

ENHANCEMENT REVIEW REPORT

PHYSICS AND ASTRONOMY

FY 2007-08

Introduction

The Physics and Astronomy Review Panel consisting of Dr. Laurie McNeil, Professor of Physics and Chair of the Department of Physics and Astronomy, University of North Carolina at Chapel Hill; and Dr. Stephen Addison, Professor of Physics and Chair of the Department of Physics and Astronomy, University of Central Arkansas, met March 8, 2008 in Baton Rouge, Louisiana, to evaluate twenty-seven (27) proposals submitted to the Louisiana Board of Regents requesting funds through the Enhancement component of the Board of Regents Support Fund.

The panel received the following materials prior to the visit: (1) all proposals and appropriate rating forms; (2) a summary of the proposals submitted listing titles, PIs, their institutions, funds requested, and so forth; (3) a copy of the most recent Physics and Astronomy report (FY 2004-05); and (4) the FY 2007-08 Traditional and Undergraduate Enhancement Request for Proposals containing criteria for evaluation. After studying all proposals, the panel met in Baton Rouge to review and evaluate them. During the review each proposal was discussed individually and its merits were evaluated with respect to criteria detailed in the RFP. Each proposal received a thorough and impartial review. Subsequent to the individual evaluations, the panel ranked all proposals and recommended funding levels for those deemed worthy of funding.

The twenty-seven (27) Physics and Astronomy proposals submitted in FY 2007-08 requested a total of \$2,928,356 in first-year funds. Seven (7) proposals were highly recommended for funding, four (4) of those at reduced levels.

Table I contains a rank-order list of proposals highly recommended for funding, together with the recommended funding levels. The panel recommends full funding for the partially funded proposals in Table I if additional funds become available. Table II contains a list of proposals recommended for funding if additional funding becomes available once recommendations for Table I have been satisfied. Table III contains a list of proposals not recommended for funding. A detailed review of each proposal follows immediately after the tables. A summary of all proposals submitted (Appendix A) and a copy of the rating forms used in the evaluations (Appendix B) are attached at the end of the report.

TABLE I
PROPOSALS HIGHLY RECOMMENDED FOR FUNDING

Rank	Rating	Proposal Number	Institution	First Year Funds Requested	First Year Funds Recommended	Second Year Funds Requested	Second Year Funds Recommended
1	98	003PHY-08	LSUBR	\$236,382	\$236,382		
2	93	006PHY-08	LSUBR	\$223,090	\$129,550		
2	93	019PHY-08	Tulane	\$190,365	\$109,155		
4	91	007PHY-08	LSUBR	\$149,200	\$134,000		
4	91	013PHY-08	LaTech	\$59,500	\$59,500		
6	90	026PHY-08	UNO	\$160,000	\$160,000		
6	90	012PHY-08	LaTech	\$50,956	\$46,314		
TOTALS:				\$1,069,493	\$874,901	\$0	\$0

TABLE II
PROPOSALS RECOMMENDED IF FUNDS BECOME AVAILABLE

Rank	Rating	Proposal Number	Institution	First Year Funds Requested	First Year Funds Recommended	Second Year Funds Requested	Second Year Funds Recommended
8	86	008PHY-08	LSUBR	\$116,730	\$116,730		
9	83	005PHY-08	LSUBR	\$152,870	\$152,870	\$35,741	\$35,741
10	82	010PHY-08	LSU-S	\$12,900	\$12,900		
11	80	017PHY-08	SUBR	\$24,400	\$24,400		
TOTALS:				\$306,900	\$306,900	\$35,741	\$35,741

**TABLE III
PROPOSALS NOT RECOMMENDED FOR FUNDING**

Rank	Rating	Proposal Number	Institution	First Year Funds Requested	First Year Funds Recommended	Second Year Funds Requested	Second Year Funds Recommended
12	68	024PHY-08	UNO	\$85,000	\$0		
12	68	027PHY-08	UNO	\$24,806	\$0		
14	64	001PHY-08	CEN	\$121,000	\$0		
15	62	009PHY-08	LSUBR	\$99,950	\$0		
16	60	021PHY-08	ULL	\$154,500	\$0		
17	59	016PHY-08	SUBR	\$99,800	\$0		
18	58	025PHY-08	UNO	\$63,174	\$0		
19	55	004PHY-08	LSUBR	\$350,300	\$0		
20	52	002PHY-08	Dillard	\$94,321	\$0		
20	52	020PHY-08	Tulane and LSUBR	\$35,000	\$0	\$35,000	\$0
22	49	011PHY-08	LSU-S	\$109,996	\$0		
22	49	014PHY-08	Nicholls	\$81,623	\$0		
24	40	022PHY-08	ULL	\$53,000	\$0		
25	39	018PHY-08	SUNO	\$65,974	\$0		
26	37	015PHY-08	SUBR	\$38,056	\$0	\$0	\$0
27	18	023PHY-08	ULM	\$75,463	\$0		
TOTALS:				\$1,551,963	\$0	\$35,000	\$0

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 001PHY-08

INSTITUTION: Centenary College

TITLE OF PROPOSAL: Centenary Physics: Spectroscopy in the Sciences Enhancement

PRINCIPAL INVESTIGATOR: Troy C. Messina

A. The Current Situation

(Total of 10 Points)

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

H. Total Score:

64

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 12 (of 15 points)
B.3 5 (of 20 points)
B.4 1 (of 5 points)
B.5 2 (of 2 points)
B.6 0 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$121,000
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The goals of the project and the approach taken by the physics faculty at Centenary are laudable. However, the rationale for purchasing this particular spectroscopic instrument seems driven more by the principal investigator's research interests than by pedagogical enhancement. LabView programming is applicable to almost any kind of instrumentation (which is why it is such a valuable skill for students to acquire), and the summer spectroscopy seminar could be implemented now, without this instrument. It is therefore not clear how much impact this instrument would have on the stated goals. The number of students affected is quite small. Given that the instrument selected is modular, a more modest initial purchase with the intent of enhancing the apparatus later with the microscope and scanning stage might be more appropriate. The performance measures are not connected with the stated goals. The potential to achieve eminence might have been more convincing if there were any indication of interdisciplinary collaboration.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 002PHY-08

INSTITUTION: Dillard University

TITLE OF PROPOSAL: Enhancement of Teaching and Undergraduate Laboratories in the Physics Department

