

**REPORT TO THE LOUISIANA BOARD OF REGENTS
REVIEW OF TRADITIONAL ENHANCEMENT PROPOSALS IN
PHYSICS AND ASTRONOMY
FY 2016-17**

March 2017

Prepared by:

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**FY 2016-17 BOARD OF REGENTS SUPPORT FUND
ENHANCEMENT COMPONENT**

Physics/Astronomy

INTRODUCTION

The Physics and Astronomy Review Panel consisted of Dr. Alexey Petrov (panel chair), and Dr. Min Ouyang, University of Maryland. The panel reviewed eleven (11) proposals submitted to the Louisiana Board of Regents requesting funds through the Traditional Enhancement component of the Board of Regents Support Fund.

Prior to the review, the panel received the eleven (11) proposals and appropriate rating forms; complete review and analysis by community college consultant Dr. Katherine Boswell, Education Policy Associates, of the one (1) proposal submitted by a two-year institution; the FY 2016-17 Enhancement Program Request for Proposals (RFP), which included the specific criteria for evaluation; a summary table listing the proposals by title, institution, principal investigator, and funds requested; and a copy of the Physics and Astronomy review panel report from FY 2013-14. The panel members initially studied, evaluated, and ranked each proposal independently, using the criteria contained in the RFP. The members then discussed the proposals extensively via email and phone during February and March of 2017 and reached a consensus on their evaluations, rankings, and recommended funding levels.

The eleven (11) proposals submitted to the FY 2016-17 Enhancement Program requested a total of \$1,412,854 in first-year funding. Table I lists, in order of rank, the two (2) proposals strongly recommended for funding by the panel for a total of \$322,587. Table II lists two (2) proposals that are recommended for funding provided additional money becomes available. Table III lists the proposals not recommended for funding. The individual evaluations for each proposal are included 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 included at the end of this 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	96	08PHY-17	Tulane	\$159,945	\$159,945		
2	95	01PHY-17	LSUAM	\$162,642	\$162,642		
TOTALS:				\$322,587	\$322,587	\$0	\$0

**TABLE II
PROPOSALS RECOMMENDED IF ADDITIONAL FUNDING BECOMES AVAILABLE**

Rank	Rating	Proposal Number	Institution	First Year Funds Requested	First Year Funds Recommended	Second Year Funds Requested	Second Year Funds Recommended
3	93.5	03PHY-17	LSUAM	\$104,021	\$104,021		
4	93	11PHY-17	UNO	\$114,433	\$114,433		
TOTALS:				\$218,454	\$218,454	\$0	\$0

**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
5	87	10PHY-17	UNO	\$149,920	\$0		
6	86	07PHY-17	SUBR	\$79,852	\$0		
7	83.5	04PHY-17	LSUAM	\$123,280	\$0		
8	82	05PHY-17	LSUS	\$67,107	\$0		
9	80.5	09PHY-17	Tulane	\$204,600	\$0		
10	76	02PHY-17	LSUAM	\$161,380	\$0		
11	68.5	06PHY-17	NTCC	\$85,674	\$0		
TOTALS:				\$871,813	\$0	\$0	\$0

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 01PHY-17

INSTITUTION: Louisiana State University and A & M College

TITLE OF PROPOSAL: Development of a Solid State RF System for the CAMD
Synchrotron Light Source

PRINCIPAL INVESTIGATOR: Daren Launey

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
A.2 5 (of 5 points)
A.3 3.5 (of 5 points)

C. Equipment

(Total of 10 Points)

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

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

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

B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)
B.2 19 (of 21 points)
B.3 5 (of 5 points)
B.4 5 (of 5 points)
B.5 5 (of 5 points)
B.6 5 (of 5 points)
B.7 4.5 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes _____ No X

G. Total Score:

95

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$162,642
RECOMMENDATIONS: Recommended Amount: \$162,642

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 Center for Advanced Microstructures and Devices (CAMD) at LSU seeks to build a custom solid-state RF system with an upgraded amplifier component. CAMD is one of the few university-based research centers that operate their own light source, which positively affects interdisciplinary faculty research. The upgraded equipment will also impact curriculum and instruction and allow students to get first-hand experience in contemporary accelerator technology. A substantial institutional match is provided. Full funding is recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 02PHY-17

INSTITUTION: Louisiana State University and A & M College

TITLE OF PROPOSAL: Enhancement of the Low Temperature Scanning Tunneling
Microscopy [STM] and Spectroscopy [STS] Infrastructure at
LSU

PRINCIPAL INVESTIGATOR: Ward Plummer

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

B. The Enhancement Plan

(Total of 56 Points)

B.1 7 (of 10 points)
B.2 18.5 (of 21 points)
B.3 4 (of 5 points)
B.4 2.5 (of 5 points)
B.5 4 (of 5 points)
B.6 4 (of 5 points)
B.7 3 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

76

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$161,380

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.)

