

REPORT OF THE FINAL PANEL
BOARD OF REGENTS SUPPORT FUND
RESEARCH COMPETITIVENESS SUBPROGRAM
FY 2006-07

BACKGROUND INFORMATION

One-hundred sixty research proposals requesting a total of \$8,679,767 in first-year funds were submitted for funding consideration in fiscal year (FY) 2006-07 to the Research Competitiveness Subprogram (RCS) of the Board of Regents Support Fund (BORSF) R & D Program. Eight disciplines were eligible, including the agricultural sciences, biological sciences, computer and information sciences, earth and environmental sciences, engineering "A" (i.e., chemical, civil, electrical, etc.), mathematics, physics and astronomy, and social 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 2006, the Board of Regents' Sponsored Programs staff solicited the assistance of three hundred twenty 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 sixty proposals were distributed among nine subject area panels, corresponding to the eight general disciplines eligible for funding consideration in FY 2006-07. 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 2006-07 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 eight 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

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.

an in 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 9 and 10, 2007, 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. Ninety-one proposals were discussed at length during this two-day meeting.

The Panel was informed that approximately \$1.25 million would be available to fund the first year of work of the RCS projects. Utilizing the criteria described previously, the Panel recommended thirty-three proposals, totaling \$1,255,133 in first-year funds, which it strongly believed were worthy of support and placed them in the “Priority One” category in **Appendix A**. An additional nine 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 forty-two are listed in descending order of merit for funding.

The budgets for each of the forty-two proposals rated as “Priority One” were scrutinized closely and, in most cases, were adjusted 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 were 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 forty-two 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 thirty 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 believed that it was 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)

Rank	Proposal No.	Institution	Recommended BORSF 1st Year Funds	Recommended BORSF 2nd Year Funds	Recommended BORSF 3rd Year Funds
1	104A	Pennington	\$41,573	\$41,573	\$41,573
1	037A	LSU-BR	\$25,744	\$25,744	---
1	082A	LA-TECH	\$45,904	\$34,904	\$34,904
1	138A	ULL	\$32,813	\$32,813	\$32,813
1	032A	LSU-BR	\$18,224	\$18,224	\$18,224
1	092A	LA-TECH	\$47,249	\$47,249	\$47,249
1	028A	LSU-BR	\$58,750	\$32,250	\$32,250
1	085A	LA-TECH	\$24,471	\$24,471	\$24,471
1	122A	TULANE	\$42,534	\$42,500	\$41,123
1	040A	LSU-BR	\$63,548	\$30,666	\$30,666
1	148A	ULM	\$40,634	\$40,000	---
1	159A	UNO	\$34,804	\$34,804	\$34,804
1	088A	LA-TECH	\$27,931	\$27,931	\$27,931
1	017A	LSU-BR	\$28,484	\$28,484	\$28,484
15	016A	LSU-BR	\$46,209	\$46,209	\$46,209
16	035A	LSU-BR	\$42,734	\$42,000	\$42,000
17	059A	LSU-BR	\$34,203	\$34,203	\$34,203
18	096A	McNEESE	\$38,770	\$38,770	\$38,770
19	077A	LSUHSC-S	\$56,911	\$56,911	---
20	127A	ULL	\$37,725	\$37,725	\$37,725

APPENDIX A (continued)
RCS PROPOSALS HIGHLY RECOMMENDED FOR FUNDING

21	006A	LSU-AG	\$33,250	\$33,250	\$33,250
22	137A	ULL	\$11,655	\$11,655	\$11,655
23	020A	LSU-BR	\$48,896	\$48,895	\$45,145
24	139A	ULL	\$45,319	\$45,319	\$41,000
25	140A	ULL	\$48,857	\$38,641	\$33,441
26	026A	LSU-BR	\$52,750	\$27,000	\$21,624
27	027A	LSU-BR	\$43,791	\$43,791	\$42,441
28	120A	TULANE	\$20,511	\$20,511	\$20,511
29	042A	LSU-BR	\$46,935	\$46,935	---
30	109A	Southeastern	\$34,224	\$34,224	\$32,724
31	061A	LSUHSC-NO	\$30,679	\$30,679	\$30,679
32	111A	Southeastern	\$19,964	\$19,964	\$19,964
33*	154A	ULM	\$29,087	\$19,681	\$16,000
34	117A	SU-BR	\$54,796	\$54,796	\$54,796
35	135A	ULL	\$12,040	\$12,040	\$12,040
36	030A	LSU-BR	\$43,670	\$43,285	\$43,000
37	065A	LSUHSC-NO	\$36,255	\$36,255	\$36,255
38	124A	TUHSC	\$58,016	\$54,336	\$52,700
39	156A	UNO	\$27,466	\$27,466	\$27,466
40	049A	LSU-BR	\$51,148	\$33,548	\$32,000
41	091A	LA-TECH	\$53,781	\$39,531	\$39,531
42	067A	LSUHSC-NO	<u>\$13,375</u>	<u>\$13,375</u>	<u>\$13,375</u>
TOTALS			\$1,605,680	\$1,452,608	\$1,252,996

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

APPENDIX B

**MERITORIOUS PROPOSALS RANKED PRIORITY ONE BY THE
SUBJECT AREA PANELS AND CONSIDERED BY THE FINAL PANEL
BUT NOT RECOMMENDED FOR FUNDING (11)**

003A 015A 018A 029A 034A 053A 057A 062A 070A 071A 079A

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 2007.

APPENDIX C

**MERITORIOUS PROPOSALS RANKED PRIORITY TWO
BY THE SUBJECT AREA PANELS AND CONSIDERED BY THE FINAL PANEL
BUT NOT RECOMMENDED FOR FUNDING (38)**

009A	041A	072A	098A	157A
011A	043A	073A	102A	158A
014A	045A	075A	112A	-
019A	046A	076A	113A	-
021A	054A	081A	118A	-
022A	055A	083A	123A	-
024A	060A	084A	130A	-
025A	064A	086A	134A	-
038A	069A	093A	149A	-

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 2007.

APPENDIX D

**PROPOSALS RANKED PRIORITY THREE OR DECLARED INELIGIBLE (*)
BY THE SUBJECT AREA PANELS AND NOT RECOMMENDED FOR FUNDING (69)**

001A	047A	090A	116A	145A
002A	048A	094A	119A	146A
004A	050A	095A	121A	147A
005A	051A	097A	125A	150A
007A	052A	099A	126A	151A
008A	056A	100A	128A	152A
010A	058A	101A	129A	153A
012A	063A	103A	131A	155A
013A	066A	105A	132A	160A
023A	068A	106A	133A	---
031A	074A	107A	136A	---
033A	078A	108A	141A	---
036A	080A	110A	142A	---
039A	087A	114A	143A	---
044A	089A	115A	144A	---

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 2007.

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 forty-two 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 forty-two 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 the Enhancement Program 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 the Enhancement Program 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 the Enhancement Program of the Board of Regents Support Fund.

Appendix E (continued):

PROPOSAL NO.: 104A

RANK: 1

TITLE: *Structural Studies of the Islet Amyloid Polypeptide Aggregation Pathway*

INSTITUTION: Pennington Biomedical Research Center

PRINCIPAL INVESTIGATOR: Indu Kheterpal

The PI proposes to apply hydrogen deuterium exchange methods to probe the secondary structure of islet amyloid polypeptide (IAPP) fibrils associated with Type 2 diabetes. Protein aggregation and abnormal tissue deposition of normally soluble proteins is a common feature of >25 amyloid-associated diseases (e.g. Alzheimer's disease (AD), Parkinson's disease, diabetes). Many non-pathogenic proteins can be induced to form the amyloid structure *in vitro*. Insoluble IAPP deposits are the prominent pathological feature in the pancreas of >90% of Type 2 diabetic patients at post mortem and are linked with a decline in insulin secretion and –cell death. The PI proposes to study the exploration of the structures of monomers, oligomers, and fibrils and the structural relationships among these states. The information obtained here will be compared with hydrogen exchange data on amyloid fibrils from neurodegenerative disorders such as AD to understand the basic pathogenesis of protein aggregation disorders and protein folding motifs.

The PI has a pending NIH proposal entitled “Structural Studies on Yeast Prion using Hydrogen/Deuterium Exchange.” If funded, LEQSF award/support should not be provided.

The budget can be significantly reduced to provide one month's salary for the PI, \$16,000 in support for the Post-doctoral researcher, and \$2,000 in undergraduate student support for a salary budget of \$30,058. Additionally, LEQSF travel support should be limited to \$1,000, for a year one budget of \$41,573. A similar budget of \$41,573 is recommended for years two and three.

Year 1: \$41,573

Year 2: \$41,573

Year 3: \$41,573

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

PROPOSAL NO.: 037A**RANK: 1****TITLE:** *A Systems Approach to Measure Kinetics of Protein-Protein Interaction Cascades in Living Organisms***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Naohiro Kato

The function of many proteins depends on their ability to bind other proteins with a high degree of specificity. Current molecular tools and the instruments used to detect the specific interactions in living organisms allow the analysis between two proteins of interest. Proteins in the organisms, however, can change their interaction partner, as often seen in signaling pathways. The goal of this project is to establish a novel method to track multiple protein interactions in cells and living organisms. The PI has identified amino- and carboxyl-terminal fragments of paralogous luciferase proteins that can functionally complement one another when the two fragments are closely positioned. Depending on the fragment combinations, the complemented luciferase activity can emit luminescence in distinct colors by catalyzing a same substrate. To prove the concept 1) the PI will optimize the amino acid compositions of the fragmented luciferase proteins and 2) measure kinetics of a protein-protein interaction cascade involved in transducing a specific signaling pathway in living plant cells.

The requested budget can be reduced to provide one month's summer salary for the PI. Student assistance should be reduced to \$3,000, and supplies limited to \$11,000. The total recommended budget for year one is \$25,744. A similar budget of \$25,744 is recommended for year two.

Year 1: \$25,744**Year 2: \$25,744**

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

PROPOSAL NO.: 082A**RANK: 1****TITLE:** *Application of Hippocampal neuron Dynamics in Artificial Neural Networks for the Development of Brain Function Restoration Strategy***INSTITUTION:** Louisiana Tech University**PRINCIPAL INVESTIGATOR:** Alan W. Lun Chiu

A new approach to incorporate nonlinear, biologically-inspired activation functions in recurrent artificial neural networks could potentially enhance the computation power over traditional artificial neural networks. Static neural networks can only simulate long-term memory synaptic properties of neurons in which the system is in its steady state. In this project, the neurological system dynamics are reproduced in the neural units of the proposed artificial neural network structure having parallel nonlinear-linear (pNL) cascades. The nonlinear current-voltage characteristics obtained from different neuron types are used as the activation functions. The linear passive resistive-capacitive (R-C) dendritic components are obtained from the Gaussian white noise system identification strategy.

This study will enhance our understanding of the mechanisms of biological neural network information processing. Success of this project is essential for the development of a hybrid neural network, where assembly of topologically selective neurons is allowed to connect with artificial neural units, for the purpose of brain function restoration.

The PI received his Ph.D. in 2006 and was appointed an Assistant Professor. He has seven publications and the support of this research should enhance his chances of getting national funding for his work.

The PI has two proposals pending, one submitted to the Epilepsy Foundation, entitled "Nonparametric Model for Classification of Seizure" and the other submitted to NIH, entitled "Spatial Coherence Function of Brain Signals for the Prediction of Neurological Disorders." If either is funded, LEQSF award/support should not be provided.

The budget can be slightly reduced to limit undergraduate student support to \$2,000 and equipment to \$7,500, which is consistent with the 25% match provided by the institution. The recommended budget for the year one is \$45,904, with budgets of \$34,904 in years two and three.

Year 1: \$45,904**Year 2: \$34,904****Year 3: \$34,904**

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

PROPOSAL NO.: 138A**RANK:** 1**TITLE:** *Ultra-High Speed Optical 3R and Wavelength Conversion for the Next Generation of WDM Optical Communications Networks***INSTITUTION:** University of Louisiana at Lafayette**PRINCIPAL INVESTIGATOR:** Zhongqi Pan

The demand for network bandwidth is outpacing even the astounding advances of recent years. New applications are driving the need for ultra-high bandwidth services. Due to its high capacity and performance, optical fiber communications have already replaced many conventional communication systems, and have been steadily progressing to ever-higher speed and capacity.

In this proposal, the PI's research includes both theoretical and experimental investigation of the key issues on the next generation of WDM (wavelength division multiplexing) optical networks. The PI plans to demonstrate all optical 3R and wavelength conversion using optical parametric amplification and four-wave-mixing in highly-nonlinear photonic crystal fibers and an optical clock pump. The proposed novel all-optical signal processing schemes have the advantages of ultra-high speed, multi-wavelengths, and high efficiency. Therefore, the success of the research should help to deploy the future reconfigurable wavelength-division-multiplexing networks which have throughput, high efficiency and high transparency.

The PI is a 2003 Ph.D. graduate and is excellently trained to conduct the proposed research, with a number of patents and nine refereed journal articles.

The PI has a pending NSF proposal, entitled "Ultra-high Speed Optical Clock Generation and its Applications in the Future WDM Optical Fiber Communication Networks." If funded, LEQSF award /support should not be provided.

Only a minor reduction in the requested budget is recommended that limits LEQSF travel support to \$1,000, for a recommended year one budget of \$32,813. A similar budget is recommended for year two and year three. Since the second year should not be larger than the year one budget, the PI may wish to delay the appointment of the graduate student until late in the first year and purchase the equipment requested in the second year during year one.

Year 1: \$32,813**Year 2: \$32,813****Year 3: \$32,813**

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

PROPOSAL NO.: 032A**RANK: 1****TITLE:** *Unitary Representations of Symplectic Groups***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Hongyu He

This research project proposes to construct irreducible unitary representations using invariant tensor product. The PI plans to study the invariant tensor functions associated with the irreducible unitarizable subquotients of the representation induced from a character of the Siegel parabolic subgroup. These subquotients are classified by Sahi and they fall into four classes: unitary degenerate principal series, complementary series, small constituents and large constituents. The PI will study the behavior of the four types of invariant tensor functions and relate these invariant tensor functions to unitary parabolic induction, complementary induction, Howe's duality, and cohomological induction, respectively. The proposed research will improve the general understanding of the unitary representations of the classical groups. The techniques are equally applicable to the coverings of other classical groups. The support from the Board of Regents will help initiate the PI's research program and enhance his competitive status for federal funding.

The PI has two proposals pending, one submitted to the National Security Agency entitled "Unitary Representations of Symplectic Groups," and one submitted to NSF entitled "Unitary Representations of Symplectic Groups." If either of these proposals is funded, LEQSF award/support should not be provided.

The PI received his PhD degree from the Massachusetts Institute of Technology in 1998 and spent six years as an Assistant Professor at Georgia State University, before moving to Louisiana State University in 2005 as an Assistant Professor. He is well qualified to conduct the proposed research.

The proposed budget has been reduced to provide one month's summer salary for the PI, limit LEQSF travel support to \$1,000, and delete support for consultants, for a recommended year one budget of \$18,224. Similar budgets are recommended for year two and year three.

Year 1: \$18,224**Year 2: \$18,224****Year 3: \$18,224**

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

PROPOSAL NO.: 092A**RANK: 1****TITLE:** *Search for New Physics Phenomena in Jet Production at Hadron Colliders***INSTITUTION:** Louisiana Tech University**PRINCIPAL INVESTIGATOR:** Markus Wobisch

The PI plans to use the large discovery potential of the “Large Hadron Collider” (LHC) at CERN in Geneva, Switzerland to search for new physics phenomena by studying the production rates of high energetic jets. The first goal is to achieve a solid understanding of the theoretical expectations, according to the “Standard Model” of particle physics, and according to models which predict new physics phenomena. On this basis, observables with a maximum sensitivity to new physics processes will be identified. The second step is to measure these observables at the Fermilab Tevatron Collider, using the large amount of data collected during Run II, to establish and optimize the experimental methods for data analysis. In the third step the experimental and conceptual knowledge gained in the theoretical studies and from the measurements at the Tevatron will be applied to the first Large Hadron Collider data to explore new ground.

It is hoped that the project will help establish higher visibility of the high energy program at Louisiana Tech University and increase the principal investigator’s competitiveness for federal support.

The requested budget is slightly reduced to limit LEQSF travel support to \$6,700 on the basis of one trip to CERN and four trips to the Fermi Lab. Support of the graduate students, along with one month’s summer salary for the PI result in a recommended year one budget of \$47,249. Similar funding is recommended for years two and three.

