

**REPORT TO THE LOUISIANA BOARD OF REGENTS**  
**REVIEW OF PROPOSALS SUBMITTED TO THE**  
**TRADITIONAL ENHANCEMENT SUBPROGRAM IN ENGINEERING B**

**March 3-4, 2015**

Prepared by:

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# **FY 2014-15 LOUISIANA BOARD OF REGENTS SUPPORT FUND TRADITIONAL ENHANCEMENT COMPONENT ENGINEERING B**

## **Introduction**

An Engineering B proposal review panel consisting of Dr. David B. Beasley, Chair, Arkansas State University Jonesboro (retired); Dr. Oscar Barton, Jr., George Mason University; and Dr. R. Allen Miller, The Ohio State University (retired) met March 3-4, 2015 in Baton Rouge to evaluate thirty (30) Engineering B proposals requesting a total of \$4,391,157 in first-year funding through the Traditional Enhancement component of the Board of Regents Support Fund.

Each panel member reviewed the proposals prior to arrival in Baton Rouge, and each prepared a detailed review for presentation at the meeting. All proposals were discussed in detail, which resulted in comments, suggestions, and debate about the various aspects of each proposal, given the reviewers' backgrounds and areas of expertise. In each case, unanimous agreement was reached with respect to the ranking and recommended funding. The panel believes that each proposal received a thorough and fair evaluation based upon the criteria enumerated on the proposal rating forms (Appendix B).

The panel recommended a total of \$1,105,504 for eight (8) proposals. Of that number, six (6) were recommended for full funding and two (2) for partial funding. The reduction recommended for each partially funded proposal was based on a thorough review of the budget and the institutional cost sharing, and resulted in a recommended amount corresponding to the proposal's most pressing needs and merits.

Table I contains a rank-ordered list of proposals highly recommended for funding with recommended funding levels. Proposals with scores of 85 or greater are found in the table. Table II contains four (4) proposals that are recommended for funding if additional monies become available. Proposals not recommended for funding are listed in Table III. A detailed review of each proposal follows immediately after the tables. A summary of all proposals submitted and a copy of the rating forms used in the evaluations are attached at the end of the report in Appendix A and B, respectively.

In addition, the panel marked seven (7) proposals as NR (not reviewable) indicating that these proposals did not seem to be eligible for funding consideration in the Engineering B competition. In the consensus view of the panel, proposals marked NR were deemed to be more appropriate for competition in another disciplinary review or by another funding agency. The Engineering B panel once again explicitly reminds principal investigators and their institutions that Appendix A of the Enhancement Program RFP is a Taxonomy listing the sub-disciplines eligible to be submitted for consideration in Engineering B. **In every funding cycle, nevertheless, this panel reads proposals that are not within Engineering B – directly or even indirectly. This year the panel concluded that 20% of the 30 proposals submitted were not rooted in that discipline.**

**Traditional Enhancement Subprogram, Engineering B, FY 2014-15**

**TABLE I**

**Proposals Highly Recommended for Funding**

RANK	RATING	PROPOSAL NO.	INSTITUTION	1ST YR. FUNDS REQUESTED	1ST YR. FUNDS RECOMMENDED	2ND YR. FUNDS REQUESTED	2ND YR. FUNDS RECOMMENDED
1	95	019ENGB-15	TUL	\$150,000	\$150,000		
2	93	007ENGB-15	LSUBR	\$47,410	\$47,410		
3	91	005ENGB-15	LSUBR	\$108,370	\$108,370		
4	90	009ENGB-15	LSUBR	\$195,000	\$195,000		
5	89	030ENGB-15	UNO	\$107,485	\$107,485		
6	88	023ENGB-15	ULL	\$35,970	\$35,970		
7	86	001ENGB-15	LSU AG	\$255,172	\$97,672	\$9,746	\$0
8	85	008ENGB-15	LSUBR	\$391,301	\$363,597		
				\$1,290,708	\$1,105,504	\$9,746	\$0

**TABLE II**

**Proposals Recommended for Funding If Monies Become Available**

RANK	RATING	PROPOSAL NO.	INSTITUTION	1ST YR. FUNDS REQUESTED	1ST YR. FUNDS RECOMMENDED	2ND YR. FUNDS REQUESTED	2ND YR. FUNDS RECOMMENDED
9	84	010ENGB-15	LSUBR	\$159,999	\$159,999		
10	83	016ENGB-15	MCNEESE	\$97,208	\$83,633		
11	82	014ENGB-15	LA TECH	\$75,990	\$75,990		
12	81	011ENGB-15	LSUBR	\$150,000	\$150,000		
				\$483,197	\$469,622	\$0	\$0

**TABLE III**

**Proposals Not Recommended for Funding**

RANK	RATING	PROPOSAL NO.	INSTITUTION	1ST YR. FUNDS REQUESTED	1ST YR. FUNDS RECOMMENDED	2ND YR. FUNDS REQUESTED	2ND YR. FUNDS RECOMMENDED
13	80	022ENGB-15	ULL	\$117,529	\$0		
14	79	013ENGB-15	LA TECH	\$65,000	\$0		
15	78	018ENGB-15	SUBR	\$53,408	\$0	\$0	\$0
16	77	026ENGB-15	ULL	\$93,660	\$0		
17	76	003ENGB-15	LSUBR	\$137,000	\$0	\$6,000	\$0
18	75	020ENGB-15	ULL	\$115,796	\$0		
19	74	021ENGB-15	ULL	\$216,699	\$0		
20	73	029ENGB-15	UNO	\$308,828	\$0		
21	72	017ENGB-15	NICHOLLS	\$148,882	\$0		
22	69	004ENGB-15	LSUBR	\$77,760	\$0		
22	69	027ENGB-15	ULL	\$108,500	\$0		
	NR	002ENGB-15	LSUBR	\$429,940	\$0	\$0	\$0
	NR	006ENGB-15	LSUBR	\$149,864	\$0	\$0	\$0
	NR	012ENGB-15	LSUS	\$175,880	\$0		
	NR	015ENGB-15	MCNEESE	\$175,000	\$0		
	NR	024ENGB-15	ULL	\$67,626	\$0		
	NR	025ENGB-15	ULL	\$123,280	\$0		
	NR	028ENGB-15	ULM	\$52,600	\$0		
				\$2,617,252	\$0	\$6,000	\$0

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 001ENGB-15

INSTITUTION: Louisiana State University Agricultural Center

TITLE OF PROPOSAL: Acquisition of Processing, Characterization, and Simulation Tools to Enhance Bio- and Agricultural-based Nanotechnology and Bioenergy Research

PRINCIPAL INVESTIGATOR: Dorin Boldor

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No             
A.2 5 (of 5 points)  
A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 10 (For S/E)  
or (of 10 points)  
E.2b            (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 5 (of 10 points)  
B.2 19 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No           

G. Total Score: 

86
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount:	YEAR 1	YEAR 2
		<u>\$255,172</u>	<u>\$9,746</u>
	Recommended Amount:	<u>\$97,672</u>	<u>\$0</u>

The applicant wishes to acquire equipment and software for research addressing processing and characterization of nanotechnology and bioenergy products. The proposal includes an extensive list of equipment and software, some intended for bioenergy research, some for nanotechnology. The well-qualified research team has made significant contributions in the past, particularly in bioenergy, an area of considerable importance to Louisiana; much of the requested equipment would enable continued progress in this area. The proposal could be stronger with more focus and prioritization of equipment needs. The proposal attempts to accomplish too many potential activities, which dilutes its impact. The panel recommends funding for the pieces of equipment that will facilitate bioenergy research: 1) Microplate Reader, 2) Microwave AutoTuner, 3) Rotovap, and 4) Fiber Optic Temperature Measurement System. Funding is not recommended for the nanoparticle characterization instrument and the COMSOL software. Partial funding of \$97,672 is recommended in year 1 only. The institutional match may be reduced proportionally.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 002ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Large-Scale Flow Generation for Testing Energy and Coastal  
Infrastructure

PRINCIPAL INVESTIGATOR: Aly Mousaad Aly

## A. The Current Situation

(Total of 10 Points)

