REPORT OF THE FINAL PANEL

BOARD OF REGENTS SUPPORT FUND
INDUSTRIAL TIES RESEARCH SUBPROGRAM
FY 2012-13

BACKGROUND INFORMATION

Thirty-four research proposals requesting a total of $2,935,604 for the first year of work were submitted for funding consideration during fiscal year (FY) 2012-13 in the Industrial Ties Research Subprogram (ITRS) component of the Board of Regents Support Fund (BoRSF). Of the thirty-four proposals submitted, one contained information of a confidential or proprietary nature and one requested a continuation of funding. A three-phase evaluation process conducted exclusively by out-of-state experts was used to review these proposals.

REVIEW PROCESS

Phase I: In-Depth Mail Review

The thirty-four proposals were reviewed for scientific and technical merit, as well as for their potential to contribute to Louisiana’s economic development and diversification, by twelve out-of-state experts. The experts included two reviewers in each of the following six subject areas: agriculture, aquaculture, and animal science; biotechnology and health care; chemical materials and petroleum engineering; computer and information sciences; mechanical and materials engineering; and environmental science & technology and urban design. Each subject-area reviewer independently evaluated and prepared an in-depth evaluation form for each assigned proposal in the subject area.

Phase II: Reviewer Consensus Evaluation

After each reviewer independently assessed each assigned proposal, members of the various subject-area groups communicated with each other to arrive at a consensus ranking of proposals within each subject area. Proposals were placed in one of three categories:

1. Priority One: Highly Meritorious Proposals Recommended for Funding;
2. Priority Two: Meritorious Proposals of a Lower Priority; and

All evaluation forms from out-of-state experts who participated in Phases I and II of the review process were available for each member of the final panel, along with all proposals submitted. Each member of the final panel read and studied each proposal and each evaluation prior to the final panel’s meeting.
Phase III: Final Panel Review

Three out-of-state experts participated in Phase III of the review process and served on the final panel. The panel convened in Baton Rouge on February 14-15, 2013, to discuss Phase I and II subject-area evaluations, prioritize awards, and develop funding recommendations. The final panel considered each of the thirty-four proposals extensively and based its recommendations on the following criteria:

A. Scientific and technical merit;
B. Potential to enhance economic development and/or diversification in Louisiana;
C. Evidence of private-sector involvement; and
D. Evidence of innovation and ability to advance Louisiana’s scientific, engineering, and/or technological bases.

The panel was informed that a maximum of $585,000 would be available in first-year funds for new research projects in the ITRS in FY 2012-13, and that money to continue the second and/or third years of multi-year projects recommended for funding would be budgeted separately from this amount. As a result of the final panel's deliberations, seven proposals were recommended for funding. These seven Priority One proposals are listed in Appendix A, immediately following the narrative section of this report. The final rankings and selections for awards were based upon individual ratings of the external reviewers (Phase I), the consensus rankings of the subject-area reviewer groups (Phase II), and the final panel’s consensus evaluation (Phase III), taking into account the economic potential of each project.

Three 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. The applicants whose proposals are listed in Appendix B should closely review the panel’s comments. The final panel believes that these investigators should be notified of their good work and encouraged to revise and resubmit their proposals in the future, with the prospect that improvements in proposal content could ultimately lead to an award. These proposals, listed in Appendix B, should not be funded this year. The Board of Regents Support Fund would be better served by diverting any available funds not awarded to and/or unclaimed by Priority One projects to other R&D program component(s).

Four other proposals were considered meritorious by both the subject-area reviewers and the final panel, but insufficiently developed in one or more areas to be worthy of funding at this time (Priority Two).

Each of the remaining proposals, although meritorious in some respects, was deemed inconsistent with the goals and purposes of the ITRS and/or seriously deficient in one or more areas (Priority Three). The principal investigators who submitted these proposals are encouraged to submit them to other, more appropriate funding programs or to make significant revisions before considering resubmission to the ITRS.

The panel recommends that the Board of Regents commit funding for each new proposal for a maximum of three years, with renewal in the second and third years made contingent upon satisfactory progress as well as reconfirmation of continued external matching funding. External stipulations and institutional matching requirements applicable in general to the seven Priority One proposals are contained in Appendix C (C.1). The specific levels of outside funding required and detailed stipulations or conditions applicable to each proposal are included in the discussion of the seven Priority One proposals listed in
Appendix C (C.2). Summary statements have also been provided in Appendix C for each meritorious ITRS proposal ranked Priority One by the subject-area panels and considered by the final panel but not recommended for funding (C.3), and Priority Two proposals (C.4). These summaries include the following information for each proposal:

1. Proposal number and title;
2. Strengths and weaknesses of the proposal;
3. Potential economic impact on Louisiana; and
4. Recommended BoRSF funding level and funding stipulations, as applicable. (Note: This information is provided only for the seven proposals recommended for funding and included in Appendix C.2).

A general statement on proposals ranked Priority III by the final panel is included in Appendix C (C.5).

The individuals who participated in Phases I and II of the review process are listed in Appendix D.

In-depth mail reviews will be provided as feedback to all applicants in July 2013.

FINAL PANEL RECOMMENDATIONS

To Phase I and Phase II Subject-Area Reviewers:

Reviewers should be commended for their performance in accordance with the guidelines set forth in the FY 2012-13 Request for Proposals.

To the Applicants:

Applicants should be commended for their efforts to obtain industrial support and for proposing research in areas with high economic potential. Several of the proposals were not supported by strong research plans which included a testable hypothesis. Improving the quality of this section of the ITRS proposal would help ensure that this program contributes to strengthening the academic mission of the supporting university or institution.

Each proposal submitted should include the following information:

1. A one-page summary describing the research in layman's language and assessing its technology transfer potential;
2. An assessment of the supportive scientific and interdisciplinary expertise needed to enhance the potential success of the research, including joint activities with other researchers or research groups at the same or other institutions;
3. A description of industrial participation representing true collaboration, including past, scheduled, and potential contacts and visits to and from industry, as well as scheduled or potential contributions of funds, equipment, and services by industry; and

4. Identification of an existing industry that will utilize project results or of a new industry to be created through the proposed research.

To the Board of Regents: General Recommendations

Over the years there has been a substantial improvement in ITRS applicants obtaining industry and non-academic support as well as development of solid research plans. It is important to encourage these improvements through the following (5) processes:

1. Continue to provide workshops and seminars for faculty on proposal preparation and requirements; development of consortia and cooperative research centers; patent and licensing procedures; and technology transfer to commerce.

2. Ensure that funded projects obtain the required industrial matching support. Principal investigators should be required to document acquisition of the recommended level and types of industrial matching support by June 30, 2013, for the mandated first-year matching commitment; by March 31, 2014, for the required second-year match; and by March 31, 2015, for the required third-year matching commitment. The staff of the Board’s Office of Sponsored Programs should further promote recognition around the State that the ITRS not only encourages but requires industrial and/or federal governmental support as a condition for funding. Significant external funding is often necessary to purchase equipment and to fund salaries.