Year 1: \$47,249**Year 2: \$47,249****Year 3: \$47,249**

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

PROPOSAL NO.: 028A**RANK: 1****TITLE: *Genetic Characterization of Novel Macrolide Resistance Mechanisms in Campylobacter from Poultry*****INSTITUTION: Louisiana State University and A&M College – Baton Rouge****PRINCIPAL INVESTIGATOR: Beilei Ge**

The emerging and evolving antimicrobial resistance in foodborne pathogens, such as *Campylobacter* from poultry, poses a significant threat to public health. Mitigation efforts designed at the pre- and post-harvest levels need a great understanding of the resistance mechanisms. The Principal Investigator aims to elucidate the mechanisms of macrolide resistance in the *Campylobacter* poultry isolates by studying: (1) genetic characteristics of the macrolide resistance determinants, and (2) the identity of novel resistance determinants using transposon random mutagenesis. This research should greatly advance our basic knowledge on macrolide resistance mechanisms in *Campylobacter* and contribute to enhancing safety of the Nation's food supply.

Only a modest reduction in the requested budget is recommended that limits supply costs to \$9,000 and deletes publication costs of \$500, for a recommended year one budget of \$58,750. A budget of \$32,250 is recommended year two and year three.

Year 1: \$58,750**Year 2: \$32,250****Year 3: \$32,250**

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

PROPOSAL NO.: 085A**RANK: 1****TITLE:** *Sensitivity Analysis for the Design of MinMax Controllers***INSTITUTION:** Louisiana Tech University**PRINCIPAL INVESTIGATOR:** Katie A. Evans

The PI is interested in the design of robust, real-time controllers for physical systems described by partial differential equations. One particular robustly stabilizing controller for such physical systems is the MinMax controller, which has been used for such problems as accelerator fault detection for the F-16XL fighter jet, flow control in a driven cavity, and speed estimation for an induction motor drive. The mathematical formulation of this controller involves a design parameter, which gives a measure of robustness for the controller. The PI will employ sensitivity analysis as a means of mathematically examining different criteria in order to formulate a more efficient assignment of the MinMax control design parameter.

The PI has a pending NSF proposal entitled “i-WorK: WeBWorK in an Integrated STEM Curriculum.” If funded, LEQSF award/support should not be provided.

A significant reduction in the budget is recommended that provides one month’s summer salary for the PI, limits LEQSF travel support to \$1,000, and deletes the cost of printing. With these reductions, a budget of \$24,471 is recommended for year one. A similar budget is recommended for year two and year three.

Year 1: \$24,471**Year 2: \$24,471****Year 3: \$24,471**

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

PROPOSAL NO.: 122A**RANK: 1****TITLE:** *Conceptualizing Racism: Understanding Group and Individual Differences in the Perception of Racism***INSTITUTION:** Tulane University**PRINCIPAL INVESTIGATOR:** Laurie T. O'Brien

The PI will investigate individual and group differences in the way people define racism. It tests the hypothesis that White and African Americans define racism at different levels. The proposed research will make it possible to investigate (1) the cognitive and motivational antecedents of individuals' definitions of racism, (2) the processes through which individuals alter their definitions of racism, (3) the consequences of definitions of racism for perceptions of racism in American society and psychological well-being, and (4) the consequences of definitions of racism for support for public policies that remediate or exacerbate social inequalities between African and White Americans. Support for this project will contribute to basic research on prejudice and stigma and help to strengthen the fundamental research base of Louisiana universities. This research should provide a solid foundation from which the PI can compete for federal funding.

The recommended budget is exactly what was requested for year one (\$42,534). A budget of \$42,500 is recommended for year two and \$41,123 for year 3.

Year 1: \$42,534**Year 2: \$42,500****Year 3: \$41,123**

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

PROPOSAL NO.: 040A**RANK: 1****TITLE: *PFKFB3 Structure-Based Design of the Inhibitor of Cancer Glycolysis*****INSTITUTION: Louisiana State University and A&M College – Baton Rouge****PRINCIPAL INVESTIGATOR: Yong-Hwan Lee; Song-Gun Kim**

The vigorous cancer-specific glycolysis is driven by PFKFB3 that control the concentration of F-2,6-P₂, the mammalian glycolysis pacemaker. The activated glycolysis by PFKFB3 is necessary for production of metabolic products and energy essential for proliferation of cancer cells growing under hypoxic conditions. PFKFB3 expression is a strict checkpoint for progression to full cancer and genetic disruption of PFKFB3 induces death of cancerous proliferating cells. Accordingly, inhibition of PFKFB3 has been suggested as a new strategy to kill cancer cells. To test this intriguing idea, the PI will determine the structures of human PFKFB3 and perform functional studies that lead to the molecular catalytic mechanism of PFKFB3 and to a molecular paradigm of the aimed PFKFB3 inhibitors. The PI will acquire the target information by investigating the molecular catalytic mechanism of PFKFB3 done before. To achieve the real PFKFB3 inhibitors the PI will screen the potential inhibitor libraries that are constructed according to their inhibitor paradigm.

The PI has a pending proposal submitted to NIH entitled “PFKFB3-Based Development of a New Cancer Drug Targeting the Warburg Effect.” If funded, LEQSF award/support should not be provided.

The budget can be significantly reduced to limit LEQSF travel support to \$1,000 and the supply cost to \$10,000, for a year one budget of \$63,548. It is recommended that one month’s summer salary be provided for the PI, along with \$10,125 in graduate assistant support, for a salary budget of \$18,701, and a year two budget of \$30,666. A similar budget is recommended for year three.

Year 1: \$63,548**Year 2: \$30,666****Year 3: \$30,666**

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

PROPOSAL NO.: 148A**RANK: 1****TITLE:** *Ecological Causes and Fitness Consequences of Group-Living***INSTITUTION:** University of Louisiana at Monroe**PRINCIPAL INVESTIGATOR:** Loren Donald Hayes; Eileen Lacey; Luis Ebensperger

Understanding the ecological causes and fitness consequences of group-living is critical to developing sociality theory. The relationship between intraspecific habitat variation, group-living and the fitness in widely distributed species has not received sufficient attention. The objective of this ongoing study is to determine the potential ecological causes of group-living and estimate the fitness consequences of group-living in the degu, a widely distributed rodent whose sociality is understudied. To test the hypotheses for the ecological causes of group-living, Luis Ebensperger and the PI quantified ecological conditions that affect degu sociality and compared social organization of degus occurring in two sympatric sites in Chile. The study sites differ in the amount of cover and availability of food, allowing them to test the predation risk and food availability hypotheses. To test hypotheses for the fitness consequences of group-living, the PI will quantify the reproductive success of degus from groups of varying sizes, replicating their study from 2005-06.

It is recommended that the proposed budget be reduced by deleting \$12,000 for consultants and reducing housing support from \$9,000 to \$8,000, thus requiring the PI to learn how to include the genetic analysis. It is not scientifically sound to have Dr. Lacey at the University of California-Berkeley carry out this research with the graduate student spending a semester there. The PI and the graduate students should learn how to carry out these analyses at their institution. Thus, the funding for this part of the program (Part B) is \$9,650, with travel support of \$400, supplies at \$500, \$750 for radio collars, and the \$8,000 for the development of the genetic analysis. The total recommended budget for year one is \$40,634, with a recommended budget of \$40,000 in year two.

Year 1: \$40,634**Year 2: \$40,000**

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

PROPOSAL NO.: 159A**RANK: 1****TITLE:** *Advanced Digital Forensic Processing of Large Data Sets***INSTITUTION:** University of New Orleans**PRINCIPAL INVESTIGATOR:** Vassil Roussev

As a computer science field, digital forensics deals with the technical aspects of recovering and analyzing artifacts from digital media with the express purpose of rigorously establishing a sequence of user-triggered events that resulted in the observed state of the recovered artifacts. This process inherently requires the use of specialized tools, which do exist but fall well short in their overall ability to meet the needs of computer science forensics analysis. They fail to provide a *scalable* solution to keep up with the rapid growth in the *size* and *complexity* of investigative targets. The PI proposes to develop a conceptual *software engineering framework* and *prototype infrastructure implementation* that will significantly advance the state of the art of digital forensics by enabling the *advanced automated forensic analysis of large data sets*. The conceptual framework will consist of the following components: Domain requirements, Functional taxonomy, Domain data model, and Reference architecture. The prototype infrastructure implementation will feature distributed computing, advanced processing capabilities, and open component-based design.

The PI received his Ph.D. degree in 2003 from the University of North Carolina and was appointed Assistant Professor in 2002 at the University of New Orleans. He has eight publications in the field and is extremely well trained to carry out the proposed research, which should significantly enhance his potential to become nationally competitive. The PI has a pending NSF Career proposal entitled “Advanced Digital Forensic Processing of Large Data Sets.” If funded, LEQSF award/support should not be provided.

A significant reduction in the budget is recommended to provide support of one graduate assistant, limit LEQSF travel support to \$1,000, and reduce the equipment budget to \$2,700, for the purchase of computer equipment. In general, computer equipment is considered part of infrastructure. With these reductions, a budget of \$34,804 is recommended for year one. A similar budget of \$34,804 is recommended for year two and year three.

Year 1: \$34,804**Year 2: \$34,804****Year 3: \$34,804**

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

PROPOSAL NO.: 088A**RANK: 1****TITLE:** *An Efficient Method for Simulating Diffusion Inside Nano-Tubes for Drug Delivery System***INSTITUTION:** Louisiana Tech University**PRINCIPAL INVESTIGATOR:** Don Liu; Weizhong Dai; Yuri Lvov

A novel drug delivery system has been developed using nanotubes for encapsulation of biologically active macromolecules and drug particles. Using strong surface charge of the halloysite layer by layer, Lvov et al. have designed nanotubes and demonstrated low soluble drug loading and sustained release in water-alcohol solvents. To understand the phenomenon, improve micro-manufacturing processes, and commercialize the technology, a practical explanation of the behavior of macromolecules in confined geometry is needed. The PI will take into account the combined effects of surface effects, geometry constraints, and Brownian motion, and develop a nanoscale fluid-particle interactions model inside confined space.

A slight reduction in the requested budget is recommended that limits LEQSF travel support to \$1,000 and deletes printing charges, for a total year one budget of \$27,931. A similar budget is recommended for year two and year three.

Year 1: \$27,931**Year 2: \$27,931****Year 3: \$27,931**

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

PROPOSAL NO.: 017A**RANK: 1****TITLE:** *Maximizing the Utility of Visual Working Memory: Can attention Strategies Overcome Limits During Encoding and Retrieval?***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Melissa R. Beck

Changes in the visual world often go undetected when the motion caused by the change does not attract attention to the change location. A failure to detect visual changes during everyday tasks such as driving can result in dire consequences. Capacity limits for encoding information into visual working memory are often considered the cause of change blindness. However, change blindness may also be the result of a failure to retrieve encoded information. In Phase 1 of the proposed research, the PI will examine the roles of capacity limits on encoding and on retrieval in change blindness. In Phase 2, the PI will employ eye-tracking technology to examine the role of attention strategies in change blindness. In Phase 3, the PI will investigate the influence of attention strategies on capacity limits during the various stages of change detection (encoding and retrieval). In addition to refining theories of visual working memory and developing applications for reducing errors in everyday tasks, the proposed research will improve the PI's competitiveness for a federally funded grant.

A significant reduction in the requested budget is recommended to provide one month's summer salary for the PI and support of one graduate student, for a year one budget of \$28,484. A similar budget is recommended for year two and year three.

Year 1: \$28,484**Year 2: \$28,484****Year 3: \$28,484**

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

PROPOSAL NO.: 016A**RANK: 15****TITLE: *Distribution and Potential Toxicity of the Diatom Pseudo-nitzschia spp. In Mississippi River Influenced Louisiana Coastal Waters*****INSTITUTION: Louisiana State University and A&M College – Baton Rouge****PRINCIPAL INVESTIGATOR: Sibel Bargu ates; Nancy Rabalais**

Harmful algal blooms (HABs) are increasingly observed around the world's coastal ocean, with a growing number of reports indicating anthropogenic influences. Additionally, some species within the diatom genus *Pseudo-nitzschia* are shown to produce the neurotoxin domoic acid (DA), which causes amnesic shellfish poisoning known to kill marine organisms and cause short-term memory loss or even death in humans. The ecology of these diatoms is poorly understood--specifically which species are toxic and what controls their toxicity in a large river plume, thus complicating efforts to control outbreaks. The PI's specific goal in this proposed project is to determine how biological and chemical conditions interact to control *Pseudo-nitzschia* proliferation and toxicity in Louisiana coastal waters. These results will help to understand conditions that initiate and promote major *Pseudo-nitzschia* blooms, identify spatial and temporal patterns of potentially toxic *Pseudo-nitzschia* species, and determine their domoic acid (DA) production in the northern Gulf of Mexico. In addition, the proposed project should provide the basis for future studies of domoic acid in coastal Gulf of Mexico food webs and will aid in development of an early detection system to support state and coastal community efforts to manage harmful algal blooms.

The PI is a 2001 Ph.D. graduate and was appointed in 2006 as an Assistant Professor in the Department of Oceanography and Coastal Science. By obtaining mentoring from an established investigator she should be able to significantly her strengthen her research effort. The comments of the reviewers should also assist the PI greatly in conducting her research and help her to become nationally competitive.

A small reduction in the budget is recommended that limits the supply budget to \$10,000, LEQSF travel support to \$1,000, and deletes printing costs, for a year-one budget of \$46,209. A similar budget of \$46,209 is recommended for year two and year three.

Year 1: \$46,209**Year 2: \$46,209****Year 3: \$46,209**

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

PROPOSAL NO.: 035A**RANK: 16****TITLE: *Hydrogen Storage Materials for the 21st Century*****INSTITUTION: Louisiana State University and A&M College – Baton Rouge****PRINCIPAL INVESTIGATOR: Alexander Ignatov**

“Doubling of the world’s energy needs by the year 2050 and the increasing demand for ‘clear’ energy have resulted in increased attention worldwide to a possibilities of a ‘hydrogen economy’ as a long term solution for a secure energy future” (www.sc.doe.gov/bes/reports/list.html). The PI plans to develop new materials for reversible hydrogen storage applications. Specifically, synchrotron x-ray absorption and core-level spectroscopies will provide *in-situ* element specific probe of local atomic structure and electronic orbitals of 3d metal-based catalysts and intermediate species. Complex metal-hydrides and metal-coated carbon nanotubes with enhanced estimated properties will be made and their hydrogen uptake will be tested experimentally. Deviations from the anticipated properties will be addressed by proper experiments to validate the structure-to-properties relationships, adjust the computational estimates, and come up with an updated set of perspective catalysts and modified complex hydrides capable of meeting the DOE guidelines.

The PI has a tremendous amount of experience in this area and holds at present the position of Assistant Professor of Research, which is probably not a tenure track position. Nonetheless, with his vast experience it is possible that he could become nationally competitive in such a position.

It is recommended the budget be reduced to provide \$2,000 for undergraduate student support, along with one month summer salary for the PI, and limit LEQSF travel support to \$1,000. The printing costs should be deleted and equipment support reduced to \$25,200, which is consistent with the 25% match provided by the institution, for a recommended year one budget of \$42,734. A budget of \$42,000 is recommended for year two and year three.

Year 1: \$42,734**Year 2: \$42,000****Year 3: \$42,000**

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

PROPOSAL NO.: 059A**RANK: 17****TITLE: *Enhancing the Erosion Resistance of Coastal Sediments Using Biodegradable Polymers*****INSTITUTION: Louisiana State University and A&M College – Baton Rouge****PRINCIPAL INVESTIGATOR: Guoping (Gregg) Zhang**

The devastation caused by the hurricanes demonstrated the importance of coastal wetlands in protecting sustainable US coasts. The PI proposes a pilot study on using water soluble, nontoxic, biodegradable polymers to enhance sediment erosion resistance. Its overall goal is to develop fundamental knowledge on the interaction between biodegradable polymers and soil fine particles in coastal environments and on the improvement in erosion resistance of sediments treated by biodegradable polymers. This study should assist the PI in: (1) establishing a track record of research on coastal geotechnics; (2) developing close collaboration with coastal scientists, wetland geochemists, and geologists; (3) exploring novel concepts and obtaining preliminary information; and (4) publicizing preliminary results to federal funding agencies, which should make the PI nationally competitive for federal funding in this area.

The PI has two pending proposals submitted to the National Textile Center, one entitled “Functionalizing Textiles with Nanoclay Based Coatings,” and one entitled “Fire-resistant hybrid Geopolymer Foams and Composites.” If either of these proposals is funded, LEQSF award/support should not be provided.

A modest reduction in the budget is recommended that provides one month’s summer salary for the PI, undergraduate student support of \$2,000, and deletes the cost of printing, for a year-one budget of \$34,203. Similar budgets are recommended for year two and year three.