This proposal requests funds to develop a scanning tunneling microscope (STM) facility at LSU. While several STMs are already available for research and education activities at LSU, the requested system would benefit cutting-edge material synthesis research in the Department of Physics. The PI has an excellent research record. However, a compelling case for need in both research and education is not established. The major advantage of the requested system over available systems appears to be operation temperature. However, impacts on the research activities described appear to be marginal. The evaluation component is not clearly developed. The quality and sustainability of the maintenance plan is questionable. A substantial institutional match is proposed, but funding is not recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 03PHY-17

INSTITUTION: Louisiana State University and A & M College

TITLE OF PROPOSAL: Modernization of Infrastructure for Experimental Research and Education

PRINCIPAL INVESTIGATOR: Phillip Sprunger

A. The Current Situation

(Total of 10 Points)

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

C. Equipment

(Total of 10 Points)

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

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)
E.2a 8.5 (For S/E)
or (of 10 points)
E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)
B.2 20 (of 21 points)
B.3 4 (of 5 points)
B.4 5 (of 5 points)
B.5 5 (of 5 points)
B.6 4.5 (of 5 points)
B.7 3.5 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 11 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

93.5

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$104,021

RECOMMENDATIONS: Recommended Amount: \$104,021

(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.)

LSU's College of Science seeks to upgrade the Machine Shop with the acquisition of high-precision Computer Numerical Control (CNC) machining instrumentation. The need for the update is clearly stated. The equipment would be utilized by faculty from Physics, Chemistry, Biology, and Engineering. The CNC mill and water jet facilities would speed up a number of research projects and make them less expensive. The creation of mini-courses on machine shop practices and CAD designing would introduce critical workforce skills that are rarely addressed in current national programs. The evaluation plan is clearly described. A substantial institutional match from several departments is proposed. The full impact of the proposal is difficult to assess without additional details on the usage and fee structure of the machine shop facility. Full funding is recommended if additional funds become available.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 04PHY-17

INSTITUTION: Louisiana State University and A & M College

TITLE OF PROPOSAL: Acquisition of a Real-Time Back-Reflection Laue Camera System

PRINCIPAL INVESTIGATOR: David Young

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
A.2 4.5 (of 5 points)
A.3 4 (of 5 points)

C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)
C.2 1 (of 1 point)
C.3 2.5 (of 3 points)

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 0 (of 2 points)
E.2a 9 (For S/E)
or _____ (of 10 points)
E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 56 Points)

B.1 9.5 (of 10 points)
B.2 12.5 (of 21 points)
B.3 5 (of 5 points)
B.4 4.5 (of 5 points)
B.5 4.5 (of 5 points)
B.6 5 (of 5 points)
B.7 3.5 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

83.5

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$123,280

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.)

This proposal seeks to procure a real-time back reflection Laue camera system. It would add to LSU's capabilities in condensed matter Physics and solid state Chemistry by allowing in-house determination of crystal orientation. While the project appears to have high scientific impact, the work plan lacks essential details. What concrete projects will primarily benefit from this device? How will it be incorporated into educational activities? What are (approximate) enrollments of the affected classes? There are multiple techniques for determining crystal orientation, though the proposal did not address the possible availability of them at other campus facilities. The evaluation component is vague. The proposed institutional match is substantial; however, funding is not recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 05PHY-17

INSTITUTION: Louisiana State University in Shreveport

TITLE OF PROPOSAL: Fluorescence Lifetime Spectrometer for Optics Education and Research Enhancement

PRINCIPAL INVESTIGATOR: William Yu

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
A.2 3.5 (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 1.5 (of 2 points)
E.2a 8 (For S/E)
or (of 10 points)
E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)
B.2 16.5 (of 21 points)
B.3 3.5 (of 5 points)
B.4 4.5 (of 5 points)
B.5 4 (of 5 points)
B.6 5 (of 5 points)
B.7 4 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 10.5 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

82

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$67,107
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.)