A.1 Yes \_\_\_\_\_ No \_\_\_\_\_  
A.2 \_\_\_\_\_ (of 5 points)  
A.3 \_\_\_\_\_ (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 \_\_\_\_\_ (of 6 points)  
C.2 \_\_\_\_\_ (of 1 point)  
C.3 \_\_\_\_\_ (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 \_\_\_\_\_ (of 2 points)  
E.2a \_\_\_\_\_ (For S/E)  
or \_\_\_\_\_ (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 \_\_\_\_\_ (of 10 points)  
B.2 \_\_\_\_\_ (of 21 points)  
B.3 \_\_\_\_\_ (of 5 points)  
B.4 \_\_\_\_\_ (of 5 points)  
B.5 \_\_\_\_\_ (of 5 points)  
B.6 \_\_\_\_\_ (of 5 points)  
B.7 \_\_\_\_\_ (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 \_\_\_\_\_ (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes \_\_\_\_\_ No \_\_\_\_\_

G. Total Score: 

NR
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount:	YEAR 1	YEAR 2
		\$429,940	\$0
	Recommended Amount:	\$0	\$0

The PI wants to construct a Wind, Rain and Wave testing facility for coastal infrastructure. The work plan of this project is in the domain of Civil Engineering and, therefore, falls in the Engineering A category of the Taxonomy of Disciplines used by the Board of Regents for the Support Fund Programs. No funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 003ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Droplet Printing System for Sensors, Materials, and Biomedical  
Engineering Research

PRINCIPAL INVESTIGATOR: Jin-Woo Choi

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 3 (of 5 points)  
A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 5 (of 6 points)  
C.2 1 (of 1 point)  
C.3 2 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 7 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 9 (of 10 points)  
B.2 15 (of 21 points)  
B.3 4 (of 5 points)  
B.4 2 (of 5 points)  
B.5 4 (of 5 points)  
B.6 3 (of 5 points)  
B.7 3 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 76 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount:	YEAR 1	YEAR 2
		Recommended Amount:	
		<u>\$137,000</u>	<u>\$6,000</u>
		<u>\$0</u>	<u>\$0</u>

The proposal's primary goal is establishment of printing-based, micro- and nanofabrication tools for nano- and biomaterials research at LSU. The proposed equipment includes a universal inkjet printing system and a laser engraving system, which would provide additional options for depositing and patterning nano- and biomaterials on a variety of surfaces. The potential impact of work in the areas enabled by this equipment appears to be very good, but the impact on curricula is not well developed. The research team appears to be well qualified with several departments represented. However, most of the team members are from Engineering A programs and the equipment is to be located in Electrical Engineering laboratory space. The benefit to Engineering B programs is limited. The PIs should consider submitting this proposal to the Engineering A or multidisciplinary competitions. No funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 004ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Employing Eye Tracking Technology to Improve Instruction and  
Research on Human Interface Projects

PRINCIPAL INVESTIGATOR: Jan Hondzinski

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                       
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 3 (of 6 points)  
C.2 0 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 3 (For S/E)  
or (of 10 points)  
E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 7 (of 10 points)  
B.2 16 (of 21 points)  
B.3 3 (of 5 points)  
B.4 3 (of 5 points)  
B.5 3 (of 5 points)  
B.6 3 (of 5 points)  
B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes                      No x

G. Total Score: 

69
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$77,760</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

This proposal requests funding for two eye tracking devices, one to be used by the Kinesiology program and the other by the Mechanical and Industrial Engineering program. The PI is from Kinesiology and no significant interactions between the two programs are described. This leads the reviewers to conclude that these are essentially two independent requests packaged as a single proposal. The Kinesiology component does not qualify as Engineering B and consequently is not eligible for this competition. The uses of the tracking system proposed by Industrial Engineering are largely restricted to classroom and laboratory demonstrations. It is unclear that the higher-performance equipment requested adds significant value above the equipment currently available for such uses. The Industrial Engineering portion of the proposal would have been stronger with a more thorough explanation of how the equipment would be incorporated into the curriculum and if the department's research programs would be impacted. No funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 005ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Transmission Electron Microscopy Sample Preparation System  
for Materials Engineering Research and Education

PRINCIPAL INVESTIGATOR: Fengyuan Lu

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 4 (of 5 points)  
A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 10 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)  
B.2 20 (of 21 points)  
B.3 4 (of 5 points)  
B.4 3 (of 5 points)  
B.5 3 (of 5 points)  
B.6 3 (of 5 points)  
B.7 5 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

91
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$108,370</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$108,370</u>

The proposal is a request for a sample preparation system to support the transmission electron microscope (TEM) facility at LSU. Improvement of the facility will support several strategic research directions including nuclear energy materials, micro-manufacturing technologies, mineral chemistry, and nanostructured materials. The requested equipment will significantly enhance the electron microscopy capability at the Shared Instrumentation Facility (SIF) by improving its TEM specimen preparation methods, which benefit all Materials Science and Engineering research activities that require TEM characterization of hard matter. While it was clear to the review panel that the equipment will have a significant impact on research capabilities, the impact on curricula and pedagogy was less apparent. Similarly, industry interactions were described in terms of services that might be offered and the potential for future interaction. Future proposals should detail integration of the requested equipment/facilities into the teaching program. The panel recommends full funding of \$108,370 for the proposal.



# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 006ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Enhancement of Motion Capture Capabilities for Biomechanical Application

PRINCIPAL INVESTIGATOR: Michael MacLellan

## A. The Current Situation

(Total of 10 Points)

A.1 Yes \_\_\_\_\_ No \_\_\_\_\_  
A.2 \_\_\_\_\_ (of 5 points)  
A.3 \_\_\_\_\_ (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 \_\_\_\_\_ (of 6 points)  
C.2 \_\_\_\_\_ (of 1 point)  
C.3 \_\_\_\_\_ (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 \_\_\_\_\_ (of 2 points)  
E.2a \_\_\_\_\_ (For S/E)  
or \_\_\_\_\_ (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 \_\_\_\_\_ (of 10 points)  
B.2 \_\_\_\_\_ (of 21 points)  
B.3 \_\_\_\_\_ (of 5 points)  
B.4 \_\_\_\_\_ (of 5 points)  
B.5 \_\_\_\_\_ (of 5 points)  
B.6 \_\_\_\_\_ (of 5 points)  
B.7 \_\_\_\_\_ (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 \_\_\_\_\_ (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes \_\_\_\_\_ No \_\_\_\_\_

G. Total Score: 

NR
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$149,864</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

This proposal is from the School of Kinesiology, a component of the College of Human Sciences and Education. The PI categorized the proposal as applicable to Biomedical Engineering, but the panel does not see involvement of any kind of engineering. The proposal is therefore not eligible for the Engineering B competition and was not reviewed.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 007ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Radiation Monitoring Equipment for LSU-CAMD

PRINCIPAL INVESTIGATOR: Marie-Lorraine Marceau-Day

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                       
A.2 5 (of 5 points)  
A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 10 (For S/E)  
or (of 10 points)  
E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 9 (of 10 points)  
B.2 18 (of 21 points)  
B.3 5 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 5 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

93
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount: <u>\$47,410</u> Recommended Amount: <u>\$47,410</u>
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This proposal requests funds to expand and upgrade the radiation monitoring system for the LSU synchrotron. Newly installed equipment has led to the need to improve and upgrade the radiation monitoring systems in order to maintain safe operation of the facility. The equipment requested would permit monitoring of each of the 16 beamlines, which the PI argues is a best practice for radiation safety at synchrotron rings. CAMD is an important resource to the LSU research community and continued safe operation is important for many research programs across the campus. The need for the proposed equipment and the plan for acquisition and implementation are well documented; the panel was able to determine the need for the upgrade and its significance. However, the panel also notes that the proposal did not contain all of the sections specified in the Enhancement Program RFP. Future submissions would be strengthened by the inclusion of all stipulated information. This proposal is recommended for full funding nonetheless.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 008ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Micro-milling Machine for Micro-molding Research and Capstone Support

PRINCIPAL INVESTIGATOR: Michael Murphy

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                     

A.2 5 (of 5 points)

A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)

C.2 1 (of 1 point)

C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)

E.2a 7 (For S/E)

or (of 10 points)

E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 9 (of 10 points)

B.2 18 (of 21 points)

B.3 4 (of 5 points)

B.4 3 (of 5 points)

B.5 4 (of 5 points)

B.6 4 (of 5 points)

B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

85
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$391,301</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$363,597</u>