PRINCIPAL INVESTIGATOR: Abdalla Darwish

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

H. Total Score:

52

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 5 (of 15 points)
B.3 10 (of 20 points)
B.4 5 (of 5 points)
B.5 2 (of 2 points)
B.6 0 (of 5 points)
B.7 Yes _____ No X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 3 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 0 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$94,321
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The adoption of RealTime Physics would be an excellent enhancement to pedagogy in the Physics Department, and it is good that the principal investigator has attended one workshop on its use. Further training in this type of teaching, especially for the other faculty members who will also teach these labs, is important to the success of the project. NSF-funded summer workshops ("Activity-Based Physics Faculty Institutes") are available; the faculty should take advantage of them. The cost summary in section C.1 mentions "workshops," but they are not otherwise described and it is not clear who would have the expertise to lead them. Performance measures for the project should have been included. There are several nationally known concept tests to measure physics knowledge acquired by students in introductory physics classes. Comparing the results of these tests before and after the implementation of the new pedagogy (and in successive years, as the faculty further develop their skills in this kind of teaching) would have been useful to the department as a measure of the effectiveness of its teaching. The budget page does not match the equipment list in section C. The additional funding sources section and the budget justification appear to belong to another proposal. The proposal text suffers from poor writing and proofreading, which render some portions all but unreadable.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 003PHY-08

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

TITLE OF PROPOSAL: Upgrade of the LSU Helium Liquefier Facility

PRINCIPAL INVESTIGATOR: Philip Adams

A. The Current Situation

(Total of 10 Points)

A.1 Yes No X
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)

H. Total Score:

98

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 15 (of 15 points)
B.3 18 (of 20 points)
B.4 5 (of 5 points)
B.5 2 (of 2 points)
B.6 5 (of 5 points)
B.7 Yes No X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No

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

SPECIFIC BUDGETARY Requested Amount: \$236,382
RECOMMENDATIONS: Recommended Amount: \$236,382

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in full. This apparatus is clearly justified. The facility is an essential research tool that will be heavily used across a number of disciplines. However, no specific goals for liquid production or duty cycle for the apparatus are given, nor is an estimate of the cost per liter. The budget is well leveraged with matching funds from the institution.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 004PHY-08

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

TITLE OF PROPOSAL: Enhancement for Teaching Astronomy (E. T. A.)

PRINCIPAL INVESTIGATOR: Amy Campbell

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
 A.2 5 (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 0 (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)

H. Total Score: 55 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 1 (of 5 points)
 B.2 13 (of 15 points)
 B.3 5 (of 20 points)
 B.4 3 (of 5 points)
 B.5 2 (of 2 points)
 B.6 2 (of 5 points)
 B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 6 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 0 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$350,300
 RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The stated objective is to provide the students with equipment, but there are no goals stated for what should happen as a result, nor any measures of the outcomes. The connection between the desired enhancement of function and the science standards quoted in the section 4.2.3 is obscure. There appear to be no plans for faculty to receive training in active student engagement techniques that a planetarium-based class can facilitate, only an acknowledgement that a redirection of teaching style "will have to" take place. There appears to be no expertise in planetarium-based instruction. This is really two proposals--one for upgrading the equipment at HRPO and one for renovation and upgrade at the planetarium. The two project ideas should have been submitted separately. Given that a lack of maintenance at the planetarium has been a problem in the past, it is unclear to the panel what has changed that will assure that the new equipment is maintained. The sound system and other ancillary equipment seem inappropriate for a university setting. The current planetarium is a "Spitz A3," not a "Spitzer" as stated in the proposal. This is a large cost for a relatively low impact and it appears to be a development opportunity. Has the LSU Development Office been contacted about naming rights?

RATING FORM FOR ENHANCEMENT REQUESTS OTHER THAN EQUIPMENT PURCHASES

PROPOSAL NUMBER: 005PHY-08

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

TITLE OF PROPOSAL: Science Teacher Training Using Astrophysics Research

PRINCIPAL INVESTIGATOR: Michael L. Cherry

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. Faculty and Staff Expertise

(Total of 12 Points)

C.1 8 (of 12 points)

D. Economic and/or Cultural Development and Impact

(Total of 12 Points)

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

B. The Enhancement Plan

(Total of 62 Points)

B.1 5 (of 5 points)
 B.2 15 (of 20 points)
 B.3 20 (of 25 points)
 B.4 5 (of 5 points)
 B.5 2 (of 2 points)
 B.6 2 (of 5 points)
 B.7 Yes X No _____

E. Additional Funding Sources

(Total of 4 Points)

E.1 4 (of 4 points)

F. Previous Support Fund Awards

(No Points Assigned)

F.1 Yes X No _____

G. Total Score: 83 (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>
SPECIFIC BUDGETARY RECOMMENDATIONS:		
Requested Amount:	<u>\$152,870</u>	<u>\$35,741</u>
Recommended Amount:	<u>\$152,870</u>	<u>\$35,741</u>
	(If additional funds become available)	

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in full if additional funding becomes available. The proposed activities are quite worthy efforts to enhance the training of high school physical science teachers. Further detail about how many teachers (and what fraction of the teacher population) could be expected to participate, and how they would be recruited, would have strengthened the proposal. The work depends upon the funding of the NASA proposal, so LaBoR funding should be contingent upon the success of this proposal. Details about the link between the content to be presented to the teachers and the science standards they must teach should have been included. More involvement by Education faculty would have strengthened the proposal. The idea of granting graduate physics course credit for the workshop is dubious; the content clearly will not be at the graduate level in physics. CEU credits or credit toward an MAT degree would be more appropriate.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 006PHY-08

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

TITLE OF PROPOSAL: A Quantum-Design Physical Property Measurement System (PPMS) for Novel Thermoelectric Material Studies

PRINCIPAL INVESTIGATOR: Shengmin Guo

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)

H. Total Score:

93

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 15 (of 15 points)
B.3 20 (of 20 points)
B.4 3 (of 5 points)
B.5 2 (of 2 points)
B.6 5 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 9 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 2 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$223,090
RECOMMENDATIONS: Recommended Amount: \$129,550

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in part, with full funding if additional funds are made available. This is a workhorse system that will be used by many people. The research it will support is sound. Given the heavy use it will get for research, will it really be available for use in five Mechanical Engineering courses? Faculty and staff expertise is mostly described in terms of where the PIs have been, not what their expertise in the use of such instruments is. Given the potential applications of the instrument, industrial involvement and support should be sought. Funding is recommended for the base system and shipping. The institutional match should be retained at the proposed level.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 007PHY-08

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

TITLE OF PROPOSAL: Acquisition of a Variable-Temperature SPM for Multidisciplinary Materials Research and Education

PRINCIPAL INVESTIGATOR: Richard L. Kurtz

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)

H. Total Score:

91

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 10 (of 15 points)
B.3 20 (of 20 points)
B.4 3 (of 5 points)
B.5 2 (of 2 points)
B.6 5 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 2 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$149,200
RECOMMENDATIONS: Recommended Amount: \$134,000