This proposal seeks to acquire a time-correlated single photon counting fluorescence lifetime spectrometer (TCSPC). The proposal states that the equipment will be used in a variety of lab courses with some additional benefits to research. Details are lacking on the research projects impacted. TCSPC is a delicate machine mainly used for single photon detection and the impact on education may be limited. The proposed location of the equipment is the PI's research lab, which may hinder use by undergraduate Physics, Chemistry, and Biology courses. It is not clear which of the impacted courses currently exist and which will be developed only after the equipment is acquired. The stated rationale is vaguely worded and does not address the reasoning for using the TCSPC rather than less sensitive equipment. The proposed institutional match is substantial, but funding is not recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 06PHY-17

INSTITUTION: Northshore Technical Community College

TITLE OF PROPOSAL: Physics Laboratory Equipment And Supply Essentials FUND!

PRINCIPAL INVESTIGATOR: Tina Tinney

A. The Current Situation

(Total of 10 Points)

A.1	Yes	<u>X</u>	No	<u> </u>
A.2		<u>3</u>	(of 5 points)	
A.3		<u>3.5</u>	(of 5 points)	

C. Equipment

(Total of 10 Points)

C.1	<u>4.5</u>	(of 6 points)
C.2	<u>0</u>	(of 1 point)
C.3	<u>2.5</u>	(of 3 points)

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

(Total of 12 Points)

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

B. The Enhancement Plan

(Total of 56 Points)

B.1	<u>6</u>	(of 10 points)
B.2	<u>11</u>	(of 21 points)
B.3	<u>4</u>	(of 5 points)
B.4	<u>5</u>	(of 5 points)
B.5	<u>3.5</u>	(of 5 points)
B.6	<u>2.5</u>	(of 5 points)
B.7	<u>4</u>	(of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1	<u>8</u>	(of 12 points)
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F. Previous Support Fund Awards

(No Points Assigned)

G.1	Yes	<u> </u>	No	<u>X</u>
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G. Total Score: 68.5 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$85,674

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.)

This proposal seeks to acquire basic laboratory equipment for physical sciences labs. The request represents a significant investment for the new NTCC STEM campus. Evidence is provided for partnerships with other regional institutions as well as community and business outreach efforts. However, the objectives are not concrete or measurable. The number of enrolled students or courses that will be impacted is not provided. There is not a clear and convincing plan for how the PI intends to integrate the equipment into the curriculum. The need for expensive laptops is not well established. There is no evaluation plan. Funding is not recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 07PHY-17

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

TITLE OF PROPOSAL: Equipment Enhancement for Research and Education on
Functionalized Nanomaterials and Applications

PRINCIPAL INVESTIGATOR: Guang-Lin Zhao

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
A.2 4 (of 5 points)
A.3 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 2.5 (of 3 points)

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)
E.2a 9.5 (For S/E)
or (of 10 points)
E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 56 Points)

B.1 9 (of 10 points)
B.2 19 (of 21 points)
B.3 4 (of 5 points)
B.4 3 (of 5 points)
B.5 4.5 (of 5 points)
B.6 4.5 (of 5 points)
B.7 3.5 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 10 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

86

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$79,852
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.)

This proposal seeks to acquire equipment for synthesis of carbon nanotubes and other carbon-based nanomaterials. The requested equipment will enhance research capabilities by moving the production phase of many projects in-house, thus eliminating the need for travel to Argonne National Lab to utilize its equipment. It is not clear how the listed (basic) Chemistry and Physics courses would benefit from the equipment. The evaluation plan lacks details. Funding is not recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 08PHY-17

INSTITUTION: Tulane University

TITLE OF PROPOSAL: An Infrared Image Floating Zone Furnace to Enhance Research and Education in Materials Science and Engineering 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 2.5 (of 3 points)

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

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

B. The Enhancement Plan

(Total of 56 Points)

B.1 10 (of 10 points)
B.2 20.5 (of 21 points)
B.3 5 (of 5 points)
B.4 4 (of 5 points)
B.5 5 (of 5 points)
B.6 5 (of 5 points)
B.7 4 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 12 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

96

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$159,945
RECOMMENDATIONS: Recommended Amount: \$159,945

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.)