3. Notify applicants that literature reviews, the development of databases, and the drafting of research protocols should take place prior to submission of a proposal. These activities should not be funded by the ITRS.

4. Notify applicants that the industrial support obtained should be incorporated into the budgets of proposals under the appropriate line items.

5. Where appropriate, request applicants to include more detailed information regarding current and potential intellectual property rights related to their proposals.
APPENDIX A

ITRS PROPOSALS HIGHLY RECOMMENDED FOR FUNDING (PRIORIT Y ONE)

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<th>Proposal No.</th>
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APPENDIX B*

MERITORIOUS ITRS PROPOSALS RANKED PRIORITY ONE BY THE SUBJECT-AREA PANELS AND CONSIDERED BY THE FINAL PANEL BUT NOT RECOMMENDED FOR FUNDING (3)

026B 030B 031B

Note: *The panel’s comments on these proposals are provided in Appendix C.3. Subject-area panel reviews for these proposals will also be provided to the applicant in July 2013.

APPENDIX C

MERITORIOUS ITRS PROPOSALS OF LOWER PRIORITIES

PRIORITY TWO*

001B 018B 012B 023B

Note: *These proposals are not listed in rank order of merit and are not recommended for funding as currently submitted. The panel’s comments on the proposals ranked Priority Two are provided in Appendix C.4. Subject-area panel reviews for each proposal will be provided to the applicants in July 2013.
Note: *These proposals are not listed in rank order of merit and are not recommended for funding as currently submitted. The final panel’s general comments on the proposals ranked Priority Three are provided in Appendix C.5. Subject-area panel reviews for each proposal will be provided to the applicants in July 2013.
APPENDIX C.1

GENERAL EXTERNAL AND INSTITUTIONAL MATCHING REQUIREMENT STIPULATIONS FOR ITRS AWARD RECIPIENTS

External (i.e., industrial or approved governmental) and institutional funding commitments may not be reduced below levels pledged in the original proposal unless reductions are specifically permitted in the funding stipulations for a grant. In some cases, additional external funding over and above that pledged in the proposal (see Appendix C.2) may be required. The types and amounts of additional required funding are specified in the funding stipulations for the affected awards. Unless otherwise indicated, all awards are contingent upon receipt by the Board no later than June 30, 2013, of updated documentation from the provider(s) of the external match reconfirming provision of the match pledged in the proposal. Furthermore, second-year funding will be contingent upon receipt by the Board no later than March 31, 2014, of updated documentation from the provider(s) of the external match reconfirming provision of the required second-year external match. Third-year funding will be contingent upon receipt by the Board no later than March 31, 2015, of updated documentation from the provider(s) of the external match reconfirming provision of the required third-year external match. Letters (originals) from the private-sector partner or government agency providing the required match must be provided to the Board on company or agency letterhead and signed by authorized representatives of the companies or agencies by these same dates.

Although budget requests from the Board of Regents Support Fund have been reduced significantly in some cases, no budget has been reduced to a degree that would impair execution of the proposed research and accomplishment of the project goals. Therefore, funding for each recommended Priority One project is made contingent upon full and complete execution of the work plan delineated in the proposal.
APPENDIX C.2
COMMENTS AND FUNDING STIPULATIONS FOR
PROPOSALS HIGHLY RECOMMENDED FOR FUNDING
(PRIORITY ONE)

Proposal 028B

TITLE: Transition-Metal Catalyzed Asymmetric Nitrogenation of Hydrocarbons (olefins): Method Development and its Synthetic Applications to Valuable Chemicals

INSTITUTION: University of Louisiana at Lafayette

PRINCIPAL INVESTIGATOR: Radhey Srivastava, Ph.D.

COMMENTS: The nitrogenation reactions of olefins are key chemical transformations that are used in academia and industry. The amines have a wide range of applications such as petrochemicals, agriculture, corrosion inhibitor, food additive, polymer, catalyst, etc. As a result, the search for new, selective chemical procedures for the direct conversion of petroleum-derived hydrocarbons to functionalized organic compounds is a major thrust of research. Many of the starting materials, like alkenes, are petroleum-derived chemicals. The Chiral amines have proven to be powerful pharmacophores for defining new pharmaceutical drugs due to their high density of structural information which is augmented by their propensity for hydrogen bond formation. Despite the historical need for and continued interest in Chiral amines, their synthesis remains challenging.

The proposed research is a joint collaboration between the University of Louisiana at Lafayette and Coastal Chemical Co., LLC, Lafayette, LA, a Brenntag subsidiary. The research is involved in developing efficient catalysts for the manufacture of fine chemicals, medicinal compounds and polymers. The transfer of a nitroso (RNO) group catalytically transforms hydrocarbons (abundantly found in Louisiana) into more valuable asymmetric materials. The proposed work will focus on the formation of asymmetric allyl amines. These are versatile and chemically and biologically important products of great interest to pharmaceutical industries. Although the research is not specific to Louisiana, the emphasis on pharmaceuticals is both interesting and economically sensible in terms of high-value-added products. This is a well-written proposal by a highly qualified researcher. It should be noted that Dr. Srivastava is the recipient of past ITRS funding for his work on the study of the catalytic transfer of a nitroso (RNO) and imido (RN) group to hydrocarbons for the development of more valuable materials with C-N bonds. This prior work has proven to be quite successful in terms of productivity, resulting in (1) filed patent and (8) peer-reviewed publications. There is, however, concern regarding potential overlap of the proposed research with two pending NSF proposals. At a minimum, the PI should provide assurances to the Board that the proposed research will not in any way be funded by either of the (2) NSF projects, if an award is received. Lastly, the letter of support from Brenntag did not provide a mailing address/telephone number and should therefore be resubmitted. It is recommended that the proposed budget be revised to provide one month summer salary for the PI including fringe benefits and BoRSF support for out-of-state travel, limited to $2,000. Funding is recommended at an annual level of $75,000 for year one, year two and year three. The PI is required to maintain support for undergraduate students at the level proposed in the original budget for each year of the project.

As a condition of funding, the types and amounts of the institutional and external matching commitments stated in the proposal should be maintained in full. Funding is contingent upon receipt by the Board no later than June 30, 2013 of updated documentation showing support at the levels indicated in the original proposal and as required in Appendix C.1.

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Appendix C.2 (continued)

Proposal 009B

**Rank: 1**

**TITLE:** System and Operational Design Optimization for Microalgal/Cyanobacterial Co-Culture Production of Biofuels and Bioproducts

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

**PRINCIPAL INVESTIGATORS:** Kelly Rusch, Ph.D.

**COMMENTS:** Cost-effective, high productivity systems and appropriate culture species selection have been identified as two of the technological obstacles requiring transformation advances for microalgae biotechnology platforms to be economically feasible for biofuels and bioproduct development. Most unialgal cultures are difficult to maintain in industrial systems due to species shift and/or contamination. To overcome this, two approaches have been developed by this research group. First, a hydraulically integrated serial turbidostat algal reactor (HISTAR) production system has been developed that allows the control of contaminants while maintaining continuous biomass output, and secondly, the use of mixed microalgal/cyanobacterial cultures has resulted in higher productivity and reduced risk of contamination/species shift. The PI envisions the HISTAR concept will provide the foundation for the development of a scalable platform for the manipulation of photosynthetic co-cultures, which allows for the production of a suite of bioproducts.

