \$39,529. Additionally, it is recommended that travel support be limited to \$1,500, for a year-two budget of \$35,029 with a similar amount of \$35,029, for year three.

The PI has (1) pending proposal:

- NSF- “Discovering Socially Valuable Trends by Extracting Personal Experiences from the Web” in the amount of \$412,369.

Should the PI receive funding for the pending proposal he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$39,529

Year 2: \$35,029

Year 3: \$35,029

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 140A

RANK: 1

TITLE: Effects of Chronic Hypoglycemia on Renal Function

INSTITUTION: University of Louisiana at Monroe

PRINCIPAL INVESTIGATOR: Keith E. Jackson

COMMENTS: Hypertension is a key underlining contributor to fatality in several disease processes such as diabetes, cardiovascular disorders and renal failure. The significance of the renal system in controlling blood pressure has been established. The heme oxygenase (HO) system is gaining increased attention in its unique ability to modulate blood pressure and renal function. Controversy currently exists in the literature as to whether chronic insulin treatment can produce hypertension. The PI will address the following specific aims: (1) determine the source of increased AngII during recurrent insulin-induced hypoglycemia; (2) determine the time course for the development of hypertension and increase HO activity during hypoglycemia; (3) determine the acute and chronic effects of AngII-induced HO expression and oxidative stress on renal hemodynamic and excretory functions in hypoglycemic rats; and (4) determine renal HO protein expression and its alterations by the oxidative stress pathway in hypoglycemic AngII-induced hypertensive rats. The accomplishment of these specific aims will identify the role of endogenous CO during hypoglycemia to potentially protect renal function and help to develop better therapeutic strategies for treating diabetic complications.

It is recommended that the proposed budget be revised to limit supplies to \$12,600 and delete publication charges, for a year-one budget of \$39,626. Additionally, in year two it is recommended that supplies be limited to \$10,100, for a budget of \$37,329. A budget of \$34,038 is recommended for year three.

Year 1: \$39,626

Year 2: \$37,329

Year 3: \$34,038

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 150A

RANK: 1

TITLE: Accurate Computational Methods for Pharmaceutical Drug Discovery

INSTITUTION: University of New Orleans

PRINCIPAL INVESTIGATOR: David L. Mobley

COMMENTS: The PI proposes to apply computer methods for predicting biomolecular interactions. These methods can revolutionize the pharmaceutical drug discovery process by making it easier to identify potential drug candidates and reducing the amount of trial and error involved. Computational tools have been used in drug discovery in the past, but current methods cannot accurately predict binding. New innovations in this area have already proved themselves useful in blind tests of affinity estimates in two different systems. The PI proposes three applications to binding sites of increasing difficulty and biological relevance. These applications could drive new technical innovations while at the same time providing more preliminary data to support new proposals.

The PI is a relatively new PhD (2004) in the area of Biophysics and has four years of post-doctoral experience using computational methods for molecular modeling. Therefore, he is well trained to conduct the proposed research.

The proposed budget can be significantly reduced to provide one month summer salary for the PI, including associated fringe benefits, limit travel support to \$1,500/year, and delete publication charges, resulting in a year-one budget of \$44,125. A similar budget of \$44,125 is recommended for year two and year three.

The PI has (2) pending proposals:

- NSF – “Computing Accurate Free Energies for Molecular Binding and Solubility” in the amount of \$685,979;
- NIH - “Refinement of Computational Methods for Predicting Protein-ligand Binding” in the amount of \$352,081.

Should the PI receive funding for any one of the pending proposals he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$44,125

Year 2: \$44,125

Year 3: \$44,125

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 148A

RANK: 1

TITLE: Uplift and Incision of the Ethiopian Plateau: Integration of Quantitative Geomorphology, Palealtimetry and Thermochronology

INSTITUTION: University of New Orleans

PRINCIPAL INVESTIGATOR: M. Royhan Gani; Nahid DS Gani

COMMENTS: The proposed study will focus on the paleo-topographic evolution of the Ethiopian Plateau by integrating quantitative geomorphology, thermochronology, palealtimetry, and geochronology. The plateau is characterized by the 1.6 km deep Gorge-of-the-Nile formed by Blue Nile incision. To test the hypothesis of early-Pliocene abrupt increase of long-term incision rate of the Blue Nile drainage linked to pulsed plateau growth, the PI will collect samples to perform apatite (U-Th)/He thermochronology to constrain long-term incision rates, and of paleosol carbonates sandwiched within well-dated Neogene basalts to conduct $\delta^{18}\text{O}$ -based palealtimetry to constrain plateau uplift. For some selected areas and using SRTM and ASTER DEM data, the PI will also undertake stream-profile analysis to quantify certain stream parameters such as steepness and concavity indices to specifically tease out tectonic signals of this elevated landscape.

This study for the Ethiopian Plateau holds enormous potential in shedding light on the geodynamic and climatic evolution of the region. The PI has the appropriate credentials to conduct this study successfully, in addition to very impressive collaborators from the University of Chicago, Arizona State University, and Los Alamos National Laboratory.

It is recommended that the proposed budget be revised to provide one month summer salary for the PI and co-PI, including associated fringe benefits, for a year-one budget of \$56,621. A similar budget of \$56,621 is recommended for year two. In year three, printing charges should be deleted, resulting in a budget of \$23,535.

Year 1: \$56,621

Year 2: \$56,621

Year 3: \$23,535

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 080A

RANK: 1

TITLE: Diverging Flow Cell Electroporation to Facilitate *in vitro* Biomolecule Delivery

INSTITUTION: Louisiana Tech University

PRINCIPAL INVESTIGATOR: Shengnian Wang

COMMENTS: Electroporation serves as an efficient tool for exogenous biomolecule delivery. Current electroporation instruments are easy to use and applicable to many cell lines. They have been reasonably successful but carry several major drawbacks e.g., high electric voltage requirement, large variations in transfection efficacy and cell viability, narrow cell population ($10^5 - 10^6$), and cell source specific protocols. It would be highly desirable to uniformly electroporate every cell of a large population with desired transfection efficacy and cell viability.

The PI proposes to design, construct, and evaluate a diverging flow electroporation (DFE) device for *in vitro* biomolecules delivery. The enhanced precision and control afforded by such a system would be applicable in a variety of cellular investigations.

The PI received his Ph.D. (2006) from Ohio State University, where he remained as a post doc until joining Louisiana Tech as an assistant professor in 2007. He appears to be well qualified to successfully complete the proposed work.

Only a slight reduction in the proposed budget is recommended that limits travel support to \$1,500/year, for year-one budget of \$48,061. A budget of \$46,604 is recommended for year two and year three.

The PI has (3) pending proposals:

- NSF - “Nanoengineering Cell Electroporation to Facilitate Pluripotent Stem Cell Research” in amount of \$419,558;
- NSF- “Development of an Integrated Cell Surgery Station for Ceullular Analysis and Therapy” in the amount of \$859,903;
- NIH - “Microfluidics-Mediated Delivery of Biomolecule Probes for ES and Cancer Cells” in the amount of \$330,559.

Should the PI receive funding for any one of the pending proposals he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$48,061

Year 2: \$46,604

Year 3: \$46,604

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 083A

RANK: 1

TITLE: Novel Roles for the Orphan Nuclear Receptor NURR1 in Arthritis

INSTITUTION: Loyola University New Orleans

PRINCIPAL INVESTIGATOR: Kimberlee S. Mix

COMMENTS: Inflammatory joint diseases such as rheumatoid arthritis and osteoarthritis are significant causes of disability worldwide. The irreversible destruction of cartilage and bone in articular joints causes chronic pain, reduced mobility, and ultimately a shortened lifespan. Elucidating the molecular and cellular events contributing to the progression of arthritic diseases may lead to the development of therapies capable of blocking joint damage. NURR1 is a constitutively active transcription factor that is potently induced by inflammatory mediators in synoviocytes and chondrocytes, suggesting that this receptor may intersect with gene expression pathways controlling the onset or severity of arthritis.

The PI aims to identify multiple target genes regulated by NURR1 using high-throughput gene expression arrays specific for inflammation and angiogenesis pathways. The PI also aims to document the spatiotemporal expression pattern of NURR1 in joint tissues during the progression of collagen-induced arthritis in mice.

Dr. Mix recently (2009) joined the Department of Biological Sciences at Loyola University as an Assistant Professor. She is very well qualified to conduct these studies. The institutional commitment and support are outstanding. This is a well written, technically sound proposal, which will provide fundamental knowledge about the mechanism of action of NURR1.

It is recommended that the proposed budget be significantly reduced to provide one month summer salary for the PI, including associated fringe benefits, limiting undergraduate student support to \$12,000, limiting supplies to \$14,250, and deleting printing charges, resulting in a year-one budget of \$37,755. A similar budget of \$37,755 is recommended in year two and a budget of \$37,005 in year three.

Year 1: \$37,755

Year 2: \$37,755

Year 3: 37,005

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 018A

RANK: 1

TITLE: Talker-Specific Speech Perception in Louisiana's Toddlers With and Without Hearing Loss

INSTITUTION: Louisiana State University A & M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Brittan A. Barker

COMMENTS: Ideally, babies born in Louisiana diagnosed with hearing loss are promptly equipped with hearing devices and this early diagnosis yields successful members of the community. However, early diagnosis does not guarantee success. The implementation of a thoughtful listening intervention program is crucial for these toddlers' success. Age-appropriate, listening intervention programs currently lack theoretical support. This dearth of listening intervention programs is a direct result of limited understanding of the development of speech perception in toddlers with both normal hearing and hearing loss. Until there is better understanding of speech perception in young children the intervention services will be restricted. The PI plans to fill voids in the pediatric literature and gain a better understanding of talker-specific speech perception in toddlers. Typically, developing children aged 30 to 40 months, with and without cochlear implants, will be recruited to test for the effects of talkers' speech on the following specific aims: (1) spoken word recognition; (2) story comprehension and; (3) spoken word learning.

The project should provide data necessary for the PI to successfully compete for funding from NIDHD or NIDCD. It should also establish the investigator's credibility to serve as the PI of a larger research project. The project is in an area of great interest to the communicative disorders research community and offers an innovative approach to addressing an important issue.

It is recommended that the proposed budget be significantly reduced to provide one month salary for the PI, including associated fringe benefits, for a year-one budget of \$35,668. A budget of \$34,650 is recommended for year two and year three.

Year 1: \$35,668

Year 2: \$34,650

Year 3: \$34,650

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 077A

RANK: 1

TITLE: DNA Image Segmentation Methods and Statistical Modeling

INSTITUTION: Louisiana Tech University

PRINCIPAL INVESTIGATOR: Mihaela Paun; Weizhong Dai

COMMENTS: DNA microarrays are a multiplex technology used in molecular biology and in medicine, and are used to monitor changes in the expression levels of multiple genes simultaneously. The PI is interested in performing statistical analysis on different segmentation methods and comparing the existing methods to the proposed methods. The PI observed that in some cases she has a more reduced precision than in others, or increased variability of low-intensity spot values. The PI aims to develop an improved segmentation method for cDNA segmentation with the expectation that the improved method will provide quantitative results from DNA experiments rather than just the qualitative signals of gene-disease relationships presently obtained from existing segmentation methods.

Only a slightly reduction in the proposed budget is recommended that limits travel support to \$1,500/year, for a year-one budget of \$37,934. A budget of \$37,810 is recommended for year two and year three.

Year 1: \$37,934

Year 2: \$37,810

Year 3: \$37,810

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 099A

RANK: 1

TITLE: Microbial Diversity of Cadaver Decomposition Islands

INSTITUTION: Southeastern Louisiana University

PRINCIPAL INVESTIGATOR: Erin J. Watson

COMMENTS: In forensic biology little information is known regarding the microbial communities associated with the decomposition of large vertebrates above-ground (i.e., cadaver decomposition islands). Most studies regarding microbial diversity and community structure are associated with profiling soil microbial populations, clandestine graves, or artificial situations using small quantities of tissue in the laboratory rather than whole organisms in the natural environment. Additional studies have investigated soil solutions beneath decomposing cadavers for volatile fatty acids, anions, and cations and for specific organ biomarkers; characterized patterns of carbon dioxide evolution from decaying remains; and reviewed the localized effects of decaying remains of cadaver decomposition islands versus plant and fecal resources on below-ground ecology. However, the majority of decomposing remains of humans (and poached wildlife) of forensic interest are recovered above-ground and often placed directly onto vegetation, leaf litter, soil surface, etc. From an investigative and evidentiary viewpoint, the more information one has the stronger the case. Thus, the proposed research will address the need for gathering a more realistic and comprehensive database of microbial diversity, community structure, and succession by conducting field research using adult swine carcasses.

The proposed study will integrate microbiology, biochemistry, ecology, entomology, molecular biology, and forensics. A significant objective of the project will be to establish a database of microbial diversity and community structure associated with carcasses above-ground using ribosomal RNA analyses. Group I lipase activity will be examined for the potential use in crime scene investigations.

It is recommended that the proposed budget be significantly reduced to limit undergraduate student support to \$3,040 and travel to \$1,500/year, for a year-one budget of \$54,136. A budget of \$53,366 and \$51,116 is recommended for year two and year three, respectively.