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in part, with full funding if additional funds become available. The statement (in section a.3) that "to achieve low-temperature operation, a UHV instrument is required" is incorrect. Vacuum is needed, but not UHV. Few of the projects appear to require UHV. The authors may find that collective design, with such a large and varied cast of Co-PIs, is more difficult than they realize. It is unclear to the panel who will be responsible for maintaining the instrument. The statement (in section b.4) about integrating the instrument into the classroom is dubious. Having the system installed in an existing UHV chamber provides good leverage of the funds, and the institutional match is significant. Industrial matching funds should also be sought. Funding is recommended for the base system and the vibration isolation. The institutional match should be retained at the proposed level.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 008PHY-08

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

TITLE OF PROPOSAL: Enhancement of the High Resolution Surface Characterization System at CAMD

PRINCIPAL INVESTIGATOR: Yaroslav Losovj

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 6 (For S/E)
or (of 10 points)
E.2b _____ (For NS/NE)

H. Total Score:

86

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 15 (of 15 points)
B.3 20 (of 20 points)
B.4 2 (of 5 points)
B.5 0 (of 2 points)
B.6 2 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 2 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$116,730

RECOMMENDATIONS: Recommended Amount: \$116,730

(If additional funds become available)

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in full if additional funds become available. This is an important instrument that will be widely used. The outreach aspects of the justification are dubious without more elaboration to make them more than notional, as are the impacts on curriculum and instruction. It would have been appropriate for CAMD to contribute more than salary (which will be provided independent of the award). Quantitative performance measures should have been provided. The impact on the quality of students is not readily apparent in the proposal.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 009PHY-08

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

TITLE OF PROPOSAL: High-resolution UV and X-ray Sources for Atomic and Materials Physics

PRINCIPAL INVESTIGATOR: Phillip Sprunger

A. The Current Situation

(Total of 10 Points)

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

H. Total Score:

62

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 1 (of 5 points)
B.2 12 (of 15 points)
B.3 5 (of 20 points)
B.4 1 (of 5 points)
B.5 2 (of 2 points)
B.6 1 (of 5 points)
B.7 Yes X No

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No

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

SPECIFIC BUDGETARY Requested Amount: \$99,950
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The rationale for this project would have been more convincing if it had been less generic and more locally specific. It was unclear what of the research described cannot be done without the proposed instrument. Most of the statements describing the research are of the non-specific "would enhance our understanding" variety. Stating that the program would achieve eminence does not make it so. The outreach value is dubious. Would the solid state and surface classes really use the equipment? Is there a lab component to these classes, and would the students receive enough training to operate the equipment? The performance measures (which do not relate to anything other than research) have no benchmarks, and therefore it is impossible to know what constitutes success. Some institutional matching funds should have been included.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 010PHY-08

INSTITUTION: Louisiana State University and A&M College-Shreveport

TITLE OF PROPOSAL: Enhancing Student Education and Research Capabilities in Applied Physics at LSUS

PRINCIPAL INVESTIGATOR: Gary R. Boucher

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)

H. Total Score:

82

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 5 (of 15 points)
B.3 15 (of 20 points)
B.4 5 (of 5 points)
B.5 2 (of 2 points)
B.6 2 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$12,900

RECOMMENDATIONS: Recommended Amount: \$12,900

(If additional funds become available)

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in full if additional funds become available. This is a modest project with a modest cost, and the cost/benefit ratio would be favorable. There should have been a description of how the equipment would be used, with an example of the kind of projects the students would carry out. Performance targets (values the measures should reach to declare success) should have been provided. The argument for achieving eminence does not appear to be strongly connected to the proposed project.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 011PHY-08

INSTITUTION: Louisiana State University and A&M College-Shreveport

TITLE OF PROPOSAL: Reaching for the Stars

PRINCIPAL INVESTIGATOR: Laura A. Whitlock

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 2 (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)

H. Total Score: 49 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 2 (of 5 points)
 B.2 7 (of 15 points)
 B.3 5 (of 20 points)
 B.4 1 (of 5 points)
 B.5 1 (of 2 points)
 B.6 1 (of 5 points)
 B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 6 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY	Requested Amount:	<u>\$109,996</u>
RECOMMENDATIONS:	Recommended Amount:	<u>\$0</u>

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The rationale for the project should encompass more than overall increases in enrollment. The principal investigator (PI) should select a particular field of astronomical research to pursue, and then apply for funds for a smaller telescope that is well-suited to that field. After achieving preliminary results, the PI could apply to the NSF Program for Research and Education with Small Telescopes for funding to upgrade the facility. In any request for funding for an observatory it would be wise to include such things as the limiting visual magnitude of the site, the quality of the viewing and how it varies throughout the year, and the number of cloudless nights to be expected per year. All of this information is readily available. To develop eminence, it is likely that the PI will need to collaborate with astronomers at larger institutions. By selecting a field in which to concentrate, the PI could then apply for time on telescopes in national observatories based on the preliminary results obtained with the local equipment. This combined approach would be more likely to succeed, and would still afford the students opportunities for full participation. The instructional objectives of the project are limited and vague. The faculty development described seems to be for hobbyists, not for professionals relevant to their duties. The PI is encouraged to consider these comments and resubmit in the next cycle.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 012PHY-08

INSTITUTION: Louisiana Tech University

TITLE OF PROPOSAL: Louisiana Tech Astronomical Observatory Enhancement

PRINCIPAL INVESTIGATOR: John Shaw

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)

H. Total Score: 90 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
 B.2 15 (of 15 points)
 B.3 14 (of 20 points)
 B.4 5 (of 5 points)
 B.5 2 (of 2 points)
 B.6 3 (of 5 points)
 B.7 Yes _____ No X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 2 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY	Requested Amount:	<u> \$50,956 </u>
RECOMMENDATIONS:	Recommended Amount:	<u> \$46,314 </u>

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in part, with funding in full if additional funds are made available. This is an appropriate, transitional approach to observatory upgrade. Unlike other proposals for observatory upgrades in this competition, the equipment request for this proposal appears to fit institutional needs and personnel expertise. More indication of the kind of research projects the students could be expected to undertake would have strengthened the proposal. What are they doing now for their thesis research? What are they interested in doing that the telescope could facilitate? The justification that research will induce faculty to be involved with students is dubious; they should be able to do that regardless. How will it really aid faculty development? Student feedback is useful for evaluation, but what findings from the feedback would constitute success? Support from private donors should be sought (this could be a naming opportunity). Funding is not recommended for the spectrograph or the video camera unless additional funds are made available. The institutional match should be maintained at the proposed level.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 013PHY-08