Year 1: \$34,203**Year 2: \$34,203****Year 3: \$34,203**

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

PROPOSAL NO.: 096A**RANK: 18****TITLE:** *Isolation and Characterization of Antimicrobial Peptides for Leukocytes of the American Alligator (Alligator Mississippiensis)***INSTITUTION:** McNeese State University**PRINCIPAL INVESTIGATOR:** Mark Merchant; Gill Diamond; Kermit Murray;
Ruth M. Elsey

Eukaryotic organisms must continuously defend against infection by potentially infectious microbiological organisms. Innate immunity is the first line of defense against infection. The production of cationic peptides is an effective method of humoral defense used by a broad spectrum of diverse eukaryotic organisms including mammals, birds, crustaceans, and plants. The results from recent work in the PI's laboratory have revealed that leukocytes of the American alligator express cationic antimicrobial peptides. The objectives of the proposed research are to: 1) isolate and determine the primary structure of these peptides, 2) characterize the range of antimicrobial activities, as well as the minimal inhibitory concentrations, of these peptides for a broad spectrum of pathogenic bacteria, fungi, and viruses, and 3) characterize the interactions of these peptides with biological membranes using fluorescent dye in micelles and small unilamellar vesicles.

It is recommended that the PI receive one month's summer salary, five months' support for the technician (\$10,417), and \$4,500 in graduate assistance, for a salary budget of \$23,816 (category A), along with a supply budget of \$8,000, for a year-one budget of \$38,770. Similar amounts are recommended for year two and year three.

Year 1: \$38,770**Year 2: \$38,770****Year 3: \$38,770**

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

PROPOSAL NO.: 077A**RANK: 19****TITLE:** *Study of the Mechanism of EGFR-Mediated Troglitazone-Induced Cellular Acidosis in Cancer***INSTITUTION:** Louisiana State University Health Sciences Center-Shreveport**PRINCIPAL INVESTIGATOR:** Francesco Turturro; Tomas Welbourne

The PI has recently shown that troglitazone (TRO), a member of the thiazolidinedione (TZD) class of antihyperglycemic agents, and peroxisome proliferator-activated receptor γ (PPAR γ)-ligand family, induces a prompt and severe cellular acidosis in breast cancer-derived cell lines MCF-7 and MDA-MB-231, respectively. The cellular acidosis occurs acutely within 4 minutes of TRO-incubation, and is related to decreased activity of the Na^+/H^+ exchanger 1 (NHE1)-mediated acid extrusion rather than to increasing acid production. The PI has further shown that TRO-induced EGFR-mediated sustained activation of ERK $\frac{1}{2}$ signaling pathway is associated with persistent cellular acidosis in breast cancer cell lines. Hence the PI proposes that EGFR-mediated TRO action initiates and maintains the persistent reduced activity of NHE1 and consequently cellular acidosis. He proposes that TRO may act through these two mechanisms in regulating the signaling pathways between EGFR and NHE1 activity. The elucidation of these mechanisms will allow the use of a combination of drugs that magnify the cellular acidosis either through decreased NHE1 activity or increased acid production or a combination of both.

A significant decrease in the budget is recommended, to provide one month's salary for the PI and 50% support for a research associate, for a total salary budget of \$36,729 (category A). The supply budget should be reduced to \$10,000 and LEQSF travel support limited to \$1,000, for a year-one budget of \$56,911. A similar budget of \$56,911 is recommended for year two.

Year 1: \$56,911**Year 2: \$56,911**

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

PROPOSAL NO.: 127A**RANK:** 20**TITLE:** *3-D Interaction Methods for Efficient Interpretation of Scientific Data in Virtual Reality-Based Visualization Systems***INSTITUTION:** University of Louisiana at Lafayette**PRINCIPAL INVESTIGATOR:** Christopher W. Borst

The PI seeks to establish a research program focused on 3-D interactions in virtual reality (VR) systems for effective exploration and interpretation of scientific data. Initially, techniques will be researched in the context of a geological visualization system (topographic data with associated geophysical data), but application to a broader range of applications is proposed. The work focuses on: 1) development of a “volumetric windows” interaction metaphor and related techniques for managing and interacting with multiple simultaneous views or datasets in 3-D space; 2) investigation of added haptic (force or tactile) feedback to aid interpretation tasks in a desktop VR system; and 3) a distributed multi-user visualization environment that allows users of both immersive and non-immersive VR systems to interpret 3-D data, either individually or collaboratively, even though they may be using different types of VR systems (CAVE, head-mounted, desktop). Results will be evaluated using continual formative evaluation based on expert human interpreters and by more formal human factors studies of specific system aspects such as force feedback.

The PI has a large number of publications in this area and the pursuit of research in this field should lead to him becoming nationally competitive for funding. The PI currently has a pending NSF proposal entitled “III CXT: Visualization and Data Mining Techniques for Exploring Sediment Transport Data,” in the amount of \$896,412, which if funded would indicate that the PI is nationally competitive and should not receive funding from the LEQSF program.

A significant reduction in the budget is recommended to provide one month’s summer salary for the PI, limit LEQSF travel support to \$1,000, and delete the cost of printing. With these reductions a budget of \$37,725 is recommended for year one, with similar recommendations for year two and year three.

Year 1: \$37,725**Year 2: \$37,725****Year 3: \$37,725**

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

PROPOSAL NO.: 006A**RANK: 21****TITLE: *The Impact of Anti-Oxidation Suppression on Bovine Parainfluenza Virus Type-3*****INSTITUTION: Louisiana State University – Agricultural Center****PRINCIPAL INVESTIGATOR: Jason E. Rowntree; Kenneth R. Bondioli**

The greatest health-associated impact on beef cattle profitability is Bovine Respiratory Disease (BRD). In 2002, the USDA estimated BRD associated financial losses to the beef industry were over one billion dollars. BRD is a disease of complex multiple origins, including several viral agents. Parainfluenza virus type-3 (PI-3), an RNA virus, is one of the primary infectious agents involved in BRD. Primarily, modified live vaccines (MLV) are administered to cows and freshly weaned calves to control BRD incidence. Previous work in Influenza viruses, which are structurally similar to PI-3, has shown that RNA viruses undergo genomic mutation in pro-oxidative stressed hosts who were Selenium (Se) deficient. The objective of this research is to determine the impact of host anti-oxidation deficiency, such as selenium deficiency, on the accumulation of genomic mutation within PI-3, resulting in generation of potentially more virulent quasi-species. Additionally, the PI will determine if the current attenuated live vaccines for PI-3 undergo similar mutations and loss of attenuation when propagated in the absence of anti-oxidants.

The proposed budget should be significantly reduced to limit the supply budget to \$10,000, for a recommended year one budget of \$33,250. A similar budget of \$33,250 is recommended for year two and year three.

Year 1: \$33,250**Year 2: \$33,250****Year 3: \$33,250**

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

PROPOSAL NO.: 137A**RANK:** 22**TITLE:** *Simple, Nuclear, Stably Finite, Real Rank Zero, Z-Stable C*-Algebras***INSTITUTION:** University of Louisiana at Lafayette**PRINCIPAL INVESTIGATOR:** Ping Wong Ng

The PI will study the special case of simple, real rank zero, stably finite, Z-stable C*-algebras. Additionally, he will try to classify all simple, stably finite, locally type I algebras with real rank zero and Z-stability. This is a competitive area which many researchers have worked in and is a fundamental step in the Elliott program. A period of intensive research on this problem, jointly with the experts in the field, should yield substantial results and make him more nationally competitive as a researcher.

The PI has a pending NSF proposal entitled "Stability of C* Algebra's," in the amount of \$84,136. If funded, the PI should not receive an award/support from the LEQSF program.

A significant reduction in the proposed budget is recommended that provides one month's summer salary for the PI, limits LEQSF travel support to \$1,000 and consultant cost to \$1,000, for a year-one budget of \$11,655. Similar amounts are recommended for year two and year three.

Year 1: \$11,655**Year 2: \$11,655****Year: \$11,655**

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

PROPOSAL NO.: 020A**RANK: 23****TITLE:** *Economic Recovery from Natural Disasters: A Dynamic Stochastic General Equilibrium Approach***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Areendam Chanda; Eric Hillebrand

The purpose of this research is to model the long run economic development pattern of an area affected by a natural disaster. The PI will focus on the speed and extent of recovery, and on migration. In the first phase of the project, the PI will construct a dynamic general equilibrium model with heterogeneous agents and different production sectors. Agents are grouped according to sectors: worker-consumers and producers of different goods. Workers are differentiated by skill levels and wealth. The disaster is an exogenous shock that adversely affects all economic sectors in proportions that can be calibrated to data from real events. In the second phase of the project, the PI will move from a decentralized market-based economy to one based on interactions between agents. Here the PI will develop a granular model that allows one to view agents interacting with each other not just through the market but also locally.

A significant reduction in the budget is recommended that provides summer salary for one month for both the PI and co-PI, for a year-one budget of \$48,896. A budget of \$48,895 is recommended for year two and \$45,145 for year three.

Year 1: \$48,896**Year 2: \$48,895****Year 3: \$45,145**

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

PROPOSAL NO.: 139A**RANK:** 24**TITLE:** *Interstitial Gas Effects on Granular Dynamics: The “Pure Granular” State***INSTITUTION:** University of Louisiana at Lafayette**PRINCIPAL INVESTIGATOR:** Andi G. Petculescu

The general behavior of granular matter continues to be an open problem whose solution is important for many aspects of science, from understanding sand dunes to planetary regolith interactions. The PI will address the dynamics of granular media from a unique perspective, namely by quantifying the effect of the interstitial gas. Here the acoustic response of a granular system to external excitation is measured during the interstitial gas evacuation when the medium transitions from a gas-saturated state to a “pure granular” state where gas-particle coupling becomes negligible. The interstitial gas effects are contained in the different responses of the gas-saturated and “pure granular” states. The response of granular media to impulsive forcing, namely arrival times, harmonic content, and pulse shapes, can yield information about the structure of the medium itself, including any dynamic “memory” or pulse-resaping effects.

The PI is excellently trained to carry out this research, earning a Ph.D. in 2002 and joining the Department of Physics in 2006 after post-doctoral training at the National Center for Physical Acoustics at Northwestern University.

The budget has been significantly reduced to provide one month summer salary for the PI (a reduction from the two months requested) limiting LEQSF travel support to \$1,000, and deleting printing costs. Therefore, a budget of \$45,319 is recommended for year one, with a similar budget of \$45,319 recommended for year two and \$41,000 for year three.

Year 1: \$45,319**Year 2: \$45,319****Year 3: \$41,000**

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

PROPOSAL NO.: 140A**RANK: 25****TITLE: *Magnetoelastic Studies in Fe-Ga Alloys*****INSTITUTION: University of Louisiana at Lafayette****PRINCIPAL INVESTIGATOR: Gabriela Petculescu**

Fe-Ga alloys (Galfenol) are part of a new class of materials with significant magnetostrictive properties and valuable mechanical characteristics. With their discovery, the use of magnetostrictive sensors and actuators in numerous applications where the existent weak or brittle magnetostrictive and piezoelectric materials could not be used before is now possible. The proposed project will focus on studies of the elastic properties and magnetoelastic interactions in Galfenol using ultrasonic methods. The relationship between the magnetoelastic energy of the alloy and its composition, heat treatment, and microstructure will be investigated. The goal of the project is to understand the structural complexity of the material to a level which would enable adjustments of the fabrication procedure to produce the maximum desired effect for a given application. The project will assist the PI in developing a strong research program and becoming nationally competitive in the field of ultrasonic probing of solid matter.

The requested budget can be significantly reduced to provide one month's salary for the PI, reduce undergraduate student support to \$2,000, limit LEQSF travel support to \$1,000, and \$6,000 for only three samples rather than the five samples requested. With these reductions a budget of \$48,857 is recommended for year one. Similarly for year two the undergraduate support should be limited to \$2,000 and LEQSF travel support limited to \$3,000 and \$6,000 for samples, for a recommended budget of \$38,641. A budget of \$33,441 is recommended for year three that provides one month's salary for the PI and limits LEQSF travel support to \$4,000.

Year 1: \$48,857**Year 2: \$38,641****Year 3: \$33,441**

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

PROPOSAL NO.: 026A**RANK:** 26**TITLE:** *Electrografting of Functional Monolayers to Silicon Nanowires***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** John C. Flake

Electrografting is a relatively new technique used to attach organic molecules to metals or semiconductor surfaces. The aim of the proposed research in this proposal is to demonstrate the attachment of functional molecules (e.g. amino, carboxylic functional nitriles or alkynes) to silicon nanowires. An electrochemical cell will be fabricated to accept silicon wafers with nanoscale structures as the cathode. Aqueous and nonaqueous electrolytes with functional molecules will be loaded into the cell. Electrografting will be performed using a potentiostat under various current and voltage conditions. Analysis of the grafted film will be done via XPS or XANES, MIR, FTIR, and electroanalytical techniques. Finally, the usefulness of electrografting to attach silicon nanowires will be demonstrated by fabricating thin film transistors.

The PI is a recent appointee in 2006 to Louisiana State University as an Associate Professor in the Department of Chemical Engineering. He is well trained to conduct the proposed research. The PI has a pending NSF proposal entitled “Hybrid Fabrication of Silicone Nanowire Devices,” which if funded should obviate the need for LEQSF award/support.

A significant reduction in the budget is recommended since there was an error made in its initial construction. The graduate assistant was placed in the research category with fringe benefits and overhead charges. Placing the graduate assistant’s salary of \$21,200 in the appropriate category, limiting LEQSF travel support to \$1,000, and reducing the supply budget to \$9,000, results in a recommended year-one budget of \$52,750. The recommended budgets for year two and year three are \$27,000 and \$21,624, respectively, when placed in the proper category.

Year 1: \$52,750**Year 2: \$27,000****Year 3: \$21,624**

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

PROPOSAL NO.: 027A**RANK: 27****TITLE:** *Cellular and Molecular Responses of the Freshwater Fish Gill to Parasitism by Larval Freshwater Mussel *Utterbackia Imbecilis****INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Fernando Galvez

Freshwater mussels are the most endangered animals in North America, with over 70% of the native species at risk for extinction, considered endangered, or otherwise in a situation of special concern. A contributing factor to this decline has been the failure of larval mussels (glochidia) to complete an obligatory parasitic stage requiring their successful attachment to the gill epithelium of fish. The physiological effects of glochidial attachment to the fish gill are largely unknown, as is the influence of host biology in influencing this process. The proposed research will be a multi-faceted project designed to: a) investigate the physiological effects of glochidial infection on host physiology; and b) investigate how alterations in host physiology influence the susceptibility of the fish gill to glochidia.

The budget can be significantly reduced to provide one month's salary for the PI, support for the GRA but not for the Research Assistant, limit LEQSF travel support to \$1,000, and reduce the supply budget to \$9,000, for a recommended year-one budget of \$43,791. A similar budget is recommended for year two, with a budget of \$42,441 for year three.

Year 1: \$43,791**Year 2: \$43,791****Year 3: \$42,441**

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

PROPOSAL NO.: 120A**RANK: 28****TITLE:** *Investigations of Monomial Ideals and Multi-graded Regularity***INSTITUTION:** Tulane University**PRINCIPAL INVESTIGATOR:** Tai Huy Ha

The PI proposes to investigate monomial ideals and multi-graded regularity. While monomial ideals are classical objects which have been extensively studied, they continue to inspire much of current research in commutative algebra. The PI proposes to study monomial ideals in the newly established framework of edge ideals and hyper-graphs. This framework allows one to translate algebraic problems about monomial ideals into combinatorial questions about hyper-graphs and vice-versa. It will provide means for using algebraic techniques to solve combinatorial questions and for using combinatorial methods to investigate algebraic invariants and properties.

The PI has a pending NSF proposal pending entitled "Monomial Ideals, Multi-graded Regularity and Arithmetic Macaulayfication," in the amount of \$145,693, with a recommended starting date July 2007. If funded, the PI should not receive the LEQSF award/support.

A significant reduction in the requested budget is recommended to provide one month's summer salary for the PI, limit LEQSF travel support \$1,000, delete the cost of consultants, and limit participants support to \$2,000, for a year-one budget of \$20,511. Similar amounts are recommended for year two and year three.

Year 1: \$20,511**Year 2: \$20,511****Year 3: \$20,511**

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

PROPOSAL NO.: 042A**RANK: 29****TITLE: *Consumer Coping in Post-Disaster Recovery and Rebuilding: A Longitudinal Approach*****INSTITUTION: Louisiana State University and A&M College – Baton Rouge****PRINCIPAL INVESTIGATOR: Chuanlan Liu; Frances Lawrence; William C. Black**

It is the general population, even those not at emotional risk, that must engage in constructive coping to return to a “normal” day-to-day life as the impacted area recovers. The degree and speed of individual recovery depends on the extent to which individual re-defined needs are satisfied and balanced for their daily life as a consumer. By fully articulating a consumers’ adjustment of their consumption behavior in response to disaster situations, with a focus on the process of returning to a normal day-to-day life, the proposed study will make it possible to examine the formation and change of individual coping self-efficacy, identify the necessary constructive coping strategies and action for individual recovery, and identify the resources necessary for facilitating constructive coping from not only public and social support, but from the retailing infrastructure as well.

The budget can be significantly reduced to provide one month’s summer salary for the PI, support for the Graduate Research Assistant but not for the co-PIs, limiting LEQSF travel support to \$2,000, placing funds for paper etc., in the supply budget of \$1,376, and deleting printing, which should be done on a PC very easily. The amount for participant stipend is extraordinarily large and \$50 per hour is excessive for an interview. Participant stipends should be reduced to \$8,000 at the most. This leaves a recommended budget of \$46,935 for year one and a similar budget for year two.