Year 1: \$54,136

Year 2: \$53,366

Year 3: \$51,116

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 068A

RANK: 1

TITLE: Probing Roles of Reactive Oxygen Species in Carcinogenesis Using Novel Photonic Nanosensors

INSTITUTION: Louisiana State University in Shreveport

PRINCIPAL INVESTIGATOR: Kui Chen; Brian A. Salvatore; Shile Huang

COMMENTS: Reactive oxygen species (ROS) and oxidative stress have been implicated as important underlying causes in cancer. However, the molecular mechanisms that connect ROS to carcinogenesis remains insufficiently understood. This lack of understanding is mainly because most of the current information in this area comes from indirect endpoint measurements such as DNA, protein damage and lipid peroxidation. The ultimate goal of the research proposed by this PI is to differentiate the roles of individual ROS and further elucidate the molecular mechanisms of their roles in carcinogenesis. The central hypothesis is that the PI can gain insight into ROS roles by correlating the changes to the regulation of key cancer biomarker from parallel bioassays.

This is a very important area of research and the PI is very well trained to carry out the proposed work. Dr. Chen received his PhD. degree (2004) from the University of South Carolina and trained three years as a post-doc at Oak Ridge National Laboratory in the Biophotonics area.

The proposed budget can be significantly reduced to provide one month summer salary for the PI and “other investigator,” including associated fringe benefits, (no release time) for a year-one budget of \$30,453. A similar budget of \$30,453 is recommended for year two and year three.

Year 1: \$30,453

Year 2: \$30,453

Year 3: \$30,453

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 047A

RANK: 1

TITLE: Tomographic Imaging of Combustion Zones: In-situ Measurement of Temperature and Species Concentrations Using Tunable Diode Lasers

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Ingmar Michael Schoegl

COMMENTS: The research proposed by the PI combines tunable diode laser absorption spectroscopy (TDLAS) and tomographic techniques to obtain 2-D images for species concentrations and temperature within a combustion zone. The research includes a combination of the development of an analytical technique with basic research in flame characterization. The analytical technique will enable the PI to produce a 2D mapping of temperature and species composition in flame zones. The PI hopes to use this research to make himself nationally competitive in the area of thermochemical energy conversion and other high-temperature fuels research.

The PI is a Ph.D. graduate (2009) of the University of Texas at Austin. He is currently an assistant professor in the Department of Mechanical Engineering at Louisiana State University. The proposed work is an extension/expansion of the research performed for his doctoral dissertation.

It is recommended that the research project be funded at the level requested in year one, i.e., \$46,455. A similar budget of \$46,455 is recommended for year two and year three.

The PI has (1) pending proposal:

- NSF - “Metal-based Microscale Catalytic Fuel Reformers for Portable Power” in the amount of \$389,053.

Should the PI receive funding for the pending proposal he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$46,455

Year 2: \$46,455

Year 3: \$46,455

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 060A

RANK: 15

TITLE: Gamma Delta T cells are Integral Mediators of Interstitial Pulmonary Fibrosis

INSTITUTION: Louisiana State University Health Sciences Center - New Orleans

PRINCIPAL INVESTIGATOR: Derek Pociask

COMMENTS: The PI believes that interstitial pulmonary fibrosis (IPF) begins as a response to epithelial injury, followed by an influx of inflammatory cells and subsequent wound repair and extracellular matrix deposition. $\gamma\delta$ T cells are a subset of T cells associated with epithelial mucosal tissues and play a prominent role in both promoting and dampening inflammatory responses to pathogens, as well as strongly mediating epithelial repair. The PI hypothesizes that $\gamma\delta$ T cells are an integral subset of T-cells required for modulating epithelial repair and inflammation as well as regulating the fibrotic responses to bleomycin. To test the hypothesis the PI administered bleomycin to mice lacking the δ chain of $\gamma\delta$ T cell receptor. There was no sign of resolution by 45 days post bleomycin compared to wild-type mice. The data demonstrate that $\gamma\delta$ T cells are novel immunomodulatory T cells which play a critical role in the resolution of bleomycin induced fibrosis, potentially through the induction of IP-10. The proposal is technically sound and the model of bleomycin- induced pulmonary fibrosis in $\gamma\delta$ knock-out mice appears to provide chronic fibrosis, which is missing from other models.

The PI appears to be a well trained investigator who has published in excellent journals.

It is recommended that the proposed budget be reduced to provide one month summary salary for the PI, including associated fringe benefits, limit the supply budget to \$25,296, and delete publication charges of \$1,000, for a year-one budget of \$35,687. A similar budget of \$35,687 is recommended for year two and year three.

The PI has (1) pending proposal:

- NIH - "Influenza A Potentiates the Pulmonary Fibrotic Response" in the amount of \$97,625.

Should the PI receive funding for the pending proposal he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$35,687

Year 2: \$35,687

Year 3: \$35,687

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 139A

RANK: 16

TITLE: Thyroid Hormone and Its Nuclear Receptor Use Epigenetics to Regulate Viral Gene Expression and Replication During Latency/Reactivation

INSTITUTION: University of Louisiana Monroe

PRINCIPAL INVESTIGATOR: S. Victor Hsia

COMMENTS: HSV-1 is one of the most common viral infections in humans. Following primary infection, the virus establishes a life-long latent infection within neurons of trigeminal ganglia. During the latency, the viral DNA replication and transcription are largely devoid and the reactivation occurs from time to time. The molecular mechanisms of gene silencing and reactivation are poorly understood. The PI's long-term goals are to define the biochemical, molecular, and pharmacological mechanisms that regulate HSV-1 latency, reactivation, and recurrence. Achieving these goals should improve the knowledge of HSV-1 biology and may lead to the development of therapeutic strategies to control reactivation of HSV-1. The PI hypothesizes that 3,5,3'-Triiodothyronine (Thyroid Hormone or T3) and its receptor (TR) influence HSV-1 latency and reactivation through the regulation of DNA synthesis and gene expression. To investigate the possible pathways, the PI proposes to test the hypotheses: (1) that T3 and T3 modulators control the viral DNA replication by regulating the expression of HSV-1 TK, LAT, and ICPO using animal models and (2) that TR and T3 regulate the latency and reactivation in thyroidectomized mice. The completion of the study should yield a series of publications, thereby further establishing the research program and enhancing the capability for national competitiveness.

It is recommended that the proposed budget be reduced to limit travel to \$1,500/year, supplies to \$16,400, and deleting printing charges, for a year-one budget of \$49,475. A budget of \$34,670 is recommended for year two and year three.

Year 1: \$49,475

Year 2: \$34,670

Year 3: \$34,670

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 145A

RANK: 17

TITLE: Morphing the Gameboard: A Novel Detection and Defense Framework Against Modern Malicious Software

INSTITUTION: University of New Orleans

PRINCIPAL INVESTIGATOR: Daniel Bilar

COMMENTS: Malware is malicious software (Trojans, viruses, worms, etc.). Independent laboratories regularly test updated AV scanners against millions of malicious software specimens. It has been found that failing to update signatures for one week, the *best* AV tested missed between 26 and 31 percent of the new malicious software, the worst missed upwards of 80 percent. The question is how to deal in practice with malware (MW) increasingly resistant to antivirus (AV) scanners.

The PI plans to design a novel morphing framework to manipulate, mislead and contain modern malware. The PI plans to use an instrumented environment to infer its internal decision structure and then use that knowledge to change the environment, thus manipulating the observables malware might use for its decisions. This is an important area of research and the PI is well trained carry out the proposed work. He is a second-year Assistant Professor of Computer Science at the University of New Orleans.

The budget request for ½ month summary salary, matched by the institution (start-up funds) in year one, and the request for \$4,000 in travel support in year two and year three appear unreasonable. Since only \$1,500 is allowed for travel, the start-up funds (match for ½ month salary) should be used in this category. Therefore, it is recommended that the proposed budget be revised to provide one month summer salary for the PI, including associated fringe benefits, and limit travel to \$1,500, for a year-one budget of \$40,892. A similar budget of \$40,892 is recommended for year two and year 3.

Year 1: \$40,892

Year 2: \$40,892

Year 3: \$40,892

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 048A

RANK: 18

TITLE: Development of Sustainable Rehabilitation Layer on Existing Concrete Layer

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Hak-Chul Shin

COMMENTS: America’s infrastructure is graded a “D” due to a limited capacity and poor quality of old deteriorated infrastructure, and the total investment necessary for five-years was estimated at 2.2 trillion dollars. To enhance the capacity and quality of America’s infrastructure by overlaying or patching with rehabilitation materials, it is essential to understand the mechanical properties and behaviors at the interface between old construction material and new rehabilitation material, since the interface is the weakest link for composite behavior and a source of premature failure.

The PI proposes a study of interfacial behaviors which will involve characterizing interfacial surfaces, understanding bonding and debonding mechanisms, and controlling concrete interface to develop superior mechanical properties. The objectives of the proposed study are to improve the scientific and engineering understandings on the relationship between the material properties and failure mechanisms at the layer interface, and to develop a guideline for the rehabilitation of old structures without defects during the service life. The real benefits of this study are to construct sustainable rehabilitation layers on existing concrete surfaces. The PI has expertise in interfacial mechanisms, bonding, and especially concrete interface properties. Equipment is available for state-of-art testing visualization, and identification of interfacial layers.

It is recommended that the research project be funded at the level requested, i.e., \$51,158 in year one, \$49,683 in year two, and \$48,229 in year three.

The PI has (2) pending proposals:

- Department of Homeland Security - “Development of Impulse Energy Based Analysis Method of Fortified Infrastructure Against Devastating Explosives” in the amount of \$258,877 and;
- Department of Army - “Acquisition of General Purpose High Strain Rate Testing System” in the amount of \$500,135.

Should the PI receive funding for any one of the pending proposals he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$51,158

Year 2: \$49,683

Year 3: \$48,229

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 136A

RANK: 19

TITLE: Function of a Hypothetical Protein Slr0110 of *Synechocystis* sp. PCC 6803 in Light- and Glucose-induced Signal Transduction

INSTITUTION: University of Louisiana at Lafayette

PRINCIPAL INVESTIGATOR: Wu Xu

COMMENTS: All chemical forms of energy and oxygen on the earth are from photosynthesis. The primary objective of this proposal is to understand the detailed biochemical function(s) of a hypothetical protein Slr0110 in light- and glucose-induced signal transduction in cyanobacterium *Synechocystis* sp. PCC 6803. Slr0110, identified by the targeted mutagenesis approach, is postulated to have a direct or indirect role in regulating photosynthesis and/or respiration since the slr0110-deficient cells exhibit severe growth defect under the normal light condition in the presence of glucose. The unique phenotype of this strain can be used as a research tool to address the fundamental questions on how *Synechocystis* sp. PCC 6803 coordinately regulates photosynthesis and respiration. The success of this project will advance understanding of fundamental questions regarding photosynthetic and respiratory processes.

The PI is a fourth-year Assistant Professor of Biochemistry at University of Louisiana at Lafayette. He received his PhD. in 2001 and worked five years as a Research Associate at St. Jude's Children's Research Hospital. The results of the proposed research will strengthen the resubmission of an NSF CAREER proposal which received good reviews.

It is recommended that the proposed budget be slightly reduced to limit the supply budget to \$10,000, resulting in a year-one budget \$48,614. A budget of \$44,025 is recommended for year two and year three.

The PI has (4) pending proposals:

- NSF - "Biochemical Function and Regulation of A Hypothetical Protein Slr0110 of *Synechocystis* sp.PCC 6803 in Light-and Glucose-Induced Signal Transduction" in the amount of \$1,041,430;
- NSF - "Studies of the Catalytic and Reactivation/Activation Mechanism of B12-dependent and SAM-dependent Glycerol Dehydratases" in the amount of \$420,793;
- NSF - "Microbial Engineering for the Production of 3-Hydroxypropionaldehyde from Glycerol" in the amount of \$402,039 and;
- NIH - "Identification of Bioactive Compounds from Traditional Chinese Herbs and their Targets with the Focus on Anticancer Activity using Experimental and Theoretical Chemical Approaches" in the amount of \$205,728.

Should the PI receive funding for any one of the pending proposals he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$48,614

Year 2: \$44,025

Year 3: \$44,025

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 040A

RANK: 20

TITLE: Remobilization and Bioaccumulation of ^{210}Po in Gulf of Mexico Hypoxia

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Kanchan Maiti

COMMENTS: ^{210}Po ($T_{1/2} = 138\text{d}$) is a naturally occurring radioisotope produced by the decay of ^{210}Pb that is especially enriched in proteinaceous tissues of marine organisms. Human consumers of seafood receive their largest dose of natural radiation (~70%) from ^{210}Po due to bioaccumulation of polonium in the marine food chain. It is thus important to understand the processes that may result in large increase in the dissolved Po species in the water column. The working hypothesis for the present study is that - low dissolved oxygen concentration (0-2 mg/L) across the Gulf of Mexico hypoxia zone causes remobilization of ^{210}Po and increased ^{210}Po activity in the water column. In order to test this hypothesis water column and sediment core samples will be collected and analyzed for ^{210}Po and ^{210}Pb across this region along with a host of other ancillary data. The proposed research is a necessary first step towards understanding the distribution and accumulation of ^{210}Po in the Gulf of Mexico region where little to no data exist. The PI will address the processes by which marine organisms bioaccumulate the radioactive polonium under hypoxic conditions in the Gulf. Given that those who consume seafood from the Gulf receive much of their natural radiation exposure from this isotope, the significance of these studies cannot be understated.

Dr. Maiti is a Ph.D. graduate (2007) from the University of South Carolina with three years post doctoral experience at Woods Hole Oceanographic Institution. He will join Louisiana State University as an Assistant Professor during 2010. Given the strong proposal submitted and the overall high ratings given this project by the subject-area panel and the external evaluators, it is believed that Dr. Maiti has significant potential for becoming competitive for federal research support.

The proposed budget should be revised to limit undergraduate student support to \$2,500 and delete printing charges of \$500, for a year-one budget of \$61,135. A similar budget of \$61,135 is recommended for year two that limits the PI to one month summer salary, including associated fringe benefits.

