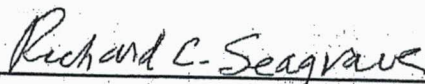


Report to the Louisiana Board of Regents
Review of Research Proposals Submitted for Funding Consideration
in the Board of Regents Support Fund R & D Program
Proof-of-Concept/Prototyping Initiative

March 14, 2018



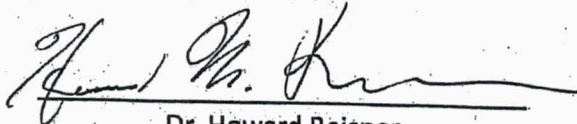
Dr. Richard Seagrave
Distinguished Emeritus Professor
Chemical & Biological Engineering
Past President
Iowa State University

Jay P. Gore

Digitally signed by Jay P. Gore
DN: cn=Jay P. Gore, o=Purdue
University, ou=Mechanical Engineering,

Date: 2018.03.30 06:32:05 -04'00'

Dr. Jay Gore
Professor
Mechanical Engineering
Purdue University



Dr. Howard Reisner
Professor
Department of Pathology & Laboratory Medicine
School of Medicine
University of North Carolina at Chapel Hill

LOUISIANA BOARD OF REGENTS SUPPORT FUND
PROOF-OF-CONCEPT/PROTOTYPING (PoC/P) INITIATIVE
FINAL PANEL REPORT
FY 2017-18

BACKGROUND INFORMATION

Nineteen (19) research proposals requesting a total of \$752,140 were submitted for funding consideration during fiscal year (FY) 2017-18 under the Proof-of-Concept/Prototyping (PoC/P) Initiative of the Board of Regents Support Fund (BoRSF). Of the nineteen proposals submitted, four contained information of a confidential or proprietary nature. A two-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 nineteen proposals were reviewed for scientific and technical merit, commercialization opportunity, and potential for success by out-of-state experts. The experts included reviewers in each of the following four targeted industry sectors: Advanced Materials and Manufacturing; Life Sciences and Bioengineering; Digital Media and Enterprise Software; Clean Technology and Energy; and Coastal and Water Management. Each subject-area reviewer evaluated and prepared an in-depth evaluation form for each assigned proposal in the subject area. No proposals were submitted in the Coastal and Water Management industry sector.

All evaluation forms from out-of-state experts who participated in Phase I 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 II: Final Panel Review

Three out-of-state experts participated in Phase II of the review process and served on the final panel. The Panel convened on March 14, 2018, to discuss Phase I subject-area evaluations, prioritize proposals, and develop funding recommendations. The Panel considered each of the nineteen proposals extensively and based its recommendations on the following criteria:

- A. Scientific and technical merit;
- B. Commercial Opportunity; and
- C. Potential for Success.

The Panel was informed that a maximum of \$250,000 would be available for new PoC/P research projects, though reductions were likely due to low revenues in the Support Fund. As a result of the final panel's deliberations, six proposals were recommended for funding. These six 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) and the final panel's consensus evaluation (Phase II).

Five other highly meritorious proposals (Priority II) considered at the Panel meeting and recommended for funding only if additional monies become available are listed in **Appendix B**.

One proposal was considered meritorious by the subject-area reviewers and the Panel, but was insufficiently developed in one or more areas to be worthy of funding at this time (Priority III); this is listed in **Appendix C.1**. The Panel believes that the investigators should carefully review the Panel's comments and revise and resubmit the proposal in the future, with the prospect that improvements in proposal content could ultimately lead to an award.

The seven remaining proposals, although meritorious in some respects (Priority III – Lower Priority), are listed in **Appendix C.2**.

The Panel recommends that the Board of Regents commit funding, as available, for each Priority One and Two proposal at the level requested for a period of one year. Summary statements have been provided in **Appendix D** applicable to the six Priority One proposals listed in **Appendix A** and **Appendix E** for each of the five Priority Two proposals deemed meritorious and recommended for funding if more funds become available as listed in **Appendix B**. A summary statement for the one PoC/P proposal considered meritorious but insufficiently developed in one or more areas (Priority Three) has been provided in **Appendix F.1**. Summaries include the following information for each proposal:

1. Proposal number and title;
2. Strengths and weaknesses of the proposal;
3. Commercial opportunity or potential for success; and
4. Recommended BoRSF funding level and funding stipulations, as applicable. (**Note:** This information is provided for the six proposals recommended for funding (Appendix D) and the five proposals recommended for funding if additional funds become available (Appendix E).

