



Student Technology
Fiscal Year 2006-07
Grant Proposals

Delivered to IS: 11/1/06
Date

Jennifer Long Martin
Signature

Dr. Jim McCrory:

Approved

Denied

Comment: why Mac PC's. The Airport Base Station
violates University EOP policy.

Signature: _____ Date: _____

Tim Chadbourne:

Approved

Denied

Comment: _____

Signature: TC Date: 11/2/06

Gary Gatch:

Approved

Denied

Comment: wireless will create issues with existing
wireless network.

Signature: _____ Date: 11/7/06

Dale Martin:

Approved

Denied

Comment: _____

Signature: [Signature] Date: _____

Tyron/Diana:

Approved

Denied

Comment: _____

Signature: dh Date: 11/6/06

Student Technology Fee
Funding Proposal Request From
Fiscal Year 2006-07

~~STF~~
STF

2007.004

Northwestern State University of Louisiana

Prepared by: Zafer Hatahet For: Department of Biological Sciences

Department/Unit: Biological Sciences College: Science and Technology Campus: Natchitoches

Which NSTEP Goals/Objectives does this project meet? 1 and 3

Requested equipment will be located/installed/housed? Building 090, Bienvenu Hall Room 109

Are department property policies and procedures in place for requested equipment? Yes

Which individual will be responsible for property control of the requested equipment? Dept. Chair

Signature:  Date: 10/25/2006

Grant Proposal Requested Amount: \$ \$29,739 Budget Attached (circle one): YES/NO

Grant delivered to Student Technology located in Watson Library, Room 113. Date: 10/31/2006

10/31/06
11:47am

This grant proposal must include all specifications, description, model number, quotation, cost, state contract number, and vendor for each item. Proposal will be returned if information is not included in full.

1. Describe target audience

Students enrolled in BIOL1011, the Introductory Biology Laboratory I.

2. Describe project/initiative for which you are requesting funds.

BIOL1011 is a required course for all biology and psychology majors. This course is intended to introduce college freshmen to the principles of scientific experimentation, provide them with the basic hands-on skills needed in higher level courses, and demonstrate and reinforce the theoretical concepts taught in BIOL1010, the Introductory Biology lecture course. Regrettably, the current state of technical resources in BIOL1011 is very inadequate. First, a significant portion of the experiments currently offered is more suitable for high school students. This stems from lack of appropriate equipment to conduct college-level experiments. Secondly, the equipment currently available in the lab is inadequate in quantity forcing the instructors to group students in teams of six to eight students. Such large teams are not conducive to good learning and inevitably a significant number of students do not obtain hands-on experience. Finally, all of the existing equipment is very old and often is non-operational. This project aims to re-equip BIOL1011 lab with modern instruments appropriate for college level experiments and in sufficient quantities to service the large number of students enrolled in this course annually.

3. State measurable objectives that will be used to determine the impact/effectiveness of the project.
- Equip BIOL1011 with modern instruments appropriate for the experiments currently included in the syllabus of this course.
 - Obtain a sufficient number of instruments as to have teams of NO more than three students.
 - Update the syllabus of the course to take advantage of the new instruments

4. Indicate how each objective will be evaluated.
- BIOL1011 lab will be inspected to insure that the requested equipment was properly installed and utilized in the course of the experiments.
 - Course sections should be inspected to insure that students are not grouped in teams that are too large.
 - The syllabus should be inspected and compared to the existing syllabus to insure that experiments have been updated brought up to college-level complexity.

5. If funded, which NSTEP <http://www.nsula.edu/nstep/NSTEP.pdf> objective(s) will this funding of this project advance? How will funding of the project advance the University and College/Unit technology plan?