Year 1: \$61,135

Year 2: \$61,135

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 125A

RANK: 21

TITLE: Integrating Ecological and Evolutionary Theory to Understand the Epidemiology of Rapidly Evolving Viral Pathogens

INSTITUTION: University of Louisiana at Lafayette

PRINCIPAL INVESTIGATOR: Scott M. Duke-Sylvester

COMMENTS: Ecological and evolutionary processes are often viewed as operating on vastly different time scales, with ecological dynamics playing out over the course of years to decades while measurable evolutionary changes occur over the span of millennia or more. As a result, research in these two areas has remained largely independent. The PI's objective in the proposed research is to develop an approach combining both ecological and evolutionary perspectives to explore contemporary epidemiological patterns neither approach can account for individually. The PI will use mathematical modeling and statistical analysis to reveal the residual signatures embedded within the viral phylogeny produced by the ecological processes governing the spread of infection.

It is recommended that the research project be funded at the level requested, i.e., \$42,975 in year one; \$31,708 in year two, and \$26,209 in year three.

Year 1: \$42,975

Year 2: \$31,708

Year 3: \$26,209

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 127A

RANK: 22

TITLE: Developing Autonomous Fault Tolerant Control Technology for Complex System

INSTITUTION: University of Louisiana at Lafayette

PRINCIPAL INVESTIGATOR: Afef Fekih

COMMENTS: As many technological systems become more complex, highly integrated and widespread, the effects of system failures can be devastating to the infrastructure of modern society. Defects in sensors, actuators or in the process itself can degrade overall system performance, and faults can develop into failures in which probability increases with the increased complexity of the system. In order to maintain high level of performance it is important that failures be promptly detected and identified and appropriate remedies be applied. Fault Tolerant Control (FTC) is the means for determining the corrective action necessary when a fault has been detected and isolated by an appropriate Fault Detection and Identification (FDI) algorithm.

The PI's goal is to contribute to the knowledge base in the field of control of complex systems via the development, implementation and analysis of autonomous fault tolerant control technology for complex systems. The proposed approach will integrate control, diagnosis and fault tolerance and will be validated using a nonlinear full vehicle active suspension system as test best. The project will be crucial in building and strengthening the fundamental research base and competitiveness of the PI. The PI plans to submit proposals to federal granting agencies such as DOT, NSF, DOD, and NASA.

The proposed budget should be revised to provide support for only **one** graduate research assistant and limit the travel budget to \$1,500/year, requested for a year-one budget of \$36,149. A similar budget of \$36,149 is recommended for year two and year three.

Year 1: \$36,149

Year 2: \$36,149

Year 3: \$36,149

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 108A

RANK: 23

TITLE: Wireless Sensor Network Approach for Monitoring Home Security Systems

INSTITUTION: Southern University and A&M College - Baton Rouge

PRINCIPAL INVESTIGATOR: Md Abus Salam; P.K. Bhattacharya

COMMENTS: The advent of low-cost, low-power and programmable sensors has led to an explosive growth in the use of sensor networks targeting a variety of distributed or remote sensor applications. Precise monitoring, collection and transmission of data through Wireless Sensor Networks (WSN) to the end user or decision-making system makes WSN a perfect candidate for use in monitoring home security systems. One of the most important potential uses for sensor networks is in the areas of security system monitoring. The PI's research will focus on home security monitoring systems and the experimental test-bed will be composed of 2.4 GHz Crossbow wireless sensors. These sensors are capable of monitoring home environments such as light, temperature, humidity, barometric pressure, and position of objects. The researcher will develop a smart interactive user interface (SUIT) and the interface will be real time and available over the Internet. This is an interesting scientific project which could produce a marketable product. The PI is well trained to carry out this research.

The proposed budget can be significantly reduced to provide one month summer salary for the PI, limit undergraduate student support to \$4,000, and travel to \$1,500/year, for a year-one budget of \$40,212. A budget of \$36,212 is recommended for year two and year three.

Year 1: \$40,212

Year 2: \$36,212

Year 3: \$36,212

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 115A

RANK: 24

TITLE: The Role of Surfactants in the Electrochemical Synthesis of Anisotropic Crystalline Particles

INSTITUTION: Tulane University

PRINCIPAL INVESTIGATOR: Noshir S. Pesika

COMMENTS: The PI proposes to develop a systematic approach to understand the role of surfactants as shape directing agents (SDAs) during the electrochemical growth of nano- and micrometer size crystals. Nanoparticles, typically less than 100 nm in size, exhibit new size-dependent properties (e.g., quantum confinement, surface plasmon resonance, superparamagnetism), which can be significantly different from their respective bulk properties. Although the size-dependent properties of simple-shaped nanoparticles (e.g., spheres, rods) have been widely studied, the shape-dependent properties of complex-shaped nanoparticles have received less attention. Surfactants are known to direct the solution phase synthesis of nanoparticles by preferentially binding to certain facets of a crystal, although an *a priori* knowledge of how the surfactant will affect the growth and eventual shape of the nanoparticle is not understood. The PI aims to develop a technique to identify surfactants on a scientific basis that promotes anisotropic electrochemical growth and provides *a priori* knowledge of the choice of surfactant needed to attain a desired particle shape for a particular material. This research will have a broader impact in materials engineering by enhancing the ability to screen through promising SDAs, and by enabling the growth of novel complex-shaped nanoparticles.

It is recommended that the proposed budget be revised to limit supplies to \$10,000 and travel to \$1,500, for a year-one budget of \$56,666. A similar budget of \$56,666 is recommended for year two and year three.

Year 1: \$56,666

Year 2: \$56,666

Year 3: \$56,666

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 053A

RANK: 25

TITLE: New Methods in Incorporating Photonic Crystals into Solar Cells for Enhanced Light Harvesting

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Ying Wang

COMMENTS: The long-term goal of this multidisciplinary project is the fundamental understanding needed to design, fabricate, and ultimately validate prototype photonic-crystal based dye-sensitized solar cells (DSSCs) with high energy conversion efficiency. An effective strategy to enhance the light collection in solar cells is to incorporate photonic crystals to manipulate the light flow. The PI proposes to synthesize a new bilayer photo-electrode consisting of a photonic crystal layer *chemically bonded* to the oxide nanostructure layer, using novel atomic layer deposition and solution processing methods. The proposed research is the first effort to fabricate and systematically investigate photonic-crystal-based DSSCs consisting of photonic crystal layer chemically bonded to oxide nanostructure layer. Such strong bonds between the two layers promise further enhanced light-harvesting ability and energy conversion efficiency.

The PI is a Ph.D. graduate (2006) of the University of Washington in Material Sciences and Engineering with two years postdoctoral training at Northwestern University. The PI has an extensive publication record (over 20 publications) and is well qualified to conduct the research work.

Only a minor reduction in the proposed budget is recommended that deletes printing charges of \$500, resulting in a year-one budget of \$50,458. A budget of \$49,458 and \$48,458 is recommended for year two and year three, respectively.

The PI has (1) pending proposal:

- DOE - “Novel Solar Cell Design and Fabrication of High Energy Conversion Efficiency” in the amount of \$757,912.

Should the PI receive funding for the pending proposal she should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$50,458

Year 2: \$49,458

Year 3: \$48, 458

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 056A

RANK: 26

TITLE: HPV-16 E6/E7 Oncoproteins and Focal Adhesion Kinase (FAK)

INSTITUTION: Louisiana State University Health Sciences Center - New Orleans

PRINCIPAL INVESTIGATOR: KyungWon Huh

COMMENTS: Persistent infection with a subset of human papillomaviruses (HPVs) called high-risk viruses causes development of cervical cancer. Two HPV proteins, E6 and E7, are necessary for initiation and maintenance of cancer. Focal adhesion kinase (FAK) is a cellular protein that mediates various extracellular signals from the cell surface into the cells leading to various cellular changes such as migration, survival and differentiation. Others have shown that FAK is activated by E6/E7 oncoproteins of HPV-18, and that FAK is necessary for tumorigenic properties of cervical cancer cells harboring HPV-16 subgenome. The PI hypothesizes that FAK is activated by HPV-16 E6/E7 oncoproteins and mediates the oncogenic properties such as invasion, anoikis-resistance and anchorage independent growth of HPV-16 E6 and E7 oncoproteins. The proposed research is based on original observations made by the PI. The experimental approach outlined by the PI is technically sound.

Dr. Huh has been an Assistant Professor of Biochemistry and Molecular Biology at LSUHSC-NO since 2008. During her postdoctoral training at Harvard Medical School she authored a number of papers on papillomavirus-induced oncogenesis. She is well qualified to carry out these studies.

It is recommended that the proposed budget be revised to limit travel support to \$1,500/year and supplies to \$10,000, for a year-one budget of \$25,631. A similar budget of \$25,631 is recommended for year two and year three.

Year 1: \$25,631

Year 2: \$25,631

Year 3: \$25,631

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 074A

RANK: 27

TITLE: Early Detection of Subclinical Alzheimer Disease Using 2-D Micro-Electrophoresis Chip and Principal Component Analysis

INSTITUTION: Louisiana Tech University

PRINCIPAL INVESTIGATOR: June Feng

COMMENTS: Alzheimer Disease (AD) is the most common form of dementia in the elderly, and it may manifest as neuropathological changes long before it is diagnosed. Oxidative stress induced by Reactive Oxygen Species has been implicated as a contributing factor to AD. Protein carbonyl formation is considered as a marker of oxidative stress in AD. The overall goal of the proposed research is to develop a process of quantitative and highly sensitive two-dimensional micro-electrophoretic (2D- μ CE) profiling of biomarkers (e.g., carbonylation formation) from very small amounts of blood plasma taken from Alzheimer's transgenic mice model. To achieve this goal, the PI will develop a 2D micro-electrophoresis fluid device with laser induced fluorescence (LIF) detection. This will allow the quantitative characterization of 2D- μ CE profiling of carbonylated proteins at different stages of AD development using specific fluorescent carbonyl labeling.

The PI is a Ph.D. graduate (2007) of the University of Minnesota in Biomedical Engineering. She is quite accomplished, with a strong publication and presentation list. She appears to be well qualified to conduct the proposed research.

It is recommended that the research project be funded at the level requested in year one, i.e., \$48,484. Additionally, travel should be limited to \$1,500, for a year two budget of \$46,984 and a similar amount of \$46,984 for year three.

The PI has (1) proposal pending:

- NIH - "Understanding the Molecular Mechanism of Alzheimer's Disease: Quantitative Proteomics of Oxidatively Modified Proteins Using iTRAQ Analysis and a Novel Proteomic Reactor" in the amount of \$125,000/year.

Should the PI receive funding for the pending proposal she should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$48,484

Year 2: \$46,984

Year 3: \$46,984

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 058A

RANK: 28

TITLE: Epigenetic Regulation of the HSV-1 Genome During Reactivation

INSTITUTION: Louisiana State University Health Sciences – New Orleans

PRINCIPAL INVESTIGATOR: Donna Neumann

COMMENTS: Recurrent episodes of ocular HSV-1 are the number one cause of blindness due to an infectious agent in industrialized countries, yet the development of treatments for individuals that do not respond to traditional viroptic therapy has been hampered by the limited understanding of the molecular mechanisms that govern HSV-1 reactivation. During latency, the HSV-1 genome exists in sensory neurons as a circular episome associated with histones where only the latency-associated transcript (LAT) is expressed. The mechanisms of LAT expression and lytic repression in latency have not been elucidated but one possibility is that epigenetic mechanisms play a role. The major goal of this research is to characterize the functional properties of these insulator elements and to determine their roles in HSV-1 reactivation. Understanding the mechanisms that maintains the latent HSV-1 genome and enable the transition from latency to reactivation is a fundamental step in ultimately designing novel therapeutics for the treatment of recurrent HSV-1 infections.

It is recommended that the proposed budget be significantly reduced to provide one month summer salary for the PI and 25% salary support for the Research Associate, including associated fringe benefits, limit supplies to \$10,000, and delete printing charges of \$1,000, for a year-one budget of \$41,028. A similar budget of \$41,028 is recommended for year two and year three.

Year 1: \$41,028

Year 2: \$41,028

Year 3: \$41,028

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 073A

RANK: 29

TITLE: Spectroscopic and Electrochemical Studies of the Electrodeposition of Refractory Metals and Alloys in Room Temperature Ionic Liquids

INSTITUTION: Louisiana Tech University

PRINCIPAL INVESTIGATOR: Sven Eklund

COMMENTS: The PI plans to study the electrodeposition process of tantalum, tungsten, and hafnium in room and low temperature ionic liquids such as [BMP]Tf₂N. The studies will include spectroscopic and electrochemical characterization of the complex metal fluoride species in the ionic liquid before, during, and after the electrodeposition process. The choices of these metals are based on their resistance to mechanical wear and chemical corrosion as thin films and the use of tungsten and hafnium in the electronics industry and tantalum coatings for medical implants.

The PI is an Assistant Professor of Chemistry at Louisiana Tech University and has been successful in obtaining some funding from the private sector.

The funds requested in year one are reasonable; therefore, it is recommended that the project be funded at the level requested, i.e., \$41,598. A similar budget of \$41,598 is recommended in year two and a budget of \$41,503 in year three.

The PI has (1) pending proposal:

- NSF - "Development of Novel Rechargeable Lithium Battery Electrolytes with Enhanced Safety Using Ionic Liquids" in the amount of \$350,000.