The proposal is a request from faculty members in Mechanical and Industrial Engineering at LSU to purchase a micro-milling machine with 5-axis control. The group currently has an older machine with 3-axis control, slower maximum spindle speed, larger minimum tool radius and smaller working envelope. The machine requested has significantly better performance specifications and will enable continued progress in development of high-aspect ratio engineered systems incorporating three dimensional micro- and nanoscale features produced by molding polymers and metals (the milling machine is used to prototype and produce the mold inserts used in these processes). The team has an excellent record in developing innovative technology and intellectual property that in the past has spawned spin-off companies. The significant increase in the performance capabilities of the requested machine should enable and further enhance that progress. The panel recommends partial funding of \$363,597 with full maintenance of the institutional match.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 009ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Learn by Doing - Additive Manufacturing Prototyping

PRINCIPAL INVESTIGATOR: Dimitris Nikitopoulos

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                       
A.2 5 (of 5 points)  
A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 8 (For S/E)  
or (of 10 points)  
E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)  
B.2 18 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

90
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount: <u>\$195,000</u> Recommended Amount: <u>\$195,000</u>
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The proposal requests funding for equipment to support "Learn-by-Doing" activities through use of additive manufacturing and 3D scanning tools. The equipment would primarily benefit the Mechanical and Industrial Engineering Department at LSU, but the user facility that will be developed will benefit most programs in Engineering by encouraging interdisciplinary activity. The proposal requests funding for a multi-material 3D printer, six inexpensive portable 3D printing units, and a 3D scanner. The equipment represents a significant upgrade to the 3D printing capability that is currently available. Increased capacity will enable wider use plus the expanded range of printer and scanner performance capabilities creates additional opportunities for student experiential learning. The combination of equipment types enables visualization and reengineering exercises, concept development and prototyping. The equipment will also see significant use in capstone design projects, student and faculty research, and in support of several other basic engineering courses. Full funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 010ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Enhancement of Metrology Capability for Detecting Single  
Biomolecules in Micro/Nanofluidics

PRINCIPAL INVESTIGATOR: Sunggook Park

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 5 (of 5 points)  
A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 5 (of 6 points)  
C.2 1 (of 1 point)  
C.3 1 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 8 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)  
B.2 17 (of 21 points)  
B.3 4 (of 5 points)  
B.4 3 (of 5 points)  
B.5 4 (of 5 points)  
B.6 3 (of 5 points)  
B.7 5 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

84
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY REQUESTS: Requested Amount: \$159,999 (if additional funds  
RECOMMENDATIONS: Recommended Amount: \$159,999 become available)

This proposal requests funding for equipment to enhance LSU faculty capability to detect single biomolecules in confined geometries within micro/nano fluidic systems. The equipment requested includes devices to measure electrical, fluorescent and/or optical signals, plus equipment to isolate vibrations and electrical interference. The team is well qualified and the potential impact of the research that would be enabled by this equipment is good. However, the proposed equipment has a limited impact on curriculum and would be strengthened by better integration of the research and teaching programs of the investigators. The proposal's biggest shortcoming is the lack of appropriate support for operation and maintenance. The applicant states that the equipment will be supervised by a graduate research assistant; that raises questions about the level and continuity of support and maintenance. If additional funds become available, the panel recommends full funding.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 011ENGB-15

INSTITUTION: Louisiana State University and A&M College

TITLE OF PROPOSAL: Research Enhancement Through the Acquisition of a Residual  
Stress Measurements System with an Emphasis in Engineering &  
Science Education in Materials and Manufacturing

PRINCIPAL INVESTIGATOR: Muhammad Wahab

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 5 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 8 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)  
B.2 17 (of 21 points)  
B.3 5 (of 5 points)  
B.4 4 (of 5 points)  
B.5 2 (of 5 points)  
B.6 2 (of 5 points)  
B.7 3 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

81
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY Requested Amount: \$150,000 (if additional funds  
RECOMMENDATIONS: Recommended Amount: \$150,000 become available)

Acquisition of an Xray Diffraction Residual Stress Measurement (RSM) system, needed to support faculty competitiveness in friction-stir welding research, is the goal of this proposal. The unit is not currently available at LSU-Baton Rouge. To be located in the Engineering Research and Development building, the RSM will be accessible to up to 15 LSU faculty members in several departments. In addition, a collaboration with faculty and students at Southern University Baton Rouge is anticipated if the unit is available. The work plan highlights six tasks required for implementation as well as presents details of three projects that will benefit from the acquisition. This proposal highlights a mature and productive research environment in multiple areas, including theoretical and computational mechanics, weld-quality determination of friction-stir welds, and experimental condensed matter physics. However, the proposal falls short of establishing that acquisition of the RSM would further enhance overall competitiveness. In addition, details were not provided for the potential collaboration with Southern University, and performance metrics for evaluation were not presented. If sufficient funding becomes available the panel recommends funding the proposal fully.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 012ENGB-15

INSTITUTION: Louisiana State University in Shreveport

TITLE OF PROPOSAL: Acquisition of an AFM for Materials, Biology, and Nanoscience  
Education and Research

PRINCIPAL INVESTIGATOR: William Yu

## A. The Current Situation

(Total of 10 Points)

A.1 Yes \_\_\_\_\_ No \_\_\_\_\_

A.2 \_\_\_\_\_ (of 5 points)

A.3 \_\_\_\_\_ (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 \_\_\_\_\_ (of 6 points)

C.2 \_\_\_\_\_ (of 1 point)

C.3 \_\_\_\_\_ (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 \_\_\_\_\_ (of 2 points)

E.2a \_\_\_\_\_ (For S/E)

or \_\_\_\_\_ (of 10 points)

E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 \_\_\_\_\_ (of 10 points)

B.2 \_\_\_\_\_ (of 21 points)

B.3 \_\_\_\_\_ (of 5 points)

B.4 \_\_\_\_\_ (of 5 points)

B.5 \_\_\_\_\_ (of 5 points)

B.6 \_\_\_\_\_ (of 5 points)

B.7 \_\_\_\_\_ (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 \_\_\_\_\_ (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes \_\_\_\_\_ No \_\_\_\_\_

G. Total Score: 

NR
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$175,880</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

LSU Shreveport faculty wish to purchase an Atomic Force Microscope (AFM) to expand laboratory experiences that now include both scanning electron (SEM) and transmission electron (TEM) microscopes. Resolution of images using these two pieces of equipment is inadequate to provide an enriched teaching environment as well as a research environment that promotes productivity. One new course and five modified courses to include experimental content using the AFM will enhance several disciplines including Biology, Chemistry and Physics. As written, the proposal primarily lends benefits to programs in Engineering A rather than Engineering B, and as such is not eligible for this competition.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 013ENGB-15

INSTITUTION: Louisiana Tech University

TITLE OF PROPOSAL: Enhancement of Flexible Manufacturing Laboratory at Louisiana  
Tech University

PRINCIPAL INVESTIGATOR: Jun-Ing Ker

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No             
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 8 (For S/E)  
or (of 10 points)  
E.2b            (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)  
B.2 16 (of 21 points)  
B.3 2 (of 5 points)  
B.4 3 (of 5 points)  
B.5 3 (of 5 points)  
B.6 2 (of 5 points)  
B.7 3 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes            No x

G. Total Score: 

79
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$65,000</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

In an effort to expose students to both Lean and Six Sigma philosophies, this request seeks \$65,000 to replace out-of-date, defective robotic equipment and software in the industrial engineering department with an MR5 robot and OPEN CIM software. Lab courses that support students in the Architecture, Industrial, and Mechanical Engineering programs demonstrate student demand for the respective laboratories, which has remained consistent since the last enhancement in 2007. An institutional match of \$9,200 covers installation and training. The work plan contains sufficient details describing implementation of the physical equipment, but what is not well presented is how the enhanced facilities and curricula impact the teaching of Lean and Six Sigma strategies. No funding is recommended.



# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 014ENGB-15

INSTITUTION: Louisiana Tech University

TITLE OF PROPOSAL: Enhancing Nanomaterials and Energy Education with Pyrolyzer  
and GCMS Systems

PRINCIPAL INVESTIGATOR: Shengnian Wang

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 2 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 8 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)  
B.2 16 (of 21 points)  
B.3 5 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 3 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

82
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY REQUESTS: Requested Amount: \$75,990 (if additional funds  
Recommended Amount: \$75,990 become available)

The acquisition of a pyrolyzer and a GC/MS system to aid in the synthesis and characterization of nanomaterials and to enhance nanomaterial and energy education are goals of this proposal. There are only a few Nanosystems Engineering programs nationwide. The PI is committed to developing a curriculum that is multidisciplinary, discovery-based and hands-on. The work plan highlights several courses to be integrated in the program. Although the goals and objectives of the pedagogical element are clear, the work plan is not detailed and explicit about integration of the equipment in the research component and its impact on faculty research. Providing performance metrics and some direct measures, in addition to survey data, would have given another dimension for the panel to evaluate attainment of project goals. While some sections of the proposal indicate that a thorough editorial review process was undertaken, other sections suffer from numerous errors. If additional funding becomes available the panel recommends full funding.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 015ENGB-15

INSTITUTION: McNeese State University

TITLE OF PROPOSAL: Model LNG Process Plant for Teaching and Training [Phase 1]

PRINCIPAL INVESTIGATOR: Nikos Kiritsis

## A. The Current Situation

(Total of 10 Points)

A.1 Yes \_\_\_\_\_ No \_\_\_\_\_  
A.2 \_\_\_\_\_ (of 5 points)  
A.3 \_\_\_\_\_ (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 \_\_\_\_\_ (of 6 points)  
C.2 \_\_\_\_\_ (of 1 point)  
C.3 \_\_\_\_\_ (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 \_\_\_\_\_ (of 2 points)  
E.2a \_\_\_\_\_ (For S/E)  
or \_\_\_\_\_ (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 \_\_\_\_\_ (of 10 points)  
B.2 \_\_\_\_\_ (of 21 points)  
B.3 \_\_\_\_\_ (of 5 points)  
B.4 \_\_\_\_\_ (of 5 points)  
B.5 \_\_\_\_\_ (of 5 points)  
B.6 \_\_\_\_\_ (of 5 points)  
B.7 \_\_\_\_\_ (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 \_\_\_\_\_ (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes \_\_\_\_\_ No \_\_\_\_\_

G. Total Score: 

NR
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$175,000</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

The proposal seeks to augment McNeese's current chemical production plant with an LNG (liquefied natural gas) processing plant. Liquefied natural gas consists mostly of methane that has been converted to liquid form for ease of storage or transport. The long-term vision of the project is to align the plant with the projected growth in the LNG local industry and with anticipated revenue projections of approximately \$70 billion. A total of \$1.5 million is needed to complete the four-phased project. The requested sum of \$175,000 represents about 10% of the total needed to complete the project, but there are no details about how the money will be expended. Since the planned facilities and the processes are chemical, this proposal is better suited to Engineering A than Engineering B. No funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 016ENGB-15

INSTITUTION: McNeese State University

TITLE OF PROPOSAL: Enhancement of Instrumentation and Measurement Laboratory

PRINCIPAL INVESTIGATOR: Zhuang Li

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                       
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 8 (For S/E)  
or (of 10 points)  
E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)  
B.2 17 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 3 (of 5 points)  
B.6 4 (of 5 points)  
B.7 3 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

83
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount: <u>\$97,208</u> (if additional funds Recommended Amount: <u>\$83,633</u> become available)
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With the elimination of McNeese's Engineering Technology programs, a collaborative effort of the Mechanical and Electrical Engineering Departments was established to integrate industrial-style instrumentation in an existing lab and to develop new laboratory exercises in measurements. Supported with assessment data that captures an increasing enrollment trend and performance data for the topic of measurements from the fundamental exam, four objectives are listed that would enhance classroom experiences. In addition, the faculty will promote an enriched learning environment using innovative teaching methods. If sufficient funding becomes available the panel recommends \$83,633 for the project, with elimination of costs for infrastructure changes and graduate student support. The institutional match may be reduced proportionally.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 017ENGB-15

INSTITUTION: Nicholls State University

TITLE OF PROPOSAL: Process Safety and Instrumentation Laboratory Enhancement Project

PRINCIPAL INVESTIGATOR: Milton Saidu

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No             
A.2 4 (of 5 points)  
A.3 2 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 5 (For S/E)  
or (of 10 points)  
E.2b            (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)  
B.2 15 (of 21 points)  
B.3 3 (of 5 points)  
B.4 3 (of 5 points)  
B.5 3 (of 5 points)  
B.6 3 (of 5 points)  
B.7 3 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes            No x

G. Total Score: 

72
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$148,882</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

A Nicholls State investigator seeks \$148,882 for laboratory equipment that exposes students to the technology used in the oil and gas industry, specifically those items that relate to process safety and operation. A particular strength of this proposal is the direct effort to understand changing student demographics and to offer pathways into the program from community colleges. This will have a positive impact on student matriculation. Another strength is the program's effort to incorporate existing pneumatic equipment in a comparative learning environment with the new PAC system. The proposal, however, lacks details on existing resources available to the program and an understanding of the impact on curricula if the equipment is acquired. In addition, the impact on faculty development section is weak. Few, if any, benchmarks for evaluation of the goals and objectives are stated. The panel does not recommend funding.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

**PROPOSAL NUMBER:** 018ENGB-15

**INSTITUTION:** Southern University and A&M College

**TITLE OF PROPOSAL:** Enhancement of Mechanical Engineering Laboratories with  
Visualization, Design and Prototyping, and Mecatronics Equipment

**PRINCIPAL INVESTIGATOR:** Amitava Jana

**A. The Current Situation**

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 2 (of 5 points)  
A.3 2 (of 5 points)

**C. Equipment**

(Total of 10 Points)

C.1 5 (of 6 points)  
C.2 1 (of 1 point)  
C.3 2 (of 3 points)

**E. Economic and/or Cultural  
Development and Impact**

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 8 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

**B. The Enhancement Plan**

(Total of 56 Points)

B.1 7 (of 10 points)  
B.2 18 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 3 (of 5 points)  
B.7 4 (of 5 points)

**D. Faculty and Staff Expertise**

(Total of 12 Points)

D.1 12 (of 12 points)

**F. Previous Support Fund Awards**

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

**G. Total Score:** 78 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

		<u>YEAR 1</u>	<u>YEAR 2</u>
<b>SPECIFIC BUDGETARY</b>	<b>Requested</b>		
<b>RECOMMENDATIONS:</b>	<b>Amount:</b>	<u>\$53,408</u>	<u>\$0</u>
	<b>Recommended</b>		
	<b>Amount:</b>	<u>\$0</u>	<u>\$0</u>

The proposal seeks \$53,408 to implement concepts of design and manufacture in the Mechanical Engineering curriculum and to expand the mechatronics and measurement lab with additional workstations. Additive manufacturing, an emerging research topic and one supported by numerous federal initiatives, is an area of importance for program involvement. Elements of the proposal could be strengthened with additional detail. The rationale presents a list of courses that would be affected, but does not provide a clear picture of the intent of the proposal; the section on existing resources should speak from a value-added perspective; the sections on student and faculty impact should address more directly the benefits to be gained by both cohorts; and the work plan identifies a number of instructors whose direct involvement with the project is not well presented. The panel does not recommend funding.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 019ENGB-15

INSTITUTION: Tulane University

TITLE OF PROPOSAL: Advancing Visualization and Simulation in Biomedical Engineering

PRINCIPAL INVESTIGATOR: Donald Gaver

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                       
A.2 5 (of 5 points)  
A.3 5 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 9 (For S/E)  
or (of 10 points)  
E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 9 (of 10 points)  
B.2 20 (of 21 points)  
B.3 4 (of 5 points)  
B.4 5 (of 5 points)  
B.5 5 (of 5 points)  
B.6 4 (of 5 points)  
B.7 5 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

95
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$150,000</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$150,000</u>

This proposal seeks \$150,000 to establish a photonics lab and an advanced simulation and visualization lab in the Biomedical Engineering Department at Tulane University. This is a well-written proposal that focuses on curricular innovations and research initiatives. Students will benefit from these improvements with new course offerings in measurements and processing, while faculty members will have the opportunity to advance their industry-centric research program. Sound assessment and evaluation procedures, structured on an ABET-style model, are in place to address the level of attainment presented in the work plan's objectives and goals. Full funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 020ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: A Process Control Systems Technology Laboratory for  
Undergraduate Instruction and Research