INSTITUTION: Louisiana Tech University

TITLE OF PROPOSAL: Thermal Evaporator for Physics Education and Research

PRINCIPAL INVESTIGATOR: Chester Wilson

A. The Current Situation

(Total of 10 Points)

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

H. Total Score:

91

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 15 (of 15 points)
B.3 18 (of 20 points)
B.4 5 (of 5 points)
B.5 1 (of 2 points)
B.6 3 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 2 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$59,500
RECOMMENDATIONS: Recommended Amount: \$59,500

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in full. This is a workhorse instrument, definitely needed in such a program. The description of impact on existing resources is not very specific. The argument that the purchase is needed because there is no equipment specifically identified as supporting the new Engineering Physics degree program is unconvincing. The program either needs the equipment or it does not; it does not matter if the equipment is specifically designated for the program. The evaluation measures are vague. Students will be surveyed, but what findings from those surveys would constitute success? Mention is made of submitting NSF CCLI grants, but what sort of project would be proposed to that program? More specific ideas about what would be proposed (either to federal agencies or potential industrial partners) should have been provided.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 014PHY-08

INSTITUTION: Nicholls State University

TITLE OF PROPOSAL: Enhancement of the Physics Instructional Laboratories at Nicholls State University

PRINCIPAL INVESTIGATOR: Chadwick Young

A. The Current Situation

(Total of 10 Points)

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

C. Equipment

(Total of 10 Points)

C.1 2 (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 0 (of 2 points)
E.2a 2 (For S/E)
or (of 10 points)
E.2b _____ (For NS/NE)

H. Total Score:

49

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 3 (of 5 points)
B.2 15 (of 15 points)
B.3 5 (of 20 points)
B.4 1 (of 5 points)
B.5 2 (of 2 points)
B.6 2 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 2 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$81,623
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The energy that the principal investigator is (self-)described as bringing to the Nicholls State physics program is certainly impressive. However, the equipment requested is almost entirely intended to replace worn-out items used in existing experiments (not described in the proposal). There appears to be no plan to implement more up-to-date experiments, tie the laboratory activities to learning goals, introduce microcomputer-based data acquisition for real-time experimentation and analysis, or modify the laboratory pedagogy based on physics education research. This is surprising given that Dr. Lo appears to have made similar changes in the chemistry curriculum. Performance measures to evaluate the expected enhancement in learning and student satisfaction as a result of the upgraded laboratory equipment are minimal, although these could easily be utilized (especially since this appears to be the primary role assigned to Dr. K. Young in the project). The relationship between the requested equipment and the (laudable) outreach activities described in section e.2 is obscure. Could a lab fee be implemented to fund routine items such as rulers and stopwatches? The prices that are quoted in the proposal are far from being the most favorable available. More extensive investigation into potential vendors should have been done. Suppliers to secondary school markets, for example, often have lower-cost equipment that is entirely adequate to the purpose.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 015PHY-08

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

TITLE OF PROPOSAL: Educational Expansion and Research Enhancement with a
20-Node Parallel Computing Cluster

PRINCIPAL INVESTIGATOR: Edward E. Doomes

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
 A.2 0 (of 5 points)
 A.3 0 (of 5 points)

C. Equipment

(Total of 10 Points)

C.1 6 (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 2 (of 2 points)
 E.2a 5 (For S/E)
 or _____ (of 10 points)
 E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 52 Points)

B.1 1 (of 5 points)
 B.2 2 (of 15 points)
 B.3 5 (of 20 points)
 B.4 1 (of 5 points)
 B.5 0 (of 2 points)
 B.6 1 (of 5 points)
 B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 0 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes _____ No X

H. Total Score: 37 (of 100 points)

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

	YEAR 1	YEAR 2
SPECIFIC BUDGETARY RECOMMENDATIONS:		
Requested Amount:	\$38,056	\$0
Recommended Amount:	\$0	\$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. No mention is made of proposal 016PHY-08 from Drs. Zhao and Bagayoko of the same department, which also requests funds for computational equipment. However, their research is used as justification for this proposal. The rationale that the project will enhance the students' experimental experience is specious. A request for laboratory apparatus would be more appropriate than efforts to substitute simulation for experimentation. A cluster is not needed to upgrade the introductory physics courses; ordinary desktop PCs would suffice. The only reasonable justification for the request is research. However, the description of Dr. Walker's research says nothing about computation. The Physics Department is said to be "accredited by the American Physical Society" despite the fact that APS does not engage in accreditation. APS accredits programs, not departments. Section c.3 contains a description of a central analytical facility that is irrelevant to the proposal. Only in section e.2 is any mention made of user fees, and no indication is given that permission to establish a cost-recovery center has been granted (or even sought). What will be the basis of the fees, how will the funds be used, who will provide oversight, etc.? No biographical sketch of the principal investigator is provided. The department needs to communicate internally so that requests are coordinated in a way that will assure the maximum impact for the funds allocated. Multiple requests for overlapping equipment should not be submitted. The computational capacity needed could be provided by purchasing entire systems at lower costs than those quoted for the parts to be assembled. There is no bidding process with Apple--they have a non-negotiable educational price for their products.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 016PHY-08

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

TITLE OF PROPOSAL: Enhancement of the Computational Capability for Predictive Quantum Computations of Properties of Nano and Electronic Materials and Related Systems

PRINCIPAL INVESTIGATOR: Guang-Lin Zhao

A. The Current Situation

(Total of 10 Points)

A.1 Yes No X
A.2 2 (of 5 points)
A.3 2 (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 2 (of 2 points)
E.2a 8 (For S/E)
or (of 10 points)
E.2b (For NS/NE)

H. Total Score:

59

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 2 (of 5 points)
B.2 12 (of 15 points)
B.3 5 (of 20 points)
B.4 3 (of 5 points)
B.5 0 (of 2 points)
B.6 2 (of 5 points)
B.7 Yes X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 3 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No

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

SPECIFIC BUDGETARY Requested Amount: \$99,800
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. No mention is made of proposal 015PHY-08, which also requests computational resources (and in which the research of the principal investigators is mentioned as a justification). The institutional description is very limited, given that the justification is based on graduate research. How many graduate students does the department have? Could national supercomputer resources be used for this research? The objectives of the plan are not defined in terms of measurable outcomes. A rationale should have been provided for selecting the specific system. Other manufacturers (e.g., Sun) have educational grant programs that would allow the authors to buy comparable equipment for less. Such an approach would also have provided some remote workstations, which appear to be needed. The department needs to communicate internally so that requests are coordinated in a way that will assure the maximum impact for the funds allocated. Multiple requests for overlapping equipment should not be submitted.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 017PHY-08