Should the PI receive funding for the pending proposal he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$41,598

Year 2: \$41,598

Year 3: \$41,503

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 038A

RANK: 30

TITLE: Function Mechanism of RNAi Directed Viral Immunity in *C. elegans*

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Rui (Ray) Lu

COMMENTS: Recent study by the PI has demonstrated that a dicer related RNA helicase encoded by *drh-1* plays a major role in worm RDVI but appears dispensable in RNAi targeting non-viral transcripts, suggesting a dedicated function for *drh-1* in RDVI. The PI proposes to study the function and mechanism of *drh-1* using a combination of cellular, genetic and molecular approaches. The proposed study should allow the PI to gain insight into the unique mechanistic feature of RDVI in single-dicer vertebrate but also advance the knowledge on how viruses of distinct families are differentially recognized in mammalian cytosolic viral innate immunity. The research is technically sound; however, some outside reviewers commented that the PI should pay more attention to the interpretation of his experiments and descriptions of past work in the field. This is an interesting application that could have a significant impact on the field.

It is recommended that the proposed budget be revised to limit supplies to \$10,000, for a year-one budget of \$35,036. Additionally, publication charges of \$500 should be deleted, for a recommended budget of \$35,036 for year two and year three.

The PI has (1) pending proposal:

- NIH - "RNAi Directed Viral Immunity in *C. elegans*" in the amount of \$1,250,000.

Should the PI receive funding for the pending proposal he should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$35,036

Year 2: \$35,036

Year 3: \$35,036

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 025A

RANK: 31

TITLE: Climate Change and Disease Transmission: Shifts in Host-Pathogen Ranges

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Bret Elderd; James Reilly

COMMENTS: The research proposed by the PI will use experiments to construct Bayesian hierarchical models to determine how the interaction between the fall armyworm *Spodoptera frugiperda* and its species-specific nucleopolyhedrosis virus changes as a result of increasing temperatures. The fall armyworm, a common pest species, readily migrates from its overwintering habitat in Southern Texas and Florida. Armyworm population dynamics and spread are linked to temperature such that increased temperature decreases development time and increases migration distance northward. When fall armyworm populations increase to levels that cause widespread defoliation, epizootic outbreak occur. These traits make the fall armyworm system ideal for studying the effects of a warming climate on species' range, disease transmission rates, and spatial spread of epizootics. Board of Regents funds will be instrumental in the establishing this long-term research plan and ensuring its national competitiveness when seeking external funding.

It is recommended that the proposed budget be revised to provide one month summer salary for the PI and co-PI including associated fringe benefits, and limit the supply budget to \$12,000, for a year one budget of \$41,515. Additionally, publication charges of \$1,000 should be deleted, resulting in a budget of \$31,515 for year two and year three.

Year 1: \$41,515

Year 2: \$31,515

Year 3: \$31,515

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 095A

RANK: 32

TITLE: Sonochemical Synthesis of Graphene Nanosheets and Other Novel Nanostructures

INSTITUTION: Southeastern Louisiana University

PRINCIPAL INVESTIGATOR: Zhengrong Li

COMMENTS: Graphene is a flat monolayer of carbon atoms chemically bonded into a two-dimension honeycomb lattice. Besides being a basic building block for many novel carbon nanomaterials of other dimensions, graphene nanosheet itself has also demonstrated outstanding properties distinct from other carbon nanostructures. The PI proposes to synthesize sonochemically and to investigate graphene nanosheets and their hybrid nanosheets. The specific aims of the research are:

- 1) Determine the factors affecting the size and morphology of the graphene nanosheets synthesized;
- 2) Study the conditions and factors for graphene nanosheet packing, rolling, and folding into various carbon nanostructures and;
- 3) Explore hybrid graphene nanosheets with heteroatoms and with rings other than six carbon rings.

The potential applications of graphene nanosheets, i.e. energy-storage super-capacitors and batteries, and high-strength structural composites, are among the subjects funded heavily by DOD and DOE programs.

The PI is a Ph.D. graduate (2002) of Texas Tech University with two years of post-doc training, and four years as an instructor at that institution. He is well trained with extensive experience and should be able to produce excellent science.

Only a minor reduction in the proposed budget is recommended that limits travel support to \$1,500/year, for a year-one budget of \$38,498. A budget of \$36,148 is recommended for year two and \$35,648 for year three.

Year 1: \$38,498

Year 2: \$36,148

Year 3: \$35,648

The Institutional Match pledged in the proposal should be maintained in full.

Appendix E (continued):

PROPOSAL NO. 028A

RANK: 33

TITLE: Predictive Modeling of Construction Process Operations in Transportation Projects and Decision-Making Automation

INSTITUTION: Louisiana State University and A&M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Marwa M. Hassan

COMMENTS: The PI proposes to develop interactive, high-fidelity modeling and decision-making tools for management of construction operations in large-scale transportation projects. Specifically, the PI will develop the following: (a) detailed simulation models of selected highway-construction operations that are built and validated in the initial phase of the study to estimate response surfaces representing the expected value of each selected project performance measure (response) as a function of the primary decision (design) variables and; (b) flexible neural-network approximations to the corresponding response surfaces that can be used by project managers for rapid evaluation of overall system performance under different scenarios without the need to perform any additional simulations. The proposed work focuses on three types of highway-construction processes—namely, excavation and hauling operations, cast-in-place concrete pavement construction, and asphalt-paving operations. The selected performance measures are those used by transportation engineers and project managers—namely, productivity rates, delays, project duration, and cost. The PI has substantial experience working with the relevant construction operations as well as a clear vision of how to provide transportation engineers with a decision-making tool that they can use for effective ongoing management of highway-construction operations.

It is recommended that the project is funded at the level requested, i.e., \$42,068 for year one, \$37,746 year two, and \$34,708 year three.

The PI has (1) pending proposal:

- NIST - “A Multi-dimensional LCA Framework for Quantifying the Impact of Nano-material Applications in Construction” in the amount of \$506,539.

Should the PI receive funding for the pending proposal she should be considered nationally competitive and the requested funds from the LEQSF program should not be awarded.

Year 1: \$42,068

Year 2: \$37,746

Year 3: \$34,708

The Institutional Match pledged in the proposal should be maintained in full.

APPENDIX F

**COMMENTS ON PROPOSALS RANKED PRIORITY I BY THE
SUBJECT AREA PANELS AND CONSIDERED BY THE FINAL PANEL
BUT NOT RECOMMENDED FOR FUNDING**

PROPOSAL NO. 008A

TITLE: Gene Expression Involved in Reproduction and Response to Immune and Xenobiotic Challenges in the Formosan Subterranean Termite

INSTITUTION: Louisiana State University Agricultural Center

PRINCIPAL INVESTIGATOR : Claudia Husseneder

COMMENTS: The PI proposes to describe expression of genes putatively involved in reproduction of male Formosan subterranean termites (FST), as well as immune defense and detoxification processes of different castes (workers, soldiers, nymphs, alates). Microarrays will be designed using the PI's previously constructed expressed sequence tag library and public databases. The results from the study might lead to future applications to disrupt colony propagation and immune competence and to manage resistance development of FST.

The PI currently has \$150,000 USDA-ARS cooperative agreement at LSU Agricultural Center. Additionally, she has \$34,000 in funding support listed twice in 2009. The \$105,000 from the State of Louisiana which began in July 2009 runs until the end of June 2010. It is obvious that the PI is nationally competitive to obtain funding for her program.

PROPOSAL NO. 039A

TITLE: NMR Structural Studies of O-linked β -N-Acetylglucosamine

INSTITUTION: Louisiana State University and A & M College – Baton Rouge

PRINCIPAL INVESTIGATOR: Megan A. Macnaughtan

COMMENTS: The objective of the proposed research is to study the structural changes induced by the O-GlcNAc modification on biomedically relevant proteins. The target protein for this research is a human transcription factor, cyclic AMP response element binding protein (CREB)

The PI currently has a National Institute of Health (NIH) grant in the amount \$247,282 that began in 8/2009 thru 8/2010. Therefore, it is clear the researcher is nationally competitive.

Appendix F (continued):

PROPOSAL NO. 063A

TITLE: Developmental Hierarchy Guiding Development of Photosensory Neurons

INSTITUTION: Louisiana State University Health Sciences Center – New Orleans

PRINCIPAL INVESTIGATOR: Judith M. Venuti

COMMENTS: The goals of the proposed research are to characterize the morphological and physiological properties of the photosensory neuronal clusters and their connections to other neurons and to determine the developmental events that produce adult photosensory neurons beginning at late larval stages and continuing through rudiment development and metamorphosis.

The PI is an established investigator with past funding support from the National Science Foundation (NSF) beginning in January 2000 in the amount of \$390,000 for three years and the Muscular Dystrophy Association from 2002 to 2005 in the amount of \$187,417. However, neither was renewed, which is an indication that the PI did not produce sufficient research to continue to receive support in the area of her scientific investigations. In order for her to be eligible for funding from the RCS program it would be necessary for her to change her research focus to a new area. Requesting funding for research which was pursued in the past but was not funded with renewal does not make the individual a strong candidate for funding from the BORSF RCS program.

PROPOSAL NO. 135A

TITLE: GPS-Free Autonomous Robotic Exploration

INSTITUTION: University of Louisiana at Lafayette

PRINCIPAL INVESTIGATOR: Hongyi Wu

COMMENTS: The PI proposes to develop effective technologies to support autonomous robotic exploration without location information, especially under complex environment with concave obstacles and holes. The proposed project will involve algorithm design, implementation, prototyping, and testbed experiments.

Dr. Hongyi Wu is an Associate Professor at the University of Louisiana at Lafayette who currently holds (2) NSF grants; a CAREER grant which was funded in 7/2004 and second NSF grant which began in 9/2008 and runs through 8/2011 for \$350,000. This funding clearly indicates that he is nationally competitive and does not qualify for funding from the BORSF RCS program.

APPENDIX G

**OUT-OF-STATE EXPERTS WHO SERVED AS FINAL
AND FULL SUBJECT AREA PANELISTS**

FINAL PANEL

James R. Durig, Ph.D., Chair

Professor, Department of Chemistry and Geosciences
University of Missouri at Kansas City
Former Chair and Project Director, South Carolina EPSCoR Program

J. Michael Rigsbee, Ph.D.

Professor, Department of Materials Science and Engineering
North Carolina State University

Richard Vulliet, Ph.D., D.V.M.

Professor, Laboratory of Veterinary Cytotherapeutics
Department of Veterinary Molecular Biosciences
University of California at Davis

Appendix G (continued):

Subject Area Panels

BIOLOGICAL SCIENCES I (Human Biology, Immunology, Virology and Microbiology)

Jeff Engler, Ph.D., Chair

Professor
Department of Biochemistry and Molecular Genetics
University of Alabama at Birmingham

Alan Kaplan, Ph.D.

Professor and Chair
Department of Microbiology, Immunology, and Molecular Genetics
University of Kentucky College of Medicine

Kirill M. Popov, Ph.D.

Associate Professor
Department of Biochemistry and Molecular Genetics
University of Alabama at Birmingham

BIOLOGICAL SCIENCES II (Natural Sciences, Ecology, Microbiology, Genetics)

Geoffrey A. Cordell, Ph.D. Chair

Professor and Director of Graduate Studies in Pharmacognosy
Department of Medicinal Chemistry and Pharmacognosy
College of Pharmacy
University of Illinois at Chicago

Gary Ervin, Ph.D.

Associate Professor
Department of Biological Sciences
Mississippi State University

Appendix G (continued):

CHEMISTRY

Burt Davis, Ph.D., Chair

Professor and Interim Director
Center for Applied Energy Research
University of Kentucky

Mario L. Ocelli, Ph.D.

President
MLO Consulting
Atlanta, GA

COMPUTER & INFORMATION SCIENCES

Sartaj Sahni, Ph.D., Chair

Distinguished Professor
Department of Computer & Information Sciences and Engineering
University of Florida

Oscar H. Ibarra, Ph.D.

Professor
Department of Computer Science
University of California at Santa Barbara

EARTH & ENVIRONMENTAL SCIENCES

Charles J. Wurrey, Ph.D., Chair

Associate Dean, College of Arts and Sciences
Professor, Department of Chemistry
University of Missouri at Kansas City
Consultant, U.S. Environmental Protection Agency

Donn S. Gorsline, Ph.D.

W. and D. Zinsmeyer Professor Emeritus of Marine Sciences
Department of Earth Sciences
University of Southern California

Appendix G (continued):

ENGINEERING B

Michael E. Prudich, Ph.D., Chair

Professor and Chair, Department of Chemical Engineering
Ohio University

William A. Hyman, Sc.D.

Professor of Bioengineering
Biomedical Engineering Program
Texas A & M University

Raul G. Longoria, Ph.D.

Associate Professor
Department of Mechanical Engineering
The University of Texas at Austin
Austin, TX

James R. Wilson, Ph.D.

Professor and Head
Department of Industrial Engineering
North Carolina State University
Raleigh, NC

HEALTH & MEDICAL SCIENCES

Gerald Sonnenfeld, Ph.D., Chair

Vice President for Research, Binghamton University
State University of New York
Binghamton, NY

Lawrence A. Palinkas, Ph.D.

Professor of Social Work and Anthropology
School of Social Work
University of Southern California
Los Angeles, CA

Eric Prossnitz, Ph.D.