Louisiana State University, through close collaboration with industry partner Aquaculture Systems Technologies (AST), New Orleans, LA, will work to optimize the system and operational design of a microalgal/cyanobacterial co-culture platform for the production of biofuels and bioproducts. This is a well-written, innovative proposal by a team of highly qualified researchers. Aquaculture System Technologies’ pledge of in-kind support valued at $30,600/year involves not only personnel time but access to facilities for pilot-scale testing under natural/greenhouse conditions—hence an excellent model for industrial/academic partnership. The research is based purely on biofuel production and therefore the economic utility is questionable, since there is likely to be an additional variety of very high value bioproducts. There is concern regarding the stability of the proposed mixed microalgal/cyanobacterial cultures over time. If stable mixed cultures cannot be maintained, a major objective of the proposal might not be achieved. Hence, early proof of co-culture stability was judged to be critical. Based on this determining factor, the panel suggests that a two-year time period would be sufficient to achieve this goal. It is recommended that the proposed budget be revised to provide one month summer salary for the PI including fringe benefits and BoRSF support for out-of-state travel limited to $2,000. Funding is recommended at a level of $80,000 for year one, and $60,000 for year two. The PI is required to maintain support for undergraduate students and support for one graduate research assistant (GRA) at the level proposed in the original budget for each year of the project.

As a condition of funding, the types and amounts of the institutional and external matching commitments stated in the proposal should be maintained in full for the two years of BoRSF support. Funding is contingent upon receipt by the Board no later than June 30, 2013 of updated documentation showing support at the levels indicated in the original proposal and as required in Appendix C.1.

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Appendix C.2 (continued)

Proposal 006B

TITLE: Design and Cost Effective Manufacturing of Miniature Gas Chromatograph Sensors

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

PRINCIPAL INVESTIGATOR: Wen Meng, Ph.D.

COMMENTS: At present, speciated chemical analysis is predominantly based around the use of conventional gas chromatography/mass spectrometry (GC/MS) technology, which is large, slow, and expensive. The typical cost for environmental analyses is several hundred dollars per analysis and it usually takes weeks to months to obtain the analytical results. Decision makers are strapped with these delays, costs, and response times, making many applications that could benefit from speciating chemical analysis unfeasible. For the petrochemical processing and manufacturing sector alone, revenues from the production of chemicals and allied products amount to well over $425 billion in the U.S. World-wide revenues are much greater. In the U.S., industry associated with the production of industrial chemicals spent over $5.5 billion on R&D of new products and processes. An estimate of the analytical costs associated with this R&D is over a billion dollars or ~20%, and could be as high as 50% according to industry personnel. The PI proposes the development of miniature gas chromatograph (mGC) sensor modules that are capable of reducing the time and costs of such analysis. While the miniature gas chromatograph (mGC) sensor modules could not replace GC/MS in all applications, this analytical device will find many applications that are beyond the capabilities of current speciating analytical technologies.

The proposed research is a joint collaboration between Louisiana State University and Enervana Technologies, LLC, Baton Rouge, LA, a technology-based start-up company. The project focuses on developing the design and manufacturing protocol for metal-based, miniature gas Chromatograph (mGC) sensors. This is a well-written proposal by a team of highly qualified researchers who are well positioned to make considerable gains in this important research area. This meritorious project has great economic potential for the State of Louisiana. If successful, the proposed project has the potential of establishing a market presence for Enervana and securing its position as a job creator for the State. Enervana’s pledged industry support of $20,000/year cash will help to ensure that project goals are achieved. It should be noted that Dr. Meng is the principal investigator (PI) and co-principal investigator (co-PI) of (2) currently funded ITRS projects. The ITRS program requires that a faculty member serve as PI or co-PI on no more than (2) ITRS grants at any one time. Therefore, as a condition of funding at least one of Dr. Meng’s ITRS projects must end prior to June 1, 2013, (start date for new FY 2013 ITRS contracts) or, alternatively, Dr. Meng must resign his position as co-PI of the existing ITRS project. Funding is recommended at the level requested, i.e., $80,000 for year one, $79,400 for year two, and $78,800 for year three. The PI is required to maintain support for one/two graduate research assistants (GRAs) based on one full-time-equivalent at the level proposed in the original budget for each year of the project and limit BoRSF support for out-of-state travel to $2,000/year.

As a condition of funding, the types and amounts of the institutional and external matching commitments stated in the proposal should be maintained in full. Funding is contingent upon receipt by the Board no later than June 30, 2013 of updated documentation showing support at the levels indicated in the original proposal and as required in Appendix C.1.

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Appendix C.2 (continued)

Proposal 027B

TITLE: Experimental Investigations of Fracture Growth in Unconventional Liquid-Rich Shale Plays

INSTITUTION: University of Louisiana at Lafayette

PRINCIPAL INVESTIGATOR: Boyun Guo, Ph.D.

COMMENTS: Fossil fuels—coal, oil and natural gas—currently provide more than 85% of all the energy consumed in the United States, nearly two-thirds of U.S. electricity, and virtually all of U.S. transportation fuels. Moreover, it is likely that U.S. reliance on fossil fuels to power an expanding economy will actually increase over at least the next two decades even with aggressive development and deployment of new renewable and nuclear technologies. Because U.S. economic health depends on the continued availability of reliable and affordable fossil fuels, research and development of future fossil energy technologies are essential for U.S. national security and sustainable growth of the U.S. economy. Liquid-rich shale formations have been identified as a very promising energy resource and are an area of expanding interest to the oil and gas industry. Optimal recovery of oil and natural gas found in liquid-rich shale formations has been constrained due to limited knowledge concerning geologic and engineering factors that control recovery.

The University of Louisiana at Lafayette and Halliburton, Inc., a private-sector company providing technical services to the Louisiana oil and gas industry, will focus on investigations of fracture growth in liquid-rich shale formations, which is considered one of the key factors affecting the productivity of horizontal wells completed with multiple hydraulic fractures. The PI proposes to design and build a laboratory model to investigate the propagation of multiple fractures under controlled tri-axial stress conditions. The effects of fluid pressure and stress anisotropy on fracture growth will also be examined. Although models used in field experiments are usually quite valuable in helping to reduce costly trial and error, it is unclear if such tests can be scaled up from the proposed test-bed to the field. Tri-axial stress tests equipment by convention is small and the equipment needed is not necessarily available off the shelf. There is concern that limited testing performed in conditions far different from field conditions (i.e., lower temperatures and the absence of fracturing fluid) will not yield data of value to the industry. A better description of the test bed would have provided clarity in this area. Nevertheless, the role of Halliburton is essential for this work and a good fit for the project. Halliburton’s letter of support agrees to contribute laboratory instruments needed for the project; however, the letter provided no value for this in-kind contribution. Prior to funding, an updated letter from the industry partner must be obtained detailing their commitment to the project. Funding is recommended at the level requested for year one, i.e., $43,704. Similar budgets of $43,704 are recommended for year two and year three. The PI is required to maintain support for one graduate research assistant (GRA) at the level proposed in the original budget for each year of the project and limit BoRSF support for out-of-state travel to $2,000/year.