- This project should help advance the following NSTEP objectives
 - To improve access to technology by students, faculty, and staff at Northwestern State University.* Specifically, to expose student to modern laboratory equipment, train them on their use, and give them the basic experimental skills required in higher-level courses and post-graduate careers.
 - To upgrade student technology laboratories with modern technology.* Specifically, to use modern instrument that are appropriate in complexity for college students.
- Implementation of this project will help advance three critical objectives of the College of Science and Technology and NSU at large,
 - Attract and recruit and more importantly **retain** academic achievers. This course is one of earliest taken by entering freshmen. As such, it can very strongly influence a student decision to remain in college and/or continue to pursue a degree in science. Regrettably, in its current format, BIOL1011 does not contribute well to student retention. In AY2005-2006, 394 students were enrolled in BIOL1011 while only 259 were enrolled in its sequel BIOL1021, a drop-off of 34%. Based on an informal survey of students who took BIOL1011 and opted not to continue on with BIOL1021, a significant portion felt inadequately challenged by the experiments. Specifically, some expressed that the material was similar to what they learnt in high school.
 - Increase excellence in academic program. As a cornerstone course, BIOL1011 is instrumental is adequately preparing students for more advanced courses, thus allowing instructors in such courses to focus on advanced, modern techniques rather than “water down” the content of those courses to accommodate students who did not receive appropriate training in BIOL1011.
 - To strengthen national recognition of academic programs at NSU. The current BIOL1011 syllabus does not compare favorably at the national collegiate level. Updating and modernizing the lab should enhance NSU’s national standing in this area significantly.

6. Provide a justification for funding the project. Estimate the number of students that will be served per academic year and in what ways. Please indicate also any unique needs of the target group.

Approximately 400 students enroll in BIOL1011 every year. Although BIOL1011 has a lab fee of \$15 per student, these funds are barely sufficient to purchase basic reagents required to conduct the experiments. Updating the labs and equipping them with instruments sufficient to train 32 students at a time (the current average section size) would require a significant infusion of funds from sources such as the Student Technology Fee Grants.

7. List those individuals who will be responsible for the implementation of the project/initiative and indicate their demonstrated abilities to accomplish the objectives of the project?

Dr. Zafer Hatahet has taught BIOL1011 for three semesters. For the last two semesters he has introduced one new experiment to the lab involving a modern technique, gel electrophoresis. The experiment was very well received by the students as it is the most commonly seen technique in the media (TV and movies) when reference is made to biological techniques. Dr. Hatahet also teaches Molecular Biology and Advanced Molecular Biology labs which have seen a complete overhaul in the last year. Finally, Dr. Hatahet is currently seeking Board of Regents funds to re-establish a modern "Molecular Genetics" lab in the biology department, a course that has been missing from the curriculum for over ten years.

8. Describe any personnel (technical or otherwise) required to support the project/initiative.

None, other than Dr. Hatahet.

9. Provide a schedule for implementation and evaluation.

Most of the equipment requested are available through state contractor Fisher. As such, purchase and implementation should be feasible within the Spring semester of 2007. The syllabus and experimental procedures can be updated during the same semester.

Evaluation of the project will be based on two criteria,

- a. Comparison of Student Evaluations of BIOL1011 for several semesters before and after implementation.
- b. Comparison of student retention rates, as measured by enrollment in BIOL1021, for several semesters before and after implementation.

10. Estimate the expected life of hardware and software. Explain any anticipated equipment/software upgrades during the next five years.

Durability-wise, the hardware should last significantly longer than five years. However, given the pace at which technology is advancing, a lifespan of five years is more realistic. No upgrades would likely be needed before that time.

11. Explain in detail a plan and policy that will be in place to ensure property security/controls for any equipment received through a Student Tech Fee grant

All laboratories in the Biology building are kept locked when they are not in use. Instruments are also put away in storage unless they are required for a particular lab.

Attach two (2) letters of support for the project from the following individuals: the requesting department's Dean, the appropriate Vice President (for non-academic units), or the SGA President from the requesting campus (for student requests).

Student Technology Fee Grant Proposal Checklist:

Yes ___ Is all information requested provided (items 1 – 11)?

Yes ___ Is a detailed budget attached?

Yes ___ Are all specifications, description, model number, quotation, cost, state contract number, and vendor provided for each item?