Associate Professor
Department of Cell Biology and Physiology
University of New Mexico Health Science Center
Albuquerque, NM

APPENDIX H
RESEARCH COMPETITIVENESS SUBPROGRAM
FY 2009-10
SUMMARY OF PROPOSALS

154 TOTAL PROPOSALS

17	BS I	Biological Sciences I
23	BS II	Biological Sciences II
17	CHE	Chemistry
21	C/IS	Computer and Information Sciences
15	EAR	Earth and Environmental Sciences
37	ENG B	Engineering B
24	HEA	Health & Medical Sciences

TOTAL FIRST-YEAR FUNDS REQUESTED: \$8,499,214

**Summary of Proposals Submitted to the
Research Competitiveness Subprogram (RCS)
for the FY 2009-2010 Review Cycle**

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
001 A-10/BS	Molecular Regulators of the Central Mammalian Circadian Clock	Centenary College of Louisiana (Department of Biology)	Greg Q. Butcher		
	New Request		Contain Confidential/Proprietary Information? No	1	46,242
				2	41,097
				3	41,036
				TOTAL	128,375
002 A-10/C/IS	Incorporating Machine Learning and Prior Knowledge into the RoboCupRescue Challenge Through Inductive Logic Programming	Centenary College of Louisiana (Department of Mathematics and Computer Science)	Mark Goadrich		
	New Request		Contain Confidential/Proprietary Information? No	1	34,271
				2	29,548
				TOTAL	63,819
003 A-10/CHE	Synthesis and <i>in vivo</i> Testing of Perfluoroalkyl Derivatives of Arene-Containing Analgesics	Centenary College of Louisiana (Department of Chemistry and Biology)	Joshua D. Lawrence Scott E. Chirhart (Co-PI/PD) Gregory Q. Butcher (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	46,356
				2	46,356
				3	46,356
				TOTAL	139,068
004 A-10/BS	Quantifying Noble Gas Anesthetic Interactions with Hydrophobic Interfaces	Centenary College of Louisiana (Department of Physics and Biophysics)	Troy C. Messina		
	New Request		Contain Confidential/Proprietary Information? No	1	50,597
				2	15,597
				3	15,597
				TOTAL	81,791
005 A-10/CHE	Electrochemical Detection of Protease Activity with Selectively Modified Sensors	Dillard University (Department of Chemistry)	Sonya L. Caston		
	New Request		Contain Confidential/Proprietary Information? No	1	60,000
				2	50,000
				3	50,000
				TOTAL	160,000
006 A-10/BS	Chemical Ecology of Louisiana Coastal Wetland Forest Defoliators	Louisiana State University and A&M College - Agricultural Center (Department of Entomology)	Jeremy D. Allison		
	New Request		Contain Confidential/Proprietary Information? No	1	48,250
				2	43,000
				3	43,000
				TOTAL	134,250

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
007 A-10/ENG B	Engineered Multi-Scalar Tissue Scaffolds	Louisiana State University And A&M College - Agricultural Center (Department of Biological & Agricultural Engineering)	Daniel Hayes William Monroe (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	65,000
				2	65,000
				3	63,000
				TOTAL	193,000
008 A-10/BS	Gene Expression Involved in Reproduction and Response to Immune and Xenobiotic Challenges in the Formosan Subterranean Termite	Louisiana State University And A&M College - Agricultural Center (Department of Entomology)	Claudia Husseneder		
	New Request		Contain Confidential/Proprietary Information? No	1	67,500
				2	67,200
				3	64,000
				TOTAL	198,700
009 A-10/EAR	Bioremediation of Estrogenic Hormones from Poultry Litter-Amended Agricultural Land Surface Runoff with a Constructed Wetland System	Louisiana State University And A&M College - Agricultural Center Louisiana State University - Shreveport	Eddie P. Millhollon Dalton R. Gossett Co-PI/PD Stephen W. Banks (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	34,790
				2	33,990
				3	33,153
				TOTAL	101,933
010 A-10/BS	Role of Agriculture in Antimicrobial Resistance of Bacteria from Human, Animal and Environmental Sources	Louisiana State University And A&M College - Agricultural Center (Hill Farm Research Station)	William E. Owens Sidney M. DeRouen (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	41,222
				2	28,850
				3	22,513
				TOTAL	92,585
011 A-10/EAR	Use of Mechanism Designs to Find the Optimal Level of Water Quality in Broiler Production Region of Louisiana	Louisiana State University And A&M College - Agricultural Center (Department of Agricultural Economics)	Krishna P. Paudel Steven G. Hall (Co-PI/PD) Theresia Lavergne (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	121,000
				2	59,000
				TOTAL	180,000
012 A-10/ENG B	Cultivation of ZnO Nano Rods on Cell Walls for Super-hydrophobic Wood	Louisiana State University And A&M College - Agricultural Center (Calhoun Research Station)	Cheng Piao Jim J. Wang (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	55,250
				2	55,250
				3	55,250
				TOTAL	165,750

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested		
013 A-10/BS	Genetic Population Structure in Louisiana Bachman's Sparrows	Louisiana State University And A&M College - Agricultural Center (School of Renewable Natural Resources)	Sabrina Taylor				
				New Request	Contain Confidential/Proprietary Information? No	1	44,875
						2	43,000
						3	30,500
						TOTAL	118,375
014 A-10/BS	Non-Pathogenic dsRNS Viruses: Molecular and Biological Interactions with Pathogenic Viruses of Pepper and Tomato	Louisiana State University And A&M College - Agricultural Center (Department of Plant Pathology and Crop Physiology)	Rodrigo A. Valverde				
				New Request	Contain Confidential/Proprietary Information? No	1	40,700
						2	41,150
						3	35,775
						TOTAL	117,625
015 A-10/HEA	Capabilities of Phytochemicals in Legumes, Vegetables and Fruits in Inhibiting Cholesterol Oxidation	Louisiana State University And A&M College - Agricultural Center (Department of Food Sciences)	Zhimin Xu				
				New Request	Contain Confidential/Proprietary Information?? No	1	35,000
						2	30,000
						TOTAL	65,000
016 A-10/BS	Dietary Lectins in the Environmental "Unknown Pathogen" in Parkinson's Disease	Louisiana State University And A&M College - Agricultural Center (Department of Veterinary Science)	Jolene Zheng Jeffrey Keller (Other Investigator)				
				New Request	Contain Confidential/Proprietary Information?? Yes	1	66,520
						2	60,355
						3	59,355
						TOTAL	186,230
017 A-10/ENG B	Development of Finite Elements for Response and Response Sensitivity Analysis of Reinforced Concrete Structures Retrofitted with Externally-	Louisiana State University And A&M College - Baton Rouge (Department of Civil and Environmental Engineering)	Michele Barbato				
				New Request	Contain Confidential/Proprietary Information? No	1	44,930
						2	43,203
						3	41,733
						TOTAL	129,866
018 A-10/HEA	Talker-Specific Speech Perception in Louisiana's Toddlers With and Without Hearing Loss	Louisiana State University And A&M College - Baton Rouge (Department of Communication Sciences & Disorders)	Brittan A. Barker				
				New Request	Contain Confidential/Proprietary Information? No	1	46,686
						2	46,769
						3	48,876
						TOTAL	142,331

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
019 A-10/ENG B	Development of a Novel Genetic Screen for Enhanced Bioplastic Production in Aquatic Microorganisms	Louisiana State University And A&M College - Baton Rouge (Department of Chemical Engineering)	Michael G. Benton Maria Teresa Gutierrez-Wang (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	67,000
				2	67,000
				3	66,000
				TOTAL	200,000
020 A-10/HEA	Brief Marijuana Treatment for Mandated University Students	Louisiana State University And A&M College - Baton Rouge (Department of Psychology)	Julia D. Buckner		
	New Request		Contain Confidential/Proprietary Information? No	1	59,650
				2	59,650
				3	58,250
				TOTAL	177,550
021 A-10/C/IS	Design and Analysis of Efficient Conflict Managers for Software Transactional Memory	Louisiana State University And A&M College - Baton Rouge (Department of Computer Science)	Konstantin Busch		
	New Request		Contain Confidential/Proprietary Information? No	1	49,147
				2	49,148
				3	49,148
				TOTAL	147,443
022 A-10/ENG B	Hybrid Electronic Materials for Alternative Energy Applications	Louisiana State University And A&M College - Baton Rouge (Department of Electrical and Computer Engineering)	Theda Daniels-Race		
	New Request		Contain Confidential/Proprietary Information? No	1	70,000
				2	60,000
				3	60,000
				TOTAL	190,000
023 A-10/C/IS	Bi-Directional Mobile Phone Interactions for Enhancing Education & Commerce	Louisiana State University And A&M College - Baton Rouge (Department of Information Systems & Decision Sciences)	Jamison M. Day		
	New Request		Contain Confidential/Proprietary Information? No	1	66,125
				2	52,625
				3	36,625
				TOTAL	155,375
024 A-10/EAR	Probabilistic Characterization of Cycling-Induced Sediment-Water Interface in Fine-Grained Streams	Louisiana State University And A&M College - Baton Rouge (Department of Civil and Environmental Engineering)	Zhi-Qiang Deng		
	New Request		Contain Confidential/Proprietary Information? No	1	47,329
				2	44,498
				3	42,434
				TOTAL	134,261

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
025 A-10/BS	Climate Change and Disease Transmission: Shifts in Host-Pathogen Ranges	Louisiana State University And A&M College - Baton Rouge (Department of Biological Sciences)	Bret Elderd James Reilly		
	New Request		Contain Confidential/Proprietary Information? No	1	77,103
				2	54,836
				3	55,605
				TOTAL	187,544
026 A-10/BS	Mitochondrial Dysfunction and Renal Damage in Metabolic Syndrome	Louisiana State University And A&M College - Baton Rouge (Dept. of Comparative Biomedical Sciences)	Joseph Francis		
	New Request		Contain Confidential/Proprietary Information? No	1	85,000
				2	75,000
				TOTAL	160,000
027 A-10/ENG B	Bioproducts from Photosynthetic Microorganisms Native to Louisiana	Louisiana State University And A&M College - Baton Rouge (Department of Civil and Environmental Engineering)	Maria Teresa Gutierrez-Wing		
	New Request		Contain Confidential/Proprietary Information? No	1	64,481
				2	64,745
				3	67,823
				TOTAL	197,049
028 A-10/ENG B	Predictive Modeling of Construction Process Operations in Transportation Projects and Decision-Making Automation	Louisiana State University And A&M College - Baton Rouge (Dept. of Construction Management and Industrial Engr.)	Marwa Hassan		
	New Request		Contain Confidential/Proprietary Information? No	1	42,068
				2	37,746
				3	34,708
				TOTAL	114,522
029 A-10/ENG B	Sialic Acid Modified Polyamines to Prevent A-Beta Toxicity <i>In Vitro</i>	Louisiana State University And A&M College - Baton Rouge (Department of Chemical Engineering)	James Henry		
	New Request		Contain Confidential/Proprietary Information? No	1	55,624
				2	54,379
				3	53,174
				TOTAL	163,177
030 A-10/EAR	Applying Eddy Flux Methods to Evaporation Estimations in Louisiana	Louisiana State University And A&M College - Baton Rouge (Department of Environmental Sciences)	April Hiscox Robert V. Rohli (Co-PI/PD) Ron Sheffield (Other Investigator) Ernest L. Clawson (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	76,098
				2	52,136
				3	49,238
				TOTAL	177,472

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested		
031 A-10/ENG B	Improving Patient Safety Using Lean and Safety Principles	Louisiana State University And A&M College - Baton Rouge (Dept. of Construction Management & Industrial Engr.)	Laura H. Ikuma Isabelina Nahmens (Co-PI/PD) Craig M. Harvey (Other Investigator)				
				New Request	Contain Confidential/Proprietary Information? No	1	52,340
						2	21,585
					TOTAL		73,925
032 A-10/EAR	Role of Type Three Secretion Systems in Vibrio Colonization of Oysters	Louisiana State University And A&M College - Baton Rouge (Department of Environmental Sciences)	Crystal N. Johnson				
				New Request	Contain Confidential/Proprietary Information? No	1	65,233
						2	61,441
						3	57,684
	TOTAL		184,358				
033 A-10/ENG B	Characterization of Foam Flow for Deep-Water and Deep-Well Underbalanced Drilling Operations	Louisiana State University And A&M College - Baton Rouge (Department of Petroleum Engineering)	Seung I. Kam				
				New Request	Contain Confidential/Proprietary Information? No	1	29,471
						2	29,471
						3	29,471
	TOTAL		88,413				
034 A-10/BS	Systems Modeling of Pollen Tube Growth in Arabidopsis	Louisiana State University And A&M College - Baton Rouge (Department of Biological Sciences)	Naohiro Kato				
				New Request	Contain Confidential/Proprietary Information? No	1	53,169
						2	52,169
						3	51,169
	TOTAL		156,507				
035 A-10/HEA	Quantifying Effects of Age and Gender on Vocal Fold Vibration by Using High-Speed Digital Imaging and Phonovibrogram	Louisiana State University And A&M College - Baton Rouge (Department of Communication Sciences and Disorders)	Melda Kunduk				
				New Request	Contain Confidential/Proprietary Information? No	1	52,770
						2	38,650
						3	27,325
	TOTAL		118,745				
036 A-10/EAR	Mercury Assessment and Accumulation in Food Webs and Sediments Near the Mouth of the Mississippi River	Louisiana State University And A&M College - Baton Rouge (Department of Oceanography & Coastal Sciences)	Charles W. Lindau				
				New Request	Contain Confidential/Proprietary Information? No	1	47,000
						2	51,170
						3	42,118
	TOTAL		140,288				