As a condition of funding, the types and amounts of the institutional and external matching commitments stated in the proposal should be maintained in full. Funding is contingent upon receipt by the Board no later than June 30, 2013 of updated documentation showing support at the levels indicated in the original proposal and as required in Appendix C.1.

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Proposal: 025B

**TITLE:** Field Investigation of the Wave Suppressor Sediment Collection (WSSC) System, a Highly Effective System for Shoreline Protection and Sediment Retention

**INSTITUTION:** University of Louisiana at Lafayette

**PRINCIPAL INVESTIGATORS:** Daniel Gang, Ph.D.

**COMMENTS:** Land and wetland loss occurs along edges of wetlands, water courses, and shorelines across coastal Louisiana. Conventional shore protective structures are expensive to construct in these environments and impede environmental exchanges essential for connectivity and functionality. Pierce Industries, LLC, Cutoff, LA, recently invented a modular shoreline protection/sediment retention system that could become a preferred alternative to conventional measures. Laboratory testing of the Wave Suppressor Sediment Collection (WSSC) system at UL Lafayette, funded through a previous ITRS grant, revealed extraordinary potential in wave energy reduction and sediment retention. However, the performance and stability of the system in the field are unknown. Therefore, extensive field investigation and design refinement are necessary to move the system to commercialization.

The primary goal of this project is to test the viability of the WSSC system in the marsh area, to optimize the anchor design, to evaluate its application and to gather data to support implementation. This is a well-written proposal with clearly stated goals and objectives. The project has significant importance for the Louisiana coastal regions and is considered a relatively low-cost proposal with the potential for large economic gains, if successful. While this is not a highly academic program, student involvement in data collection and analysis makes the project appropriate for BoRSF funding. There is, however, concern regarding the ability of the proposed research to be disseminated into the public domain while still maintaining the proprietary position of the industrial partner. Pierce Industries’ pledged cash and in-kind support of $55,600 will help to insure that project goals and objectives are achieved. Funding is recommended at the level requested, i.e. $63,634 for year one, $62,683 for year two, and $61,958 for year three. The PI is required to maintain support for undergraduates students and one graduate research assistant (GRA) at the levels proposed in the original budget for each year of the project. BoRSF support for out-of-state travel should be limited to $2,000/year.

As a condition of funding, the types and amounts of the institutional and external matching commitments as stated in the proposal should be maintained in full. Funding is contingent upon receipt by the Board no later than June 30, 2013 of updated documentation showing support at the levels indicated in the original proposal and as required in Appendix C.1.

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Appendix C.2 (continued)

Proposal 015B

TITLE: Pre-Clinical Development of a Multi-Wavelength Pulse Photometer for Non-Invasive Real-Time Pharmacokinetics

INSTITUTION: Louisiana Tech University

PRINCIPAL INVESTIGATORS: Dennis O’Neal, Ph.D.

COMMENTS: There is an immediate and urgent clinical need to enhance the monitoring of the onset and spread of cancers, and the accuracy and performance of related drug delivery systems. Rural or community oncology treatment centers are not meeting the high standards of treatment efficacy set by the top NIH-designated cancer centers. The skill and sophistication of the clinical oncologist, the quality of the supporting clinical instrumentation and the analytical lab, and the ability of the patients to pay for superior treatment are measurably lower at regional hospitals.

Louisiana Tech University and Nanospectro Biosciences, Inc., Houston, TX, will join together to implement a clinically applicable optical tool to provide instantaneous quantitative information to support the delivery and circulation of therapeutically relevant nanoparticles and therapeutic drugs. Independently, Louisiana Tech will work to develop a pre-clinical prototype, to be placed on a finger or other optically accessible location, to monitor the accuracy of the delivered dose and assess the effective circulation time immediately after intravenous delivery but prior to therapeutic intervention. The utility of the Nanospectra AuroShell technology in cancer chemotherapy remains to be proven—assuming that the system works, there is limited evidence that levels of nanoparticles in the peripheral circulation correlate in any way with tumor accumulation. The researchers note that particles are cleared via the liver and spleen the levels of accumulation in these organs versus the tumor are not shown in Table 3. Hence, a major goal of the proposed research will be to evaluate this claim. The impact on Louisiana’s economy is not clear in the near term; however, some aspects would be certainly beneficial to Louisiana Tech. The elimination of year three support is based on the need for the investigators to demonstrate that the levels of drug detected in circulating blood correlate with intra-tumor uptake, rather than serve simply as a measure of hepatic or splenic clearance. Alternatively, the investigators could more directly attempt to measure intra-tumor uptake by using redesigned probes. In the absence of such evidence questions would be raised regarding the clinical utility of the device. Evidence for such utility would strongly support additional funding from multiple national sources. Lastly, Nanospectro Biosciences’ letter of support pledged contributions for labor and supplies totaling more than $30,000 with a contingency for funding in year two and year three. Prior to funding, an updated letter from Nanospectro Biosciences, Inc., must be obtained detailing their specific contributions to the project. Despite these shortcomings this is a well-written proposal by a team of highly qualified researchers. It is recommended that the proposed budget be revised to provide one month summer salary for the PI including fringe benefits. Funding is recommended at a level of $90,000 for year one and $90,000 for year two. The PI is required to maintain support for two graduate research assistants (GRAs) at the level proposed in the original budget for each year of the project.

As a condition of funding, the types and amounts of the institutional and external matching commitments as stated in the proposal should be maintained in full for the two years of BoRSF support. Funding is contingent upon receipt by the Board no later than June 30, 2013 of updated documentation showing support at the levels indicated in the original proposal and as required in Appendix C.1.

<table>
<thead>
<tr>
<th>BUDGET</th>
<th>BoRSF</th>
<th>EXTERNAL</th>
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</thead>
<tbody>
<tr>
<td>1st Year</td>
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</tr>
<tr>
<td>2nd Year</td>
<td>$90,000</td>
<td>$31,806 as specified in the proposal</td>
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</table>
Appendix C.2 (continued)

Proposal 019B

**TITLE:** Dynamic Interfacial Tension at High Temperatures as it Applies to the Printing Industry

**INSTITUTION:** Tulane University

**PRINCIPAL INVESTIGATOR:** Kyriakos Papadopoulos, Ph.D.

**COMMENTS:** Inkjet printing is a multibillion-dollar business expected to keep increasing at a high rate and to encompass more new applications. The continued improvement and success of inkjet printing depends on smaller droplets produced at higher rates. As a droplet’s size becomes smaller, and as the time between the droplet’s production and its adhesion onto a targeted substrate becomes shorter, knowledge and control of the ink’s dynamic surface tension at high temperatures where processes take place are paramount for high-quality printing. Continuous inkjet (CIJ) and drop-on-demand (DOD) are the two main inkjet printing technologies today. In CIJ, ink droplets are sprayed out of nozzles in a continuous mode. Although CIJ is still in use today, most of the commercial and consumer inkjet printers are DOD, which dispense ink droplets as needed.