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

TITLE OF PROPOSAL: Thermal Transport Measurement of Novel Thermoelectric Materials and Related Systems

PRINCIPAL INVESTIGATOR: Guang-Lin Zhao

A. The Current Situation

(Total of 10 Points)

A.1 Yes No X
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)

H. Total Score:

80

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 15 (of 15 points)
B.3 0 (of 20 points)
B.4 5 (of 5 points)
B.5 2 (of 2 points)
B.6 5 (of 5 points)
B.7 Yes No X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes No X

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

SPECIFIC BUDGETARY Requested Amount: \$24,400
RECOMMENDATIONS: Recommended Amount: \$24,400

(If additional funds become available)

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in full if additional funds become available. The justification for the project is not very specific, as the need for the particular measurements the requested apparatus would make possible is not detailed. Much of the text appears to have been recycled from some other context, and there are frequent discontinuities due to poor editing. The "evidence of potential to achieve eminence" section is entirely missing. It is unfortunate that the proposal was so carelessly prepared, since the request is modest and the apparatus would enhance the capabilities of an already-functional instrument.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 018PHY-08

INSTITUTION: Southern University and A&M College-New Orleans

TITLE OF PROPOSAL: Adaptation and Implementation of Technology for SUNO
Physics and Science Classes

PRINCIPAL INVESTIGATOR: Mostafa A. Elaasar

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
A.2 2 (of 5 points)
A.3 0 (of 5 points)

C. Equipment

(Total of 10 Points)

C.1 2 (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)

H. Total Score:

39

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 2 (of 15 points)
B.3 0 (of 20 points)
B.4 2 (of 5 points)
B.5 0 (of 2 points)
B.6 0 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 6 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$65,974
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The principal investigator (PI) proposes to introduce modern pedagogical techniques that are firmly based on physics education research and widely implemented in various institutions. While this is a very worthy goal, it does not necessarily require any specialized equipment. All that is really needed to implement these pedagogies is faculty training, which is not mentioned in the proposal. Effective use of them is not intuitive and requires a significant modification of one's approach to the classroom. While "attending various workshops and meetings that dealt with Physics undergraduate education" is a good start, a more extensive immersion in the concepts and methods of active student engagement is needed, especially for the PI to train other faculty. The classroom response system (which does require equipment) is likewise ineffective without the proper approach to its use. The concern articulated in section 4.b.3 regarding SUNO students' lack of experience with experimental techniques will not be addressed by the plan to implement the use of classroom response systems, Tutorials and Physics by Inquiry. What is needed is intermediate and advanced laboratory classes with appropriate equipment. The stated impact on curriculum and instruction, through the institution of workshops for secondary school teachers, is laudable (and indeed addresses the audience for whom Physics by Inquiry was developed). However, the proposal gives no indication of how those workshops will be organized, who in the project has the necessary expertise in pedagogy and state science standards to lead them, etc. (Continued on next page.)

Several times in the proposal mention is made of "covering more material" in the class, which is NOT the intent of the pedagogies to be implemented. The idea is to cover the same material in a way that induces the students to learn more of it. Specific nationally known measures of student learning (such as the FCI) should be used to measure the effectiveness of the faculty's implementation of the new pedagogy and to guide improvements in its use. This proposal has a very worthy goal, and the PI should develop it further along the lines articulated here and resubmit. Communication with the University of Washington PER Group (who developed the Tutorials and Physics by Inquiry), or with the PER group at Kansas State University would be extremely helpful. A thorough study of the literature and consultation with those groups would allow the PI to develop a much stronger proposal to accomplish the goals stated here. The students would benefit if this were done.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 019PHY-08

INSTITUTION: Tulane University

TITLE OF PROPOSAL: A Physical Property Management System (PPMS) to Enhance Research and Education in Material Science at Tulane

PRINCIPAL INVESTIGATOR: Zhiqiang Mao

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)

H. Total Score:

93

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 15 (of 15 points)
B.3 19 (of 20 points)
B.4 3 (of 5 points)
B.5 2 (of 2 points)
B.6 2 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 3 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$190,365
RECOMMENDATIONS: Recommended Amount: \$109,155

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in part, with full funding if additional funds become available. This equipment is truly necessary for a crystal growth and characterization program. The shared use between two faculty members with overlapping research interests is a plus. The impact on curriculum and instruction is weak, as no specific plans are given. The performance measures do not contain any quantitative targets, so it will be difficult to know if they are met. The institutional match is significant, especially since it is cash rather than in-kind. However, industrial support should be sought. Funding is recommended for the base system and dewar, the magnetization and TTO modules, and shipping. The institutional match should be maintained at the proposed level.

RATING FORM FOR ENHANCEMENT REQUESTS OTHER THAN EQUIPMENT PURCHASES

PROPOSAL NUMBER: 020PHY-08

INSTITUTION: Tulane University and LSU and A&M College-Baton Rouge

TITLE OF PROPOSAL: Tulane-LSU Quantum Materials and Technologies Colloquium Series

PRINCIPAL INVESTIGATOR: James H. McGuire

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
 A.2 3 (of 5 points)
 A.3 0 (of 5 points)

C. Faculty and Staff Expertise

(Total of 12 Points)

C.1 12 (of 12 points)

D. Economic and/or Cultural Development and Impact

(Total of 12 Points)

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

B. The Enhancement Plan

(Total of 62 Points)

B.1 3 (of 5 points)
 B.2 7 (of 20 points)
 B.3 10 (of 25 points)
 B.4 2 (of 5 points)
 B.5 2 (of 2 points)
 B.6 2 (of 5 points)
 B.7 Yes X No _____

E. Additional Funding Sources

(Total of 4 Points)

E.1 4 (of 4 points)

F. Previous Support Fund Awards

(No Points Assigned)

F.1 Yes X No _____

G. Total Score: 52 (of 100 points)

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

		YEAR 1	YEAR 2
SPECIFIC BUDGETARY RECOMMENDATIONS:	Requested Amount:	<u>\$35,000</u>	<u>\$35,000</u>
	Recommended Amount:	<u>\$0</u>	<u>\$0</u>

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. This proposal should have requested BoRSF funding as seed money, with a plan for sustaining the program with institutional support. What will happen to the program after two years? The institution appears to have supported ICAM membership in the past--why is that support not continuing? The stated goal of bringing the groups at the two institutions together is laudable, but it is not clear how having seminars at the two locations will help. How will the groups be brought together? Why can they not come together using internal resources, to discuss their own work?