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested		
037 A-10/C/IS	Assessing Retail Flood Hazard Resilience - Towards a Cost-Effective Disaster Recovery in New Orleans	Louisiana State University And A&M College - Baton Rouge (School of Human Ecology)	Chuanlan Liu; Fahui Wang (Other Investigator); Ye-Sho Chen (Other Investigator); Lei Wang (Other Investigator) William Black (Other Investigator)				
					Contain Confidential/Proprietary Information? No	1	70,492
						2	69,892
				TOTAL	140,384		
038 A-10/BS	Function Mechanism of RNAi Directed Viral Immunity in <i>C. elegans</i>	Louisiana State University And A&M College - Baton Rouge (Department of Biological Sciences)	Rui (Ray) Lu				
					Contain Confidential/Proprietary Information? No	1	53,036
						2	49,036
						3	47,661
				TOTAL	149,733		
039 A-10/BS	NMR Structural Studies of O-Linked- β -N-Acetylglucosamine Modified Proteins	Louisiana State University And A&M College - Baton Rouge (Department of Chemistry)	Megan A. Macnaughtan				
					Contain Confidential/Proprietary Information? No	1	47,985
						2	48,003
						3	48,256
				TOTAL	144,244		
040 A-10/EAR	Remobilisation and Bioaccumulation of ^{210}Po in the Gulf of Mexico Hypoxia	Louisiana State University And A&M College - Baton Rouge (Department of Oceanography and Coastal Sciences)	Kanchan Maiti				
					Contain Confidential/Proprietary Information? No	1	69,135
						2	79,525
				TOTAL	148,660		
041 A-10/ENG B	Direct Numeric Simulation of Feed-Back Control in Fluid Systems with Non-Linear Damping	Louisiana State University And A&M College - Baton Rouge (Department of Mechanical Engineering)	Michael James Martin				
					Contain Confidential/Proprietary Information? No	1	46,958
						2	46,701
						3	46,483
				TOTAL	140,142		
042 A-10/HEA	Dengue Virus Transmission Dynamics are Characterized by Competitive Interactions Between Different, Naturally Coincident Serotypes and Subtypes of Denque Virus	Louisiana State University And A&M College - Baton Rouge (Department Pathobiological Sciences)	Christopher N. Mores				
					Contain Confidential/Proprietary Information? No	1	62,500
						2	65,000
				TOTAL	127,500		

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
043 A-10/BS	Role of Brain Inflammatory Molecule in the Development of Hypertension	Louisiana State University And A&M College - Baton Rouge (Department of Veterinary Clinical Sciences)	Romain Pariaut Joseph Francis (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	75,000
				2	65,000
				3	60,000
				TOTAL	200,000
044 A-10/HEA	Neutrophil Response in Insulin Resistant Equine Endothelial Cell Culture	Louisiana State University And A&M College - Baton Rouge (Department of Veterinary Clinical Sciences)	Laura M. Riggs Changaram S. Venugopal (Other Investigator) Susan C. Eades (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	58,313
				2	47,113
				TOTAL	105,426
045 A-10/ENG B	Assessment of Sustainable Building Technologies	Louisiana State University And A&M College - Baton Rouge (Department of Construction Management & Industrial Engr.)	Emerald M. Roider Carol J. Friedland (Co-PI/PD) Isabelina Nahmens (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information?? No	1	71,611
				2	67,068
				3	43,354
				TOTAL	182,033
046 A-10/ENG B	Katrina/Gustav: Emergency Evacuation Plan and Traffic Control During Disasters	Louisiana State University And A&M College - Baton Rouge (Department of Construction Management & Industrial Engr.)	Bhaba R. Sarker Pius E. Egbelu (Co-PI/PD) T. Warren Liao (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	64,795
				2	66,486
				3	68,535
				TOTAL	199,816
047 A-10/ENG B	Tomographic Imaging of Combustion Zones: In-Situ Measurement of Temperature and Species Concentrations Using Tunable Diode Lasers	Louisiana State University And A&M College - Baton Rouge (Department of Mechanical Engineering)	Ingmar Michael Schoegl		
	New Request		Contain Confidential/Proprietary Information? No	1	46,455
				2	48,053
				3	49,715
				TOTAL	144,223
048 A-10/ENG B	Development of Sustainable Rehabilitation Layer on Existing Concrete Layer	Louisiana State University And A&M College - Baton Rouge (Department of Civil and Environmental Engineering)	Hak-Chul Shin		
	New Request		Contain Confidential/Proprietary Information? No	1	51,158
				2	49,683
				3	48,229
				TOTAL	149,070

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
049 A-10/BS	Excluding Arsenic from Plants Via Altered Phosphate Transporter Expression	Louisiana State University And A&M College - Baton Rouge (Department of Biological Sciences)	Aaron P. Smith		
	New Request		Contain Confidential/Proprietary Information? No	1	51,398
				2	51,290
				3	51,224
				TOTAL	153,912
050 A-10/EAR	Modeling the Transport of Cohesive Sediments	Louisiana State University And A&M College - Baton Rouge (Department of Civil and Environmental Engineering)	Heather D. Smith		
	New Request		Contain Confidential/Proprietary Information? No	1	53,130
				2	50,729
				3	54,360
				TOTAL	158,219
051 A-10/ENG B	Modeling of Multi-Stranded Hydraulic Fracture Propagation in Tight Formations	Louisiana State University And A&M College - Baton Rouge (Department of Petroleum Engineering)	Arash Dahi Taleghani		
	New Request		Contain Confidential/Proprietary Information? No	1	44,979
				2	43,241
				TOTAL	88,220
052 A-10/EAR	Mapping Coastal Erosion and Storm Surge Hazards on the Western Louisiana Coast	Louisiana State University And A&M College - Baton Rouge (Department of Geography and Anthropology)	Lei Wang Barry Keim (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	51,250
				2	51,050
				TOTAL	102,300
053 A-10/ENG B	New Methods of Incorporating Photonic Crystals Into Solar Cells for Enhanced Light Harvesting	Louisiana State University And A&M College - Baton Rouge (Department of Mechanical Engineering)	Ying Wang		
	New Request		Contain Confidential/Proprietary Information? No	1	50,958
				2	49,958
				3	48,958
				TOTAL	149,874
054 A-10/BS	Structural and Functional Study of Prolyl Endopeptidase	Louisiana State University Health Sciences Center - New Orleans (Department of Biochemistry and Molecular Biology)	Thang K. Chiu		
	New Request		Contain Confidential/Proprietary Information? No	1	75,000
				2	75,000
				3	50,000
				TOTAL	200,000

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
055 A-10/BS	Epigenetic Alterations in Uterine Leiomyoma	Louisiana State University Health Sciences Center - New Orleans (Department of Genetics)	Judy S. Crabtree		
	New Request		Contain Confidential/Proprietary Information? No	1	60,000
				2	60,000
				3	60,000
				TOTAL	180,000
056 A-10/BS	HPV-16 E6/E7 Oncoproteins and Focal Adhesion Kinase (FAK)	Louisiana State University Health Sciences Center - New Orleans (Department of Biochemistry and Molecular Biology)	KyungWon Huh		
	New Request		Contain Confidential/Proprietary Information? No	1	44,431
				2	45,711
				3	50,029
				TOTAL	140,171
057 A-10/HEA	Tracking Transcriptome Changes During Neural Circuit Development in the Songbird Brain by RNA-Seq	Louisiana State University Health Sciences Center - New Orleans (Neuroscience Center of Excellence)	XiaoChing Li		
	New Request		Contain Confidential/Proprietary Information? No	1	60,573
				2	69,573
				3	63,573
				TOTAL	193,719
058 A-10/HEA	Epigenetic Regulation of the HSV-1 Genome During Reactivation	Louisiana State University Health Sciences Center - New Orleans (Department of Ophthalmology and Genetics)	Donna Neumann		
	New Request		Contain Confidential/Proprietary Information? No	1	60,000
				2	69,999
				3	69,999
				TOTAL	199,998
059 A-10/BS	The Role of Histone Deacetylase 6 (HDAC6) in Age Related Neurodegeneration	Louisiana State University Health Sciences Center - New Orleans (Department of Genetics)	Udai Pandey		
	New Request		Contain Confidential/Proprietary Information? No	1	53,672
				2	55,978
				3	58,672
				TOTAL	168,322
060 A-10/BS	Gamma Delta T Cells are Integral Mediators of Interstitial Pulmonary Fibrosis	Louisiana State University Health Sciences Center - New Orleans (Department of Genetics)	Derek Pociask		
	New Request		Contain Confidential/Proprietary Information? No	1	50,000
				2	50,000
				3	50,000
				TOTAL	150,000

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
061 A-10/HEA	Multidimensional Data Integration and Display in Deep Brain Stimulation	Louisiana State University Health Sciences Center - New Orleans (Department of Neurosurgery)	Erich O. Richter Hilary Thompson (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	54,026
				2	52,536
				3	52,536
				TOTAL	159,098
062 A-10/HEA	Role of Interleukin-23 in Host Defense Against <i>P. carinii</i>	Louisiana State University Health Sciences Center - New Orleans (Department of Medicine)	Xiaowen Rudner Judd E. Shellito (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	60,000
				2	60,000
				3	60,000
				TOTAL	180,000
063 A-10/HEA	Developmental Hierarchy Guiding Development of Photosensory Neurons	Louisiana State University Health Sciences Center - New Orleans (Department of Anatomy and Cell Biology)	Judith M. Venuti		
	New Request		Contain Confidential/Proprietary Information? No	1	76,608
				2	62,983
				3	59,983
				TOTAL	199,574
064 A-10/HEA	A Transgenic-Based Approach to Study the Role of Ubiquitination in Alzheimer's Disease	Louisiana State University Health Sciences Center - New Orleans (Neuroscience Center of Excellence)	Chunlai Wu		
	New Request		Contain Confidential/Proprietary Information? No	1	55,000
				2	55,000
				3	60,000
				TOTAL	170,000
065 A-10/BS	Mechanism of Cadmium-Induced Neuronal Apoptosis	Louisiana State University Health Sciences Center - Shreveport (Department of Biochemistry and Molecular Biology)	Shile Huang Baoshan Xu (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	70,000
				2	70,000
				3	60,000
				TOTAL	200,000
066 A-10/BS	Aging Effects on Inherent Dopamine Compensation Mechanisms in Parkinson's Disease	Louisiana State University Health Sciences Center - Shreveport (Department of Pharmacology, Toxicology and Neuroscience)	Michael F. Salvatore		
	New Request		Contain Confidential/Proprietary Information? No	1	74,188
				2	74,188
				TOTAL	148,376

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
067 A-10/BS	p53 and Mitochondrial Translocation in Tissue Injury	Louisiana State University Health Sciences Center - Shreveport (Department of Pharmacology)	Yunfeng Zhao Terry Oberley (Co-PI/PD) Runhua Shi (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information?? No	1	64,740
				2	63,640
					62,820
				TOTAL	191,200
068 A-10/CHE	Probing Roles of Reactive Oxygen Species in Carcinogenesis Using Novel Photonic Nanosensors	Louisiana State University And A&M College - Shreveport (Department of Chemistry and Physics)	Kui Chen Brian A. Salvatore (Other Investigator) Shile Huang (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information?? No	1	40,365
				2	40,365
				3	39,096
				TOTAL	119,826
069 A-10/BS	Effects of Nutrient Fertilization on Nutritional and Defensive Mangrove Leaf Chemistry and on Herbivore Feeding Behavior in North and Central American...	Louisiana State University And A&M College - Shreveport (Department of Biological Sciences)	Amy Anne Erickson Stephen W. Banks (Consultant) Elahe Mahdavian (Consultant)		
	New Request		Contain Confidential/Proprietary Information? No	1	84,349
				2	51,103
				3	51,103
				TOTAL	186,555
070 A-10/C/IS	Wireless Sensor Networks for Environmental Monitoring	Louisiana State University And A&M College - Shreveport (Department of Computer Science)	Leslie D. Fife		
	New Request		Contain Confidential/Proprietary Information? No	1	30,000
				2	25,000
				3	25,000
				TOTAL	80,000
071 A-10/C/IS	Parallel Algebraic Multigrid Methods for Large-Scale Problems on the LONI Infrastructure and for the Next Generation of Hyper-Parallel Platforms	Louisiana Tech University (Department of Computer Science)	Abdelkader Baggag		
	New Request		Contain Confidential/Proprietary Information? No	1	59,445
				2	57,743
				3	58,364
				TOTAL	175,552
072 A-10/C/IS	Theoretical and Practical Development of Tools for the Visualization of Graphs in a Dynamic Environment	Louisiana Tech University (Department of Computer Science)	Christian A. Duncan		
	New Request		Contain Confidential/Proprietary Information? No	1	40,526
				2	51,087
				3	51,670
				TOTAL	143,283

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
073 A-10/CHE	Spectroscopic and Electrochemical Studies of the Electrodeposition of Refractory Metals and Alloys in Room Temperature Ionic Liquids	Louisiana Tech University (Department of Chemistry)	Sven Eklund		
	New Request		Contain Confidential/Proprietary Information? No	1	41,598
				2	42,040
				3	41,503
				TOTAL	125,141
074 A-10/ENG B	Early Detection of Subclinical Alzheimer Disease Using 2-D Micro-Electrophoresis Chip and Principal Component Analysis	Louisiana Tech University (Department of Biomedical Engineering)	June Feng		
	New Request		Contain Confidential/Proprietary Information? No	1	48,484
				2	48,522
				3	49,084
				TOTAL	146,090
075 A-10/ENG B	Artificial Optical Materials for Molding the Flow of Light	Louisiana Tech University (Department of Physics and Electrical Engineering)	Dentcho A. Genov		
	New Request		Contain Confidential/Proprietary Information? No	1	49,438
				2	44,391
				3	44,966
				TOTAL	138,795
076 A-10/ENG B	A Novel Method for Dielectric Characterization of Materials Using Low Cost Passive Wireless Sensor	Louisiana Tech University (Department of Civil Engineering)	Arun Jaganathan		
	New Request		Contain Confidential/Proprietary Information? No	1	58,338
				2	58,890
				3	58,848
				TOTAL	176,076
077 A-10/C/IS	DNA Image Segmentation Methods and Statistical Modeling	Louisiana Tech University (Department of Mathematics and Statistics)	Mihaela Paun Weizhong Dai (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	39,434
				2	39,310
				3	39,203
				TOTAL	117,947
078 A-10/HEA	Factors Affecting Acceptance of Augmented Reality Support Systems by Louisiana Health Care Workers	Louisiana Tech University (Department of Health Information Management)	James Phillips Carol Owens (Co-PI/PD) Paula Books (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	51,040
				2	48,640
				TOTAL	99,680