General statements related to the seven remaining meritorious proposals rated of lower priority by the Panel are included in **Appendix F.2**.

General Comments for Funded Projects

No reduction in the scope of work plans of projects recommended for funding shall be allowed.

Cost sharing and matching commitments are binding. As a condition of funding, types and amount of institutional matching commitments as stated in the proposal shall be maintained in full.

The project activation date is June 1, 2018 and the termination date is no later than June 30, 2019. No-cost extensions may be requested but are generally discouraged considering the goals of the PoC/P initiative and should be limited to one (1) year.

Debriefing

Reviewer evaluations for each PoC/P proposal will be available to the applicant in July 2018.

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

APPENDIX A
PoC/P PROPOSALS HIGHLY RECOMMENDED FOR FUNDING
(PRIORITY ONE) (6)

Rank	Proposal No.	Institution	Requested BoRSF Funds	Recommended BoRSF Funds
1	010D	TULANE	\$ 40,000	\$ 40,000
2	009D	LA-TECH	39,999	39,999
3	006D	LSU A&M	39,679	39,679
4	003D	LSU A&M	40,000	40,000
5	008D	LA-TECH	39,012	39,012
6	014D	ULL	39,995	39,995
TOTAL			\$ 238,685	\$ 238,685

Note: The Panel's comments on these proposals are provided in Appendix D. The subject-area review for each proposal will be provided to the applicant in July 2018.

APPENDIX B
PoC/P PROPOSALS RECOMMENDED FOR FUNDING
IF ADDITIONAL FUNDS BECOME AVAILABLE
(PRIORITY TWO) (5)

Rank	Proposal No.	Institution	Requested BoRSF Funds	Recommended BoRSF Funds
7	002D	LSU-AG	\$ 39,000	\$ 39,000
8	001D	LSU-AG	38,000	38,000
9	016D	ULL	39,986	39,986
10	013D	ULL	39,500	39,500
11	015D	ULL	<u>40,000</u>	<u>40,000</u>
TOTAL			\$ 196,486	\$ 196,486

Note: The Panel's comments on these proposals are provided in Appendix E. The subject-area review for each proposal will be provided to the applicant in July 2018.

APPENDIX C**PRIORITY THREE (8)****1. MERITORIOUS PoC/P PROPOSAL**

007D

Note: The proposal is not recommended for funding as currently submitted. The Panel's comments on the proposal are provided in Appendix F.1. The subject-area review for the proposal will be provided to the applicant in July 2018.

2. PoC/P PROPOSALS OF LOWER PRIORITY (7)

004D 012D
005D 017D
011D 018D
019D

Note: These proposals are not listed in rank order of merit and are not recommended for funding as currently submitted. The Panel's general statements on these proposals are provided in Appendix F.2. The subject-area review for each proposal will be provided to the applicant in July 2018.

APPENDIX D
PROPOSALS HIGHLY RECOMMENDED FOR FUNDING
(PRIORITY ONE)

Proposal No. 010D

Rank: 1

Principal Investigator: Matthew Escarra, Ph.D.

Institution: Tulane University

Title: Transmissive Concentrator Photovoltaic Modules for Hybrid Solar Energy Conversion

Comment: This is an excellent proposal with great economic potential. Preliminary work on solar cogeneration (converting ultraviolet and visible wavelengths energy into electricity and transmitting infrared light to a thermal receiver) has established high efficiencies during prototype testing with a transmissive concentrator photovoltaic (tCPV) module. The utilization of a parabolic trough collector (PTC) seems to be an advantageous addition to the existing system. The PI's techno-economic analysis for the system has demonstrated that the added value provided by the electricity makes the heat produced less expensive than natural gas in many states in the commercial sector and in two (2) states for industrial users.