PRINCIPAL INVESTIGATOR: Cherif Aissi

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 4 (of 5 points)  
A.3 3 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 7 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)  
B.2 16 (of 21 points)  
B.3 3 (of 5 points)  
B.4 3 (of 5 points)  
B.5 3 (of 5 points)  
B.6 3 (of 5 points)  
B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

75
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$115,796</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

Development of a process control system technology (PCST) lab is proposed. In a modernized lab students could investigate embedded systems and expand their project development opportunities, while practicing engineers could upgrade their professional skills using a state-of-the-art facility. Three courses will be modified to accommodate the new lab equipment and experiments would affect about 140 students annually in two programs. Providing faculty research facilities is another important objective; however, it is unclear how the faculty will use the planned facilities and to what level value would be added to their research capabilities. The budget request includes funding for eleven PCs, one printer, and graduate student and travel support. These are items the panel feels the institution should commit to rather than requesting support from the BOR. No funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 021ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: Proposal for Lab Facility Improvement

PRINCIPAL INVESTIGATOR: Fathi Boukadi

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No             
A.2 4 (of 5 points)  
A.3 3 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)  
C.2 1 (of 1 point)  
C.3 2 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 7 (For S/E)  
or (of 10 points)  
E.2b            (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 7 (of 10 points)  
B.2 14 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 5 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 9 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No           

G. Total Score: 

74
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount: <u>\$216,699</u> Recommended Amount: <u>\$0</u>
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This proposal intends to provide more up-to-date equipment for three laboratory experiences in the Petroleum Engineering program at the University of Louisiana at Lafayette. The faculty has contacted oil and gas companies concerning funding, but apparently no funds were provided. The Evangeline Section of the Society of Petroleum Engineers has agreed to provide \$100,000, should this proposal be funded, to purchase some of the equipment in the upgrade proposal. Panel members agree that such an extensive and expensive project would provide more realistic teaching and learning opportunities for the program and its students, but Enhancement Program funds for Engineering B are stretched to the limit. The panel does not recommend funding.



# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 022ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: Student Project Center and Materials Laboratory Development

PRINCIPAL INVESTIGATOR: Matthew Fadden

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 1 (of 2 points)  
E.2a 7 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)  
B.2 16 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

80
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$117,529</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

Machining equipment and measuring instrumentation to equip a student project center for several programs at the University of Louisiana at Lafayette are requested. While the lead department is Civil Engineering, this appears to be a joint project that could benefit programs in both Engineering B and A. Most of the specific examples of student use and impact, however, were for Civil Engineering, which is an Engineering A discipline. Although the proposal has many merits, the panel does not recommend funding.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 023ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: Acquisition of Adsorption Analyzer for Hydraulic Fracturing  
Flowback Water Treatment Education and Research

PRINCIPAL INVESTIGATOR: Daniel Gang

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                     

A.2 4 (of 5 points)

A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 5 (of 6 points)

C.2 1 (of 1 point)

C.3 2 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)

E.2a 9 (For S/E)

or (of 10 points)

E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)

B.2 18 (of 21 points)

B.3 5 (of 5 points)

B.4 5 (of 5 points)

B.5 5 (of 5 points)

B.6 5 (of 5 points)

B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 11 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

88
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount: <u>\$35,970</u> Recommended Amount: <u>\$35,970</u>
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This project intends to study oil adsorption materials by acquiring an automatic physisorption analyzer and associated equipment to be used by several engineering disciplines at the University of Louisiana at Lafayette. The equipment requested will complement existing equipment and provide additional capabilities to an already very capable effort in the Petroleum Engineering area. The team appears to be well qualified and the proposal addresses a very serious issue associated with hydraulic fracturing. The panel recommends full funding.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 024ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: Enhancement of Infrastructure and Materials Laboratory Through  
Advanced Rheometer System for Novel Materials Characterization

PRINCIPAL INVESTIGATOR: Mohammad Khattak

## A. The Current Situation

(Total of 10 Points)

A.1 Yes \_\_\_\_\_ No \_\_\_\_\_

A.2 \_\_\_\_\_ (of 5 points)

A.3 \_\_\_\_\_ (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 \_\_\_\_\_ (of 6 points)

C.2 \_\_\_\_\_ (of 1 point)

C.3 \_\_\_\_\_ (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 \_\_\_\_\_ (of 2 points)

E.2a \_\_\_\_\_ (For S/E)

or \_\_\_\_\_ (of 10 points)

E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 \_\_\_\_\_ (of 10 points)

B.2 \_\_\_\_\_ (of 21 points)

B.3 \_\_\_\_\_ (of 5 points)

B.4 \_\_\_\_\_ (of 5 points)

B.5 \_\_\_\_\_ (of 5 points)

B.6 \_\_\_\_\_ (of 5 points)

B.7 \_\_\_\_\_ (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 \_\_\_\_\_ (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes \_\_\_\_\_ No \_\_\_\_\_

G. Total Score: 

NR
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$67,626</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

The ULL PI intends to acquire an advanced rheometer system to enhance materials characterization in the Civil and Chemical Engineering programs. While there is no doubt that the team requesting this equipment is qualified and that need exists for the equipment, the disciplines that will primarily benefit from this proposal both belong to Engineering A and are, therefore, not eligible for funding consideration in the Engineering B competition.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 025ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: Rapid Prototyping Equipment for the Sensor and Microfabrication  
Laboratory at the University of Louisiana at Lafayette

PRINCIPAL INVESTIGATOR: Mohammad Madani

## A. The Current Situation

(Total of 10 Points)

A.1 Yes \_\_\_\_\_ No \_\_\_\_\_  
A.2 \_\_\_\_\_ (of 5 points)  
A.3 \_\_\_\_\_ (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 \_\_\_\_\_ (of 6 points)  
C.2 \_\_\_\_\_ (of 1 point)  
C.3 \_\_\_\_\_ (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 \_\_\_\_\_ (of 2 points)  
E.2a \_\_\_\_\_ (For S/E)  
or \_\_\_\_\_ (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 \_\_\_\_\_ (of 10 points)  
B.2 \_\_\_\_\_ (of 21 points)  
B.3 \_\_\_\_\_ (of 5 points)  
B.4 \_\_\_\_\_ (of 5 points)  
B.5 \_\_\_\_\_ (of 5 points)  
B.6 \_\_\_\_\_ (of 5 points)  
B.7 \_\_\_\_\_ (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 \_\_\_\_\_ (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes \_\_\_\_\_ No \_\_\_\_\_

G. Total Score: 

NR
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$123,280</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

The proposal team intends to purchase a maskless lithography system to enhance rapid prototyping efforts in the Electrical and Computer Engineering programs at the University of Louisiana at Lafayette. While there is no doubt that the team requesting this equipment is qualified and that need for the equipment exists, the disciplines that will benefit from this proposal fall under Engineering A and are not eligible for funding consideration in Engineering B.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 026ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: Enhancement of the Computer Numerical Control [CNC] Lab with  
a High Performance, Multi-Axis CNC Turning Center

PRINCIPAL INVESTIGATOR: Gholam Massiha

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)  
C.2 1 (of 1 point)  
C.3 2 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 6 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 6 (of 10 points)  
B.2 17 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 5 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 10 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

77
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$93,660</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

This project is a joint submission from the Department of Industrial Technology and the Department of Mechanical Engineering at the University of Louisiana at Lafayette and will support acquisition of a high-performance, multi-axis CNC turning center. The proposal indicates that the equipment will be utilized in the teaching programs and outreach to manufacturing partners for new product/process development. While the proposal is logical and there is little doubt that the equipment would enhance both departments' efforts, there is a competing proposal from ULL that involves the two departments in this proposal as well as the Civil and Petroleum Engineering programs. The competing proposal requests funds to create a student project center and includes, as part of the equipment request, a somewhat less expensive CNC 3-axis mill. While the other proposal's equipment is probably not as capable as the turning center in this proposal, it appears to have broader support and would potentially be used by a larger contingent of students. Funding for this proposal is not recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 027ENGB-15

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: CAPE Satellite Communications Laboratory Upgrades

PRINCIPAL INVESTIGATOR: George Thomas

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                       
A.2 3 (of 5 points)  
A.3 3 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)  
C.2 1 (of 1 point)  
C.3 2 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 7 (For S/E)  
or (of 10 points)  
E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 7 (of 10 points)  
B.2 13 (of 21 points)  
B.3 3 (of 5 points)  
B.4 4 (of 5 points)  
B.5 3 (of 5 points)  
B.6 3 (of 5 points)  
B.7 3 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 11 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