Tulane University, in collaboration with Xerox, Inc., Wilsonville, OR, proposes to develop an experimental technique that will use lateral capillary video-microscopy on microscopic drops that form on and detach from the tip of a vertically positioned micropipette, at temperatures ranging from 25°C to well over 100°C. The technique will be used to measure high-temperature molten-ink surface tension as a function of time. Droplet jetting rates will be varied to the point where drop formation time is below 10µm. Ultimately, the results should help design better inks and improve mechanical means and devices for jetting them. Although the proposed research appears to be targeted work, it does, however, have the potential to contribute to the science in that field. It does not necessarily represent a big advancement in the technology or have broad applications. Taking accurate dynamic temperature measurements without disturbing the flow within the microchannel would be difficult to accomplish. It is not clear how the proposed research could lead to a spin-off company in Louisiana, as the proposal provided no strong evidence that supports this claim. The PI is encouraged to seek Louisiana-based industry support and provide a more detailed plan for a spinoff company by the end of the year 3 funding period. The PI has an excellent background in the area of video microscopy and in droplet interfacial behavior. The requests for a “new microscope to be used vertically and for vertical microscopy, and an automated pipette puller” were not justified and should therefore be disallowed. Xerox pledged support of $20,000/year cash will help to insure that project goals and objectives are achieved. Funding is recommended at the level of $45,000 for year one, $40,000 for year two, and $35,000 for year three. The PI is required to maintain support for one graduate research assistant (GRA) at the level proposed in the original budget for each year of the project.

As a condition of funding, the types and amounts of the institutional and external matching commitments stated in the proposal should be maintained in full. Funding is contingent upon receipt by the Board no later than June 30, 2013 of updated documentation showing support at the levels indicated in the original proposal and as required in Appendix C.1.

<table>
<thead>
<tr>
<th>BUDGET</th>
<th>BoRSF</th>
<th>EXTERNAL</th>
</tr>
</thead>
<tbody>
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<td>$20,000 as specified in the proposal</td>
</tr>
<tr>
<td>2nd Year</td>
<td>$40,000</td>
<td>$20,000 as specified in the proposal</td>
</tr>
<tr>
<td>3rd Year</td>
<td>$35,000</td>
<td>$20,000 as specified in the proposal</td>
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APPENDIX C.3
COMMENTS ON PROPOSALS RANKED PRIORITY I BY THE
SUBJECT-AREA PANEL AND CONSIDERED BY THE FINAL PANEL
BUT NOT RECOMMENDED FOR FUNDING

Proposal 026B

TITLE: Social Media Infused Situational Awareness for Emergency Management

INSTITUTION: University of Louisiana at Lafayette

PRINCIPAL INVESTIGATORS: Raju Gottumukkala, Ph.D.

COMMENTS: Social media is playing an increasing role in recent emergencies and disasters, both disseminating important information, and monitoring user activities to establish situational awareness. However, much of the social media information on situational awareness is not synthesized and channeled back to the emergency responders, who need some level of visibility on the public perception of the event to target their operations to help save lives and protect property. The goal of the proposed research is to develop techniques to synthesize meaningful summaries of unfolding events during a disaster on user-generated content from social media. More specifically, the project will develop content extraction techniques to extract relevant information.

While the proposal is well written and the need for real-time information during emergency situations is clearly defined, the extraction of relevant information from Twitter streams as described in the proposal is less convincingly described. The frequency of keywords from a recent hurricane provided in "Figure 1" does not appear to offer any new information to emergency responders. The proposed budget has support from industry partner FirstCall Network, Inc., in the amount of $30,000 that represents nothing more than a membership to the National Science Foundation Center for Visual Decision Informatics (NSF-CVDI). This is not considered support specifically set aside for this research project. Unfortunately, the PI provided no other valid external support for this work. The PI is well trained, especially in the area of developing optimization solutions for evacuation. A re-submission of this application with meaningful industrial support is encouraged.
Appendix C.3 (continued)

Proposal 030B

TITLE:  
Pico-Satellites with Software-Defined Radio (SDR) Technology

INSTITUTION:  
University of Louisiana at Lafayette

PRINCIPAL INVESTIGATORS:  
George Thomas, Ph.D.

COMMENTS:  
Software-defined radio (SDR) has been recognized as the preferred platform for deployment of cognitive radio (CR) technology where radio transceivers are aware of their radio environment and can detect unused spectral bands and utilize them on a secondary (i.e., preemptive) basis. The U.S. Federal Communications Commission (FCC) has recently encouraged innovative CR applications as a relief measure for the acute paucity of new radio spectrum for emerging applications. The new IEEE 802.22 standard for wireless rural area networks (WRANs) is an example of civilian applications of CR technology. Military applications of SDR/CR are obvious: entering into an alien territory and establishing viable radio communications in an unknown radio environment possibly exacerbated by intentional jamming. Its potential in satellite communications has not been as widely recognized. Currently, the Cajun Advance Picosatellite Experiment (CAPE) SRD project at UL Lafayette is largely funded and technically assisted by Datacom, LLC, Lafayette, LA. The CAPE program launched CAPE-1 in 2007, and CAPE-2 is currently under development.

This proposal appears similar to last year’s ITRS submission with very few modifications. The overall goal of this proposal is to develop SDR technology appropriate for picosatellites, use them in CAPE, and transfer the technology to industry partner Datacom, LLC. Datacom has a long history of close association with UL Lafayette, especially with its EECE department, and is clearly committed to an educational mission as well as corporate service. However, the proposal is aimed at helping one company get a larger share of the defense communications market and thus considered proprietary in nature. The PI should seek funding from a space-based provider such as NASA to help support such endeavors. There is significant and ever-increasing competition in this area and there appears to be nothing that is unique in this proposal. The economic impact for the State of Louisiana appears minimal.
Appendix C.3 (continued)

Proposal 031B

TITLE: Diversifying the New Orleans Area Tourist Economy: Cultural Tourism, Anniversary Events and Mobile Applications

INSTITUTION: University of New Orleans

PRINCIPAL INVESTIGATORS: Robert Dupont, Ph.D.

COMMENTS: The tourism industry in the New Orleans area depends primarily upon business travel, conventions, periodic sporting events and meetings. The industry continues to experience seasonal variations that result in sub-optimal economic performance. Within the next five years, the city will experience two anniversaries of historical events: the 200th anniversary of the Battle of New Orleans and the 300th anniversary of the founding of the city. With timely preparation, the tourism industry can leverage such events into expanded activities that will increase cultural tourism to the city and surrounding area.