This proposal seeks to acquire an infrared image floating-zone furnace for single crystal growth to enhance the materials science program. The equipment will benefit research projects related to topological Weyl semimetals (WSM) in ferromagnetic materials. If successful, the research will not only lead to fundamental discoveries (such as experimentally realizing FM WSMs), but also to exciting applications in electronics and quantum computing. The currently available floating-zone furnace is aging and cannot be used for the proposed activities of growing Heusler alloys, which the PI will attempt to achieve. This is a well-written research enhancement proposal and the PI has a strong record. Full funding is recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 09PHY-17

INSTITUTION: Tulane University

TITLE OF PROPOSAL: Research Enhancement for the Study of Low Dimensional
van der Waals Materials with Complementary Optical
Microspectroscopy

PRINCIPAL INVESTIGATOR: Jiang Wei

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
A.2 4.5 (of 5 points)
A.3 4 (of 5 points)

C. Equipment

(Total of 10 Points)

C.1 4.5 (of 6 points)
C.2 1 (of 1 point)
C.3 3 (of 3 points)

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)
E.2a 8.5 (For S/E)
or _____ (of 10 points)
E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 56 Points)

B.1 8 (of 10 points)
B.2 14.5 (of 21 points)
B.3 4.5 (of 5 points)
B.4 3 (of 5 points)
B.5 3.5 (of 5 points)
B.6 5 (of 5 points)
B.7 4 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 10.5 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

80.5

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$204,600
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.)

This proposal seeks to build a multifunctional microspectroscopy system to be used to perform several research projects to explore optical, magnetic, and optoelectric properties of van der Waals (vdW) in various dimensional configurations. The system will be capable of performing spectroscopic measurements using a variety of methods. The multi-functionality is reflected in the high cost of the system. However, the need for all of the functions is not established. The educational aspect of the proposal is weak, as only graduate and undergraduate students working in the PI's lab will use the equipment. The PI does propose to develop a module of the Introduction to Nanoscience and Technology course that could involve the described equipment. The evaluation component is vague. Funding is not recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 10PHY-17

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: Acquisition of Highly Sensitive Magneto-Optical System for
Comprehensive Studies of Magnetic Nanostructures

PRINCIPAL INVESTIGATOR: Leszek Malkinski

A. The Current Situation

(Total of 10 Points)

A.1 Yes X No _____
A.2 4.5 (of 5 points)
A.3 4.5 (of 5 points)

C. Equipment

(Total of 10 Points)

C.1 6 (of 6 points)
C.2 1 (of 1 point)
C.3 2.5 (of 3 points)

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)
E.2a 9.5 (For S/E)
or (of 10 points)
E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 56 Points)

B.1 9.5 (of 10 points)
B.2 16.5 (of 21 points)
B.3 4.5 (of 5 points)
B.4 4 (of 5 points)
B.5 4 (of 5 points)
B.6 4.5 (of 5 points)
B.7 4 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 10 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

87

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$149,920
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.)

This proposal seeks to acquire a NanoMOKE3 system for the Advanced Materials Research Institute at UNO. This system will be used primarily for research by PIs from Physics, Chemistry, and Materials Science. The system will enhance research capabilities and improve infrastructure. Though the project's impact on educational activities could be high, details are lacking for implementing it into the materials science lab or the curriculum. It is also not clear who will maintain this system. A compelling case was not made that the equipment would be the most appropriate tool for all of the proposed projects. Funding is not recommended.