The principal investigator is well qualified to carry out the proposed work. The statement of work, milestones, and expected outcomes clearly define the four (4) research tasks to be accomplished during the one-year project and appear to represent a very reasonable approach. The pro bono support of two (2) collaborators with expertise in solar thermal energy conversion is an excellent addition to the project. The project budget includes graduate research assistant (GRA) and undergraduate student support, supplies, and equipment, which is considered appropriate. Tulane's cost share for the project is also appropriate. The two (2) letters of support (Louisiana Steam Equipment Company, LLC and Syntergy) are excellent. This is a strong proposal and highly recommended for funding.

FUNDS REQUESTED: \$ 40,000

FUNDS RECOMMENDED: \$ 40,000

Appendix D (continued)

Proposal No. 009D**Rank: 2****Principal Investigator: Shengnian Wang, Ph.D.****Institution: Louisiana Tech University*****Title: Producing Valuable Fuel/Feedstock from Lignin Waste Using Mesoporous Zeolites Synthesized by Solid Crystallization***

Comment: Producing valuable fuel/feedstock from lignin via zeolite solid crystallization is an important topic. The proposal is effective in describing the potential use of mesoporous zeolites produced by the pyrolytic decomposition of lignin. This is a classic chemical engineering optimization problem that, if solved, would allow an inexpensive route for zeolite production instead of the traditional hydrothermal route. An economical means of production could have significant relevance for the petroleum industry. The progress described in the proposal is very promising. The principal investigator believes that a company spin-off is highly likely—moving to international trade within five (5) years. The partnership with the Southwest Research Institute (SWRI) allowing access to laboratory facilities is a promising feature of this work. A cost estimate of the nano-gel used in the process should have been provided. Nevertheless, the principal investigator (PI) has a strong record, and the potential for success appears high. This is a strong proposal and highly recommended for funding.

FUNDS REQUESTED: \$ 39,999**FUNDS RECOMMENDED: \$ 39,999**

Appendix D (continued)

Proposal No. 006D

Rank: 3

Principal Investigator: Kidong Park, Ph.D.

Institution: Louisiana State University and A&M College

Title: Development of Large-Scale Fabrication Setup for Rolled Scaffold

Comment: The Principal Investigator (PI) proposes the development of a new cell culture platform (Rolled Scaffold) that is based upon a polymer film [PET] that will expand the laboratory culture capacity of human cells. The proposal is well written by a highly qualified researcher. The PI defines a rigorous but achievable set of goals based upon preliminary work on Chinese Hamster Ovary cells and mouse embryonic stem cells. The PI has identified a potential problem with a workable solution if the UV resin proves to be incompatible with targeted cell culture. The PI has justly requested travel funds to establish research ties with three highly qualified collaborators trained in the area. The Panel ranks this proposal very high in technical merit and commercial opportunity, with a high probability for success. The proposal is highly recommended for funding.

FUNDS REQUESTED: \$ 39,679

FUNDS RECOMMENDED: \$ 39,679

Appendix D (continued)

Proposal No. 003D**Rank: 4****Principal Investigator: Jin-Woo Choi, Ph.D.****Institution: Louisiana State University and A&M College*****Title: Prototyping Self-Powered Underwater Lighting Device for Photosynthetic Cultures***

Comment: The goal of the proposed research is to develop a self-powered underwater lighting device for photosynthetic aquacultures. The primary objectives are to reduce light cost and increase culture depth for a wide range of algal production processes. This could increase the competitiveness of biofuel and other bioproduct applications for microalgae. The two-person research team has an excellent research background in the area and has demonstrated abilities in microdevice development and microalgal culture methodologies. In previous work, the investigators have tested a prototype using batteries at the laboratory scale. The unit needs to be miniaturized to be effective. This seems to be a very reasonable extension of previous work. The research tasks as described in the Statement of Work (SoW) are excellent and should provide clear evidence for the effectiveness of the proposed system. Conversely, the Performance Measures should have been more quantitative in describing what is required for a commercial system. The budget is reasonable, with modest investigator, graduate and undergraduate student support, as well as supplies. The letter of support from Cajun Biologic Systems, LLC states their interest in the project and emphasizes the need for data for a larger scale system. The investigators have filed a patent application related to the proposed system's development. The commercial collaborator is an excellent choice and should provide proof for the efficiency of the proposed system. This is a very good proposal that is highly recommended for funding.