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 021PHY-08

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: High Energy, Heavy Ion Nanoprobe System for Science and Engineering Research and Education

PRINCIPAL INVESTIGATOR: Gary A. Glass

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

H. Total Score:

60

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 10 (of 15 points)
B.3 10 (of 20 points)
B.4 0 (of 5 points)
B.5 2 (of 2 points)
B.6 0 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 0 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$154,500
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The proposal could have been submitted to NSF or DOE as an MRI proposal with a good likelihood of success. If NEC wants to commercialize the apparatus, it would be appropriate for them to fund its development at least in part. The letter from Baglin does not imply any IBM involvement in the project, only moral support. Could IBM become a paying user of the facility if it were developed? Much of the research described in the proposal appears to use HEFIB but not to need the proposed enhancement. The performance measures should be quantified so that it becomes clear what constitutes success.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 022PHY-08

INSTITUTION: University of Louisiana at Lafayette

TITLE OF PROPOSAL: STIM (Scanning Transmission Ion Microscopy) Immersive Tomography

PRINCIPAL INVESTIGATOR: Louis M. Houston

A. The Current Situation

(Total of 10 Points)

A.1 Yes No X
A.2 2 (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 2 (of 2 points)
E.2a 3 (For S/E)
or (of 10 points)
E.2b (For NS/NE)

H. Total Score:

40

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 2 (of 5 points)
B.2 5 (of 15 points)
B.3 0 (of 20 points)
B.4 0 (of 5 points)
B.5 0 (of 2 points)
B.6 0 (of 5 points)
B.7 Yes No X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 2 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No

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

SPECIFIC BUDGETARY Requested Amount: \$53,000
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The proposal appears to request a machine looking for a project. What is the relationship between the algorithms to be developed and existing tomography reconstruction algorithms? Are more computers really needed to accomplish this work? The value of the immersive imaging to the stated research is obscure. It is not at all clear what would actually be done with the equipment. The case would have been more convincing with descriptions of proposed research. The department should use research grants for specific projects to pay for graduate assistantships rather than requesting them as part of an equipment proposal.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 023PHY-08

INSTITUTION: University of Louisiana at Monroe

TITLE OF PROPOSAL: Astronomy Improvement for ULM Science Education and
Community Outreach

PRINCIPAL INVESTIGATOR: John F. Anderson

A. The Current Situation

(Total of 10 Points)

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

C. Equipment

(Total of 10 Points)

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

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

(Total of 12 Points)

E.1 0 (of 2 points)
 E.2a 0 (For S/E)
 or (of 10 points)
 E.2b (For NS/NE)

B. The Enhancement Plan

(Total of 52 Points)

B.1 0 (of 5 points)
 B.2 5 (of 15 points)
 B.3 2 (of 20 points)
 B.4 1 (of 5 points)
 B.5 0 (of 2 points)
 B.6 1 (of 5 points)
 B.7 Yes No X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 4 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 0 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes No X

H. Total Score: 18 (of 100 points)

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

SPECIFIC BUDGETARY **Requested Amount:** \$75,463
RECOMMENDATIONS: **Recommended Amount:** \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The telescope proposed here is a research-quality instrument. A 14" or 16" telescope would be more than adequate for the uses described in the proposal, and would be far more cost-effective. Contrary to the statement in the proposal, it is necessary that the telescope be commensurate with its planned use, not with the expectations of the students, faculty, and community. Piping the images into the classroom as described would only be useful during night classes, a detail that was not addressed. It is unclear to the panel what the AAS mission is doing in this proposal. The five 8" telescopes requested appear to be an afterthought, since there is no real plan for their use. The eyepieces proposed are not appropriate for the telescope requested, and would limit the quality of the observations below what the telescope is capable of (the major problem would be eye relief). Basic information about observing conditions at the site (limiting visual magnitude, seeing, etc.) should have been supplied. The principal investigator should begin collaborations with departments with astronomical expertise so as to better determine what the needs really are. This proposal is incomplete, with many required sections completely missing.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 024PHY-08

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: Modernizing Advanced Physics Laboratories at UNO with the Emphasis on Applied Physics

PRINCIPAL INVESTIGATOR: Leszek M. Malkinski

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 3 (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 5 (For S/E)
or (of 10 points)
E.2b _____ (For NS/NE)

H. Total Score:

68

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 10 (of 15 points)
B.3 10 (of 20 points)
B.4 3 (of 5 points)
B.5 2 (of 2 points)
B.6 2 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 0 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$85,000
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The proposed experiments are heavily biased toward magnetization and optics and do not provide a broad exposure to experimental physics appropriate to an advanced lab course. The acoustic analysis experiment can be conducted with much simpler equipment, including freeware. It certainly does not require a high-end oscilloscope. The optical imaging experiments, though useful, do not constitute a "21st-century upgrade" as stated. However, they are clearly of use in a lab accompanying an optics course. It would have been better to think more broadly about what kind of experiments are needed to meet the learning goals of the courses (what are those goals?). It is not obvious that the experiments listed here really accomplish goals that would be appropriate for an Applied Physics program, especially a professional master's. The performance measures need to be made quantitative in order to have a means to recognize success.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 025PHY-08

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: Automated Real-Time Image Monitoring and Control
Equipment for Physical Measurement of Optical Processes

PRINCIPAL INVESTIGATOR: Ashok Puri

A. The Current Situation

(Total of 10 Points)

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

C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)
C.2 0 (of 1 point)
C.3 0 (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 52 Points)

B.1 5 (of 5 points)
B.2 5 (of 15 points)
B.3 5 (of 20 points)
B.4 2 (of 5 points)
B.5 2 (of 2 points)
B.6 1 (of 5 points)
B.7 Yes X No _____

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 4 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

H. Total Score:

58

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$63,174
RECOMMENDATIONS: Recommended Amount: \$0

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. The rationale for this particular set of apparatus is weak. This proposal should have been coordinated with 024PHY-08 from the same department, which also requests optical equipment. There is no scientific justification given for the experiment for which the equipment is intended, and the connection with education is vague and notional. The equipment is described as an "enabling technology," but no explanation of what it enables one to do is given. Despite the educational rhetoric, the proposal clearly is aimed at supporting the co-principal investigator's extension of his doctoral research. Section 4.b.3 states that "completion of this phase will depend on level of student interest and participation." Who are the students who will do the setup? There appears to be no structure to the student involvement. How will the use of the equipment support the optics curriculum? The performance measures have no target numbers and therefore it will be impossible to know if success has been achieved.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 026PHY-08

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: Acquisition of a Cryogenic Probe Station for Novel Nanomaterials Investigation

PRINCIPAL INVESTIGATOR: Leonard Spinu

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)

H. Total Score:

90

 (of 100 points)