RATING FORM FOR ENHANCEMENT INSTRUCTIONAL AND RESEARCH EQUIPMENT REQUESTS

PROPOSAL NUMBER: 11PHY-17

INSTITUTION: University of New Orleans

TITLE OF PROPOSAL: Acquisition of Vector Network Analyzer for Investigation of High Frequency Properties of Novel Materials

PRINCIPAL INVESTIGATOR: Leszek 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 6 (of 6 points)

C.2 1 (of 1 point)

C.3 3 (of 3 points)

E. Economic and/or Cultural Development and Impact

(Total of 12 Points)

E.1 2 (of 2 points)

E.2a 8.5 (For S/E)

or (of 10 points)

E.2b _____ (For NS/NE)

B. The Enhancement Plan

(Total of 56 Points)

B.1 9.5 (of 10 points)

B.2 19.5 (of 21 points)

B.3 5 (of 5 points)

B.4 5 (of 5 points)

B.5 4.5 (of 5 points)

B.6 5 (of 5 points)

B.7 4 (of 5 points)

D. Faculty and Staff Expertise

(Total of 12 Points)

D.1 10 (of 12 points)

F. Previous Support Fund Awards

(No Points Assigned)

G.1 Yes X No _____

G. Total Score:

93

 (of 100 points)

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

SPECIFIC BUDGETARY Requested Amount: \$114,433

RECOMMENDATIONS: Recommended Amount: \$114,433

(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.)

This proposal seeks to acquire a Vector Network Analyzer (VNA) to enhance research in condensed matter physics and materials. It is very well written. The need is established and the proposed research projects are interesting. The current available VNA is obsolete. The system will enhance research capabilities for faculty in Physics, Chemistry, and Electrical Engineering, as well as those associated with UNO's Advanced Materials Research Institute. The equipment will also enhance graduate and undergraduate instruction. Full funding is recommended if additional funds become available.

Appendix A

Summary List of Proposals

**Proposals Submitted to the Traditional Enhancement Program - Physics/Astronomy
for the FY 2016-17 Review Cycle**

Proposal Number	PI Name	Institution	Duration	Equipment/Non Equipment	Project Title	Amount Requested		
						Year 1	Year 2	Total
001PHY-17	Mr. Daren Launey	Louisiana State University and A & M College	1 Year	E	Development of a Solid State RF System for the CAMD Synchrotron Light Source	\$162,642.00	\$0.00	\$162,642.00
002PHY-17	Prof. Ward Plummer	Louisiana State University and A & M College	1 Year	E	Enhancement of the low temperature scanning tunneling microscopy [STM] and spectroscopy [STS] infrastructure at LSU	\$161,380.00	\$0.00	\$161,380.00
003PHY-17	Prof. Phillip Sprunger	Louisiana State University and A & M College	1 Year	E	Modernization of Infrastructure for Experimental Research and Education	\$104,021.00	\$0.00	\$104,021.00
004PHY-17	Prof. David Young	Louisiana State University and A & M College	1 Year	E	Acquisition of a Real-Time Back-Reflection Laue Camera System	\$123,280.00	\$0.00	\$123,280.00
005PHY-17	Dr. William Yu	Louisiana State University in Shreveport	1 Year	E	Fluorescence Lifetime Spectrometer for Optics Education and Research Enhancement	\$67,107.00	\$0.00	\$67,107.00
006PHY-17	Dr. Tina Tinney	Northshore Technical Community College	1 Year	E	Physics Laboratory Equipment And Supply Essentials FUND!	\$85,674.00	\$0.00	\$85,674.00
007PHY-17	Prof. Guang-Lin Zhao	Southern University and A&M College - Baton Rouge	1 Year	E	Equipment Enhancement for Research and Education on Functionalized Nanomaterials and Applications	\$79,852.00	\$0.00	\$79,852.00
008PHY-17	Prof. Zhiqiang Mao	Tulane University	1 Year	E	An infrared image floating zone furnace to enhance research and education in materials science and engineering at Tulane	\$159,945.00	\$0.00	\$159,945.00
009PHY-17	Prof. Jiang Wei	Tulane University	1 Year	E	Research enhancement for the study of low dimensional van der Waals materials with complementary optical microspectroscopy	\$204,600.00	\$0.00	\$204,600.00
010PHY-17	Prof. Leszek Malkinski	University of New Orleans	1 Year	E	Acquisition of Highly Sensitive Magneto-Optical System for Comprehensive Studies of Magnetic Nanostructures	\$149,920.00	\$0.00	\$149,920.00
011PHY-17	Prof. Leszek Malkinski	University of New Orleans	1 Year	E	Acquisition of Vector Network Analyzer for Investigation of High Frequency Properties of Novel Materials	\$114,433.00	\$0.00	\$114,433.00
Total Number of Proposals submitted				11				
Total Money Requested for First Year				\$1,412,854.00				
Total Money Requested for Second Year				\$0.00				
Total Money Requested				\$1,412,854.00				

Appendix B

Rating Forms

BOARD OF REGENTS SUPPORT FUND ENHANCEMENT PROGRAM, FISCAL YEAR 2016-17

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.