Year 1: \$46,935**Year 2: \$46,935**

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

PROPOSAL NO.: 109A**RANK:** 30**TITLE:** *Memory and Learning Based Robot Control Architecture***INSTITUTION:** Southeastern Louisiana University**PRINCIPAL INVESTIGATOR:** Patrick McDowell

The objective of this research is to develop a robot control architecture that detects and adapts to changing conditions without relying on a-priori information or human-in-the-loop calibration and setup. Because robots rely on various sensors to obtain information about their environments, they are susceptible to fluctuations in the quality of information caused by mechanical and electronic variations of their sensors. Also, changes in the environment can necessitate development of new behaviors in order to realize goals. The development of this architecture would benefit many classes of robot systems because it would provide methods of automatically compensating for these variations. The PI has prior experience in machine learning algorithm development as it applies to the coordinated movements to teams of robots and walking, and with the proposed support should be able to develop his research area, which should lay a foundation for publications and establish his potential to become nationally competitive.

It is recommended that the budget be significantly reduced to provide one month's salary for the PI and reduce undergraduate support to \$2,000. With these reductions a budget of \$34,224 is recommended for year one, with similar funding for year two and a budget of \$32,724 for year three.

Year 1: \$34,224**Year 2: \$34,224****Year \$32,724**

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

PROPOSAL NO.: 061A**RANK: 31****TITLE:** *Role of the Transcription Factor, INSM1 in the Neuroendocrine Phenotype of Small Cell Lung Cancer***INSTITUTION:** Louisiana State University Health Sciences Center – New Orleans**PRINCIPAL INVESTIGATOR:** Mary B. Breslin

Lung cancer is the leading cause of cancer death in the United States. Small cell lung cancer (SCLC) accounts for 20% of all lung cancers. SCLC is an aggressive cancer with a poor prognosis for the host. SCLC cells express many proteins common to other neuroendocrine cells, including chromogranin A, neuron specific enolase, L-dopa-decarboxylase, and synaptophysin. Autocrine growth regulation of SCLC cells is thought to contribute to the aggressiveness of SCLC. The goal of the proposed research is to define the role of a novel neuroendocrine specific transcriptional protein, insulinoma associated-1 (INSM1) in SCLC. INSM1 mRNA is detected during early fetal brain, pituitary, retina, olfactory, spinal cord, and pancreas development and is completely silenced in adult tissues. Recently, a knockout mouse model demonstrated the crucial role INSM1 plays in the endocrine phenotype of SCLC cells through silencing in SCLC cell lines and over-expression in a conditional transgenic mouse model.

The budget can be significantly reduced to provide one month's salary for the PI and a supply budget of \$5,000. The sub-contract should be limited to \$14,698, for a recommended year-one budget of \$30,679, with similar amounts for year two and year three.

Year 1: \$30,679**Year 2: \$30,679****Year 3: \$30,679**

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

PROPOSAL NO.: 111A**RANK: 32****TITLE: *The Geometry and Algebra of Ideals Generated by Determinants*****INSTITUTION: Southeastern Louisiana University****PRINCIPAL INVESTIGATOR: Kent M. Neuerburg; Zachariah C. Teitler**

An area of algebraic geometry that has received much attention is the study of sets of points in the plane. The Harbourne-Hirschowitz conjectures concern the number of curves passing through a set of points with given multiplicities. The PI proposes to extend the above lines of inquiry in a new direction by considering ideals generated by all or some of the determinants of a matrix. (1) He will study the base loci of linear series with assigned basepoints in P^n defined by minors of $(k + n - 1) \times k$ matrices. He will ask the same question for further restricted classes of matrices, such as symmetric, skew-symmetric, or Hankel. (2) He will study Martin's slope varieties in the case of non-general point arrangements, and higher-dimensional analogs in the cases described in (1).

A significant reduction in the requested budget is recommended that provides one month's salary for the PI, resulting in a year-one budget of \$19,964. Similar amounts are recommended for year two and year three.

Year 1: \$19,964**Year 2: \$19,964****Year 3: \$19,964**

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

PROPOSAL NO.: 154A**RANK: 33****TITLE:** *Synthesis and Characterization of Lanthanide Actinide Hydroxy Mixed-Ligand Complexes: Potential Matrices for Nuclear Waste Isolation***INSTITUTION:** University of Louisiana at Monroe**PRINCIPAL INVESTIGATOR:** Ralph Zehnder

One of the world's most pressing problems which is yet unsolved is the safe isolation and storage of highly radioactive nuclear waste from the generation of electricity by nuclear reactors. The PI has recently developed a simplified low temperature method for the hydrothermal synthesis of lanthanide(III) bis-hydroxychloride complexes. The study of such compounds in an extended series will enhance the fundamental knowledge of lanthanide chemistry and extend this research to the analogous 5f actinide compounds, which should significantly extend the chemical knowledge of the actinides. Although the lanthanide bis-hydroxychlorides dissolve slowly in moderately acidic aqueous solutions, they are remarkably insoluble in near-neutral and basic solutions. These findings may be attributed to the highly linked three-dimensional lattice structure. The results strongly indicate that comparable crystalline actinide bis-hydroxychlorides may exhibit similar solubility patterns and they may serve as an environmentally stable matrix for the long-term isolation of nuclear waste.

The PI received his Ph.D. degree in 2003 and spent two years as a post-doctoral fellow at Los Alamos National Laboratory before appointment as an Assistant Professor in 2005. His experience at Los Alamos should enhance his potential to become nationally competitive in the area where he proposes to conduct research.

The proposed budget should be reduced to provide one month's summer salary for the PI, limit LEQSF travel support to \$1,000, and delete the rentals and printing costs, for a recommended year-one budget of \$29,087. A budget of \$19,681 is recommended for year two and a budget of \$16,000 for year three.

Year 1: \$29,087**Year 2: \$19,681****Year 3: \$16,000**

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

PROPOSAL NO.: 117A**RANK: 34****TITLE: *Statistical Physics of Single Molecule Bipolymers and Epitaxial Growth*****INSTITUTION: Southern University and A & M College – Baton Rouge****PRINCIPAL INVESTIGATOR: Pui-Man Lam**

The PI intends to study two very interesting and active areas of statistical physics: the unzipping of DNA with an applied external force and thin film epitaxial growth. In the first area, the PI wants to study both the equilibrium force versus temperature phase diagram and the dynamics of unzipping of DNA with a force, taking into account the self-avoidance effect. In the second area, which he has been working on for some years, he wants to continue his research on the physics of surface growth by molecular beam epitaxy (MBE).

The PI is an established investigator who received an LEQSF grant back in 1995 and became successful in obtaining Department of Energy funding later on. He is now attempting to shift his research to single molecule bi-polymer research and has had some success in obtaining a Petroleum Research fund in this new area. There are some problems proposed in the approach since un-zipping of the DNA is in a fluid system. Therefore, the final panel reduced the ranking of the proposal relative to that made by the subject area panel. The research proposed is in a good area to pursue, but the overall proposal is not totally new in terms of change in the research focus of the principal investigator's research effort.

The proposed budget has been slightly reduced to provide one month's summer salary for the PI, resulting in a recommended year-one budget of \$54,796. A similar budget is recommended for year two and year three.

Year 1: \$54,796**Year 2: \$54,796****Year 3: \$54,796**

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

PROPOSAL NO.: 135A**RANK:** 35**TITLE:** *Capability and Other Aspects of Finite P-groups***INSTITUTION:** University of Louisiana at Lafayette**PRINCIPAL INVESTIGATOR:** Arturo Magidin

The PI is currently studying the problem of determining which p -groups are capable. This is an important and intriguing problem which is also difficult and challenging and in which progress was slow until recently.

The PI will consider some central issues in p -groups, but is not at the cutting edge of current research. He proposes to continue exploring the consequences and reaches of the approach, while exploring connections with the more recent developments. In order to expand his research and establish the relationships with more senior investigators he will participate in and attend professional conferences that center on group theory. The PI will expand existing contacts and pursue new ones with more established researchers, as suggested by the review panel at NSF.

A significant reduction in the requested budget is recommended that provides one month's summer salary for the PI and limits LEQSF travel support to \$2,000, for a year-one budget of \$12,040, with similar amounts for year two and year three.

Year 1: \$12,040**Year 2: \$12,040****Year 3: \$12,040**

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

PROPOSAL NO.: 030A**RANK:** 36**TITLE:** *Electrospray Based MicroChemical Reactor***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Shengmin Guo

The PI will focus on the synthesis of novel ceramic nanoparticles for Solid Oxide Fuel Cells (SOFCs) using electrospray. When a conductive ionic solution presented in an electro spray emitter is pulled towards the extractor electrode, a characteristic cone shape (Taylor cone) is formed and sub-micron sized liquid droplets emit from the tip of the cone. In this study the PI will use a concentric annular type emitter, a structured microjet; a core liquid covered by a shell liquid will be generated. The breakup of this structured microjet gives birth to mono-dispersed droplets. The PI will conduct a detailed study on the mixing and the chemical reactions within these small droplets along the interface of the two streams. The realization of such technique could extend considerably the synthesis of novel ceramic materials for fuel cell application.

The PI is well trained, with a Ph.D. from Oxford University in 1998 and then considerable experience at both Oxford and the University of Manchester Institute of Science and Technology. He was appointed Assistant Professor at Louisiana State University in 2004.

The PI has a pending proposal submitted to UTSR 06-01 entitled “The Study of Console Cooling Geometry with Shaped Exit.” If funded, LEQSF award/support should not be provided.

A very modest reduction is recommended that reduces the supply budget by \$2,000, for a year-one budget of \$43,670. A budget of \$43,285 is recommended for year two and a budget of \$43,000 for year three.

Year 1: \$43,670**Year 2: \$43,285****Year 3: \$43,000**

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

PROPOSAL NO.: 065A**RANK: 37****TITLE: *Developing the Fruit Fly, Drosophila Melanogaster, as a Model to Study Serotonergic Function*****INSTITUTION: Louisiana State University Health Sciences Center– New Orleans****PRINCIPAL INVESTIGATOR: Charles D. Nichols**

The goal of the PI is to develop the fruit fly, *Drosophila melanogaster*, as a genetic model organism to investigate molecular and genetic events underlying behaviors influenced by serotonin. Serotonin is a neurotransmitter that regulates a wide range of behaviors in humans, including sleep, appetite, memory, sexual behavior, aggression, mood, and cognition. Disregulation of serotonergic function in humans can result in severe diseases, including schizophrenia and depression. As shown with most previously studied processes in *Drosophila*, ranging from embryonic development to memory to drug response, the molecular and cellular events underlying serotonergic function are likely to be highly conserved between fly and human. The PI proposes experiments to develop *Drosophila* to study serotonergic function by: 1) identifying and characterizing behaviors influenced by serotonin and developing assays to measure behavioral outcomes; and 2) developing the genetic tools necessary to elucidate molecular pathways linking serotonin receptor activation to behaviors. Together, these experiments will form a novel systems-based approach to explore neurochemical events relevant to serotonergic function not only in flies, but also in humans.

The PI has a pending NIH proposal entitled “*Drosophila* as a Model Genetic System to Study Neuropsychiatric Disorders.” If funded, LEQSF award/support should not be provided.

The requested budget can be reduced significantly to provide one month’s salary for the PI, support for the graduate assistant but not the Research Associate, supplies at a level of \$10,000, resulting in a recommended year-one budget of \$36,255. A similar budget of \$36,255 is recommended for year two and year three.

Year 1: \$36,255**Year 2: \$36,255****Year 3: \$36,255**

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

PROPOSAL NO.: 124A**RANK: 38****TITLE:** *Common Leukemia-Lymphoma-Associated Genetic Alterations in Healthy Individuals: Silent Micro-Mosaicism or Latent Predisposition?***INSTITUTION:** Tulane University Health Science Center**PRINCIPAL INVESTIGATOR:** Marilyn M. Li; Gabriella Pridjian

Leukemia/lymphoma-associated genetic alterations, such as the MLL PTDs in AML, t(9;22) *BCR/ABL* in CML and ALL and t(14;18) *IgH/BCL-2* in follicular lymphoma play important roles in tumorigenesis. These alterations are also important biological markers that dictate disease diagnosis, prognosis, and treatment regimens. The PI and others have recently discovered that some leukemia/lymphoma-associated genetic alterations can be detected in RNA and genomic DNA at low levels in bone marrow and peripheral blood samples from healthy individuals. The PI hypothesizes that many leukemia/lymphoma-associated genetic aberrations randomly occur during cell division in healthy individuals. Most of the healthy carriers will maintain a silent micro-mosaic status for life. However, a higher risk may be associated with at least a fraction of positive individuals. In the proposed project, the PI will determine the presence or absence, and the quantification of a series of common leukemia/lymphoma-associated genetic alterations in blood samples from healthy individuals and prenatal samples. This proposal was significantly lowered by the final panel review based upon the committee's belief that there is limited application of the proposed research.

A slight reduction in the budget is recommended to provide one month's salary for the PI and delete graduate assistant support, since 50% of the salary of the Postdoctoral Fellow is being requested. The supply budget should be reduced to \$10,000 and LEQSF travel support limited to \$1,000, for a year-one budget of \$58,016. A budget of \$54,336 is recommended for year two and \$52,700 for year three.

Year 1: \$58,016**Year: \$54,336****Year 3: \$52,700**

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

PROPOSAL NO.: 156A**RANK: 39****TITLE:** *Analysis of Weather Radar Imaging for Clutter Rejection and Rainfall Estimation***INSTITUTION:** University of New Orleans**PRINCIPAL INVESTIGATOR:** Dimitrios Charalampidis

The PI requests funding for research in the area of weather-radar image analysis, and more specifically, clutter rejection and rainfall estimation. The high resolution of radar imagery has made it a useful tool for observing weather events, including rain and hurricanes, and it is therefore an invaluable tool in meteorology. Standard relationships exist for converting radar reflectivity to rain rate. Since accurate rainfall estimation is crucial for many applications, non-rain related echoes such as the ones caused by anomalous propagation and clutter have to be identified and removed. The PI has significant experience in this field from his 3-year work with NASA's Tropical Rainfall Measuring Mission program. He has developed a quality-control algorithm, which is fully automatic, based on intensity and textural feature extraction through the use of multifractals. It has been shown that the technique was able to identify non-rain events similarly or more accurately than the manual algorithm provided by NASA.

The proposed budget is slightly reduced to limit LEQSF travel support to \$1,000 and delete \$1,000 in publication costs, for a recommended year-one budget of \$27,466, with a similar budget for year two and year three.

Year 1: \$27,466**Year 2: \$27,466****Year 3: \$27,466**

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

PROPOSAL NO.: 049A**RANK: 40****TITLE:** *When Foreigners Take Over: Highly Skilled Migration Into the American Chess Market***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Mariano Sana

Highly skilled migration to the United States is significant, but it is understudied. Research on the dynamics of highly skilled migration is needed. In a globalized world, companies, nonprofits and governments alike try to attract the best workers. The global market for talent is increasingly merit-based, reducing the influence of personal connections. The PI proposes a case study of highly skilled migration into an economic niche that is a virtually perfect meritocracy: the American chess market. A massive exodus of chess grandmasters to the West followed the collapse of communism. In the United States today, foreign-born players regularly get the lion's share of prize money from chess tournaments, recruit students, and publish in various media, potentially displacing talented natives from all sources of chess-related income. Has the chess market expanded after the arrival of the newcomers? How did players of all levels adjust to the immigration flow? What are their perceptions? To answer these questions, the PI will administer a survey to a random sample of members of the US Chess Federation, and will conduct interviews targeting the top US-born and foreign-born players.

The proposed budget is slightly reduced to provide one month's summer salary for the PI, for a recommended year-one budget of \$51,148. A budget of \$33,548 is recommended for year two and a budget of \$32,000 is recommended for year three.

Year 1: \$51,148**Year 2: \$33,548****Year 3: \$32,000**

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

PROPOSAL NO.: 091A**RANK: 41****TITLE:** *Effect of Material Surface Properties on Endothelial Cell Micromechanics***INSTITUTION:** Louisiana Tech University**PRINCIPAL INVESTIGATOR:** Ping-Fai Sit

To expedite the currently slow development of artificial biomaterial, which is primarily based on material availability and empirical approach, a systematic study is proposed by the PI to elucidate the effects of material surface properties on molecular scale mechanical properties of adhered endothelial cells (EC). The results should lead to a better understanding of EC-substrate interactions, and, as a first step, form a basis for an improved construction of artificial cardiovascular biomaterials through a rational design. The hypothesis to be tested is that the mechanical properties of substrate interactions, indicated by the membrane stiffness, are closely related to the surface properties of the underlying substrata. Self-assembled monolayer surfaces with systematic variations in their chemical functionalities will be used as model surfaces. Correlation will then be made on the material surface properties, cell morphology, adsorbed proteins, cytoskeletal components, shear stresses and membrane stiffness. Funding support on this project will aid the PI to become nationally competitive.