69
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$108,500</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

This project would provide the Electrical and Computer Engineering programs at the University of Louisiana at Lafayette with testing and communications equipment and facilities for communicating with the CAPE-1 and CAPE-2 pico satellites, as well as developing and testing the CAPE-3 satellite. There is no doubt that this student-led effort has produced course enhancements and much positive publicity for the department, the College of Engineering and ULL. While it is clear that the applicant is qualified and that a need exists for the equipment and facilities, the disciplines that will primarily benefit from this proposal fall under Engineering A, not Engineering B. No funding is recommended.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 028ENGB-15

INSTITUTION: University of Louisiana at Monroe

TITLE OF PROPOSAL: Acquisition of a Mini Twin Screw Extruder to Enhance "Industrial  
Pharmacy" Curriculum, Training, and Research at ULM

PRINCIPAL INVESTIGATOR: Sami Nazzal

## A. The Current Situation

(Total of 10 Points)

A.1 Yes \_\_\_\_\_ No \_\_\_\_\_

A.2 \_\_\_\_\_ (of 5 points)

A.3 \_\_\_\_\_ (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 \_\_\_\_\_ (of 6 points)

C.2 \_\_\_\_\_ (of 1 point)

C.3 \_\_\_\_\_ (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 \_\_\_\_\_ (of 2 points)

E.2a \_\_\_\_\_ (For S/E)

or \_\_\_\_\_ (of 10 points)

E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 \_\_\_\_\_ (of 10 points)

B.2 \_\_\_\_\_ (of 21 points)

B.3 \_\_\_\_\_ (of 5 points)

B.4 \_\_\_\_\_ (of 5 points)

B.5 \_\_\_\_\_ (of 5 points)

B.6 \_\_\_\_\_ (of 5 points)

B.7 \_\_\_\_\_ (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 \_\_\_\_\_ (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes \_\_\_\_\_ No \_\_\_\_\_

G. Total Score: 

NR
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$52,600</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

This project would enable acquisition of a small, twin screw extruder that would be used in the Department of Basic Pharmaceutical Sciences at the University of Louisiana-Monroe (ULM). The investigator appears to be qualified to utilize the requested equipment, which would be used to produce new pharmaceutical delivery products in concert with at least one medical school. While the applicant indicates that this proposal should be considered an Engineering B proposal, there are no Engineering faculty or programs that will directly benefit from this project. Further, the Health and Medical Sciences will be considered for Enhancement funding in the next cycle. While there is reason to believe that the acquisition of the twin screw extruder could enhance both education and research in the Biological and Medical Sciences, there is no compelling argument that this proposal is beneficial to or even related to Engineering; therefore the project is not recommended for Engineering B funding.

# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 029ENGB-15

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: A Propeller Dynamometer for Enhancement of Teaching and  
Research in Marine Propulsion

PRINCIPAL INVESTIGATOR: Lothar Birk

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No                       
A.2 4 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 4 (of 6 points)  
C.2 1 (of 1 point)  
C.3 2 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 7 (For S/E)  
or (of 10 points)  
E.2b                      (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 7 (of 10 points)  
B.2 12 (of 21 points)  
B.3 4 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 10 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No                     

G. Total Score: 

73
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount: <u>\$308,828</u> Recommended Amount: <u>\$0</u>
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A UNO faculty team wishes to acquire research equipment to develop a propeller dynamometer facility in the School of Naval Architecture and Marine Engineering. The investigative team appears to be well qualified and the proposed work would add a new capability to UNO's testing facilities. The team states that being able to test a 12-inch propeller provides superior information to that produced by modeling. However, the proposal did not address the situation when the propeller of interest might be an order of magnitude (or more) greater in size or constructed from materials that are significantly different from the plastics used in 3D printers. The proposed equipment would certainly add some capabilities to those already available at UNO, but at a very significant cost. It would seem that an equipment request of this magnitude would be a reasonable candidate for NSF's Major Research Infrastructure (MRI) program. No funding is recommended.



# RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 030ENGB-15

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: X-ray Characterization Laboratory Enhancement at UNO

PRINCIPAL INVESTIGATOR: Paul Schilling

## A. The Current Situation

(Total of 10 Points)

A.1 Yes x No \_\_\_\_\_  
A.2 5 (of 5 points)  
A.3 4 (of 5 points)

## C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)  
C.2 1 (of 1 point)  
C.3 3 (of 3 points)

## E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)  
E.2a 9 (For S/E)  
or (of 10 points)  
E.2b \_\_\_\_\_ (For NS/NE)

## B. The Enhancement Plan

(Total of 56 Points)

B.1 9 (of 10 points)  
B.2 18 (of 21 points)  
B.3 5 (of 5 points)  
B.4 4 (of 5 points)  
B.5 4 (of 5 points)  
B.6 4 (of 5 points)  
B.7 4 (of 5 points)

## D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 11 (of 12 points)

## F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes x No \_\_\_\_\_

G. Total Score: 

89
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 (of 100 points)

(Note: Proposals with a total score below 70 will not be recommended for funding.)

SPECIFIC BUDGETARY	Requested Amount:	<u>\$107,485</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$107,485</u>

This proposal is about updating and expanding capabilities of the X-ray characterization laboratory in the Mechanical Engineering Department at the University of New Orleans. The equipment to be updated was originally funded by the BoRSF about 15 years ago. The proposal team has developed a thoughtful plan to "refresh" their X-ray diffractometer by updating the existing system, rather than acquiring a new, much more expensive system. The added capabilities will enhance materials characterization for Mechanical Engineering and a number of other programs at UNO and other schools in Louisiana. Full funding is recommended.

# **Appendix A**

## **Summary List of Proposals**

**Proposals Submitted to the Traditional Enhancement Program - Engineering B  
for the FY 2014-15 Review Cycle**

Proposal Number	PI Name	Institution	Duration	Equipment/Non Equipment	New/ Continuation	Project Title	Amount Requested		
							Year 1	Year 2	Total
001ENGB-15	Dr. Dorin Boldor	Louisiana State University Agricultural Center	2 Years	E	New Request	Acquisition of processing, characterization, and simulation tools to enhance bio- and agricultural-based nanotechnology and bioenergy research	\$255,172.00	\$9,746.00	\$264,918.00
002ENGB-15	Prof. Aly Mousaad Aly	Louisiana State University and A & M College - Baton Rouge	2 Years	E	New Request	Large-Scale Flow Generation for Testing Energy and Coastal Infrastructure	\$429,940.00	\$0.00	\$429,940.00
003ENGB-15	Prof. Jin-Woo Choi	Louisiana State University and A & M College - Baton Rouge	2 Years	E	New Request	Droplet Printing System for Sensors, Materials, and Biomedical Engineering Research	\$137,000.00	\$6,000.00	\$143,000.00
004ENGB-15	Dr. Jan Hondzinski	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Employing Eye Tracking Technology to Improve Instruction and Research on Human Interface Projects	\$77,760.00	\$0.00	\$77,760.00
005ENGB-15	Dr. Fengyuan Lu	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Transmission Electron Microscopy Sample Preparation System for Materials Engineering Research and Education	\$108,370.00	\$0.00	\$108,370.00
006ENGB-15	Prof. Michael MacLellan	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Enhancement of Motion Capture Capabilities for Biomechanical Application	\$149,864.00	\$0.00	\$149,864.00
007ENGB-15	Dr. Marie-Lorraine Marceau-Day	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Radiation Monitoring Equipment for LSU-CAMD	\$47,410.00	\$0.00	\$47,410.00
008ENGB-15	Prof. Michael Murphy	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Micro-milling Machine for Micro-molding Research and Capstone Support	\$391,301.00	\$0.00	\$391,301.00
009ENGB-15	Dr. Dimitris Nikitopoulos	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Learn By Doing - Additive Manufacturing Prototyping	\$195,000.00	\$0.00	\$195,000.00
010ENGB-15	Prof. Sunggook Park	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Enhancement of metrology capability for detecting single biomolecules in micro/nanofluidics	\$159,999.00	\$0.00	\$159,999.00
011ENGB-15	Dr. MUHAMMAD WAHAB	Louisiana State University and A & M College - Baton Rouge	1 Year	E	New Request	Research Enhancement through the Acquisition of a Residual Stress Measurements System with an emphasis in Engineering & Science Education in Materials and Manufacturing	\$150,000.00	\$0.00	\$150,000.00
012ENGB-15	Dr. William Yu	Louisiana State University in Shreveport	1 Year	E	New Request	Acquisition of an AFM for Materials, Biology and Nanoscience Education and Research	\$175,880.00	\$0.00	\$175,880.00
013ENGB-15	Dr. Jun-Ing Ker	Louisiana Tech University	1 Year	E	New Request	Enhancement of Flexible Manufacturing Laboratory at Louisiana Tech University	\$65,000.00	\$0.00	\$65,000.00
014ENGB-15	Prof. Shengnian Wang	Louisiana Tech University	1 Year	E	New Request	Enhancing Nanomaterials and Energy Education with Pyrolyzer and GCMS systems	\$75,990.00	\$0.00	\$75,990.00
015ENGB-15	Dr. Nikos Kiritzis	McNeese State University	1 Year	E	New Request	Model LNG Process Plant for Teaching and Training [Phase 1]	\$175,000.00	\$0.00	\$175,000.00
016ENGB-15	Dr. Zhuang Li	McNeese State University	1 Year	E	New Request	Enhancement of Instrumentation and Measurement Laboratory	\$97,208.00	\$0.00	\$97,208.00