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
079 A-10/HEA	Novel Methods for Microarray Gene Expression Data Mining for Translational Bioinformatics	Louisiana Tech University (Department of Health Information Management)	Prerna Sethi David K. Mills (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	46,064
				2	46,819
				3	49,253
				TOTAL	142,136
080 A-10/ENG B	Diverging Flow Cell Electroporation to Facilitate <i>in vitro</i> Biomolecule Delivery	Louisiana Tech University (Institute for Micromanufacturing)	Shengnian Wang		
	New Request		Contain Confidential/Proprietary Information? No	1	49,561
				2	48,104
				3	48,668
				TOTAL	146,333
081 A-10/BS	Modeling the Ecological and Evolutionary Causes and Consequences of Extinctions	Louisiana Tech University (School of Biological Sciences)	Jeffrey V. Yule		
	New Request		Contain Confidential/Proprietary Information? No	1	29,609
				2	30,209
				3	30,409
				TOTAL	90,227
082 A-10/CHE	Organic Synthesis of Two Series of Amino Acid Derivatives: Neurotransmitter Analogues and Antimalarials	Loyola University New Orleans (Department of Chemistry)	J. Hoyt Meyer		
	New Request		Contain Confidential/Proprietary Information? No	1	45,992
				2	34,234
				3	16,300
				TOTAL	96,526
083 A-10/BS	Novel Roles for the Orphan Nuclear Receptor NURR1 in Arthritis	Loyola University New Orleans (Department of Biological Sciences)	Kimberlee S. Mix		
	New Request		Contain Confidential/Proprietary Information? No	1	62,630
				2	63,489
				3	66,875
				TOTAL	192,994
084 A-10/CHE	Antioxidant and Anti-Inflammatory Metabolites from <i>Coccoloba uvifera</i> (Seagrapes) and <i>Crataegus opaca</i> (Mayhaws)	McNeese State University (Department of Chemistry)	Omar Christian Mark Merchant (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	57,289
				2	54,133
				3	50,488
				TOTAL	161,910

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
085 A-10/CHE	Phytovolatilization of Hexachlorobutadiene and Other Organic Compounds by <i>Spartina Alterniflora</i> in Southwest Louisiana	McNeese State University (Department of Chemistry)	Joseph Sneddon James L. Donelson (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	56,000
				2	56,000
				3	12,000
				TOTAL	124,000
086 A-10/EAR	Assessment of Small Unmanned Aerial Vehicle (UAV) for Monitoring Impaired and Restored Barrier Islands	Nicholls State University (Department of Applied Science)	Balaji Ramachandran Gary LaFleur, Jr. (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	43,539
				2	41,039
				3	32,461
				TOTAL	117,039
087 A-10/C/IS	Object Typing by Algebraic Graph Transformation	Nicholls State University (Department of Mathematics and Computer Science)	Cong-Cong Xing		
	New Request		Contain Confidential/Proprietary Information? No	1	40,244
				2	40,244
				3	40,244
				TOTAL	120,732
088 A-10/HEA	Lifestyle Factors and the Risk of Heart Failure	Pennington Biomedical Research Center (Department of Population Science)	Gang Hu Jaakko Tuomilehto (Co-PI/PD) Peter T. Katzmarzyk (Other Investigator) William D. Johnson (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	64,394
				2	64,394
				3	64,394
				TOTAL	193,182
089 A-10/HEA	Improving Access to Appropriate Health Care Among Louisiana Farm Families	Southeastern Louisiana University (School of Nursing)	Ann K. Carruth		
	New Request		Contain Confidential/Proprietary Information? No	1	94,321
				2	68,821
				TOTAL	163,142
090 A-10/C/IS	Discovering Socially Valuable Trends by Extracting Personal Experiences from the Web	Southeastern Louisiana University (Department of Computer Science and Industrial Technology)	Aron Culotta		
	New Request		Contain Confidential/Proprietary Information? No	1	51,805
				2	47,805
				3	47,805
				TOTAL	147,415

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
091 A-10/CHE	Synthesis of N,N-linked Biazoles from their Corresponding Azoles through Direct N-N bond Formation	Southeastern Louisiana University (Department of Chemistry and Physics)	Jean Fotie Thomas Sommerfeld (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1 2 3	44,585 43,785 43,785
				TOTAL	132,155
092 A-10/C/IS	Aggregating User Profiles from Multiple Social Network Memberships	Southeastern Louisiana University (Department of Computer Science and Industrial Technology)	Troy Kammerdiener		
	New Request		Contain Confidential/Proprietary Information?? No	1 2 3	30,697 28,447 28,447
				TOTAL	87,591
093 A-10/ENG B	Formation Control of a Group of Car-Like Mobile Robots	Southeastern Louisiana University (Department of Computer Science and Industrial Technology)	Ho-Hoon Lee Shunmugham R. Pandian (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1 2	59,643 58,143
				TOTAL	117,786
094 A-10/CHE	Exploiting Reactions of Phosphorus Halogenides with Acetylides for Novel Compounds and Materials	Southeastern Louisiana University (Department of Chemistry and Physics)	Yingchun Li		
	New Request		Contain Confidential/Proprietary Information? No	1 2 3	43,785 43,785 43,785
				TOTAL	131,355
095 A-10/CHE	Sonochemical Synthesis of Graphene Nonosheets and Other Novel Nanostructures	Southeastern Louisiana University (Department of Chemistry and Physics)	Zhengrong Li		
	New Request		Contain Confidential/Proprietary Information? No	1 2 3	39,998 37,648 37,148
				TOTAL	114,794
096 A-10/ENG B	Performance and Lifecycle of Solar Power Systems	Southeastern Louisiana University (Department of Computer Science and Industrial Technology)	Junkun Ma Patrick McDowell (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1 2 3	66,279 54,029 49,279
				TOTAL	169,587

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
097 A-10/EAR	Evaluating the Potential Use and Impacts of Nanomaterials for Hazardous Sites Clean Up Operations	Southeastern Louisiana University (Department of Computer Science and Industrial Technology)	Ephraim A. Massawe		
	New Request		Contain Confidential/Proprietary Information? No	1	56,762
				2	50,887
				3	49,387
				TOTAL	157,036
098 A-10/ENG B	Solidification, Heat Transfer and Material Properties Characterization in Thin Strip Casting of Aluminum Alloys	Southeastern Louisiana University (Department of Computer Science and Industrial Technology)	Rana Mitra Roy J. Issa (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	64,097
				2	31,806
				3	31,806
				TOTAL	127,709
099 A-10/BS	Microbial Diversity of Cadaver Decomposition Islands	Southeastern Louisiana University (Department of Biological Sciences)	Erin J. Watson Gary T. Howard (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	57,936
				2	58,186
				3	55,416
				TOTAL	171,538
100 A-10/HEA	A Participatory Ergonomics Approach to Reduce Injuries for Librarians	Southeastern Louisiana University (Department of Computer Science and Industrial Technology)	Lu Yuan		
	New Request		Contain Confidential/Proprietary Information? No	1	50,274
				2	50,274
				TOTAL	100,548
101 A-10/HEA	Applying Computational Approaches to Model Protein-Substrate Interactions in the Lipoxygenase Family	Southern University and A&M College - Baton Rouge (Department of Computer Science)	Shuju Bai		
	New Request		Contain Confidential/Proprietary Information? No	1	65,376
				2	66,376
				3	66,376
				TOTAL	198,128
102 A-10/C/IS	Development of Heuristic Systems to Solve NP-Hard Optimization Problems	Southern University and A&M College - Baton Rouge (Department of Computer Science)	Nigel Gwee		
	New Request		Contain Confidential/Proprietary Information? No	1	48,932
				2	48,932
				3	48,932
				TOTAL	146,796

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested		
103 A-10/ENG B	Research on Novel Composites: Syntactic Foams and Cements; Using Experimentation, Parallel Molecular Dynamics Simulation, and Visualization...	Southern University and A&M College - Baton Rouge (Department of Mechanical Engineering)	Amitava Jana Sanjay Kodiyalam (Other Investigator) Basab Mukerji (Other Investigator)				
				New Request	Contain Confidential/Proprietary Information? No	1	56,940
						2	56,940
						3	56,940
			TOTAL	170,820			
104 A-10/C/IS	Investigating the Risk Factors and Ascertain Their Weights in Software Development Life Cycles	Southern University and A&M College - Baton Rouge (Department of Computer Science)	Osman Kandara				
				New Request	Contain Confidential/Proprietary Information? No	1	51,150
						2	51,150
						3	51,150
			TOTAL	153,450			
105 A-10/C/IS	Design and Implementation of a Server Side Email Spam Blocker	Southern University and A&M College - Baton Rouge (Department of Computer Science)	Mathieu Kokoly Kourouma				
				New Request	Contain Confidential/Proprietary Information? No	1	52,395
						2	52,395
						3	52,395
			TOTAL	157,185			
106 A-10/EAR	Bioelectricity and Biohydrogen Generation by Microbial Fuel Cells and for Treatment at Wastewater Facility at SUBR	Southern University and A&M College - Baton Rouge (Department of Biology)	Srivatcha Naragoni Oswald D'Auvergne (Co-PI/PD) Pushpa J Samkutty (Other Investigator) Rambabu Bobba (Other Investigator)				
				New Request	Contain Confidential/Proprietary Information? No	1	69,120
						2	69,120
			TOTAL	138,240			
107 A-10/ENG B	Experimental Study and Numerical Simulation of Advanced Hybrid Joints Bonded with Shape Memory Alloy (SMA) and Shape Memory Polymer (SMP)	Southern University and A&M College - Baton Rouge (Department of Mechanical Engineering)	Zhenyu Ouyang Guoqiang Li (Co-PI/PD)				
				New Request	Contain Confidential/Proprietary Information? No	1	45,000
						2	40,000
						3	35,000
			TOTAL	120,000			
108 A-10/C/IS	Wireless Sensor Network Approach for Monitoring Home Security Systems	Southern University and A&M College - Baton Rouge (Department of Computer Science)	Md Abus Salam Ebrahim Khosravi (Co-PI/PD) P.K. Bhattacharya (Other Investigator)				
				New Request	Contain Confidential/Proprietary Information? No	1	58,709
						2	54,743
						3	54,743
			TOTAL	168,195			

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested		
109 A-10/BS	Synergistic Effects of Two Environmental Contaminants on Cellular and Molecular Reproductive Responses <i>in vivo</i> and <i>in vitro</i>	Southern University and A&M College - Baton Rouge (Department of Biological Sciences)	Fitzgerald Spencer Eduardo Martinez-Ceballos (Co-PI/PD)				
				New Request	Contain Confidential/Proprietary Information? No	1	66,795
						2	62,795
						3	58,795
				TOTAL	188,385		
110 A-10/C/IS	An Assessment of Multimedia Instruction Techniques on STEM Learning Outcomes	Southern University and A&M College - Baton Rouge (Department of Management Information Systems)	Carlos A. Thomas Victor W. Mbarika (Co-PI/PD)				
				New Request	Contain Confidential/Proprietary Information? No	1	65,181
						2	61,378
						3	58,003
				TOTAL	184,562		
111 A-10/C/IS	Algorithms for Applied Biological Simulation and Analysis	Southern University and A&M College - Baton Rouge (Department of Computer Science)	Rachel Vincent - Finley				
				New Request	Contain Confidential/Proprietary Information? No	1	45,708
						2	45,708
112 A-10/ENG B	First Principles Simulation and Synthesis A Novel Thermal Barrier Coating and A High Efficient Transition Metal Nanoparticle Based Catalyst	Southern University and A&M College - Baton Rouge (Department of Computer Science)	Shizhong Yang				
				New Request	Contain Confidential/Proprietary Information? No	1	56,000
						2	53,000
						3	53,000
				TOTAL	162,000		
113 A-10/BS	Molecular Regulation of Cortical Synapse Development	Tulane University (Department of Cell and Molecular Biology)	Benjamin Hall				
				New Request	Contain Confidential/Proprietary Information? No	1	60,416
						2	56,251
						3	51,595
				TOTAL	168,262		
114 A-10/ENG B	Magneto-Electric Couplings in Multiferroic Films and Heteroepitaxial-Vertical-Nanocomposites for Materials Applications	Tulane University (Department of Physics and Engineering Physics)	Dae Ho Kim				
				New Request	Contain Confidential/Proprietary Information? No	1	55,625
						2	56,929
						3	56,241
				TOTAL	168,795		