Yes ___ Are your two (2) letters of support attached?

NA ___ If equipment is to be checked-out/loaned, is your policy attached?

Detailed Budget:

See attached quotes

FAX: 503-277-2448
Pam

Item	Vendor	Catalog #	Units	Price Each	Total Price
Lab Pro Deluxe Package	Vernier	BIOL-DX	10	\$1487.00	\$14,870.00
Biochamber	Vernier	BC-259	10	\$5.00	\$50.00
Biology with computers	Vernier	BWC-LP	1	\$45.00	\$45.00
Human Physiology	Vernier	HP-A	1	\$45.00	\$45.00
Apple Mobile Learning Lab	Apple	BB871LL/A	1	\$14,729.00	\$14,729.00
Grand Total					\$29,739.00

2063547
no quote included
no quote included

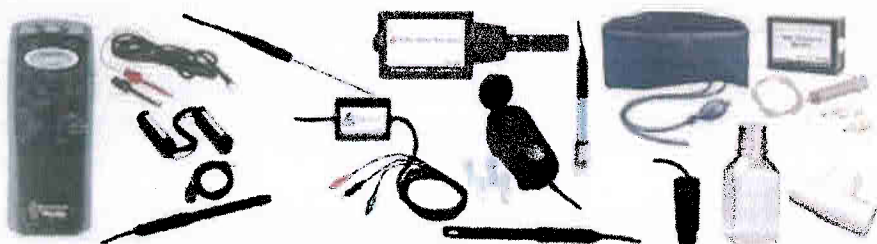
Justification

1. The Lab Pro Deluxe Package includes all the required instruments to carry out experiments in Fermentation, Photosynthesis, Aerobic Respiration, Food Energy Content, and Enzyme kinetics. These experiments are part of the current curriculum but are being carried out with only 2 functional instruments for 30-32 students in each lab section. Ten packages are requested with the intent of using 1 package per team of three students. Notice that the price of the "Deluxe Package" is significantly lower than buying each component separately (see attached quote).
2. The Biochamber, is an improved version of an instrument included in the basic package. Considering the low cost, 10 are requested to upgrade the basic package.
3. Biology with Computers, and Human Physiology are laboratory manuals to provide ideas and procedures for standard experiments carried out in many universities. One copy of each is requested.
4. Data collected from the experiments are currently "jotted" down by students every 15-30 seconds as they are displayed on the instruments of the basic package. Needless to say, this is neither accurate nor reflective or "real world" science. The "Interface Module" of the basic package (see attached quote) is designed to be hooked up to a computer for data collection. The Apple Mobile Learning Lab is a convenient way of achieving this. It includes 10 MacBook laptops, a three-year extended warranty, a networkable laser printer, and a cart to store and secure the computers.



LabPro Biology Packages

Purchase one package per computer, calculator, or handheld.



Add to Cart

Starter Package

Order Code: BIOL-STR

Unit Price: \$691

Add to Cart

Standard Package

Order Code: BIOL-SD

Unit Price: \$1052

Add to Cart

Deluxe Package

Order Code: BIOL-DX

Unit Price: \$1565

Interface and Sensors


		Starter	Standard	Deluxe
<u>LabPro Interface</u>	LABPRO	\$220	\$220	\$220
<u>Voltage Probe</u> (included with interface)	VP-BTA	\$0	\$0	\$0
<u>Stainless Steel Temperature Probe</u>	TMP-BTA	\$29	\$29	\$29
<u>Hand-Grip Heart Rate Monitor</u>	HGH-BTA	\$114	\$114	\$114
<u>Gas Pressure Sensor</u>	GPS-BTA	\$79	\$79	\$79
<u>CO₂ Gas Sensor</u>	CO2-BTA	\$249	\$249	\$249
<u>O₂ Gas Sensor</u>	O2-BTA		\$186	\$186
<u>CO₂ to O₂ Tee</u>	CO2-TEE		\$5	\$5
<u>Conductivity Probe</u>	CON-BTA		\$92	\$92
<u>pH Sensor</u>	PH-BTA		\$78	\$78
<u>Colorimeter</u>	COL-BTA			\$112
<u>Dissolved Oxygen Sensor</u>	DO-BTA			\$199
<u>EKG Sensor</u>	EKG-BTA			\$144
<u>Respiration Monitor Belt</u>	RMB			\$58
	Package Price	\$691	\$1052	\$1565



Special Offer

Buy six Deluxe Packages at \$1487 each and save \$468!