**Proposals Submitted to the Traditional Enhancement Program - Engineering B  
for the FY 2014-15 Review Cycle**

Proposal Number	PI Name	Institution	Duration	Equipment/Non Equipment	New/ Continuation	Project Title	Amount Requested		
							Year 1	Year 2	Total
017ENGB-15	Dr. Milton Saidu	Nicholls State University	1 Year	E	New Request	Process Safety and Instrumentation Laboratory Enhancement Project	\$148,882.00	\$0.00	\$148,882.00
018ENGB-15	Dr. Amitava Jana	Southern University and A&M College - Baton Rouge	2 Years	E	New Request	Enhancement of Mechanical Engineering Laboratories with Visualization, Design and Prototyping, and Mecatronics Equipment	\$53,408.00	\$0.00	\$53,408.00
019ENGB-15	Prof. Donald Gaver	Tulane University	1 Year	E	New Request	Advancing Visualization and Simulation in Biomedical Engineering	\$150,000.00	\$0.00	\$150,000.00
020ENGB-15	Dr. Cherif Aissi	University of Louisiana at Lafayette	1 Year	E	New Request	A Process Control Systems Technology Laboratory for Undergraduate Instruction and Research	\$115,796.00	\$0.00	\$115,796.00
021ENGB-15	Mr. Fathi Boukadi	University of Louisiana at Lafayette	1 Year	E	New Request	Proposal for Lab Facility Improvement	\$216,699.00	\$0.00	\$216,699.00
022ENGB-15	Dr. Matthew Fadden	University of Louisiana at Lafayette	1 Year	E	New Request	Student Project Center and Materials Laboratory Development	\$117,529.00	\$0.00	\$117,529.00
023ENGB-15	Dr. Daniel Gang	University of Louisiana at Lafayette	1 Year	E	New Request	Acquisition of Adsorption Analyzer for Hydraulic Fracturing Flowback Water Treatment Education and Research	\$35,970.00	\$0.00	\$35,970.00
024ENGB-15	Dr. Mohammad Khattak	University of Louisiana at Lafayette	1 Year	E	New Request	Enhancement of Infrastructure and Materials Laboratory through Advanced Rheometer System for Novel Materials Characterization	\$67,626.00	\$0.00	\$67,626.00
025ENGB-15	Dr. Mohammad Madani	University of Louisiana at Lafayette	1 Year	E	New Request	Rapid Prototyping Equipment for the Sensor and Microfabrication Laboratory at the University of Louisiana at Lafayette	\$123,280.00	\$0.00	\$123,280.00
026ENGB-15	Dr. Gholam Massiha	University of Louisiana at Lafayette	1 Year	E	New Request	Enhancement of the Computer Numerical Control [CNC] Lab with a High Performance, Multi-Axis CNC Turning Center	\$93,660.00	\$0.00	\$93,660.00
027ENGB-15	Dr. George Thomas	University of Louisiana at Lafayette	1 Year	E	New Request	CAPE Satellite Communications Laboratory Upgrades	\$108,500.00	\$0.00	\$108,500.00
028ENGB-15	Dr. sami nazzal	University of Louisiana at Monroe	1 Year	E	New Request	Acquisition of a mini twin screw extruder to enhance "industrial pharmacy" curriculum, training, and research at ULM	\$52,600.00	\$0.00	\$52,600.00
029ENGB-15	Dr. Lothar Birk	University of New Orleans	1 Year	E	New Request	A Propeller Dynamometer for Enhancement of Teaching and Research in Marine Propulsion	\$308,828.00	\$0.00	\$308,828.00
030ENGB-15	Dr. Paul Schilling	University of New Orleans	1 Year	E	New Request	X-ray Characterization Laboratory Enhancement at UNO	\$107,485.00	\$0.00	\$107,485.00

**\*The RFP restricts second year funding requests to no more than \$50,000.**

Total Number of Proposals submitted	30
Total Money Requested for First Year	\$4,391,157.00
Total Money Requested for Second Year	\$15,746.00
Total Money Requested	\$4,406,903.00

# **Appendix B**

## **Rating Forms**

Proposal Number: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

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**BOARD OF REGENTS SUPPORT FUND ENHANCEMENT PROGRAM, FISCAL YEAR 2010-11  
RATING FORM FOR TRADITIONAL AND UNDERGRADUATE ENHANCEMENT PROPOSALS  
REQUESTS OTHER THAN EQUIPMENT PURCHASES (e.g., Colloquia, Curricular Revisions, etc.)**

INSTRUCTIONS: The completed evaluation form should represent the consensus of the expert members of the review panel and, as such, must reflect the final decisions of that panel. Review this form and the program guidelines prior to reading the proposal. The higher the score, the more clearly the proposal satisfies the criterion under consideration. Guidelines should not be interpreted to exclude from eligibility departments and/or units engaged solely in instruction. Use the white space provided to explain the panel's ratings, especially on items given low scores. Attach additional pages, as necessary.

**A. THE CURRENT SITUATION--Total of 10 points**

YES \_\_\_\_\_ NO \_\_\_\_\_

\_\_\_\_\_ of 5 pts.

\_\_\_\_\_ of 5 pts.

A.1 Has the applicant adequately described the institution and unit(s)/department(s) that will benefit from the proposed project, especially in terms of mission, faculty, students, and relevant institutional or departmental resources?

A.2 To what extent will the proposed project enhance the affected department(s) or unit(s)?

A.3 To what extent will the project complement and improve upon existing resources of the department(s) or unit(s)?

COMMENTS:

**B. THE ENHANCEMENT PLAN--Total of 66 points**

\_\_\_\_\_ of 5 pts.

\_\_\_\_\_ of 23 pts.

\_\_\_\_\_ of 25 pts.

\_\_\_\_\_ of 5 pts.

\_\_\_\_\_ of 2 pts.

\_\_\_\_\_ of 6 pts.

B.1 Are the goals and objectives clearly stated?

B.2 Does the work plan sufficiently describe the activities that will be undertaken to achieve the goals and objectives of the proposal with responsible individuals listed for each activity, a schedule of activities with benchmarks to be accomplished, and a description detailing how each objective will be evaluated?

B.3 To what extent will the proposed project catapult the department(s) or unit(s) into attaining a high level of regional, national, or international eminence--or maintaining a current high level of eminence--commensurate with degree offerings and/or functions?

B.4 To what extent will the proposed project have an impact on the variety and quality of curricular offerings and instructional methods within the affected department(s) or unit(s)? Appropriate to current thinking in the specific field(s) or discipline(s) of the proposed project, is reform of undergraduate education and/or teacher preparation encouraged?

B.5 To what extent will the proposed project enhance the ability of the department(s) or unit(s) to attract and/or retain students of high quality, particularly high quality students from Louisiana?

B.6 To what extent will the project contribute to improving the quality and effectiveness of faculty teaching and improve faculty pedagogical practices within the context of current thinking on reform of undergraduate education and teacher preparation, specific to field(s) or discipline(s) of the proposed project?