FUNDS REQUESTED: \$ 40,000**FUNDS RECOMMENDED: \$ 40,000**

Appendix D (continued)

Proposal No. 008D

Rank: 5

Principal Investigator: Shaurav Alam, Ph.D.

Institution: Louisiana Tech University

Title: Development of In-Situ Soil-Root Binding Strength Evaluation Equipment with Internet of Things (IoT) on Board and the Associated Testing Protocol

Comment: The primary objective of the proposal is to develop a small carryon device for in-situ evaluation of soil-root bonding strength (SRBS), which is the assessment of the strength required to uproot a group of closely located roots simultaneously from the subsurface. The equipment will transfer collected data to a centralized database for analysis and comparison with other data. The creation of this device is expected to lead to the development of a new ASTM standard for onsite evaluation of SRBS.

The main strength of the proposal is that the Principal Investigators (PIs) are creating a new device to test soil strength/stability and the testing can be done in situ. It is necessary to understand the system because artifacts are created when the analysis is conducted in the laboratory. The impact of vegetation on improved stability of the soil needs to be assessed in situ and in real time. The commercialization potential for this prototype product is based on the premise that soil erosion is a major problem in coastal areas, specifically in Louisiana and the world, and that remediation strategies such as vegetation can reduce soil erosion. The research team has been working together for many years. The proposed budget is appropriate and the pledged institutional match is good. The Panel ranks the proposal very high in technical merit and commercial opportunity. It is highly recommended for funding.

FUNDS REQUESTED: \$ 39,012

FUNDS RECOMMENDED: \$ 39,012

Appendix D (continued)

Proposal No. 014D

Rank: 6

Principal Investigator: Daniel Gang, Ph.D.

Institution: University of Louisiana at Lafayette

Title: GAMC Novel Adsorbent Development for BTEX Removal from Hydraulic Fracturing Flowback Water

Comment: The main goal of the proposal is to perform proof-of-concept experiments leading to the development of a novel green aluminum matrix composite (GAMC) adsorbent with higher adsorption capacity and faster adsorption kinetics for BTEX (benzene, toluene, ethylbenzene, and xylene) removal from hydraulic fracturing flowback water. The research plan includes the design, fabrication, and testing of the novel adsorbent. An innovation disclosure has been filed by ULL due to the unique features of the work and high potential for commercialization and technology transfer. This could lead to a more effective protocol for disposal and water treatment resulting from continued shale development.

This is a good proposal by a well-qualified PI in the area. The research plan is sound with achievable goals. The project is timely for a very important topic. The proposed budget appears reasonable including the institutional match. The Panel ranks this proposal very high in technical merit and commercial opportunity and with a high potential for success. The proposal is highly recommended for funding

FUNDS REQUESTED: \$ 39,995

FUNDS RECOMMENDED: \$ 39,995

APPENDIX E**PROPOSALS RECOMMENDED FOR FUNDING
IF ADDITIONAL FUNDS BECOME AVAILABLE
(PRIORITY TWO)****Proposal No. 002D****Rank: 7****Principal Investigator: Jim Wang, Ph.D.****Institution: Louisiana State University – Agricultural Center*****Title: A Biochar-Based Advanced Fenton Oxidation Catalyst for Removing Organic Wastewater Pollutants***

Comment: The goal of the project is to increase the effectiveness of removing organic pollutants from wastewater. The Principal Investigator (PI) proposes use of an iron and iron-manganese based oxidative catalyst obtained from the impregnation of biochar from sugarcane waste and wood chips. Preliminary data suggest successful removal of dye in controlled experiments that appear better than the use of activated carbon. The recyclable nature of the catalysts is mentioned but not well developed. The PI is highly qualified in the research area and should be capable of showing conclusions at the end of the funding period. The research plan appears to be reasonable. Overall, the proposal is very complete and well developed. The industrial partner, American Biocarbon, CT, LLC, appears to be supportive. The budget is appropriate. The Panel ranks this proposal high in technical merit and commercial opportunity with a reasonably high potential for success. The proposal is highly recommended for funding only if additional funds are available.