The PI has a request for funding from two external sources—one entitled “Inter-relationship of Material Surface Properties and Cellular Micromechanics,” and one entitled “Microcantilever-based Dynamic Studies of Fibrinogen Interfacial Properties.” If either of the proposals is funded, LEQSF award/support should not be provided.

It is recommended that the budget be slightly reduced to limit LEQSF travel support to \$1,000, supplies to \$4,500, and delete laboratory usage fees, for a recommended year-one budget of \$53,781. A budget of \$39,531 is recommended for year two by reducing the supply budget to \$4,000 and deleting the laboratory usage fee, with a similar budget for year three.

Year 1: \$53,781**Year 2: \$39,531****Year 3: \$39,531**

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

PROPOSAL NO.: 067A**RANK: 42****TITLE: *Rhythmic Wrinkling: Artifact or "Atherofact"-A Histological Study*****INSTITUTION: Louisiana State University Health Sciences Center-New Orleans****PRINCIPAL INVESTIGATOR: Dana Troxclair; Bernardo Ruiz; Beth Schmidt**

Rhythmic wrinkling (RW) is characterized by grossly visible periodic ('rhythmic'), often interlaced, rows of linear wrinkled intima that extend perpendicular to the longitudinal axis of the aorta. Previously rhythmic wrinkling was considered an artifact; the cause and significance of RW is unknown. The objective of the proposed research is to determine if RW is a distinct pathobiological entity and not an artifact and also to elucidate unique biological characteristics of RW which should provide insight into the significance and causes of RW. Specifically, the PI will: (1) determine the composition of RW, including percent of lipid, collagen, elastin and smooth muscle cells; and (2) determine specific morphologic characteristics of RW, including intima-media thickness, peak height, peak-to-peak distances, periodicity and investigate the progression of RW.

A large reduction in the budget is recommended that provides one month's salary for the PI, limits LEQSF travel support to \$1,000, reduces supply cost to \$3,000, and deletes printing charges, for a year-one budget of \$13,375. Similar budgets are recommended for year two and year three.

Year 1: \$13,375**Year 2: \$13,375****Year 3: \$13,375**

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.:** 003A**TITLE:** *Investigation of Soybean-Phakopsora Pachyrhizi Interactions through a Proteomics-Based Approach***INSTITUTION:** Louisiana State University - Agricultural Center**PRINCIPAL INVESTIGATOR:** Zhi-Yuan Chen; Raymond W. Schneider

Soybean rust is mainly caused by *Phakopsora pachyrhizi*, which results in yield reduction to as much as 80% and billions of dollars in agricultural losses. Soybean rust has been spreading rapidly across the continents since its discovery in 1902 in Japan, and it finally reached the continental US in 2004. The objectives of research proposed herein include: 1) identifying proteins induced during infection using proteomics, 2) characterizing these proteins to understand host-fungus interactions, and 3) verifying the importance of promising host proteins in disease resistance through RNAi gene silencing.

The PI holds a USDA grant of \$450,000 for five years, which makes him nationally competitive.

PROPOSAL NO.: 015A**TITLE:** *Physics-Based Optimal Solvers***INSTITUTION:** Louisiana State University and A&M College – Baton Rouge**PRINCIPAL INVESTIGATOR:** Burak Aksoylu; Susanne Brenner

In hurricane modeling performance of the solver is very critical, as the simulation is repeated numerous times for an accurate approximation with real-time data. Weak performance of the solver will spoil the simulation because of time lag in processing the real-time data. The PI proposes to complement the multilevel methods by deflation techniques, as they are effective in capturing and attenuating the effect of extremal eigenvalues that are associated to the underlying physical contrasts. Invariant subspaces will be used to capture and algebraically encode the underlying physics.

The PI held an NSF grant when the proposal was submitted, which is a very strong indication that he is competitive for external funding and therefore does not qualify for the LEQSF program.

PROPOSAL NO.: 018A

TITLE: *Interactive Visualization of Large, High-Dynamic Range Volume Data*

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

PRINCIPAL INVESTIGATOR: **Werner Bengler; Andre Hutanu; Brygg Ullmer; Shalini Venkataraman**

The PI proposes to use state-of-the-art capabilities in Graphics Processing Units for visualizing multi-resolution data structures. High dynamic range volume rendering involves novel user interfaces to specify transfer functions as well as techniques to map dynamic range and lower-precision LCD displays. The PI plans to study the performance of these algorithms in order to map efficiently to emerging computing platforms such as multi-core CPU's.

Please note that the PI of this proposal lists his present position since 2005 as a Research Staff for the Center. National granting agencies do not recommend a staff person as a PI for funded research. Therefore, a staff person is not normally an optimal candidate for the LEQSF funds and the committee does not recommend funding of this proposal.

PROPOSAL NO.: 029A

TITLE: *Temporal and Multi-Modality Data Fusion for Facial Identification*

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

PRINCIPAL INVESTIGATOR: **Bahadir K. Gunturk**

The PI proposes to (i) investigate identification based on infrared and visible-range camera data, (ii) make a comprehensive analysis and evaluation of classifier fusion methods, (iii) develop algorithms that address pose and illumination variations and image resolution, and (iv) develop a prototype camera system that will help identification from large distances.

The PI did not provide the required information on education, funding history, etc., that is necessary to make a rational decision on his qualifications to carry out the research. Without this required information it was not possible to recommend funding for this proposal.

PROPOSAL NO.: 034A

TITLE: *Impacts of Hypoxia on Bacterial Community Structure and Biogeochemical Processes in Bottom Sediment of the Northern Gulf of Mexico*

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

PRINCIPAL INVESTIGATOR: Aixin Hou

The impacts of hypoxia and anoxia on benthic macrofauna on the Louisiana continental shelf have received much attention, but little is known about the impact of these same conditions on benthic bacterial community structure and biogeochemical processes. The proposed study will concern the effect of hypoxia on bacterial community structure and functionality in this coastal environment. Changes in bacterial community structure and function, i.e., nitrous oxide (N₂O) and methane (CH₄) production and mercury methylation, will be observed in relation to hypoxic conditions through both survey and incubation studies.

The PI currently has an NSF grant at a rate of \$199,937 that runs until March 2007, a USGS grant of \$34,310 a year until September 2007 and a Sea Grant of \$119,000 until January 31, 2007. It is obvious from the large number of grants that the PI is already nationally competitive and should be able to have renewal of some of these grants if good research is being conducted.

PROPOSAL NO.: 053A

TITLE: **Mechanical Behavior of Unsaturated Soils Subjected to Wetting-Drying Cycles**

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

PRINCIPAL INVESTIGATOR: Radhey S. Sharma

Majority of geoinfrastructure, including foundations, highway embankments, pavement subgrades, man-made slopes, and retaining walls, involves unsaturated soils either as a construction materials or ground above the water table in which the construction takes place. The annual cost of damage to building, structures, and roads caused by problematic unsaturated soils is estimated at \$1 billion in the United States, and many billions of dollars worldwide. There is hardly any data on unsaturated soil stiffness under cyclic wetting/drying so that the behavior of unsaturated soils can be understood, interpreted, and hence, adequately used for the analysis and design of geoinfrastructure involving unsaturated soils, including the prediction of rainfall-triggered changes in stiffness. The proposed research will involve experimental investigation of unsaturated soils under triaxial stress condition using a novel experimental set up.

The PI has a significant history of obtaining funding for his research; therefore it is obvious that he is already nationally competitive.

PROPOSAL NO.: 057A

TITLE: *Reactive Nanofolds for Electronic Packaging*

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

PRINCIPAL INVESTIGATOR: Jiaping Wang

Effective device packaging is very critical for successful development of electronic systems. Current electronic packaging methods require elevated temperatures for bonding which may damage temperature sensitive electronic device or cause debonding of dissimilar materials on cooling. The objective of the proposed research is to develop a reliable electronic packaging technology using reactive nanofolds as local heat source that can provide high quality bonds needed for packaging without exposing the electronic devices to high temperatures. The reactive nanofold packaging technology has several advantages: limited thermal exposure to electronic devices and reduced thermal stress in packages due to the localized heating; bonding of microstructures in various geometries with patterned solder layers and reactive nanofolds; metallic thermal interface between components for better heat transfer and thermal management.

The PI currently holds an NSF grant in the amount of \$330,429 that began in May of 2006 and runs until May of 2009. Clearly, the PI is nationally competitive.

PROPOSAL NO.: 062A

TITLE: *Intestinal Neurotransmitters Released in Response to Cholera Toxin Action Modulate Dendritic Cell Function*

INSTITUTION: Louisiana State University Health Sciences Center – New Orleans

PRINCIPAL INVESTIGATOR: Bonny Lynn Dickinson

Mucosal vaccines targeted to the gut generate immune protection against pathogens that infect via mucosal surfaces. Most replication incompetent oral vaccines, however, are poorly immunogenic and require inclusion of mucosal adjuvants to generate a robust immune response. Cholera toxin (CT) is the most potent oral adjuvant examined to date, and yet its enterotoxicity precludes its use in humans. Elucidating the mechanisms by which CT functions as an adjuvant would set the stage for development of molecules that exploit the toxin pathway without causing disease. The underlying premise of this application is that the transient accumulation of neurotransmitters in the gut in the presence of CT influences the function of a key resident immune cell, the dendritic cell (DC).

The PI currently holds a CCFA grant in the amount of \$230,000 to run until the end of 2006, as well as a \$100,000 grant from Children's Hospital Research Institute to run until September 2007. It is obvious that the Senior Science Award is indicative of the fact that the PI is nationally competitive.

PROPOSAL NO.: 070A

TITLE: Spatiotemporal Processing Within the Olfactory Bulb EPL

INSTITUTION: Louisiana State University Health Sciences Center– Shreveport

PRINCIPAL INVESTIGATOR: Kathryn A. Hamilton

Despite progress in understanding odor encoding by sensory neurons expressing different odorant receptors, contributions of central neurons exhibiting different properties remain unclear. Little is known about the functions of different tufted cell subtypes. The PI postulates that the electrophysiological properties and bursting of the subtypes will vary with EPL depth, and that interaction with local interneurons contributes to this diversity. Results will be obtained for superficial cells first and used in an initial publication and revised NIH proposal to be submitted within the first year. In Aim 2, she will use dual recording and cross-correlation methods to test the hypothesis that tufted cell activity is correlated with interneuron activity within the same sublamina or several sublaminae.

The PI of this proposal had NIH funding in the 1980's and 90's in the topic area currently being proposed for research. Since it is evident that the PI lost the NIH support there is little chance of her becoming nationally competitive again in the same area by simply carrying out the research proposed. Therefore, the panel does not recommend funding of this proposal.

PROPOSAL NO.: 071A

TITLE: Mechanism of Curcumin Inhibition of mTOR Signaling

INSTITUTION: Louisiana State University Health Sciences Center– Shreveport

PRINCIPAL INVESTIGATOR: Shile Huang

Curcumin is under early clinical trials as an anticancer agent. However, the underlying mechanism remains to be elucidated. Preliminary data indicate that curcumin inhibits the proliferation/growth, motility, and survival of human rhabdomyosarcoma (RMS) cells, and concurrently inhibits the mammalian target of rapamycin (mTOR) signaling. The PI hypothesizes that mTOR may be one of the primary targets of curcumin. The goal of the project is to collect more preliminary data to apply for federal funds.

The PI is obviously nationally competitive, with an RO1 NIH grant in the amount of \$144,200 a year from 2006 to 2010.

PROPOSAL NO.: 079A

TITLE: *The Role of Hematopoietic Growth Factors in Repairing Ischemic Brain*

INSTITUTION: Louisiana State University Health Sciences Center - Shreveport

PRINCIPAL INVESTIGATOR: Li-Ru Zhao

Stroke remains the major cause of death and disability worldwide. In Louisiana, stroke is responsible for 6% of all deaths and the cost to taxpayers exceeds \$49 million for inpatient hospital payments plus \$12 million to physicians. Effective treatment for stroke has not been well developed. The PI's preliminary data showed that hematopoietic growth factors, stem cell factor (SCF) and granulocyte-colony stimulating factor (G-CSF) significantly reduced infarction size and improved functional recovery when administered in both acute and chronic phase after brain ischemia, suggesting an effective therapy for all stroke patients. However, the mechanisms of this recovery remain unknown, which may delay approval of clinic trails. The PI will test the hypothesis that SCF and G-CSF-induced recovery is associated with neuroprotection, neuronal plasticity, and neural regeneration. The preliminary data collected from this proposal will provide significant insights to develop federal grant proposals.

The PI is obviously nationally competitive, with a current American Heart Association grant with an annual rate of \$100,000 and a CADASIL Foundation award of \$200,000 a year, with both grants funded until 2008.

**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 and Head, Department of Materials Science and Engineering
North Carolina State University

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

Professor, Department of Veterinary Molecular Biosciences
Director, Clinical Pharmacology Laboratory
University of California at Davis

Agricultural Sciences

Everett R. Emino, Ph.D., Chair

Professor Emeritus
Department of Environmental Horticulture
University of Florida

Gerald L. Jubb, Jr., Ph.D.

Adjunct Professor, Entomology
Interim Associate Vice President & Dean
University of Arizona – South

Appendix G (continued):

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)

Walter Diehl, Ph.D., Chair

Professor
Department of Biological Sciences
Mississippi State University

Geoffrey A. Cordell, Ph.D.

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

Computer and 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

Appendix G (continued):

Earth and 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

Engineering A

Michael E. Prudich, Ph.D., Chair

Professor and Chair, Department of Chemical Engineering
Ohio University

Samir Ahmed, Ph.D.

Professor
School of Civil & Environmental Engineering
Oklahoma State University

William A. Hyman, Sc.D.

Professor of Bioengineering
Biomedical Engineering Program
Texas A & M University

D. Mitchell Wilkes, Ph.D.

Associate Professor
Department of Electrical Engineering & Computer Science
Vanderbilt University

Appendix G (continued):

Mathematics

Kenneth I. Gross, Ph.D., Chair

Professor
Department of Mathematics & Statistics
University of Vermont

Homer F. Walker, Ph.D.

Professor
Department of Mathematical Sciences
Worcester Polytechnic Institute

Raymond Chin, Ph.D.

Professor
Department of Computer & Information Sciences
Indiana University Purdue University Indianapolis

Physics & Astronomy

Terry M. Tritt, Ph.D., Chair

Professor
Department of Physics & Astronomy
Clemson University

Frank T. Avignone, Ph.D.

Endowed Professor of Physics & Astronomy
University of South Carolina

Social Sciences

Claire B. Kopp, Ph.D., Chair

Consultant Developmental Psychology
Los Angeles, CA

Kathy B. Smith, Ph.D.