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
B.2 15 (of 15 points)
B.3 16 (of 20 points)
B.4 2 (of 5 points)
B.5 2 (of 2 points)
B.6 5 (of 5 points)
B.7 Yes _____ No X

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 1 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

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

SPECIFIC BUDGETARY Requested Amount: \$160,000
RECOMMENDATIONS: Recommended Amount: \$160,000

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel recommends funding in full. The range of projects for which this equipment would be used is broad and the cost share is reasonable. The principal investigators have a history of success with BoRSF-funded projects. It is not completely clear to the panel what will be measured and why in this project. Much of the "eminence" argument is concerned with the proposed Material Sciences Ph.D. program, not the apparatus.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 027PHY-08

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: Electrospinning Apparatus for Nanofiber Fabrication

PRINCIPAL INVESTIGATOR: Kevin L. Stokes

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

B. The Enhancement Plan

(Total of 52 Points)

B.1 5 (of 5 points)
 B.2 13 (of 15 points)
 B.3 2 (of 20 points)
 B.4 5 (of 5 points)
 B.5 2 (of 2 points)
 B.6 5 (of 5 points)
 B.7 Yes X No

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Additional Funding Sources

(Total of 4 Points)

F.1 0 (of 4 points)

G. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No

H. Total Score: 68 (of 100 points)

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

SPECIFIC BUDGETARY	Requested Amount:	<u> \$24,806 </u>
RECOMMENDATIONS:	Recommended Amount:	<u> \$0 </u>

COMMENTS: (Discuss proposal strengths and weaknesses, particularly in those sections where significant point deductions have been made. Include suggestions for resubmission. For proposals recommended for funding, include all applicable stipulations in budgets and scopes of work.)

The panel does not recommend funding. Referring to fibers of the size shown in the figures as "nanofibers" is a bit of a misnomer. The provision of measurable goals is a definite plus. The range of projects that will use the apparatus is broad. The fact that the authors have received significant funding is a good sign, and the proposal is thereby highly leveraged. The "eminence" argument consists solely of a recitation of the current strengths of the department, not of the effect the apparatus would have. The performance measures are susceptible to quantification, and this should have been done. The request is modest, and it appears that this project could be funded by small contributions from several grants, since it is a modular system that would support the work of multiple projects.

Appendix A

Summary of Proposals Submitted

**Proposals Submitted to the
Traditional Enhancement Program - Physics/Astronomy
for the FY 2007-2008 Review Cycle**

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
001PHY-08 PHY	Centenary Physics: Spectroscopy in the Sciences Enhancement	Centenary College (Physics);	Troy C. Messina;	1	\$ 121,000
				Total	\$ 121,000
E					
Proposal is a New Request					
002PHY-08 PHY	Enhancement of Teaching and Undergraduate Laboratories in the Physics Department	Dillard University (Physics);	Abdalla Darwish; Allan Burkett; Hadi Alkahby; Regional Stanton;	1	\$ 94,321
				Total	\$ 94,321
E					
Proposal is a New Request					

E=Primarily an Equipment Request
N=Not Primarily an Equipment Request

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
003PHY-08 PHY	Upgrade of the LSU Helium Liquefier Facility	Louisiana State University And A&M College - Baton Rouge (Physics);	Philip Adams; David Young; John DiTusa;	1	\$ 236,382
				Total	\$ 236,382
E					
Proposal is a New Request					
004PHY-08 PHY	Enhancement for Teaching Astronomy (E.T.A.)	Louisiana State University And A&M College - Baton Rouge (Physics and Astronomy);	Amy Campbell; Robert Hynes; T. Gregory Guzik;	1	\$ 350,300
				Total	\$ 350,300
E					
Proposal is a New Request					
005PHY-08 PHY	Science Teacher Training Using Astrophysics Research	Louisiana State University And A&M College - Baton Rouge (Physics & Astronomy);	Michael L. Cherry; J. Gregory Stacy; Pamela Blanchard; T. Gregory Guzik;	1 2	\$ 152,870 \$ 35,741
				Total	\$ 188,611
N					
Proposal is a New Request					

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
006PHY-08 PHY	A Quantum-Design Physical Property Measurement System (PPMS) for Novel Thermoelectric Material Studies	Louisiana State University And A&M College - Baton Rouge (Mechanical Engineering);	Shengmin Guo; D. M. Cao; David P. Young; Donghui (Catherine) Zhang; M. A. Wahab;	1	\$ 223,090
				Total	\$ 223,090
E	Proposal is a New Request				
007PHY-08 PHY	Acquisition of a Variable-Temperature SPM for Multidisciplinary Materials Research and Education	Louisiana State University And A&M College - Baton Rouge (Physics and Astronomy);	Richard L. Kurtz; Jayne C. Garno; John C. Flake; Phillip Sprunger; Robin McCarley; Ward Plummer; Wen Jin Meng;	1	\$ 149,200
				Total	\$ 149,200
E	Proposal is a New Request				
008PHY-08 PHY	Enhancement of the High Resolution Surface Characterization System at CAMD	Louisiana State University And A&M College - Baton Rouge (Center for Advanced Microstructures and Devices (CAMD));	Yaroslav Losovyj; Orhan Kizilkaya;	1	\$ 116,730
				Total	\$ 116,730
E	Proposal is a New Request				

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
009PHY-08 PHY	High-resolution UV and X-ray Sources for Atomic and Materials Physics	Louisiana State University And A&M College - Baton Rouge (Physics and Astronomy);	Phillip Sprunger; David Young; Erwin Poliakoff; Orhan Kizilkaya; Richard Kurtz;	1	\$ 99,950
				Total	\$ 99,950
E					
Proposal is a New Request					
010PHY-08 PHY	Enhancing Student Education & Research Capabilities in Applied Physics at LSUS	Louisiana State University And A&M College - Shreveport (Physics);	Gary R. Boucher;	1	\$ 12,900
				Total	\$ 12,900
E					
Proposal is a New Request					
011PHY-08 PHY	Reaching for the Stars	Louisiana State University And A&M College - Shreveport (Chemistry and Physics);	Laura A. Whitlock;	1	\$ 109,996
				Total	\$ 109,996
E					
Proposal is a New Request					

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
012PHY-08 PHY	Louisiana Tech Astronomical Observatory Enhancement	Louisiana Tech University (Physics);	John Shaw; Natalia Zotov;	1	\$ 50,956
				Total	\$ 50,956
E					
Proposal is a New Request					
013PHY-08 PHY	Thermal Evaporator for Physics Education and Research	Louisiana Tech University (Institute for Micromanufacturing);	Chester Wilson; John McDonald; Pedro Derosa; Tabbetha Dobbins;	1	\$ 59,500
				Total	\$ 59,500
E					
Proposal is a New Request					
014PHY-08 PHY	Enhancement of the Physics Instructional Laboratories at Nicholls State University	Nicholls State University (Physical Sciences);	Chadwick Young; Glenn Lo; Kaisa Young;	1	\$ 81,623
				Total	\$ 81,623
E					
Proposal is a New Request					