FUNDS REQUESTED: \$ 39,000**FUNDS RECOMMENDED: \$ 39,000**

Appendix E (continued)

Proposal No. 001D

Rank: 8

Principal Investigator: Terrence Tiersch, Ph.D.

Institution: Louisiana State University – Agricultural Center

Title: Prototype Development for Novel Sensing Technology and Control for Improved Cryopreservation in Global Germplasm Markets

Comment: The proposed research aims to develop a phase change sensor to monitor ice formation in order to improve the cryopreservation of germplasm. This is a very important area for cryopreservation as ice formation is the detrimental mechanism for sustainability. It is suggested that the size, shape, and distribution of ice crystals affect the mobility of ions, which in turn affects electrical conductivity. The proposal offers an opportunity to monitor this problem, although remediation or control is not addressed. Preliminary work, however, has been very promising. The research plan and supporting facilities are excellent. The PI is experienced and highly qualified. Five (5) potential partners have been identified that are interested in new freezing technology. The Panel ranks this proposal high in technical merit and commercial opportunity with a reasonably high potential for success. It is highly recommended for funding only if additional funds are available.

FUNDS REQUESTED: \$ 38,000

FUNDS RECOMMENDED: \$ 38,000

Appendix E (continued)

Proposal No. 016D

Rank: 9

Principal Investigator: Mohammad Khattak, Ph.D.

Institution: University of Louisiana at Lafayette

Title: Self-Sensing High Performance Fiber Reinforced Geopolymer Composites

Comment: The primary goal of the research is to develop self-sensing fiber reinforced geopolymer composites for structural monitoring where the damage assessment claims are not articulated. Monitoring resistivity changes is geometrically unique, making characterization generalizations impractical. The proposed tasks are detailed in the narrative, with graphs showing the preliminary results already accomplished. The optimization strategy appears to be simple regression, not organized in the form of a design for experiments. The Panel ranks this proposal high in technical merit and average in commercial opportunity with a reasonably high potential for success. While this is a good proposal in an important area, it should only be funded if additional funds are available.

FUNDS REQUESTED: \$ 39,986

FUNDS RECOMMENDED: \$ 39,986

Appendix E (continued)

Proposal No. 013D

Rank: 10

Principal Investigator: Mohsen Amini Salehi, Ph.D.

Institution: University of Louisiana at Lafayette

Title: Robust Video Streaming Engine for Crowd-Sourced Public Safety Monitoring in Smart Cities

Comment: The objective of the proposed research is the development of a video streaming engine that could be used by incident commanders to aid in providing maximum situational awareness when dealing with a crisis. The outcome of the proposed work appears to be a generic video streaming engine that is able to efficiently handle video queuing and processes based on estimates of video execution time. The resulting problem is that of scheduling jobs to parallel processors for jobs with assigned priorities.

The proposed travel budget (\$5,500) is high and is not necessary for completion of the project. The resulting video streaming engine does not represent any significant advancement in technology as proposed. The proposal does not offer evidence to indicate any significant commercial market for the technology, although the Principal Investigator (PI) has a letter of interest from HUB Enterprises, Inc., a company that utilizes video streaming services. The PI possesses the background to successfully complete the project. The Panel ranks this proposal high in technical merit and commercial opportunity and with a reasonably high potential for success. The proposal is recommended for support only if additional funds are available.

FUNDS REQUESTED: \$ 39,500

FUNDS RECOMMENDED: \$ 39,500

Appendix E (continued)

Proposal 015D

Rank: 11

Principal Investigator: Lulin Jiang

Institution: University of Louisiana at Lafayette

Title: Investigation of Atomization Characteristics of an Advanced Injector with Further Improved Primary Atomization

Comment: This is an interesting proposal based on a new technology developed by the Principal Investigator (PI) for improved nebulization. The applications for improved combustion efficiency are particularly interesting. As a scientific topic the research is worthwhile. It is not clear how much economic impact there could be. However, the PI claimed that improved fuel injectors might secure the market for fossil fuel engines in the face of competition from electric vehicles. An increase in combustion efficiency would be valuable.