A. THE CURRENT SITUATION—10 points

- YES _____ NO _____
- _____ of 5 pts. A.1 Has the applicant adequately described the institution and unit(s)/department(s) that will benefit from the 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)/unit(s) and/or curricula?
- _____ of 5 pts. A.3 To what extent will the project complement and improve upon existing resources of the department(s) or unit(s)?

B. THE ENHANCEMENT PLAN—56 points

- of 10 pts. B.1 Are the goals and objectives clearly stated? Are they realistic? Are the objectives measurable? Can the objectives be completed within the timeframe detailed in the proposal?
- of 21 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 and a schedule of// activities with benchmarks to be accomplished?
- of 5 pts. B.3 To what extent will the proposed project propel the department(s)/ 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/or quality of curricular offerings and instructional methods within the affected department(s) or unit(s)?
- of 5 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 pedagogy?
- of 5 pts. B.7 To what extent does the proposal indicate how the PIs will assess/evaluate the degree to which the project has achieved its goals?

C. EQUIPMENT—10 points

- of 6 pts. C.1 To what extent has the proposal established a relationship between the enhancement plan activities and the type of equipment requested? Is the equipment well-justified? Will it significantly enhance the existing technological capability of the department(s)/units(s)? Does it reflect current and projected trends in technology?
- of 1 pt. C.2 Is there a thorough survey of the current equipment inventory and does the proposal plan to make full use of the equipment?
- 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?

D. FACULTY AND STAFF EXPERTISE—12 points

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

E. ECONOMIC AND/OR CULTURAL DEVELOPMENT AND IMPACT—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 college or university or consortium of colleges and universities, federal government agency)?

_____ of 10 pts. E.2 To what extent will the project assist the submitting department(s)/unit(s) in promoting or enhancing economic, cultural and/or academic development and/or resources in Louisiana?

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?

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

_____ of 100 points

SPECIFIC BUDGETARY RECOMMENDATIONS

Requested Amount \$ _____ Recommended Amount \$ _____

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

Reviewer's Name and Institution: _____

Reviewer's Signature: _____ Date: _____

(Form 6.11, rev 2015)

BOARD OF REGENTS SUPPORT FUND ENHANCEMENT PROGRAM, FISCAL YEAR 2016-17

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.

A. THE CURRENT SITUATION—10 points

- YES _____ NO _____
- _____ of 5 pts. A.1 Has the applicant adequately described the institution and department(s)/unit(s) that will benefit from the 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)/unit(s) and/or curricula?
- _____ of 5 pts. A.3 To what extent will the project complement and improve upon existing resources of the department(s)/unit(s)?

B. THE ENHANCEMENT PLAN—66 points

- _____ of 10 pts. B.1 Are the goals and objectives clearly stated? Are they realistic? Are the objectives measurable? Can the objectives be completed within the timeframe detailed in the proposal?
- _____ 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 and a schedule of activities with benchmarks to be accomplished?
- _____ of 8 pts. B.3 To what extent will the proposed project propel the department(s)/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 8 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)?
- _____ of 8 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 8 pts. B.6 To what extent will the project contribute to improving the quality and effectiveness of faculty teaching and improve faculty pedagogy?
- _____ of 4 pts. B.7 To what extent does the proposal indicate how the PIs will assess/evaluate the degree to which the project has achieved its goals?

C. FACULTY AND STAFF EXPERTISE—12 points

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

D. ECONOMIC AND/OR CULTURAL DEVELOPMENT AND IMPACT—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, or another college or university or consortium of colleges and universities, federal government agency)?
- _____ of 10 pts. D.2 To what extent will the project assist the submitting department(s)/unit(s) in promoting or enhancing economic, cultural and/or academic development and/or resources in Louisiana?

E. PREVIOUS SUPPORT FUND AWARDS—No points assigned

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

F. 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 \$ _____

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

Reviewer's Name and Institution: _____

Reviewer's Signature: _____ Date: _____

(Form 6.12, rev 2015)