Professor & Chair
Department of Politics
Wake Forest University

M. Stephen Weatherford, Ph.D.

Professor
Department of Political Science

University of California at Santa Barbara

APPENDIX H
RESEARCH COMPETITIVENESS SUBPROGRAM
FY 2006-07
SUMMARY OF PROPOSALS

160 TOTAL PROPOSALS

8	AGR	Agricultural Sciences
25	BS I	Biological Sciences I
23	BS II	Biological Sciences II
21	C/IS	Computer and Information Sciences
9	EAR	Earth and Environmental Sciences
28	ENG A	Engineering A
16	MAT	Mathematics
10	PHY	Physics & Astronomy
20	SS	Social Sciences

TOTAL FIRST-YEAR FUNDS REQUESTED: \$8,679,767

**Summary of Proposals Submitted to the
Research Competitiveness Subprogram(RCS)
for the FY 2006-2007 Review Cycle**

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
001A-07 C/IS	Enhancing Digital Cultures Across the Curriculum Via Computer Sciences	Dillard University (Natural Sciences and Public Health);	Gloria C. Love;	1	\$ 54,928
				2	\$ 44,655
				3	\$ 39,997
				Total	\$ 139,580
				Proposal is a New Request	
Does this proposal contain confidential or proprietary information? No					
002A-07 AGR	A Phenology Pest Forecast Network for Integrated Pest Management in Urban Landscape	Louisiana State University And A&M College - Agricultural Center (Hammond Research Station);	Yan Chen;	1	\$ 43,343
				2	\$ 36,146
				3	\$ 36,146
				Total	\$ 115,635
				Proposal is a New Request	
Does this proposal contain confidential or proprietary information? No					

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
003A-07 AGR	Investigation of Soybean - Phakopsora Pachyrhizi Interactions through a Proteomics-Based Approach	Louisiana State University And A&M College - Agricultural Center (Plant Pathology and Crop Physiology);	Zhi-Yuan Chen; Raymond W. Schneider;	1	\$ 62,250
				2	\$ 63,500
				3	\$ 73,688
				Total	\$ 199,438
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
004A-07 ENG A	An Alternative Oil Source for Biodiesel Production	Louisiana State University And A&M College - Agricultural Center (Audubon Sugar Institute);	Donal F. Day;	1	\$ 58,000
				2	\$ 58,000
				3	\$ 58,000
				Total	\$ 174,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
005A-07 BS	Integration of Mosquito Host Preference Data with the Epidemiology of West Nile Virus in Louisiana	Louisiana State University And A&M College - Agricultural Center (Entomology);	Wayne Kramer; Alma Roy; Philip Stouffer;	1	\$ 50,000
				2	\$ 55,000
				3	\$ 55,000
				Total	\$ 160,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
006A-07 AGR	The Impact of Anti-Oxidation Suppression on Bovine Parainfluenza Virus Type-3	Louisiana State University And A&M College - Agricultural Center (Animal Sciences);	Jason E. Rowntree; Kenneth R. Bondioli;	1	\$ 52,750
				2	\$ 44,750
				3	\$ 45,750
				Total	\$ 143,250
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
Note: Verify multi-institution submission. Both PI's at AgCtr.					
007A-07 ENG A	Environmentally Conscious Biofuel Manufacturing	Louisiana State University And A&M College - Agricultural Center (Audubon Sugar Institute);	Benito A. Stradi-Granados; Giovanna DeQueiroz;	1	\$ 87,000
				2	\$ 87,000
				Total	\$ 174,000
				Proposal is a New Request	
008A-07 AGR	Bio-energy and Value Added Products from Animal Wastes in Louisiana	Louisiana State University And A&M College - Agricultural Center (Biological and Agricultural Engineering);	Chandra S. Theegala; Eric Achberger; Mike Mailander;	1	\$ 53,606
				2	\$ 54,030
				3	\$ 54,473
				Total	\$ 162,109
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
009A-07 AGR	Molecular Characterization of High Protein Rice (<i>Oryza sativa</i> L.) Lines Based on their Amino Acid Profiles and Development of Molecular Markers for High Protein Traits	Louisiana State University And A&M College - Agricultural Center (Rice Research Station);	Herry S. Utomo; Ida Wenefrida; Steve D. Linscombe;	1	\$ 57,200
				2	\$ 98,400
				Total	\$ 155,600
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
010A-07 AGR	Characterization of Developmental Changes in Energy Metabolism in Dairy Cattle	Louisiana State University And A&M College - Agricultural Center (Animal Sciences);	C. C. Williams; Bruce F. Jenny;	1	\$ 37,560
				2	\$ 34,750
				3	\$ 36,250
Total	\$ 108,560				
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
011A-07 AGR	Increasing Isoflavones in Soybean Using UV-C Irradiation as a Post Harvest Treatment	Louisiana State University And A&M College - Agricultural Center (Food Science);	Zhimin Xu;	1	\$ 35,000
				2	\$ 30,000
				Total	\$ 65,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
012A-07 MAT	Rapid Convergence of the Generalized Quasilinearization Method for Nonlinear Differential Problems with Applications	Louisiana State University And A&M College - Alexandria (Mathematics and Physical Sciences);	Tanya G. Melton;	1	\$ 31,765
				2	\$ 32,703
				3	\$ 33,688
				Total	\$ 98,156
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
013A-07 BS	Development of Novel RNA Binding Ligands as Tools for Studying RNA Recognition and Conformational Flexibility	Louisiana State University And A&M College - Baton Rouge (Biological Sciences);	Fareed Aboul-ela;	1	\$ 70,199
				2	\$ 62,354
				Total	\$ 132,553
				Proposal is a New Request	
014A-07 ENG A	Development of a Project Improvement System for Construction Projects	Louisiana State University And A&M College - Baton Rouge (Construction Management & Industrial Engineering);	Fereydoun Aghazadeh; Craig Harvey;	1	\$ 60,804
				2	\$ 60,804
				Total	\$ 121,608
				Proposal is a New Request	

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
015A-07 MAT	Physics-Based Optimal Solvers	Louisiana State University And A&M College - Baton Rouge (Mathematics and Center for Computation and Technology);	Burak Aksoylu; Susanne Brenner;	1	\$ 48,890
				2	\$ 73,275
				3	\$ 73,929
				Total	\$ 196,094
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
016A-07 EAR	Distribution and Potential Toxicity of the Diatom Pseudo-nitzschia spp. in Mississippi River Influenced Louisiana Coastal Waters	Louisiana State University And A&M College - Baton Rouge (Oceanography and Coastal Sciences);	Sibel Bargu ates; Nancy Rabalais;	1	\$ 53,409
				2	\$ 55,890
				3	\$ 53,901
				Total	\$ 163,200
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
017A-07 SS	Maximizing the Utility of Visual Working Memory: Can Attention Strategies Overcome Limits During Encoding and Retrieval?	Louisiana State University And A&M College - Baton Rouge (Psychology);	Melissa R. Beck;	1	\$ 55,566
				2	\$ 55,566
				3	\$ 55,566
				Total	\$ 166,698
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
018A-07 C/IS	Interactive Visualization of Large, High-Dynamic Range Volume Data	Louisiana State University And A&M College - Baton Rouge (Center for Computation and Technology);	Werner Bengler; Andre Hutanu; Brygg Ullmer; Shalini Venkataraman;	1	\$ 61,000
				2	\$ 61,000
				3	\$ 55,000
				Total	\$ 177,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
019A-07 SS	A Network Based Analysis of Labor Markets	Louisiana State University And A&M College - Baton Rouge (Economics);	Tibor Besedes;	1	\$ 51,839
				2	\$ 45,266
				3	\$ 24,686
				Total	\$ 121,791
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
020A-07 SS	Economic Recovery from Natural Disasters: A Dynamic Stochastic General Equilibrium Approach	Louisiana State University And A&M College - Baton Rouge (Economics);	Areendam Chanda; Eric Hillebrand;	1	\$ 78,416
				2	\$ 48,895
				3	\$ 45,145
				Total	\$ 172,456
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
021A-07 BS	Role of Transient Receptor Potential Melastatin 4 channel in Type 2 Diabetes	Louisiana State University And A&M College - Baton Rouge (Comparative Biomedical Sciences);	Henrique Cheng; Evanna Gleason;	1	\$ 66,843
				2	\$ 66,591
				3	\$ 66,566
				Total	\$ 200,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
022A-07 SS	Computerized Assessment of Negative Symptoms	Louisiana State University And A&M College - Baton Rouge (Psychology);	Alex S. Cohen;	1	\$ 64,166
				2	\$ 64,166
				3	\$ 41,666
				Total	\$ 169,998
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
023A-07 ENG A	Characterization and Analysis of Hybrid Electronic Devices	Louisiana State University And A&M College - Baton Rouge (Electrical & Computer Engineering);	Theda Daniels-Race;	1	\$ 59,179
				2	\$ 58,938
				3	\$ 58,188
				Total	\$ 176,305
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
024A-07 SS	Why Does One-Session Treatment of Specific Phobias Work? A Systematic Comparison of Massed vs. Spaced Exposure	Louisiana State University And A&M College - Baton Rouge (Psychology);	Thompson E. Davis III;	1	\$ 65,360
				2	\$ 66,560
				3	\$ 56,796
				Total	\$ 188,716
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
025A-07 EAR	Scaling Dispersion Model for Solute Transport in Natural Streams	Louisiana State University And A&M College - Baton Rouge (Civil and Environmental Engineering);	Zhi-Qiang Deng;	1	\$ 45,383
				2	\$ 44,300
				3	\$ 38,136
				Total	\$ 127,819
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
026A-07 ENG A	Electrografting of Functional Monolayers to Silicon Nanowires	Louisiana State University And A&M College - Baton Rouge (Chemical Engineering);	John C. Flake;	1	\$ 70,000
				2	\$ 35,000
				3	\$ 30,000
				Total	\$ 135,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
027A-07 BS	Cellular and Molecular Responses of the Freshwater Fish Gill to Parasitism by Larval Freshwater Mussel <i>Utterbackia imbecilis</i>	Louisiana State University And A&M College - Baton Rouge (Biological Sciences);	Fernando Galvez;	1	\$ 71,324
				2	\$ 69,260
				3	\$ 48,441
				Total	\$ 189,025
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
028A-07 AGR	Genetic Characterization of Novel Macrolide Resistance Mechanisms in <i>Campylobacter</i> from Poultry	Louisiana State University And A&M College - Baton Rouge (Food Science);	Beilei Ge;	1	\$ 60,250
				2	\$ 32,250
				3	\$ 32,250
				Total	\$ 124,750
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
029A-07 ENG A	Temporal and Multi-Modality Data Fusion for Facial Identification	Louisiana State University And A&M College - Baton Rouge (Electrical and Computer Engineering);	Bahadir K. Gunturk;	1	\$ 36,098
				2	\$ 36,098
				3	\$ 36,098
				Total	\$ 108,294
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
030A-07 ENG A	Electrospray Based Microchemical Reactor	Louisiana State University And A&M College - Baton Rouge (Mechanical Engineering);	Shengmin Guo;	1	\$ 45,670
				2	\$ 45,285
				3	\$ 44,911
				Total	\$ 135,866
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
031A-07 C/IS	Exploring Spaceage Technology for the Construction Industry	Louisiana State University And A&M College - Baton Rouge (Construction Management & Industrial Engineering);	Craig M. Harvey; Fereydoun Aghazadeh;	1	\$ 61,904
				2	\$ 52,379
				Total	\$ 114,283
				Proposal is a New Request	
032A-07 MAT	Unitary Representations of Symplectic Groups	Louisiana State University And A&M College - Baton Rouge (Mathematics);	Hongyu He;	1	\$ 31,221
				2	\$ 31,221
				3	\$ 31,221
				Total	\$ 93,663
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
033A-07 ENG A	Incorporating Polysaccharides into Polymeric Scaffolds to Improve Property Characteristics for Tissue Replacement Platforms	Louisiana State University And A&M College - Baton Rouge (Chemical Engineering);	James Henry;	1	\$ 51,809
				2	\$ 49,809
				3	\$ 47,809
				Total	\$ 149,427
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
034A-07 EAR	Impacts of Hypoxia on Bacterial Community Structure and Biogeochemical Processes in Bottom Sediment of the Northern Gulf of Mexico	Louisiana State University And A&M College - Baton Rouge (Environmental Studies);	Aixin Hou;	1	\$ 59,986
				2	\$ 59,706
				3	\$ 33,758
				Total	\$ 153,450
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
035A-07 PHY	Hydrogen Storage Materials for the 21st Century	Louisiana State University And A&M College - Baton Rouge (Center for Advanced Microstructures and Devices);	Alexander Ignatov;	1	\$ 63,634
				2	\$ 42,234
				3	\$ 42,930
				Total	\$ 148,798
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
036A-07 C/IS	Release, Certification and Warranty Management for High Confidence Software Systems	Louisiana State University And A&M College - Baton Rouge (Construction Management and Industrial Engineering);	Xiaoyue Jiang; Gerald M. Knapp;	1	\$ 34,048
				2	\$ 34,446
				3	\$ 34,856
				Total	\$ 103,350
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
037A-07 BS	A Systems Approach to Measure Kinetic of Protein - Protein Interacation Cascades in Living Organisms	Louisiana State University And A&M College - Baton Rouge (Biological Sciences);	Naohiro Kato;	1	\$ 65,986
				2	\$ 65,361
				Total	\$ 131,347
				Proposal is a New Request	
038A-07 SS	Off the Book Debt, Capital Structure and Credit Risk	Louisiana State University And A&M College - Baton Rouge (Finance);	Ayla Kayhan;	1	\$ 71,336
				2	\$ 44,193
				3	\$ 44,193
				Total	\$ 159,722
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
039A-07 BS	Rare Sugars for Wood Protection from Formosan Termites	Louisiana State University And A&M College - Baton Rouge (Biological Sciences);	Roger Laine;	1	\$ 70,677
				2	\$ 70,677
				Total	\$ 141,354
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
040A-07 BS	PFKFB3 Structure -Based Design of the Inhibitor of Cancer Glycolysis	Louisiana State University And A&M College - Baton Rouge (Biological Sciences);	Yong -Hwan Lee; Song -Gun Kim;	1	\$ 80,448
				2	\$ 59,551
				3	\$ 58,551
Total	\$ 198,550				
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
041A-07 EAR	Storm-Surge Development Over Gentle-Slope Shelf and Land and its Impact to the Louisiana Coast	Louisiana State University And A&M College - Baton Rouge (Oceanography and Coastal Sciences);	Chunyan Li;	1	\$ 34,275
				2	\$ 59,316
				3	\$ 59,875
Total	\$ 153,466				
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
042A-07 SS	Consumer Coping in Post-Disaster Recovery and Rebuilding: A Longitudinal Approach	Louisiana State University And A&M College - Baton Rouge (Human Ecology);	Chuanlan Liu; Frances C. Lawrence; William C. Black;	1	\$ 89,674
				2	\$ 76,577
				Total	\$ 166,251
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
043A-07 SS	Why and How Religious Beliefs, Practices, and Communities Matter: A National Qualitative Study of Christian, Jewish and Muslim Families	Louisiana State University And A&M College - Baton Rouge (Human Ecology);	Loren D. Marks;	1	\$ 48,576
				2	\$ 49,370
				Total	\$ 97,946
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
044A-07 SS	Fairness, Competitiveness, and Sustainability of Global Clothing/Footwear Commodity Chain	Louisiana State University And A&M College - Baton Rouge (Human Ecology);	Haesun Park;	1	\$ 60,989
				2	\$ 40,215
				Total	\$ 101,204
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
045A-07 SS	Communicating to Young Voters: New Approaches to Voter Mobilization	Louisiana State University And A&M College - Baton Rouge (Mass Communication);	Monica Postelnicu;	1	\$ 44,165
				Total	\$ 44,165
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
046A-07 SS	Training for Healthcare Information Technology Implementation: The Intersection of Workforce Aging and Innovation	Louisiana State University And A&M College - Baton Rouge (Psychology);	Tracey E. Rizzuto;	1 2 3	\$ 47,929 \$ 48,731 \$ 48,666
				Total	\$ 145,326
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
047A-07 ENG A	Theoretical and Experimental Studies for Optimal Seeding/Solvent Mediated Crystallization Operations	Louisiana State University And A&M College - Baton Rouge (Chemical Engineering);	Romagnoli Jose A.;	1 2 3	\$ 74,610 \$ 65,010 \$ 60,380
				Total	\$ 200,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
048A-07 PHY	K-Edge Capture Radiation Therapy	Louisiana State University And A&M College - Baton Rouge (Physics and Astronomy);	Erno Sajo; Kenneth Hogstrom; Kenneth L. Matthews;	1	\$ 77,434
				2	\$ 76,284
				3	\$ 34,300
				Total	\$ 188,018
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
049A-07 SS	When Foreigners Take Over: Highly Skilled Migration into the American Chess Market	Louisiana State University And A&M College - Baton Rouge (Sociology);	Mariano Sana;	1	\$ 61,361
				2	\$ 45,415
				3	\$ 33,084
				Total	\$ 139,860
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
050A-07 SS	The Traditional Media/New Media Crossover Project	Louisiana State University And A&M College - Baton Rouge (Mass Communication);	Meghan S. Sanders;	1	\$ 33,665
				2	\$ 25,269
				3	\$ 26,266
				Total	\$ 85,200
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
051A-07 ENG A	Emergency Evacuation Plan and Traffic Control during Disasters	Louisiana State University And A&M College - Baton Rouge (Construction Management & Industrial Engineering);	Bhaba R. Sarker; Andrew J. Yu; Xiaoyue Jiang;	1	\$ 75,000
				2	\$ 72,000
				3	\$ 53,000
				.	
				Total	\$ 200,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
052A-07 C/IS	A Quad-Core Model of IT Innovation: Exploring Service Oriented Architecture	Louisiana State University And A&M College - Baton Rouge (Information Systems and Decision Science);	Andrew Schwarz;	1	\$ 59,160
				2	\$ 60,560
				3	\$ 62,000
				.	
				Total	\$ 181,722
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
053A-07 ENG A	Mechanical Behavior of Unsaturated Soils Subjected to Wetting-Drying Cycles	Louisiana State University And A&M College - Baton Rouge (Civil and Environmental Engineering);	Radhey S. Sharma;	1	\$ 55,271
				2	\$ 44,271
				3	\$ 36,599
				.	
				Total	\$ 136,141
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
054A-07 ENG A	Towards Interfacial Behavior of Rehabilitation Materials	Louisiana State University And A&M College - Baton Rouge (Civil and Environmental Engineering);	Hak-Chul Shin;	1	\$ 61,971
				2	\$ 59,911
				3	\$ 59,886
				Total	\$ 181,768
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
055A-07 EAR	Examination of Mineral Dust Chemistry Using Single Particle Mass Spectrometry	Louisiana State University And A&M College - Baton Rouge (Chemistry);	Michael P. Tolocka;	1	\$ 46,921
				2	\$ 46,237
				3	\$ 45,862
				Total	\$ 139,020
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
056A-07 C/IS	Development and Validation of Genre-Based Benchmarks for Identification of Internet Fraud	Louisiana State University And A&M College - Baton Rouge (Information Systems and Decision Sciences);	James R. Van Scotter;	1	\$ 65,235
				2	\$ 64,735
				3	\$ 63,135
				Total	\$ 193,105
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
057A-07 ENG A	Reactive Nanofolds for Electronic Packaging	Louisiana State University And A&M College - Baton Rouge (Mechanical Engineering);	Jiaping Wang;	1	\$ 58,555
				2	\$ 58,555
				3	\$ 58,555
				Total	\$ 175,665
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
058A-07 C/IS	Optimizing Logistics Strategy for Emergency Supplies	Louisiana State University And A&M College - Baton Rouge (Construction Management & Industrial Engineering);	Junfang Yu; Bhaba R. Sarker; Gerald M. Knapp;	1	\$ 72,434
				2	\$ 71,670
				3	\$ 55,896
				Total	\$ 200,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
059A-07 ENG A	Enhancing the Erosion Resistance of Coastal Sediments Using Biodegradable Polymers	Louisiana State University And A&M College - Baton Rouge (Civil & Environmental Engineering);	Guoping (Gregg) Zhang;	1	\$ 41,654
				2	\$ 39,633
				3	\$ 35,576
				Total	\$ 116,863
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
060A-07 BS	Molecular and Biochemical Characterization of an AT-Hook Protein	Louisiana State University Health Sciences Center - New Orleans (Microbiology, Immunology, and Parasitology);	Ashok A. Aiyar; Kenneth H. Johnston;	1	\$ 63,816
				2	\$ 65,739
				3	\$ 67,757
				Total	\$ 197,312
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
061A-07 BS	Role of the Transcription Factor, INSM1 in the Neuroendocrine Phenotype of Small Cell Lung Cancer	Louisiana State University Health Sciences Center - New Orleans (Pediatric/Research Institute for Children);	Mary B. Breslin;	1	\$ 62,713
				2	\$ 63,815
				3	\$ 64,949
				Total	\$ 191,477
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
062A-07 BS	Intestinal Neurotransmitters Released in Response to Cholera Toxin Action Modulate Dendritic Cell Function	Louisiana State University Health Sciences Center - New Orleans (Pediatrics);	Bonny Lynn Dickinson;	1	\$ 64,749
				2	\$ 64,749
				3	\$ 64,749
				Total	\$ 194,247
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
063A-07 BS	Isolation and Characterization of Anti Microbial Peptides from the Eastern Oyster	Louisiana State University Health Sciences Center - New Orleans (Microbiology, Immunology and Parasitology);	Kenneth H. Johnston;	1	\$ 57,851
				2	\$ 58,944
				3	\$ 60,090
				.	
				Total	\$ 176,885
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
064A-07 BS	Allosteric Communication Networks in Motor Proteins	Louisiana State University Health Sciences Center - New Orleans (Biochemistry & Molecular Biology);	Sunyoung Kim;	1	\$ 61,826
				2	\$ 63,680
				3	\$ 65,591
				.	
				Total	\$ 191,097
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
065A-07 BS	Developing the Fruit Fly, Drosophila Melanogaster, as a Model to Study Serotonergic Function	Louisiana State University Health Sciences Center - New Orleans (Pharmacology and Experimental Therapeutics);	Charles D. Nichols;	1	\$ 62,495
				2	\$ 64,070
				3	\$ 65,724
				.	
				Total	\$ 192,289
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
066A-07 BS	Survivin, A Novel Transcriptional Target of Hyluronan -CD44 Mediating Cell Survival Mechanisms During Breast Tumor Invasion and Metastasis	Louisiana State University Health Sciences Center - New Orleans (Pathology);	Allal Ouhtit;	1	\$ 66,000
				2	\$ 66,000
				3	\$ 66,000
				Total	\$ 198,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
067A-07 BS	Rhythmic Wrinkling: Artifact or "Atherofact" - A Histological Study	Louisiana State University Health Sciences Center - New Orleans (Pathology);	Dana A. Troxclair; Bernardo Ruiz; Beth Schmidt;	1	\$ 50,000
				2	\$ 50,000
				3	\$ 50,000
				Total	\$ 150,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
068A-07 BS	Formyl Peptide Receptors in Mesenchymal Stem Cells	Louisiana State University Health Sciences Center - New Orleans (Medicine and Genetics);	Guoshun Wang; Richard G. Painter;	1	\$ 65,000
				2	\$ 65,000
				3	\$ 70,000
				Total	\$ 200,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
069A-07 BS	Bone Marrow-Derived Stem Cells Deliver GDNF Gene in a Rat Model of Parkinson's Disease	Louisiana State University Health Sciences Center - Shreveport (Cellular Biology and Anatomy);	Wei-Ming Duan; Jakob Reiser;	1	\$ 65,000
				2	\$ 65,000
				3	\$ 60,000
				Total	\$ 190,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
070A-07 BS	Spatiotemporal Processing Within the Olfactory Bulb EPL	Louisiana State University Health Sciences Center - Shreveport (Cellular Biology and Anatomy);	Kathryn A. Hamilton;	1	\$ 67,600
				2	\$ 65,172
				3	\$ 66,794
				Total	\$ 199,566
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
071A-07 BS	Mechanism of Curcumin Inhibition of mTOR Signaling	Louisiana State University Health Sciences Center - Shreveport (Biochemistry and Molecular Biology);	Shile Huang;	1	\$ 63,650
				2	\$ 63,650
				3	\$ 63,650
				Total	\$ 190,950
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
072A-07 BS	Defining the Relationship between Persistent Norovirus Infection and the Induction of Protective Immunity	Louisiana State University Health Sciences Center - Shreveport (Microbiology and Immunology);	Stephanie M. Karst;	1	\$ 60,000
				2	\$ 65,000
				3	\$ 65,000
				Total	\$ 190,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
073A-07 BS	Generation of Recombinant Adenoviruses to Inhibit EHV-1	Louisiana State University Health Sciences Center - Shreveport (Microbiology and Immunology);	Seong Kee Kim; Suzanne Zavec; Yunfei Zhang;	1	\$ 50,861
				2	\$ 49,933
				3	\$ 50,397
				Total	\$ 151,191
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
074A-07 BS	Notch1 Activation in Human Breast Cancer	Louisiana State University Health Sciences Center - Shreveport (Feist-Weiller Cancer Center);	Amanda Sun;	1	\$ 70,000
				2	\$ 60,000
				3	\$ 60,000
				Total	\$ 190,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
075A-07 BS	Effects of Serum on Growth and Gene Regulation in Helicobacter pylor	Louisiana State University Health Sciences Center - Shreveport (Microbiology and Immunology);	Traci L. Testerman;	1	\$ 49,000
				2	\$ 49,000
				3	\$ 49,000
				Total	\$ 147,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
076A-07 BS	Defining the Bone Marrow as a Reservoir for Gammaherpesvirus Latency	Louisiana State University Health Sciences Center - Shreveport (Microbiology and Immunology);	Scott A. Tibbetts;	1	\$ 55,000
				2	\$ 60,000
				3	\$ 65,000
				Total	\$ 180,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
077A-07 BS	Study of the Mechanism of EGFR-Mediated Troglitazone-Induced Cellular Acidosis in Cancer	Louisiana State University Health Sciences Center - Shreveport (Medicine);	Francesco Turturro; Tomas Welbourne;	1	\$ 95,888
				2	\$ 96,175
				Total	\$ 192,063
				Proposal is a New Request	