The PI is relatively new and has little research funding at present. With the pledged institutional match, this could open up a new area of expertise at ULL. The budget seems appropriate, and the research plan is reasonable. The preliminary work gives confidence of a good result. The proposal is adequate in technical merit and commercial opportunity and indicates a reasonable potential for success. The proposal is recommended for funding only if additional funds are available.

FUNDS REQUESTED: \$ 40,000

FUNDS RECOMMENDED: \$ 40,000

APPENDIX F.1**MERITORIOUS PROPOSAL
(PRIORITY THREE)****Proposal No. 007D****Principal Investigator: Jian Xu, Ph.D****Institution: Louisiana State University and A & M College*****Title: Design an Innovative Ionizing-Radiation-Free Dental Imaging System***

Comment: The primary goal of the research is to design an ionizing-radiation-free imaging system for real-time dental imaging. The proposed rat studies are interesting from the viewpoint of the use of NIR dyes in deep tissue imaging and Dr. Xu's previous work on deep tissue medical imaging for cancer patient prognosis is noted and appreciated. However, this proposal does not involve ionizing radiation. The research will involve parenteral administration of an FDA-approved dye to patients. The very real risk of serious reactions to parenteral dye (such as anaphylaxis) and less severe, but more common reactions, e.g., nausea, fainting, and the like, particularly after repeat dosing, would make the technology most unlikely to be adopted by the dental community. For these reasons the proposal is not recommended for funding.

APPENDIX F.2
PROPOSALS OF LOWER PRIORITY
(PRIORITY THREE)

Individual commentaries on proposals listed in Appendix C.2 (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):

- The proposal did not have clear objectives and/or research plans
- The proposal showed little or no commercialization potential, or economic justification
- Weak interest was shown from potential end users/commercial partners
- Budgets were excessive, inadequately justified, or inconsistent with provided budget justifications
- Equipment requests were excessive and/or inappropriate for the research proposed

APPENDIX G

LIST OF SUBJECT-AREA AND FINAL PANEL REVIEWERS WHO PARTICIPATED IN THE REVIEW PROCESS

LIFE SCIENCES AND BIOENGINEERING

Dr. Dick Auld

Professor
Plant and Soil Science
Texas Tech University

Dr. Radu Marches

Associate Research Scientist
The Jackson Laboratory for Genomic Medicine
Farmington, CT

CLEAN TECHNOLOGY AND ENERGY

Dr. Russell D. Ostermann

Associate Chair
Department of Chemical and Petroleum Engineering
University of Kansas

Dr. Roger A. Korus

Professor
Department of Chemical Engineering
University of Idaho

DIGITAL MEDIA AND ENTERPRISE SOFTWARE

Dr. John M. Usher

Professor and Head
Department of Industrial Engineering
Mississippi State University

ADVANCED MATERIALS AND MANUFACTURING

Dr. James A. Rice

Associate Professor
Department of Mechanical & Industrial Engineering
Marquette University

COASTAL AND WATER MANAGEMENT

Dr. Treavor H. Boyer

Associate Professor and Program Chair
Department of Environmental Engineering
Arizona State University

PoC/P FINAL PANEL**Dr. Richard C. Seagrave (Chair)**

Emeritus Distinguished Professor
Chemical and Biological Engineering
Iowa State University

Dr. Jay P. Gore

Professor
School of Mechanical Engineering
Purdue University

Dr. Howard Reisner

Professor
School of Medicine
Department of Pathology
University of North Carolina at Chapel Hill

APPENDIX H**SUMMARY OF PROPOSALS SUBMITTED
PROOF-OF-CONCEPT/PROTOTYPING (PoC/P) INITIATIVE
FY 2017-18**

Proposals Submitted to the Research and Development Program - PoC/P
for the FY 2017-18 Review Cycle