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
115 A-10/ENG B	The Role of Surfactants in the Electrochemical Synthesis of Anisotropic Crystalline Particles	Tulane University (Department of Chemical & Biomolecular Engineering)	Noshir S. Pesika		
	New Request		Contain Confidential/Proprietary Information? No	1	64,166
				2	64,501
				3	64,845
				TOTAL	193,512
116 A-10/EAR	Compensational Stacking of Sedimentary Deposits in Underfilled and Overfilled Basins	Tulane University (Department of Earth and Environmental Sciences)	Kyle Straub		
	New Request		Contain Confidential/Proprietary Information? No	1	79,205
				2	69,455
				3	48,194
				TOTAL	196,854
117 A-10/BS	Human Cationic Antimicrobial Peptide 18/LL-37: A New Biomarker for Ovarian Cancer	Tulane University Health Sciences Center (Department of Microbiology)	Aline M. Betancourt		
	New Request		Contain Confidential/Proprietary Information? No	1	50,000
				2	50,000
				3	50,000
				TOTAL	150,000
118 A-10/HEA	Targeting Breast Cancer Stem Cells to Curb Metastasis: Search for Novel Therapeutic Intervention Approaches	Tulane University Health Sciences Center (Department of Pharmacology)	Geetika Chakravarty		
	New Request		Contain Confidential/Proprietary Information? No	1	75,857
				2	61,079
				3	61,728
				TOTAL	198,664
119 A-10/BS	Biomarkers for Acute and Latent Tuberculosis and for Co-infection with AIDS	Tulane University Health Sciences Center (Department of Microbiology and Immunology)	Deepak Kaushal Andrew A. Lackner (Co-PI/PD) Smriti Mehra (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	67,936
				2	68,226
				3	63,838
				TOTAL	200,000
120 A-10/BS	Effects of Positive Inotropic Agents on Genome-Wide Gene Expression in Cultured Cardiomyocytes	Tulane University Health Sciences Center (Department of Anesthesiology)	Henry Liu Marilyn M. Li (Co-PI/PD) John D. Pigott (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	60,000
				2	60,000
				TOTAL	120,000

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
121 A-10/HEA	Louisiana Anesthesia Patient Safety Foundation: Public Reporting of Perioperative Outcomes	Tulane University Health Sciences Center (Department of Anesthesiology)	Francis A. Rosinia Larry S. Webber (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	33,000
				2	31,000
				3	31,000
				TOTAL	95,000
122 A-10/EAR	Growth Kinetics and Light Dynamics in Multi-species Micro-algal Cultures Raised on Eutrophic Waters from the Northern Gulf of Mexico	University of Louisiana at Lafayette (Department of Renewable Resources)	Barbara C. Benson		
	New Request		Contain Confidential/Proprietary Information? No	1	46,301
				2	43,006
				3	41,481
				TOTAL	130,788
123 A-10/ENG B	Thermal Property Detection in Reactive Composite Systems	University of Louisiana at Lafayette (Department of Chemical Engineering)	William M. Chirdon		
	New Request		Contain Confidential/Proprietary Information? No	1	36,040
				2	53,188
				3	41,671
				TOTAL	130,899
124 A-10/HEA	Understanding the Neutralizing Antibody Responses During Human Immunodeficiency Virus Infection	University of Louisiana at Lafayette (Department of Mathematics)	Stanca Mihaela Ciupe		
	New Request		Contain Confidential/Proprietary Information? No	1	31,464
				2	31,464
				3	31,464
				TOTAL	94,392
125 A-10/BS	Integrating Ecological and Evolutionary Theory to Understand the Epidemiology of Rapidly Evolving Viral Pathogens	University of Louisiana at Lafayette (Department of Biology)	Scott M. Duke-Sylvester		
	New Request		Contain Confidential/Proprietary Information? No	1	42,975
				2	31,708
				3	26,209
				TOTAL	100,892
126 A-10/ENG B	An Experimental Investigation of Hydroforming Microchannels in Sheet Metal to Enhance PEM Fuel Cell Production	University of Louisiana at Lafayette (Department of Mechanical Engineering)	William J. Emblom		
	New Request		Contain Confidential/Proprietary Information? No	1	56,323
				2	44,944
				3	44,036
				TOTAL	145,303

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
127 A-10/ENG B	Developing Autonomous Fault Tolerant Control Technology for Complex Systems	University of Louisiana at Lafayette (Department of Electrical and Computer Engineering)	Afef Fekih		
	New Request		Contain Confidential/Proprietary Information? No	1	57,149
				2	57,214
				3	57,804
				TOTAL	172,167
128 A-10/ENG B	Development and Evaluation of Nano-Scale Mesoporous Sorbents (NSMS) for Space Water Recovery Systems (WRS)	University of Louisiana at Lafayette (Department of Civil Engineering)	Daniel Dianchen Gang		
	New Request		Contain Confidential/Proprietary Information? No	1	55,743
				2	52,428
				3	49,461
				TOTAL	157,632
129 A-10/C/IS	Information Systems in Reverse Logistics	University of Louisiana at Lafayette (Department of Business System Analysis and Technology)	Hsiu-Yueh (Sonya) Hsu		
	New Request		Contain Confidential/Proprietary Information? No	1	62,064
				2	56,328
				TOTAL	118,392
130 A-10/ENG B	Process Development of Fiber Reinforced High Temperature Polymer NanoComposites	University of Louisiana at Lafayette (Department of Industrial Technology)	Ahmed Khattab		
	New Request		Contain Confidential/Proprietary Information? No	1	68,274
				2	77,183
				3	53,958
				TOTAL	199,415
131 A-10/ENG B	Development of Advanced Modeling Methodology for Creating Concept Finite Element Model for Vehicle Architecture	University of Louisiana at Lafayette (Department of Mechanical Engineering)	Yucheng Liu		
	New Request		Contain Confidential/Proprietary Information? No	1	48,350
				2	43,043
				3	43,668
				TOTAL	135,061
132 A-10/CHE	Polynuclear Cu(II) Complexes Catalyzing the Cleavage of DNA and 2-Hydroxypropyl-4-Nitrophenyl phosphate Diester (HPNPP)	University of Louisiana at Lafayette (Department of Chemistry)	Salah S. Massoud		
	New Request		Contain Confidential/Proprietary Information? No	1	62,256
				2	61,133
				3	60,995
				TOTAL	184,384

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
133 A-10/CHE	Development of Ruthenium -based Anticancer Drugs with Emphasis on the Strategy to Overcome Drug Resistance	University of Louisiana at Lafayette (Department of Chemistry)	Radhey S. Srivastava		
	New Request		Contain Confidential/Proprietary Information? No	1	99,979
				2	98,599
				TOTAL	198,578
134 A-10/BS	Plant Biomass Production: Gene Discovery and Ecological Consequences	University of Louisiana at Lafayette (Department of Renewable Resources)	Yi-Hong Wang Durga D. Poudel (Other Investigator) Alan DeRamus (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	50,821
				2	63,009
				3	50,723
				TOTAL	164,553
135 A-10/C/IS	GPS-Free Autonomous Robotic Exploration	University of Louisiana at Lafayette (Center for Advanced Computer Studies)	Hongyi Wu		
	New Request		Contain Confidential/Proprietary Information? No	1	21,000
				2	21,000
				3	21,000
				TOTAL	63,000
136 A-10/CHE	Function of A Hypothetical Protein Slr0110 of <i>Synechocystis</i> sp. PCC 6803 in Light and Glucose-Induced Signal Transduction	University of Louisiana at Lafayette (Department of Chemistry)	Wu Xu		
	New Request		Contain Confidential/Proprietary Information? No	1	53,614
				2	49,025
				3	50,498
				TOTAL	153,137
137 A-10/CHE	Development of a Chemical Platform for The Study of Biological Functions and Antiparasitic Potentials of Arginase	University of Louisiana at Lafayette (Department of Chemistry)	Fengtian Xue		
	New Request		Contain Confidential/Proprietary Information? No	1	51,653
				2	62,109
				3	68,363
				TOTAL	182,125
138 A-10/BS	Net Carbon Sequestration in a Bottomland Hardwood Forest	University of Louisiana at Monroe (Department of Biology)	Joydeep Bhattacharjee Bonniface Mills (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	80,090
				2	62,070
				TOTAL	142,160

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
139 A-10/HEA	Thyroid Hormone and Its Nuclear Receptor Use Epigenetics to Regulate Viral Gene Expression and Replication During Latency/Reactivation	University of Louisiana at Monroe (Department of Basic Pharmaceutical Sciences)	S. Victor Hsia		
	New Request		Contain Confidential/Proprietary Information? No	1	52,075
				2	37,920
				3	38,670
				TOTAL	128,665
140 A-10/BS	Effects of Chronic Hypoglycemia on Renal Function	University of Louisiana at Monroe (Department of Basic Pharmaceutical Sciences)	Keith E. Jackson		
	New Request		Contain Confidential/Proprietary Information? No	1	44,626
				2	40,329
				3	35,038
				TOTAL	119,993
141 A-10/HEA	Amyloid Beta Faulty Clearance and Alzheimer's Disease	University of Louisiana at Monroe (Department of Basic Pharmaceutical Sciences)	Amal Khalil Kaddoumi Karen Briski (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	50,369
				2	40,763
				3	40,083
				TOTAL	131,215
142 A-10/HEA	Evaluating the Health Condition, Needs, Health Literacy Level and Resources Among Northeastern Louisiana Elders	University of Louisiana at Monroe (Department of Gerontology, Sociology, and Political Sciences)	Karen Kopera-Frye		
	New Request		Contain Confidential/Proprietary Information?? No	1	64,853
				2	69,000
				3	61,144
				TOTAL	194,997
143 A-10/BS	Cancer Stem Cells and Drug Resistance in Breast Cancer	University of Louisiana at Monroe (Department of Basic Pharmaceutical Sciences)	Yong-Yu Liu Girish V. Shah (Co-PI/PD) Paul W. Sylvester (Other Investigator)		
	New Request		Contain Confidential/Proprietary Information? No	1	63,246
				2	63,246
				TOTAL	126,492
144 A-10/BS	The Contribution of Hydrogen Bonding on Ionizable Groups in Proteins with Highly Perturbed Acid Ionization Constants	University of Louisiana at Monroe (Department of Chemistry)	Richard L. Thurlkill		
	New Request		Contain Confidential/Proprietary Information? No	1	48,370
				2	36,433
				3	31,633
				TOTAL	116,436

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested
145 A-10/C/IS	Morphing the Gameboard: A Novel Detection and Defense Framework Against Modern Malicious Software	University of New Orleans (Department of Computer Science)	Daniel Bilar		
	New Request		Contain Confidential/Proprietary Information? No	1	30,384
				2	62,627
				3	65,292
				TOTAL	158,303
146 A-10/CHE	Rational Design of Heteroepitaxial Magnetoelectric Nanostructures	University of New Orleans (Department of Chemistry)	Gabriel Caruntu		
	New Request		Contain Confidential/Proprietary Information? No	1	57,266
				2	56,344
				TOTAL	113,610
147 A-10/ENG B	Numerical Analysis on Performance of Impulse Turbine Under Bi-directional and Random Inlet Flow Conditions for Wave Energy Conversion Application	University of New Orleans (Energy Conversion and Conservation Center)	Thirumalisai Shanmugam Dhanasekaran		
	New Request		Contain Confidential/Proprietary Information? No	1	24,945
				2	25,111
				3	25,111
				TOTAL	75,167
148 A-10/EAR	Uplift and Incision of the Ethiopian Plateau: Integration of Quantitative Geomorphology, Paleogeometry and Thermochronology	University of New Orleans (Department of Earth & Environmental Sciences)	M. Royhan Gani Nahid DS Gani (Co-PI/PD)		
	New Request		Contain Confidential/Proprietary Information? No	1	63,366
				2	60,966
				3	24,535
				TOTAL	148,867
149 A-10/ENG B	Improving Thermoelectric Generator Performance via Structural Optimization	University of New Orleans (Department of Mechanical Engineering)	Paul D. Herrington		
	New Request		Contain Confidential/Proprietary Information?? No	1	71,349
				2	56,401
				3	49,465
				TOTAL	177,215
150 A-10/CHE	Accurate Computational Methods for Pharmaceutical Drug Discovery	University of New Orleans (Department of Chemistry)	David L. Mobley		
	New Request		Contain Confidential/Proprietary Information? No	1	61,250
				2	61,438
				3	61,438
				TOTAL	184,126

Proposal #	Title	Institution/Department	Principal Investigator	Duration (Yrs)	BoRSF Money Requested	
151 A-10/CHE	Low Dimensional Magnetic Semiconductors: Understanding and Controlling Spin-Polarized Electron Transport in Mixed Metal Chalcogenides	University of New Orleans (Department of Chemistry)	Pierre Ferdinand Poudeu Poudeu			
				New Request	Contain Confidential/Proprietary Information? No	1 64,516
						2 60,111
						3 59,655
			TOTAL	184,282		
152 A-10/BS	Regulation of Transcription by Co-repressors in Plants During Abiotic Stress	University of New Orleans (Department of Biological Sciences)	Vaniyambadi V. Sridhar			
				New Request	Contain Confidential/Proprietary Information? No	1 48,750
						2 50,500
						3 52,273
			TOTAL	151,523		
153 A-10/BS	Automated Refinement of Near-Native Membrane-Protein Structure Models	University of New Orleans (Department of Computer Science)	Christopher M. Summa			
				New Request	Contain Confidential/Proprietary Information? No	1 40,533
						2 40,647
						3 40,647
			TOTAL	121,827		
154 A-10/C/IS	Mapping Algorithms for High-Throughput Sequencing and Discovery of Exon Junctions	University of New Orleans (Department of Computer Science)	Christopher M. Taylor			
				New Request	Contain Confidential/Proprietary Information? No	1 27,000
						2 42,148
						3 42,148
			TOTAL	111,296		

Total No. of Proposals Submitted - 154

Total First-Year Funds Requested \$8,499,214

Total Funds Requested \$22,731,377

Total First- Year Funds Available \$1,350,000