The proposed research focuses on (1) the accumulation of research data relating to New Orleans history and culture drawn both from original and existing research as part of a long-range project to publish the Encyclopedia of New Orleans; (2) the development of public-domain, easily disseminated mobile phone/audio tour applications for the tourist industry; and (3) completion of the research necessary to establish an internet resource center available to tourist agencies and businesses. The project is a joint effort between the University of New Orleans and the New Orleans Tourism Marketing Corporation (NOTMC). This is a well-written proposal with a clearly defined and logical work plan. The research team is well qualified with complementary expertise. Unfortunately, the project lacked innovation in the work itself. It is assumed that many historians have previously researched the history of New Orleans and that compiling these works in the form of a compendium is not fundable in itself. One of the weaknesses of the proposal is that the work is very applied, with no testable hypotheses. At a minimum the work should test whether funding would make a difference in the tourism market. The PI has missed a great opportunity to perform a social experiment to test such a hypothesis. As a result, there is little argument that can be made for any long-term benefit that will be shown from this work.
APPENDIX C.4

GENERAL STATEMENT ON MERITORIOUS PROPOSALS
NOT RECOMMENDED FOR FUNDING AT THIS TIME
(PRIORITY TWO)

Proposals included in this category are those applications the panel believes to be meritorious, although of a lower order than those rated Priority One. Individual subject-area commentaries on proposals ranked Priority Two are not included in this report. Proposals so ranked were not recommended for funding or recommended only if additional money becomes available.

Proposal 001B

TITLE: In-situ Production of Drop-in Biofuels from Tallow Tree Seeds Using Advanced, Scalable Electromagnetic Technologies as a Mitigation Strategy to Control the Specie’s Invasiveness in Louisiana

INSTITUTION: Louisiana State University—Agricultural Center

PRINCIPAL INVESTIGATOR: Dorin Boldor, Ph.D.

COMMENTS: Upward trends in fossil fuel prices, coupled with continuous volatility of fossil fuel markets, make biodiesel produced from vegetable oils a viable, renewable, alternative energy source that can be locally produced. Also, biodiesel has environmental benefits, reducing CO₂ emissions. The overall goal of this research project is to foster and accelerate the development of a biofuel industry using non-food, alternative resources with high yield (tallow tree seeds) specific to Louisiana.

The PI has demonstrated the use of microwave technology for soybean and rice bran oil extraction transesterification at the laboratory and pilot scale level. This proposal submission is an extension of previous work with scale-up technology as an important component. It is unclear why scale-up technologies have not been pursued by any industry. This may be an indication that the technology is impractical. As previously noted, critical data regarding harvesting technology and tree availability was not included. More specifically, harvest costs, which are considered critical to this work, were not discussed. Lastly, the research team did not include expertise in the areas of forestry or horticulture harvest technology. The project would have been stronger with the inclusion of an experienced fruit tree horticulturist. It should be noted that the PI’s past ITRS support has proven to be quite successful in terms of productivity, given the number of presentations and publications submitted.
Appendix C.4 (continued)

Proposal 012B

TITLE: Joint Interference Cancellation and Scheduling/Admission Control Approach to Improving Spectrum Efficiency for Louisiana Wireless Information Networks

INSTITUTION: Louisiana State University—Baton Rouge

PRINCIPAL INVESTIGATOR: Shuangqing Wei, Ph.D.

COMMENTS: The 9-11 Commission’s Recommendation Card released on September 1, 2011 has once again put the public safety radio network (PSRN) for first responders in the national spotlight. In this recommendation, it is pointed out that “Despite the lives at stake, the recommendation to improve radio interoperability for first responders after 911 has stalled” due to the lack of additional required spectrum. However, building a national telecommunication infrastructure to support mission-critical and interoperable wideband wireless communication for first responders is of far greater importance than allocation of additional spectrum in public safety radio bands. As an example, in the aftermath of Hurricane Katrina, Louisiana has invested significant resources into improving its public safety radio network. However, after extensive conversations with engineers from the Information Services & Communications Division (ISCD) of the Louisiana Department of Public Safety (DPS), it has been realized that the system load of the Louisiana Wireless Information Network (LWIN) could be unevenly distributed in disaster situations, thereby creating a highly concentrated and large volume of push-to-talk (PTT) calls in certain areas by first responders in emergency or disaster situations. Also serious concern has been expressed regarding the rigid ways the public safety radio bands are regulated.

The goal of the proposed research is to enhance emergency network communications performance with a joint interference cancellation and scheduling/admission control approach, thus improving spectrum efficiency and thereby further increasing LWIN’s network capacity without imposing changes on mobile units (MU). It should be noted that the PI has received previous ITRS support for similar research in this area. The proposal did not clearly delineate the differences between the two research efforts and there appears to be significant overlap in the spectrum-jamming portion of the proposal. Lastly, there is concern over the amount of additional work that would be needed bring the project to fruition and which is considered difficult to achieve given that hardware implementation would be necessary. The economic benefit to Louisiana is not clear and hard to quantify.

Proposal 018B

TITLE: Generating Metal Interlayers in Polymers Using Homogenized Laser Radiation

INSTITUTION: Tulane University

PRINCIPAL INVESTIGATOR: Brent Koplitz, Ph.D.

COMMENTS: Tulane University, in collaboration with NASA-Langley, has discovered that metal interlayers can be induced within metalized polymers using excimer laser radiation. This discovery is the subject of a patent between Tulane and NASA. The applicability of this process to different metals and polymers as well as the engineering potential of this discovery are just now being explored. The proposed research is centered on understanding the process at a fundamental level and manipulating the process at a practical level. Possible applications of the method to electronic materials and components have garnered the interest of United Technologies Research Center (UTRC).

This is a well-written proposal describing what appears to be an interesting new technology. However, the proposal lacked detail in the tasks needed to achieve goals. The economic impact appears weak as the PI did not adequately address this aspect of the proposal. The PI has no recent papers and cited mostly proceedings and upcoming submissions. The proposal did not include a letter of support from industry partner UTRC.
Appendix C.4 (continued)

Proposal 023B

TITLE: Protective Efficacy of a Virus-Like Particle-Based Lassa Fever Vaccine

INSTITUTION: Tulane University Health Sciences Center

PRINCIPAL INVESTIGATOR: Robert Garry, Ph.D.

COMMENTS: Lassa virus (LASV) is the etiologic agent of Lassa fever (LF), an often-fatal hemorrhagic illness endemic to West Africa, and is a constant and serious threat to the United States’ homeland security. A viable vaccine platform for protection from LF in humans has not yet been developed. As is the case with most neglected diseases, LF kills thousands each year and has the potential to be weaponized, yet no approved preventative and post-exposure interventions exist. Prior LASV vaccine strategies have employed irradiated virus, attenuated reassortant areaviruses, and recombinant replicon viral vectors expressing LASV antigens. Although partial or complete protection was achieved with some of these vaccine candidates in guinea pig (GP) and non-human primate (NHP) models, all approaches that were tested lack the safety and regulatory compliance necessary to generate a well-tolerated, broadly protective, mass-produced, and cost-effective vaccine against LASV. The proposed research will test the in vivo protective efficacy of a new vaccine platform against LASV. The PI has noted that his new patent-pending vaccine platform is safer, more economical, and more regulatory-compliant than any LF vaccine under development, and has resulted in partial protection in non-optimized preliminary studies in guinea pigs.