The Deluxe Package contains all the sensors needed to do



every experiment in the Biology lab books.

You will also need:



For Data Collection with Windows and Macintosh Computers

[Logger Pro 3](#) | Order Code **LP** | **\$159**

Logger *Pro* is your full-featured data-collection and analysis software for computers. Buy just one copy—site license for all school and students' personal computers is included.

[Biology with Computers](#) | Order Code **BWC-LP** | **\$45**

392 pages with 31 ready-to-use experiments. Includes a CD with word processing files for experiments, so you may easily edit labs to fit your style.

Compare packages correlated with the *Biology with Computers* book »



For Data Collection with TI Calculators

[TI Calculator](#)

We have over 6 types of calculators to choose from.

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406 pages with 31 ready-to-use experiments. Includes a CD with word processing files for experiments, so you may easily edit labs to fit your style.

Compare packages correlated with the *Biology with Calculators* book »

[Logger Pro 3 \(Recommended\)](#) | Order Code **LP** | **\$159**

Logger *Pro* is your full-featured data-collection and analysis software for computers. Buy just one copy—site license for all school and students' personal computers is included.



For Data Collection with Palm Powered™ Handhelds

[Data Pro Package](#) (one package per LabPro)

Package includes Handheld-to-LabPro cable, handheld cradle, and [Data Pro](#) data-collection and analysis software.


[Science with Handhelds](#) | Order Code **SWH** | **\$45**

Contains 31 biology experiments (9 printed, all 31 on CD).

Compare packages correlated with the *Science with Handhelds* book »

[Logger Pro 3 \(Recommended\)](#) | Order Code **LP** | **\$159**

Logger *Pro* is your full-featured data-collection and analysis software for computers. Buy just one copy—site license for all school and students' personal


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 - Financial Services
 - Professional Development
 - Professional Services
 - Software Maintenance
 - Training
 - Volume Licensing

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Mac Desktops

- iMac
- Mac mini
- Mac Pro

PowerPC Systems

- iBook 12"
- iBook 14"

Servers

- Xserve
- Xserve RAID

iPod

- iPod
- iPod nano
- iPod shuffle
- iPod Accessories
- U2 iPod

Apple Mobile Learning Lab (10 MacBook 1GB computers) with AppleCare Protection Plan - Auto Enrollment for each MacBook

This small and portable mobile lab is ready to roll into any classroom, conveniently bringing technology right to where the learning is taking place. It provides an easy way to share the latest technology among classrooms within a school.

Price: \$14,729.00

Estimated Ship:
3-4 weeks
Free Shipping



[Save for later](#)

[Add to cart](#)

The Apple Mobile Learning Lab (10 MacBook computers) includes:

Hardware:
10 MacBooks (13.3TFT XGA display, 1.83 GHz Intel Core Duo processor, 1GB memory, 60GB hard drive, Combo Drive (DVD-ROM/CD-RW), 10/100/1000 Base-T Ethernet, AirPort Extreme, Bluetooth).

Software:
1 copy of Apple Remote Desktop 3 - (Unlimited Managed System Edition). Each MacBook also includes Apple's award winning iLife applications, and Mac OS X, and other software.

Mobile Cart:
1 Bretford 20 Laptop Mobile Cart, pre-assembled (holds and charges up to 20 laptop computers), and includes two 10-outlet UL listed electrical units to charge laptops, and 4 accessory outlets on the top of the cart. Each computer is securely placed in individual compartments with easy to configure dividers. The cart includes three-point locking doors and a reprogrammable lock, an automatic timer, and two storage bins.