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
015PHY-08 PHY	Educational Expansion and Research Enhancement with a 20-Node Parallel Computing Cluster	Southern University and A&M College at Baton Rouge (Physics);	Edward E. Doomes;	1 2	\$ 38,056 \$
				Total	\$ 38,056
E	Proposal is a New Request				
016PHY-08 PHY	Enhancement of the Computational Capability for Predictive Quantum Computations of Properties of Nano and Electronic Materials and Related Systems	Southern University and A&M College at Baton Rouge (Physics);	Guang-Lin Zhao; Diola Bagayoko;	1	\$ 99,800
				Total	\$ 99,800
E	Proposal is a New Request				
017PHY-08 PHY	Thermal Transport Measurements of Novel Thermoelectric Materials and Related Systems	Southern University and A&M College at Baton Rouge (Physics);	Guang-Lin Zhao; Laurence L. Henry;	1	\$ 24,400
				Total	\$ 24,400
E	Proposal is a New Request				

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
018PHY-08 PHY	Adaptation and Implementation of Technology for SUNO Physics and Science Classes	Southern University and A&M College at New Orleans (Physics);	Mostafa A. Elaasar;	1	\$ 65,974
				Total	\$ 65,974
E					
Proposal is a New Request					
019PHY-08 PHY	A Physical Property Measurement System (PPMS) to Enhance Research and Education in Material Science at Tulane	Tulane University (Physics);	Zhiqiang Mao; Ulrike Diebold;	1	\$ 190,365
				Total	\$ 190,365
E					
Proposal is a New Request					
020PHY-08 PHY	Tulane - LSU Quantum Materials and Technologies Colloquium Series	Tulane University (Physics); Louisiana State University And A&M College - Baton Rouge;	James H. McGuire; Jonathan P. Dowling;	1 2	\$ 35,000 \$ 35,000
				Total	\$ 70,000
N					
Proposal is a New Request					

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
021PHY-08 PHY	High Energy, Heavy Ion Nanoprobe System for Science and Engineering Research and Education	University of Louisiana at Lafayette (Physics/Louisiana Accelerator Center);	Gary A. Glass; Alexander D. Dymnikov; Andrei Chistoserdov; Jerry K. Keska; Karl H. Hasenstein; Renuka P. Jindal;	1 Total	\$ 154,500 <hr/> \$ 154,500
E	Proposal is a New Request				
022PHY-08 PHY	STIM (Scanning Transmission Ion Microscopy) Immersive Tomography	University of Louisiana at Lafayette (Louisiana Accelerator Center);	Louis M. Houston; Dirk Reiners; Dirk Reiners; Gary A. Glass; Gary A. Glass; Henry Chu;	1 Total	\$ 53,000 <hr/> \$ 53,000
E	Proposal is a New Request				
023PHY-08 PHY	Astronomy Improvement for ULM Science Education and Community Outreach	University of Louisiana at Monroe (Mathematics and Physics);	John F. Anderson; M. Sean Chenoweth;	1 Total	\$ 75,463 <hr/> \$ 75,463
E	Proposal is a New Request				

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
024PHY-08 PHY	Modernizing Advanced Physics Laboratories at UNO with the Emphasis on Applied Physics	University of New Orleans (Physics);	Leszek M. Malkinski; Charles G. Seab; George Ioup; Juliette Ioup; Kevin L. Stokes; Leonard Spinu;	1	\$ 85,000
				Total	\$ 85,000
E					
Proposal is a New Request					
025PHY-08 PHY	Automated Real-Time Image Monitoring and Control Equipment for Physical Measurement of Optical Processes	University of New Orleans (Physics);	Ashok Puri; Jeffrey Gray;	1	\$ 63,174
				Total	\$ 63,174
E					
Proposal is a New Request					
026PHY-08 PHY	Acquisition of a Cryogenic Probe Station for Novel Nanomaterials Investigation	University of New Orleans (Physics and AMRI);	Leonard Spinu; Charles J. O'Connor; John B. Wiley; Kevin L. Stokes; Leszek M. Malkinski;	1	\$ 160,000
				Total	\$ 160,000
E					
Proposal is a New Request					

Prop#	Title	Institution/Department	Principal Investigator(s)	Duration (Years)	BoRSF Money Requested
027PHY-08 PHY	Electrospinning Apparatus for Nanofiber Fabrication	University of New Orleans (Physics and AMRI);	Kevin L. Stokes; John Wiley; Leszek M. Malkinski; Weilie Zhou;	1	\$ 24,806
				Total	\$ 24,806

E
Proposal is a **New Request**

Summary of Proposals Submitted to the Traditional Enhancement Program - Physics/Astronomy for the FY 2007-2008 Review Cycle			
Total Number of Proposals Submitted	Total First-Year Funds Requested	Total Funds Requested	Total First-Year Funds Available
27	\$2,928,356	\$2,999,097	

Appendix B

Rating Forms

- A. For Equipment Proposals
- B. For Non-Equipment Proposals

BOARD OF REGENTS SUPPORT FUND ENHANCEMENT PROGRAM, FISCAL YEAR 2007-08

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 52 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 15 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 5 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?

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 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?
- E.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:

Proposal Number: _____

Principal Investigator: _____

F. ADDITIONAL FUNDING SOURCES--Total of 4 points

_____ of 4 pts. F.1 To what extent will the costs associated with this project be shared through contributions from the institution(s) involved and/or external organizations?

COMMENTS:

G. 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:

H. 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:

=====
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: _____

**BOARD OF REGENTS SUPPORT FUND ENHANCEMENT PROGRAM, FISCAL YEAR 2007-08
 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 _____ | 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 62 points

- | | | |
|------------------|-----|---|
| _____ of 5 pts. | B.1 | Are the goals and objectives clearly stated? |
| _____ of 20 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 25 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 5 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?

COMMENTS:

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?

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. ADDITIONAL FUNDING SOURCES--Total of 4 points

_____ of 4 pts.

E.1 To what extent will the costs associated with this project be shared through contributions from the institution(s) involved and/or external organizations?

COMMENTS:

F. 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:

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

_____ of 100 points

Proposal Number: _____

Principal Investigator: _____

SPECIFIC BUDGETARY RECOMMENDATIONS

Requested Amount:\$ _____

Recommended Amount:\$ _____

COMMENTS:

=====

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: _____