Proposal #	PI Name	Category	Institution	Project Title	Amount Requested
001D-18	Dr. Terrence Tiersch	Advanced Materials and Manufacturing	Louisiana State University Agricultural Center	Prototype Development for Novel Sensing Technology and Control for Improved Cryopreservation in Global Germplasm Markets	\$38,000.00
002D-18	Prof. Jim Wang	Advanced Materials and Manufacturing	Louisiana State University Agricultural Center	A biochar-based advanced Fenton oxidation catalyst for removing organic wastewater pollutants	\$39,000.00
003D-18	Prof. Jin-Woo Choi	Clean Technology and Energy	Louisiana State University and A & M College	Prototyping self-powered underwater lighting device for photosynthetic cultures	\$40,000.00
004D-18	Dr. YONG-CHEOL LEE	Advanced Materials and Manufacturing	Louisiana State University and A & M College	Audio-based Process Recognition, Location Detection, and Visualization of Construction Activities and Operations for Leveraging Construction Field Monitoring and Safety Surveillance	\$39,981.00
005D-18	Prof. Supratik Mukhopadhyay	Digital Media and Enterprise Software	Louisiana State University and A & M College	Cybersecurity Tool: Automated Discovery of Attack Surfaces, Taint Analysis, and Incidence Response	\$40,000.00
006D-18	Prof. Kidong Park	Life Sciences and Bioengineering	Louisiana State University and A & M College	Development of large-scale fabrication setup for rolled scaffold	\$39,679.00
007D-18	Prof. Jian Xu	Life Sciences and Bioengineering	Louisiana State University and A & M College	Design an innovative ionizing-radiation-free dental imaging system	\$39,750.00
008D-18	Dr. Shaurav Alam	Coastal and Water Management	Louisiana Tech University	Development of in-situ soil-root binding strength evaluation equipment with Internet of Things (IoT) on board and the associated testing protocol	\$39,012.00
009D-18	Prof. Shengnian Wang	Advanced Materials and Manufacturing	Louisiana Tech University	Producing valuable fuel/feedstock from lignin waste using mesoporous zeolites synthesized by solid crystallization	\$39,999.00
010D-18	Prof. Matthew Escarra	Clean Technology and Energy	Tulane University	Transmissive Concentrator Photovoltaic Modules for Hybrid Solar Energy Conversion	\$40,000.00
011D-18	Prof. Vijay John	Life Sciences and Bioengineering	Tulane University	Attaching Polypeptoid based Drug Delivery Carriers to Liposomes and Erythrocytes	\$40,000.00
012D-18	Dr. Louise Lawson	Life Sciences and Bioengineering	Tulane University Health Sciences Center	Transpapillary Delivery Formulations for Breast Cancer Prevention	\$40,000.00
013D-18	Dr. Mohsen Amini Salehi	Digital Media and Enterprise Software	University of Louisiana at Lafayette	Robust Video Streaming Engine for Crowd-Sourced Public Safety Monitoring in Smart Cities	\$39,500.00
014D-18	Dr. Daniel Gang	Clean Technology and Energy	University of Louisiana at Lafayette	GAMC Novel Adsorbent Development for BTEX Removal from Hydraulic Fracturing Flowback Water	\$39,995.00
015D-18	Dr. Lulin Jiang	Clean Technology and Energy	University of Louisiana at Lafayette	Investigation of Atomization Characteristics of an Advanced Injector with Further Improved Primary Atomization	\$40,000.00
016D-18	Dr. Mohammad Khattak	Advanced Materials and Manufacturing	University of Louisiana at Lafayette	Self-sensing High Performance Fiber Reinforced Geopolymer Composites	\$39,986.00
017D-18	Dr. Abdenour Seibi	Clean Technology and Energy	University of Louisiana at Lafayette	Real Time Pipeline Leak Detection Using Smart Ball	\$37,437.00
018D-18	Dr. Yu Wang	Advanced Materials and Manufacturing	University of Louisiana at Lafayette	LiquidGlove: Development of a Polymer-Based Barrier Product as a Replacement for Conventional Gloves in the Healthcare Environment	\$39,801.00
019D-18	Prof. Uttam Chakravarty	Advanced Materials and Manufacturing	University of New Orleans	Development of a Biomimetic Insect-Sized Micro Air Vehicle	\$40,000.00

Total Number of Proposals Submitted	19
Total Funds Requested	\$752,140.00