**C. FACULTY AND STAFF EXPERTISE--Total of 12 points**

\_\_\_\_\_ of 12 pts

C.1 Are the faculty and support personnel appropriately qualified to implement this project? If special training will be required for faculty and/or other personnel, has an appropriate plan been developed?

Proposal Number: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

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COMMENTS:

D. ECONOMIC AND/OR CULTURAL DEVELOPMENT AND IMPACT--Total of 12 points

\_\_\_\_\_ of 2 pts.      D.1      To what extent will the project assist in establishing a new relationship, or strengthen an existing relationship, with one or more industrial/institutional sponsors (e.g., private business, trade organization, professional organization, non-profit or community organization, another university or consortium of universities, federal government agency)?

NOTE TO REVIEWER:      Depending on the discipline of the submitting department or unit, provide rating points for either D.2a OR D.2b:

\_\_\_\_\_ of 10 pts.      D.2a      For science/engineering proposals only: To what extent will the project assist the submitting department(s)/unit(s) in promoting or enhancing the economic development of the State of Louisiana?

D.2b      For non-science/non-engineering proposals only: To what extent will the project contribute to the academic and/or cultural resources of the State of Louisiana?

COMMENTS:

E. PREVIOUS SUPPORT FUND AWARDS--No points assigned

YES\_\_ NO\_\_      F.1      If the Project Director or Co-Project Director has received previous Support Fund support, has it been adequately documented?

COMMENTS:

F. TOTAL SCORE (NOTE: Proposals with a total score below 70 will not be recommended for funding.)

\_\_\_\_\_ of 100 points

Proposal Number: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

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**SPECIFIC BUDGETARY RECOMMENDATIONS**

Requested Amount:\$ \_\_\_\_\_ Recommended Amount:\$ \_\_\_\_\_

COMMENTS:

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I agree to maintain in confidence any information, documentation and material of any kind (hereinafter referred to as "Material") included in this proposal; I further agree not to disclose, divulge, publish, file patent application on, claim ownership of, exploit or make any other use whatsoever of said "Material" without the written permission of the principal investigator. To the best of my knowledge, no conflict of interest is created as a result of my reviewing this proposal.

Reviewer's Name and Institution: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(Form 6.12, rev.2010)

Proposal Number: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

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BOARD OF REGENTS SUPPORT FUND ENHANCEMENT PROGRAM, FISCAL YEAR 2010-11

RATING FORM FOR TRADITIONAL AND UNDERGRADUATE ENHANCEMENT PROPOSALS  
PURCHASE OF INSTRUCTIONAL AND RESEARCH EQUIPMENT

INSTRUCTIONS: The completed evaluation form should represent the consensus of the expert members of the review panel and, as such, must reflect the final decisions of that panel. Review this form and the program guidelines prior to reading the proposal. The higher the score, the more clearly the proposal satisfies the criterion under consideration. Guidelines should not be interpreted to exclude from eligibility departments and/or units engaged solely in instruction. Use the white space provided to explain the panel's ratings, especially on items given low scores. Attach additional pages, as necessary.

A. THE CURRENT SITUATION--Total of 10 points

- YES \_\_\_\_ NO \_\_\_\_ A.1 Has the applicant adequately described the institution and unit(s)/department(s) that will benefit from the proposed project, especially in terms of mission, faculty, students, and relevant institutional or departmental resources?
- \_\_\_\_ of 5 pts. A.2 To what extent will the proposed project enhance the affected department(s) or unit(s)?
- \_\_\_\_ of 5 pts. A.3 To what extent will the project complement and improve upon existing resources of the department(s) or unit(s)?

COMMENTS:

B. THE ENHANCEMENT PLAN--Total of 56 points

- \_\_\_\_ of 5 pts. B.1 Are the goals and objectives clearly stated? Can the objectives be completed within the timeframe detailed in the proposal?
- \_\_\_\_ of 18 pts. B.2 Does the work plan sufficiently describe the activities that will be undertaken to achieve the goals and objectives of the proposal with responsible individuals listed for each activity, a schedule of activities with benchmarks to be accomplished, and a description detailing how each objective will be evaluated?
- \_\_\_\_ of 20 pts. B.3 To what extent will the proposed project catapult the department(s) or unit(s) into attaining a high level of regional, national, or international eminence--or maintaining a current high level of eminence--commensurate with degree offerings and/or functions?
- \_\_\_\_ of 5 pts. B.4 To what extent will the proposed project have an impact on the variety and quality of curricular offerings and instructional methods within the affected department(s) or unit(s)? Appropriate to current thinking in the specific field(s) or discipline(s) of the proposed project, is reform of undergraduate education and/or teacher preparation encouraged?
- \_\_\_\_ of 2 pts. B.5 To what extent will the proposed project enhance the ability of the department(s) or unit(s) to attract and/or retain students of high quality, particularly high quality students from Louisiana?
- \_\_\_\_ of 6 pts. B.6 To what extent will the project contribute to improving the quality and effectiveness of faculty teaching and improve faculty pedagogical practices within the context of current thinking on reform of undergraduate education and teacher preparation, specific to field(s) or discipline(s) of the proposed project?
- No Points Given, but this is a required component. B.7 Does the proposal indicate how the Board of Regents or other entity will determine whether or not the project has been a success and the degree to which it has achieved its goals?



Proposal Number: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

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COMMENTS:

C. EQUIPMENT--Total of 10 points

- |                 |     |   |
|-----------------|-----|---|
| _____ of 6 pts. | C.1 | To what extent has the proposal established a relationship between the enhancement plan and the items of equipment requested? Is the equipment well-justified? Will it significantly enhance the existing technological capability of the department? Does it reflect current and projected trends in technology? |
| _____ of 1 pt.  | C.2 | Has there been a thorough survey of the current equipment inventory and does the proposal plan to make full use of it?  |
| _____ of 3 pts. | C.3 | To what extent does the proposal present a reasonable plan to ensure a maximum usable lifetime for the equipment? Are housing and maintenance arrangements for equipment adequate?  |

COMMENTS:

D. FACULTY AND STAFF EXPERTISE--Total of 12 points

- |                 |     |   |
|-----------------|-----|---|
| _____ of 12 pts | D.1 | Are the faculty and support personnel appropriately qualified to implement this project? If special training will be required for faculty and/or other personnel, has an appropriate plan been developed? |
|-----------------|-----|---|

COMMENTS:

E. ECONOMIC AND/OR CULTURAL DEVELOPMENT AND IMPACT--Total of 12 points

- |                 |     |   |
|-----------------|-----|---|
| _____ of 2 pts. | E.1 | To what extent will the project assist in establishing a new relationship, or strengthen an existing relationship, with one or more industrial/institutional sponsors (e.g., private business, trade organization, professional organization, non-profit or community organization, another university or consortium of universities, federal government agency)? |
|-----------------|-----|---|

NOTE TO REVIEWER: Depending on the discipline of the submitting department or unit, provide rating points for either E.2a OR E.2b:

- |                  |      |  |
|------------------|------|--|
| _____ of 10 pts. | E.2a | <u>For science/engineering proposals only:</u> To what extent will the project assist the submitting department(s)/unit(s) in promoting or enhancing the economic development of the State of Louisiana? |
|                  | E.2b | <u>For non-science/non-engineering proposals only:</u> To what extent will the project contribute to the academic and/or cultural resources of the State of Louisiana?                                   |

COMMENTS:

Proposal Number: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

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**F. PREVIOUS SUPPORT FUND AWARDS--No points assigned**

YES\_\_\_ NO\_\_\_ G.1 If the Project Director or Co-Project Director has received previous Support Fund support, has it been adequately documented?

COMMENTS:

**G. TOTAL SCORE (NOTE: Proposals with a total score below 70 will not be recommended for funding.)**

\_\_\_\_\_ of 100 points

**SPECIFIC BUDGETARY RECOMMENDATIONS**

Requested Amount \$ \_\_\_\_\_

Recommended Amount \$ \_\_\_\_\_

COMMENTS:

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I agree to maintain in confidence any information, documentation and material of any kind (hereinafter referred to as "Material") included in this proposal; I further agree not to disclose, divulge, publish, file patent application on, claim ownership of, exploit or make any other use whatsoever of said "Material" without the written permission of the principal investigator. To the best of my knowledge, no conflict of interest is created as a result of my reviewing this proposal.

Reviewer's Name and Institution: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(Form 6.11, rev 2010)