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
078A-07 BS	C/EBP Alpha and Androgen Independent Prostate Cancer	Louisiana State University Health Sciences Center - Shreveport (Feist- Weiller Cancer Center);	Hong Yin; Briana Jill Williams; Jonathan Glass; Patrick A. Adegboyega;	1	\$ 57,250
				2	\$ 57,250
				3	\$ 57,250
				Total	\$ 171,750
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
079A-07 BS	The Role of Hematopoietic Growth Factors in Repairing Ischemic Brain	Louisiana State University Health Sciences Center - Shreveport (Neurology and Cellular Biology and Anatomy);	Li-Ru Zhao;	1	\$ 54,700
				2	\$ 59,507
				3	\$ 59,980
				Total	\$ 174,187
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
080A-07 BS	Biophysical Modeling of Cell Motility in African Trypanosomes	Louisiana State University And A&M College - Shreveport (Biological Sciences);	Nathan R. Hutchings; Andrei Ludu;	1	\$ 31,389
				2	\$ 29,889
				3	\$ 29,139
				Total	\$ 90,417
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
081A-07 BS	Transcutaneous Electrical Stimulation via Concentric Ring Electrodes for Controlling Status Epileptics in Rats	Louisiana Tech University (Biomedical Engineering);	Walter G. Besio; Alan Chiu; David K. Mills;	1	\$ 55,165
				2	\$ 53,501
				3	\$ 54,242
				Total	\$ 162,908
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
082A-07 C/IS	Application of Hippocampal Neuron Dynamics in Artificial Neural Networks for the Development of Brain Function Restoration Strategy	Louisiana Tech University (Biomedical Engineering);	Alan W. Lun Chiu;	1	\$ 49,654
				2	\$ 34,904
				3	\$ 34,904
				Total	\$ 119,462
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
083A-07 PHY	Novel Computational Approach to Study Conductivity in Polymers with Atomic Resolution	Louisiana Tech University (Micromanufacturing/Physics);	Pedro Derosa;	1	\$ 58,039
				2	\$ 50,940
				3	\$ 51,358
				Total	\$ 160,337
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
084A-07 ENG A	Asymmetric Catalytic Hydrogenation at Chiral Self- Assembled Monolayer Modified Platinum Surfaces	Louisiana Tech University (Chemistry);	Sven Eklund;	1	\$ 50,279
				2	\$ 45,157
				3	\$ 45,552
				.	
				Total	\$ 140,988
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
085A-07 MAT	Sensitivity Analysis for the Design of MinMax Controllers	Louisiana Tech University (Mathematics and Statistics);	Katie A. Evans;	1	\$ 37,180
				2	\$ 36,909
				3	\$ 37,168
				.	
				Total	\$ 111,257
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
086A-07 ENG A	Quartz-MEMS for High Performance RF Devices	Louisiana Tech University (Micromanufacturing);	Ville P. Kaajakari;	1	\$ 68,734
				2	\$ 49,208
				3	\$ 37,206
				.	
				Total	\$ 155,148
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
087A-07 ENG A	Vibration Based NDE for Capacity Estimation of Beam Structures with Bonded FRP Composites	Louisiana Tech University (Civil Engineering);	Luke S. Lee; David Hall; Ray Sterling;	1	\$ 71,534
				2	\$ 38,386
				3	\$ 38,381
				Total	\$ 148,301
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
088A-07 MAT	An Efficient Method for Simulating Diffusion Inside Nano-Tubes for Drug Delivery System	Louisiana Tech University (Mathematics and Statistics);	Don Liu; Weizhong Dai; Yuri Lvov;	1	\$ 30,131
				2	\$ 30,477
				3	\$ 30,839
				Total	\$ 91,447
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
089A-07 ENG A	A Study of the Kinetics of Electroplating Lead-free Solders Using Ultrasonic Energy Enhancement	Louisiana Tech University (Micromanufacturing);	Chad B. O'Neal; Scott Gold; Sven Eklund;	1	\$ 57,286
				2	\$ 49,270
				3	\$ 49,775
				Total	\$ 156,331
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
090A-07 MAT	Numerical Methods for Optimizing the Temperature Distribution Related to Hyperthermia Treatment	Louisiana Tech University (Mathematics and Statistics);	Mihaela Paun; Weizhong Dai;	1	\$ 43,219
				2	\$ 37,031
				3	\$ 37,856
				Total	\$ 118,106
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
091A-07 ENG A	Effect of Material Surface Properties on Endothelial Cell Micromechanics	Louisiana Tech University (Biomedical Engineering);	Ping-Fai Sit;	1	\$ 60,581
				2	\$ 46,331
				3	\$ 46,331
				Total	\$ 153,243
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
092A-07 PHY	Search for New Physics Phenomena in Jet Production at Hadron Colliders	Louisiana Tech University (Physics);	Markus Wobisch;	1	\$ 55,000
				2	\$ 55,000
				3	\$ 55,000
				Total	\$ 165,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
093A-07 SS	A Study of How the Citizenry Participates In and Perceives the Recovery of New Orleans	Loyola University New Orleans (Political Science);	Peter F. Burns;	1	\$ 12,939
				2	\$ 33,108
				3	\$ 13,279
				Total	\$ 59,326
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
094A-07 SS	Police Vehicular Pursuits: An Investigation into the Effects of Policy Restrictiveness on Public Safety	Loyola University New Orleans (Criminal Justice);	Wendy L. Hicks;	1	\$ 18,946
				2	\$ 18,618
				3	\$ 18,928
				Total	\$ 56,492
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
095A-07 MAT	Parallel Algorithms for Numerical Solutions to Nonlinear Partial Differential Equations	Loyola University New Orleans (Mathematics and Computer Science);	Xuefeng Li;	1	\$ 39,777
				2	\$ 21,586
				3	\$ 21,955
				Total	\$ 83,318
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
096A-07 BS	Isolation and Characterization of Antimicrobial Peptides for Leukocytes of the American Alligator (<i>Alligator Mississippiensis</i>)	McNeese State University (Chemistry);	Mark Merchant; Gill Diamond; Kermit Murray; Ruth M. Elsey;	1	\$ 53,515
				2	\$ 83,304
				3	\$ 35,664
				.	
				Total	\$ 172,483
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
097A-07 C/IS	Knowledge Discovery and Datamining Applications to Academic Performance in Louisiana	McNeese State University (Mathematics, Computer Science, and Statistics);	Jithika Thomas;	1	\$ 50,600
				2	\$ 35,500
				3	\$ 36,430
				.	
				Total	\$ 122,530
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
098A-07 PHY	Computer Simulation of Laser Desorption and Ionization of Biological Molecules with Water Matrix	Nicholls State University (Physical Sciences);	Yusheng Dou; Glenn Lo;	1	\$ 64,803
				2	\$ 63,664
				3	\$ 63,664
				.	
				Total	\$ 192,131
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
099A-07 SS	An Economic Investigation of Louisiana's Local Musicians	Nicholls State University (Finance and Economics);	Norbert J. Michel;	1	\$ 57,563
				2	\$ 57,563
				3	\$ 57,563
				.	
				Total	\$ 172,689
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
100A-07 BS	Effects of Aging on Regulation of Immune Response to Salmonella typhimurium Infections	Nicholls State University (Biological Sciences);	Rajkumar Nathaniel; Angela Corbin; Marilyn Kilgen;	1	\$ 48,930
				2	\$ 44,005
				3	\$ 44,230
				.	
				Total	\$ 137,165
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
101A-07 BS	Multi -scale Habitat Use of Coastal Wetlands by Wintering Wading Birds	Nicholls State University (Biological Sciences);	Aaron R. Pierce;	1	\$ 58,654
				2	\$ 59,654
				3	\$ 40,754
				.	
				Total	\$ 159,062
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
102A-07 EAR	Coastal Restoration Technique and Monitoring Using Post-Harvest Sugarcane Residue and Geospatial Technologies	Nicholls State University (Applied Science);	Balaji Ramachandran; Ramaraj Boopathy;	1 2 3 .	\$ 52,145 \$ 51,145 \$ 50,145
				Total	\$ 153,435
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
103A-07 C/IS	An Object Type Graph System	Nicholls State University (Mathematics and Computer Science);	Cong-Cong Xing;	1 2 3 .	\$ 59,441 \$ 60,628 \$ 61,843
				Total	\$ 181,912
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
104A-07 BS	Structural Studies of the Islet Amyloid Polypeptide Aggregation Pathway	Pennington Biomedical Research Center (Proteomics and Mass Spectrometry);	Indu Kheterpal;	1 2 3 .	\$ 65,219 \$ 66,315 \$ 67,460
				Total	\$ 198,994
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
105A-07 MAT	Endomorphism Centralizer Nearings	Southeastern Louisiana University (Mathematics);	Gregory Alan Cannon;	1	\$ 15,614
				2	\$ 16,372
				3	\$ 17,169
				Total	\$ 49,155
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
106A-07 C/IS	Cocoa DL - Collaborative Creation of Applications for Directed Learning	Southeastern Louisiana University (Computer Science and Industrial Technology);	Troy Kammerdiener;	1	\$ 49,211
				2	\$ 61,099
				3	\$ 63,074
				Total	\$ 173,384
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
107A-07 PHY	Computer Simulations of Water on Structured Surfaces	Southeastern Louisiana University (Chemistry and Physics);	Hye-Young Kim;	1	\$ 26,369
				2	\$ 22,562
				3	\$ 22,991
				Total	\$ 71,922
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
108A-07 MAT	The Lattice of Subrings of Homogeneous Functions on a Module	Southeastern Louisiana University (Mathematics);	John Lewallen; Lucyna Kabza;	1	\$ 46,533
				2	\$ 44,630
				3	\$ 49,917
				.	
				Total	\$ 141,080
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
109A-07 C/IS	Memory and Learning Based Robot Control Architecture	Southeastern Louisiana University (Computer Science and Industrial Technology);	Patrick McDowell;	1	\$ 55,495
				2	\$ 56,582
				3	\$ 56,226
				.	
				Total	\$ 168,303
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
110A-07 MAT	Orthogonal Groups	Southeastern Louisiana University (Mathematics);	Dennis I. Merino;	1	\$ 21,293
				2	\$ 22,401
				3	\$ 23,562
				.	
				Total	\$ 67,256
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
111A-07 MAT	The Geometry and Algebra of Ideals Generated by Determinants	Southeastern Louisiana University (Mathematics);	Kent M. Neuerburg; Zachariah C. Teitler;	1	\$ 38,426
				2	\$ 39,847
				3	\$ 42,862
				Total	\$ 121,135
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
112A-07 SS	Hurricane Katrina and Governmental Response	Southeastern Louisiana University (History and Political Science);	Manabu Saeki;	1	\$ 26,470
				2	\$ 25,399
				Total	\$ 51,869
				Proposal is a New Request	
113A-07 BS	Impact of an Aggressive Invader, Chrysomya rufifacies (Diptera: Calliphoridae) on Louisiana's Native Carrion Insect Fauna	Southeastern Louisiana University (Biological Sciences);	Erin Jean Watson;	1	\$ 59,491
				2	\$ 56,255
				3	\$ 46,340
				Total	\$ 162,086
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
114A-07 C/IS	Using Hyperspectral Remote Sensing for GIS to Support Disaster Mitigation	Southeastern Louisiana University (Computer Science and Industrial Technology);	Wendy Zhang;	1	\$ 26,972
				2	\$ 26,290
				3	\$ 26,973
				Total	\$ 80,235
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
115A-07 SS	African American Churches Responses to HIV Prevention	Southern University and A&M College at Baton Rouge (Psychology);	Cecil Duncan; Murelle G. Harrison;	1	\$ 98,345
				2	\$ 52,261
				3	\$ 27,579
				Total	\$ 178,185
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
116A-07 C/IS	Smart Machine Tools: Machine Accuracy, Maintenance and Reliability	Southern University and A&M College at Baton Rouge (Mechanical Engineering);	Ghanashyam Joshi;	1	\$ 60,000
				2	\$ 60,000
				3	\$ 60,000
				Total	\$ 180,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
117A-07 PHY	Statistical Physics of Single Molecule Biopolymers and Epitaxial Growth	Southern University and A&M College at Baton Rouge (Physics);	Pui-Man Lam;	1	\$ 66,395
				2	\$ 66,395
				3	\$ 66,395
				Total	\$ 199,185
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
118A-07 BS	Acyclic Protegrin Analogues as Antimicrobial Agents	Southern University and A&M College at Baton Rouge (Chemistry);	Dewayne Logan;	1	\$ 55,000
				2	\$ 30,000
				3	\$ 30,000
				Total	\$ 115,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
119A-07 ENG A	Towards Advanced HBCU Engineering Education: Nano-Scale Design and Optimization of Miniature Power Source	Southern University and A&M College at Baton Rouge (Electrical Engineering);	Zhengmao Ye; Pradeep K. Bhattacharya;	1	\$ 60,000
				2	\$ 80,000
				3	\$ 60,000
				Total	\$ 200,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
120A-07 MAT	Investigations of Monomial Ideals and Multi-Graded Regularity	Tulane University (Mathematics);	Tai Huy Ha;	1	\$ 44,416
				2	\$ 45,222
				3	\$ 46,059
				Total	\$ 135,697
				Proposal is a New Request	
Does this proposal contain confidential or proprietary information? No					
121A-07 MAT	New Approaches for the Assessment of Phylogenetic Accuracy	Tulane University (Mathematics);	Michelle Lacey;	1	\$ 33,740
				2	\$ 31,499
				3	\$ 32,289
				Total	\$ 97,528
				Proposal is a New Request	
Does this proposal contain confidential or proprietary information? No					
122A-07 SS	Conceptualizing Racism: Understanding Group and Individual Differences in the Perception of Racism	Tulane University (Psychology);	Laurie T. O'Brien;	1	\$ 42,534
				2	\$ 42,711
				3	\$ 41,123
				Total	\$ 126,368
				Proposal is a New Request	
Does this proposal contain confidential or proprietary information? No					