The project will initially be a collaborative effort between Tulane University Health Sciences Center, the University of Texas Medical Branch (UTMB/Galveston National Laboratory (GNL), and bio-technology company Zalgen Labs, LLC, a start-up biotech corporation co-founded by the PI. The PI is extremely well funded in this area and several grants are very likely to overlap with this proposal. Prior work (Table 1) has certainly produced successful LASV results as measured in either guinea pigs or non-human primates. However, the PI points out potential problems with those approaches. At least some of those objections (cost, production problems) could well apply to this approach. Virus-like particles (VLPs) are currently used in several vaccines for human use—notably the HPV vaccines produced by Merck pharmaceuticals. The approach is presented in great detail, as are the preliminary studies in guinea pigs which resulted in 40% survival with the use of Ribi adjuvants—not very impressive. The studies are non-innovative and will do little to further our understanding of the immune response to LASV, but certainly will aid in characterizing the potential utility of the VLP vaccine. Much of the substantial budget is directed towards subcontracts (Zalgen Labs and UTMB/GNL), with modest student support. Even if successful, extensive primate studies will be necessary and there is no reason to believe that guinea pig results achieved in this proposal would translate to useful approaches for primates.
Individual commentaries on proposals ranked Priority Three by the final panel are not included in this report. Proposals so ranked were not recommended for funding for at least two of the following reasons (not listed in order of importance):

- Insufficient or inappropriate industrial matching funds were pledged and/or external support documented in the proposal budget was not substantiated by required letters of industrial support
- The industrial partner’s role in the research collaboration was not provided and/or detailed in the proposal
- The proposal did not have clear objectives and/or research plans lacked scientific rigor or completeness
- The background of a principal investigator was inconsistent with the proposed research and/or the principal investigator had an unusually poor publication record in the proposed area of research
- The proposal showed little or no potential for contributing to the near-term development and diversification of Louisiana’s economy
- The proposal did not contain evidence of future commercialization, or it was not clear what economic benefit would be gained from the research
- Budgets were excessive, inadequately justified, or inconsistent with provided budget justifications
- The need for consultants and/or subcontracts was not adequately justified
- Equipment requests were excessive and/or inappropriate for the research proposed
APPENDIX D

LIST OF SUBJECT-AREA REVIEWERS WHO PARTICIPATED IN PHASES I & II OF THE REVIEW PROCESS

Agriculture, Aquaculture, and Animal Science

Dr. Duane L. Johnson, Chair
ClearSkies, Inc.

Dr. Paul Raymer
Department of Crop and Soil Sciences
University of Georgia

Biotechnology and Health Care

Dr. Radu Marches, Chair
Baylor Institute for Immunology Research

Dr. Leo Herbette
President, Exploria

Chemical Materials and Petroleum Engineering

Dr. Russell D. Ostermann, Chair
Department of Chemical & Petroleum Engineering
University of Kansas

Dr. Roger A. Korus
Department of Chemical Engineering
University of Idaho

Computer and Information Sciences

Dr. John Usher, Chair
Professor, Department of Industrial Engineering
Mississippi State University

Dr. Behrooz A. Shirazi
Director, School of Electrical & Computer Science
Washington State University
Appendix D (continued)