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
123A-07 BS	The Role of K+ Channel Modulation in Plasticity	Tulane University (Cell and Molecular Biology);	Laura Schrader;	1	\$ 54,106
				2	\$ 52,251
				3	\$ 53,961
				.	
				Total	\$ 160,318
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
124A-07 BS	Common Leukemia - Lymphoma-Associated Genetic Alterations in Healthy Individuals: Silent Micro-Mosaicism or Latent Predisposition?	Tulane University Health Sciences Center (Hayward Genetics Center);	Marilyn M. Li; Gabriella Pridjian;	1	\$ 69,993
				2	\$ 70,000
				3	\$ 59,991
				.	
				Total	\$ 199,984
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
125A-07 BS	Role of Stem Cells in Adult Spinal Cord Regeneration in a Electric Fish	University of Louisiana at Lafayette (Biology);	James S. Albert;	1	\$ 76,129
				2	\$ 75,321
				3	\$ 27,227
				.	
				Total	\$ 178,677
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
126A-07 C/IS	Integrated Sensor Processors for Katrina-Like Rescue and Recovery	University of Louisiana at Lafayette (Center for Advanced Computer Studies);	Magdy Bayoumi;	1	\$ 62,545
				2	\$ 62,545
				3	\$ 62,545
				Total	\$ 187,635
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
127A-07 C/IS	3-D Interaction Methods for Efficient Interpretation of Scientific Data in Virtual Reality-Based Visualization Systems	University of Louisiana at Lafayette (Center for Advanced Computer Studies);	Christopher W. Borst;	1	\$ 53,900
				2	\$ 54,781
				3	\$ 56,314
				Total	\$ 164,995
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
128A-07 C/IS	Adaptive Distributed Embedded Computing System for Asset Surveillance and Security	University of Louisiana at Lafayette (Center for Advanced Computer Studies);	Charles D. Cavanaugh;	1	\$ 15,514
				2	\$ 15,764
				3	\$ 15,764
				Total	\$ 47,042
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
129A-07 ENG A	Determination of Transient Thermal Properties in Biological and Reactive Systems	University of Louisiana at Lafayette (Chemical Engineering);	William M. Chirdon;	1	\$ 47,586
				2	\$ 58,117
				3	\$ 44,449
				Total	\$ 150,152
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
130A-07 EAR	Characterization of the Microbial Community Involved in Modifications of Calcium Sulfate and Calcium Carbonate Deposits	University of Louisiana at Lafayette (Biology);	Andrei Chistoserdov; Brian Lock;	1	\$ 97,623
				2	\$ 99,882
				Total	\$ 197,505
				Proposal is a New Request	
131A-07 BS	SEAM Up Louisiana	University of Louisiana at Lafayette (Kinesiology);	Toby Dore'; Claire Foret; Praphul Joshi; Rachel Fournet;	1	\$ 53,716
				2	\$ 91,444
				3	\$ 53,423
				Total	\$ 198,583
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
132A-07 C/IS	Development of Human-Robot Interaction and Collaboration System Using Sensors	University of Louisiana at Lafayette (Mechanical Engineering);	Suren N. Dwivedi;	1	\$ 49,405
				2	\$ 50,548
				3	\$ 51,751
				Total	\$ 151,704
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
133A-07 SS	Investigating the Evolution of Geometric Factors in Prepositional Meaning During Language Acquisition	University of Louisiana at Lafayette (Cognitive Science);	Michele I. Feist;	1	\$ 51,004
				2	\$ 49,776
				3	\$ 50,111
				Total	\$ 150,891
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
134A-07 BS	An Analysis of the Effects of the Invasive Grass Phragmites Australis on Marsh Insect Populations	University of Louisiana at Lafayette (Biology);	Derek M. Johnson;	1	\$ 53,941
				2	\$ 43,038
				3	\$ 44,956
				Total	\$ 141,935
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
135A-07 MAT	Capability and Other Aspects of Finite P-Groups	University of Louisiana at Lafayette (Mathematics);	Arturo Magidin;	1	\$ 22,309
				2	\$ 23,080
				3	\$ 23,882
				.	
				Total	\$ 69,271
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
136A-07 ENG A	Engineering of Magnetic-Stimuli Responsive Biodegradable Polymer Core-Shell Nanoparticles As a Drug Targeting Carrier	University of Louisiana at Lafayette (Chemical Engineering);	Devesh K. Misra;	1	\$ 62,489
				2	\$ 64,614
				3	\$ 66,845
				.	
				Total	\$ 193,948
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
137A-07 MAT	Simple, Nuclear, Stably Finite, Real Rank Zero, Z-Stable C*- Algebras	University of Louisiana at Lafayette (Mathematics);	Ping Wong Ng;	1	\$ 28,048
				2	\$ 27,268
				3	\$ 27,748
				.	
				Total	\$ 83,064
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
138A-07 ENG A	Ultra-High Speed Optical 3R and Wavelength Conversion for the Next Generation of WDM Optical Communications Networks	University of Louisiana at Lafayette (Electrical and Computer Engineering);	Zhongqi Pan;	1	\$ 35,563
				2	\$ 47,415
				3	\$ 36,799
				Total	\$ 119,777
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
139A-07 PHY	Interstitial Gas Effects on Granular Dynamics: The "Pure Granular" State	University of Louisiana at Lafayette (Physics);	Andi G. Petculescu;	1	\$ 58,205
				2	\$ 71,031
				3	\$ 41,386
				Total	\$ 170,622
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
140A-07 PHY	Magnetoelastic Studies in Fe-Ga Alloys	University of Louisiana at Lafayette (Physics);	Gabriela Petculescu;	1	\$ 67,624
				2	\$ 60,882
				3	\$ 44,877
				Total	\$ 173,383
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
141A-07 C/IS	Broadening Participation in Computer Science through Undergraduate Curriculum in Game Development	University of Louisiana at Lafayette (Center for Advanced Computer Studies);	Timothy E. Roden;	1	\$ 41,461
				2	\$ 42,909
				3	\$ 31,930
				.	
				Total	\$ 116,300
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
142A-07 ENG A	Passive Optical Access Networks with Dynamic Time, Wavelength and Code Assignments	University of Louisiana at Lafayette (Electrical and Computer Engineering);	George Thomas;	1	\$ 54,108
				2	\$ 55,413
				3	\$ 56,769
				.	
				Total	\$ 166,290
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
143A-07 C/IS	Computer Information System for Economic Manufacturing Quantity and Inventory Management	University of Louisiana at Lafayette (Mechanical Engineering);	Gongtao Wang; Jim Lee;	1	\$ 69,474
				2	\$ 61,853
				3	\$ 59,995
				.	
				Total	\$ 191,322
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
144A-07 BS	Biochemical Functions of Bc110 in the Regulation of A20 Gene Expression	University of Louisiana at Lafayette (Chemistry);	Wu Xu;	1	\$ 77,722
				2	\$ 58,662
				3	\$ 56,600
				Total	\$ 192,984
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
145A-07 PHY	Substrate Interactions of Chemical Solution Deposited Thin Films	University of Louisiana at Monroe (Mathematics and Physics);	John F. Anderson;	1	\$ 51,702
				2	\$ 56,567
				3	\$ 56,567
				Total	\$ 164,836
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
146A-07 BS	Forest Patch Dynamics and Non-native Plant Invasion in Bottomland Hardwood Forests in Northeastern Louisiana	University of Louisiana at Monroe (Biology);	Joydeep Bhattacharjee; Davis Pritchett; Thomas W. Sasek;	1	\$ 44,877
				2	\$ 37,443
				3	\$ 25,484
				Total	\$ 107,804
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
147A-07 BS	Optimization of Anticancer Tobacco Cembranoid-rich Fraction Using Biocatalytic Methods	University of Louisiana at Monroe (Basic Pharmaceutical Sciences);	Khalid A. El Sayed; Girish Shah; Paul W. Sylvester;	1 2 .	\$ 55,000 \$ 45,000 <hr/>
				Total	\$ 100,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
148A-07 BS	Ecological Causes and Fitness Consequences of Group-Living.	University of Louisiana at Monroe (Biology);	Loren Donald Hayes; Eileen Lacey; Luis Ebensperger;	1 2 .	\$ 53,667 \$ 53,167 <hr/>
				Total	\$ 106,834
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
149A-07 EAR	The University of Louisiana at Monroe Hurricane Evaluation at Landfall Project for Science (ULM HELPS): Analysis of High-Resolution Data	University of Louisiana at Monroe (Geosciences);	J. Robert Howard; Boniface J. Mills; Sean Chenoweth;	1 2 3 .	\$ 82,462 \$ 40,346 \$ 40,346 <hr/>
				Total	\$ 163,154
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
150A-07 BS	Role of 3,3',5-Triido-L-thyronine and its Receptor in Herpes Simplex Virus Type 1 (HSV-1) Infections	University of Louisiana at Monroe (Basic Pharmaceutical Sciences);	S. Victor Hsia; Paul W. Sylvester;	1	\$ 33,769
				2	\$ 33,936
				3	\$ 30,987
				Total	\$ 98,692
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
151A-07 BS	Sustained Release of Inhaled Proteins From Microparticles Developed by an Electrostatic Layer-by-Layer Self Assembly Technique	University of Louisiana at Monroe (Basic Pharmaceutical Sciences);	Alamdar Hussain;	1	\$ 35,025
				2	\$ 30,025
				3	\$ 30,025
				Total	\$ 95,075
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
152A-07 BS	The Chemical Modifications of Oligonucleotides Against GCS and their Pharmaceutical Activities on Cancer Chemotherapy	University of Louisiana at Monroe (Basic Pharmaceutical Sciences);	Yong-Yu Liu; Girish V. Shah; Paul W. Sylvester;	1	\$ 62,000
				2	\$ 42,550
				Total	\$ 104,550
				Proposal is a New Request	

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
153A-07 BS	Inhibition of Calpain-Mediated Liver Injury With Calpastatin Analogues	University of Louisiana at Monroe (Basic Pharmaceutical Sciences);	Seetharama D. Satyanarayanajois; Harihara M. Mehandale;	1	\$ 65,000
				2	\$ 60,000
				3	\$ 60,000
				Total	\$ 185,000
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
154A-07 EAR	Synthesis and Characterization of Lanthanide Actinide Hydroxy Mixed-Ligand Complexes: Potential Matrices for Nuclear Waste Isolation	University of Louisiana at Monroe (Chemistry);	Ralph Zehnder;	1	\$ 51,307
				2	\$ 42,441
				3	\$ 29,455
				Total	\$ 123,203
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
155A-07 ENG A	Invariant Face Recognition Using 3D Pose Estimation	University of New Orleans (Electrical Engineering);	Abdul Rahman Alsamman;	1	\$ 53,644
				2	\$ 53,644
				3	\$ 53,644
				Total	\$ 160,932
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
156A-07 ENG A	Analysis of Weather Radar Imaging for Clutter Rejection and Rainfall Estimation	University of New Orleans (Electrical Engineering);	Dimitrios Charalampidis;	1	\$ 30,866
				2	\$ 30,866
				3	\$ 30,866
				.	
				Total	\$ 92,598
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
157A-07 ENG A	Information Theoretic Approach for Distributed Sensing and Data Fusion	University of New Orleans (Electrical Engineering);	Huimin Chen;	1	\$ 37,299
				2	\$ 37,668
				3	\$ 38,549
				.	
				Total	\$ 113,516
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		
158A-07 ENG A	High Performance Parallel Monte Carlo Nonlinear Filtering Algorithms for Target Tracking	University of New Orleans (Electrical Engineering);	Vesselin P. Jilkov;	1	\$ 30,703
				2	\$ 30,703
				3	\$ 30,703
				.	
				Total	\$ 92,109
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Prop# Discipline	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
159A-07 C/IS	Advanced Digital Forensic Processing of Large Data Sets	University of New Orleans (Computer Science);	Vassil Roussev;	1	\$ 59,604
				2	\$ 53,104
				3	\$ 53,604
				Total	\$ 166,312
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

160A-07 MAT	Stagnation Point Solutions of the Euler Equations of an Inviscid Incompressible Fluid	University of New Orleans (Mathematics);	Feride Tiglay;	1	\$ 22,225
				2	\$ 22,986
				3	\$ 23,786
				Total	\$ 68,997
Proposal is a New Request			Does this proposal contain confidential or proprietary information? No		

Summary of Proposals Submitted to the Research Competitiveness Subprogram(RCS) for the FY 2006 -2007 Review Cycle			
Total Number of Proposals Submitted	Total First-Year Funds Requested	Total Funds Requested	Total First-Year Funds Available
160	\$ 8,679,767	\$ 23,541,043	\$