**Mechanical and Materials Engineering**

**Dr. John Berry, Chair**  
E. P. Coleman Professor, Department of Mechanical Engineering  
Mississippi State University

**Dr. Mathew Schaefer**  
Department of Mechanical and Industrial Engineering  
Milwaukee School of Engineering

**Environmental Science & Technology, and Urban Design**

**Dr. Treavor H. Boyer, Chair**  
Department of Environmental Engineering Sciences  
University of Florida

**Dr. James T. Anderson**  
Environmental Research Center  
West Virginia University
APPENDIX E

SUMMARY OF PROPOSALS SUBMITTED TO THE INDUSTRIAL TIES RESEARCH SUBPROGRAM (ITRS) FY 2012-13
<table>
<thead>
<tr>
<th>Proposal #</th>
<th>PI Name</th>
<th>Discipline</th>
<th>Institution</th>
<th>Proposal Request</th>
<th>Project Title</th>
<th>Amount Requested</th>
<th>Confidential Info</th>
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<tbody>
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<td>001B-13</td>
<td>Boldor, Dorin</td>
<td>Scientific</td>
<td>Louisiana State University And A&amp;M College - Agricultural Center</td>
<td>New Request</td>
<td>In-situ production of drop-in biofuels from tallow tree seeds using advanced, scalable electromagnetic technologies as a mitigation strategy to control the specie's invasiveness in Louisiana</td>
<td>$69,971, $64,970, $61,545, $196,486</td>
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<td>King, Joan</td>
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<td>Louisiana State University And A&amp;M College - Agricultural Center</td>
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<td>Identification and Characterization of Potential Health Beneficial Food Ingredients in Chlorella Algae Grown in Louisiana in a Photo-Bioreactor</td>
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<td>Sathivel, Subramanian</td>
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<td>Louisiana State University And A&amp;M College - Agricultural Center</td>
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<td>Implementing the Commercialization of Steam-Venting Technology for Inactivating Food-Borne Pathogens in Frozen Microwave Readily Packaging with Application to Oysters</td>
<td>$56,000, $53,000, $0, $109,000</td>
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<td>004B-13</td>
<td>Chen, Q. Jim</td>
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<td>Louisiana State University And A&amp;M College - Baton Rouge</td>
<td>New Request</td>
<td>Developing a Mobile Storm Surge and Wave Monitoring Network to Improve the Prediction of Hurricane Impacts on Natural and Built Environments for Coastal Louisiana</td>
<td>$97,145, $84,687, $74,790, $256,622</td>
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<td>Liu, Chuanian</td>
<td>Non-Scientific</td>
<td>Louisiana State University And A&amp;M College - Baton Rouge</td>
<td>New Request</td>
<td>Promoting Louisiana Cultural Economy by Developing a Fashion Business Incubator Affiliated with Louisiana Business and Technology</td>
<td>$99,899, $95,757, $94,118, $289,774</td>
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<td>Louisiana State University And A&amp;M College - Baton Rouge</td>
<td>New Request</td>
<td>Design and cost effective manufacturing of miniature gas chromatograph sensors</td>
<td>$80,000, $79,400, $78,800, $238,200</td>
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<td>Mukhopadhyay, S. supratik</td>
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<td>Louisiana State University And A&amp;M College - Baton Rouge</td>
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<td>Development of an Architecture and Software for an Agro-Intelligence Platform</td>
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<td>Understanding and modeling the hydrodynamics of polymerization loop reactors</td>
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<td>009B-13</td>
<td>Rusch, Kelly</td>
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<td>System and operational design optimization for microalgae/cyanobacterial co-culture production of biofuels and bioproducts</td>
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<td>OPTIMIZING MILL PERFORMANCE THROUGH EFFECTIVE MODELING</td>
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<td>Louisiana State University And A&amp;M College - Baton Rouge</td>
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<td>Joint Interference Cancellation and Scheduling/Admission Control Approach to Improving Spectrum Efficiency for Louisiana Wireless Information Networks</td>
<td>$83,763, $59,773, $50,298, $193,834</td>
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<td>Wu, Hsiao-Chun</td>
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<td>Louisiana State University And A&amp;M College - Baton Rouge</td>
<td>New Request</td>
<td>Theoretical and Algorithmic Exploration in Innovative Signal Embedding and Blind Extraction for Communication Applications</td>
<td>$70,084, $69,834, $67,036, $206,954</td>
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<td>MUSTO, ALBERTO</td>
<td>Scientific</td>
<td>Louisiana State University Health Sciences Center - New Orleans</td>
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<td>Platform for preclinical studies in experimental neurology</td>
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<td>O'Neal, Dennis</td>
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<td>Louisiana Tech University</td>
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<td>Pre-clinical development of a multi-wavelength pulse photometer for non-invasive real-time pharmacokinetics</td>
<td>$91,586, $92,914, $94,034, $278,534</td>
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<td>Wilson,Chester</td>
<td>Scientific</td>
<td>Louisiana Tech University</td>
<td>New Request</td>
<td>Highly specific neutron detectors and nuclear containment systems for Louisiana's Energy and Defense Industries</td>
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<td>017B-13</td>
<td>Wilson,Chester</td>
<td>Scientific</td>
<td>Louisiana Tech University</td>
<td>New Request</td>
<td>Steam reforming catalyst and advanced Fischer-Tropsch Reactor development for American Synthetic fuel</td>
<td>$140,000</td>
<td>No</td>
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<td>018B-13</td>
<td>Koplitz,Brent</td>
<td>Scientific</td>
<td>Tulane University</td>
<td>New Request</td>
<td>Generating Metal Interlayers in Polymers Using Homogenized Laser Radiation</td>
<td>$174,634</td>
<td>No</td>
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<td>019B-13</td>
<td>Papadopoulos,Kyriakos</td>
<td>Scientific</td>
<td>Tulane University</td>
<td>New Request</td>
<td>Dynamic Interfacial Tension at High Temperatures as it Applies to the Printing Industry</td>
<td>$150,741</td>
<td>No</td>
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<td>020B-13</td>
<td>Parker,Geoffrey</td>
<td>Scientific</td>
<td>Tulane University</td>
<td>New Request</td>
<td>ReactWell: Geo-thermochemical Biomass-to-Oil and Bioproduct Production Platform</td>
<td>$341,983</td>
<td>Yes</td>
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<td>021B-13</td>
<td>Blake,Diane</td>
<td>Scientific</td>
<td>Tulane University Health Sciences Center</td>
<td>Continuation Request</td>
<td>Manufacture and Validation of Drug Delivery Systems for Glaucoma Drainage Devices</td>
<td>$195,105</td>
<td>No</td>
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<td>022B-13</td>
<td>Garry,Robert</td>
<td>Scientific</td>
<td>Tulane University Health Sciences Center</td>
<td>New Request</td>
<td>Development of a robust, commercializable point-of-contact lateral flow immunodiagnostic for detection of early acute human West Nile Virus infections</td>
<td>$312,422</td>
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<td>023B-13</td>
<td>Garry,Robert</td>
<td>Scientific</td>
<td>Tulane University Health Sciences Center</td>
<td>New Request</td>
<td>Protective efficacy of a virus-like particle-based Lassa fever vaccine</td>
<td>$208,247</td>
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<td>024B-13</td>
<td>Chirdon,William</td>
<td>Scientific</td>
<td>University of Louisiana at Lafayette</td>
<td>New Request</td>
<td>Determination of object position, orientation, and velocity via neural networks for automation applications.</td>
<td>$134,042</td>
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<td>025B-13</td>
<td>Gang,Daniel</td>
<td>Scientific</td>
<td>University of Louisiana at Lafayette</td>
<td>New Request</td>
<td>Field Investigation of the Wave Suppressor Sediment Collection (WSSC) System, A Highly Effective System for Shoreline Protection and Sediment Retention</td>
<td>$188,275</td>
<td>No</td>
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<td>026B-13</td>
<td>Gottumukkala,Raju</td>
<td>Scientific</td>
<td>University of Louisiana at Lafayette</td>
<td>New Request</td>
<td>Social Media Infused Situational Awareness for Emergency Management</td>
<td>$144,338</td>
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<td>027B-13</td>
<td>Guo,Boyun</td>
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<td>University of Louisiana at Lafayette</td>
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<td>Transition-metal catalyzed asymmetric nitrogenation of hydrocarbons (olefins): Method development and its synthetic applications to valuable chemicals</td>
<td>$333,748</td>
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<td>029B-13</td>
<td>Subramaniam,Ramalingam</td>
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<td>University of Louisiana at Lafayette</td>
<td>New Request</td>
<td>Microbial Lipid production from shrimp waste</td>
<td>$305,976</td>
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<td>030B-13</td>
<td>Thomas,George</td>
<td>Scientific</td>
<td>University of Louisiana at Lafayette</td>
<td>New Request</td>
<td>Pico-Satellites with Software-Defined Radio (SDR) Technology</td>
<td>$156,848</td>
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<td>Proposal #</td>
<td>PI Name</td>
<td>Discipline</td>
<td>Institution</td>
<td>Proposal Request</td>
<td>Project Title</td>
<td>Amount Requested</td>
<td>Confidential Info</td>
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<td>031B-13</td>
<td>Dupont,Robert</td>
<td>Non-Scientific</td>
<td>University of New Orleans</td>
<td>New Request</td>
<td>Diversifying the New Orleans Area Tourist Economy: Cultural Tourism, Anniversary Events and Mobile Applications</td>
<td>$56,695 $57,038 $57,038 $170,771</td>
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<td>032B-13</td>
<td>Ibanez, Juana</td>
<td>Non-Scientific</td>
<td>University of New Orleans</td>
<td>New Request</td>
<td>Highway 1, Longest Mainstreet Project</td>
<td>$92,742 $79,434 $67,928 $240,104</td>
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<td>034B-13</td>
<td>Wang, Ting</td>
<td>Scientific</td>
<td>University of New Orleans</td>
<td>New Request</td>
<td>Design an Integrated High Performance Micro-Polygeneration System</td>
<td>$65,014 $63,014 $63,014 $191,042</td>
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| Total Number of Proposals submitted | 34 |
| Total Funds Requested for First Year | $2,935,604.00 |
| Total Funds Requested for Second Year | $2,615,741.00 |
| Total Funds Requested for Third Year | $1,788,655.00 |
| Total Funds Requested                | $7,340,000.00 |