- Included Accessories:**
- 1 AirPort Extreme Base Station
 - 1 HP LaserJet P2015DN Ethernet Laser Printer
 - 2 Belkin 14 ft Ethernet cables
 - 10 AC power adapters with cords and duckheads
 - 1 Getting Started with Your Apple Mobile Learning Lab guide

- Optional Accessories:**
- Output video from MacBook to DVI, VGA, Composite, or S-Video using a mini-DVI adapter, sold separately.
 - Control Front Row on your MacBook from across the room with an Apple Remote, sold separately.

- Recommended add-ons:**
- Apple Digital Learning Series learning solutions designed as ideal companions for the mobile labs. Visit <http://www.apple.com/education/adls>
 - Apple Professional Development to prepare teachers to

Customer Rating

Be the first to review this product.

Share your opinions.

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Handwritten notes:

PC 15,149.30

~~Printer # 1514.93~~

Printer # 430.00

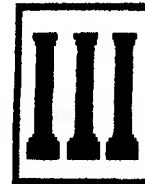
Storage # 1642.00

\$ 17,221.30



DEPARTMENT OF BIOLOGICAL SCIENCES

COLLEGE OF SCIENCE & TECHNOLOGY



October 27, 2006

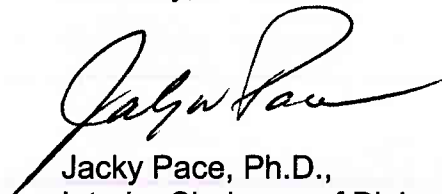
STUDENT TECHNOLOGY SUPPORT LETTER

This letter is in support of two funding proposals submitted by Dr. Zafer Hatahet, and the Department of Biological Sciences.

The approval of these proposals will greatly enhance the productivity of our faculty. Our labs are currently outdated requiring faculty to spend undue time for class preparation. In addition many of our labs are only partially completed due to inadequate equipment and facilities.

The funding of these proposals will increase the competency of our students and encourage them to attend classes/labs with enthusiasm and motivation.

Cordially,



Jacky Pace, Ph.D.,
Interim Chairman of Biology



COLLEGE OF SCIENCE & TECHNOLOGY
OFFICE OF THE DEAN



October 30, 2006

To Members of the Technology Selection Committee:

I am pleased to send this letter as proof of my support for the technology grant proposal submitted by Dr. Zafer Hatahet. Dr. Hatahet's proposal is a reasonable request for technical resources to enhance the laboratory experiences for students enrolled in Biology 1011. The acquisition of the laboratory equipment creates opportunities for the Biology Department to upgrade and modernize experiments. The new experiments should lead students to a better understanding of the biological principals that are covered in Biology 1010.

Thank you for serving on this committee and for your careful consideration of this proposal.

Very truly yours,

Austin L. Temple Jr., Ph.D.
Professor of Mathematics
Dean, College of Science and Technology



NORTHWESTERN STATE
UNIVERSITY OF LOUISIANA
Natchitoches, LA 71497

Student Technology
Watson Library, Room 113

Telephone (318) 357-6482
FAX (318) 357-6480

January 10, 2007

Dr. Zafer Hatahet
Northwestern State University
Biological Sciences
Natchitoches, LA 71497

Dear Dr. Hatahet,

It is with pleasure that the STAT (Student Technology Advisory Team) has fully funded your grant proposal for Fiscal Year 2006-07 in the amount of \$29,739.00.

Ordering of equipment listed in the grant proposal will take place during the month of January.

Please be reminded that your grant was funded through Northwestern Student Technology Fees, all equipment purchased, therefore, must be used exclusively and directly for/by Northwestern students.

You are commended for, and encouraged to continue your efforts to enrich the learning environment for students at Northwestern State University. Your time, effort, and vision in service of the students are greatly appreciated. If you have questions or need additional information please contact me by phone or via email at: long@nsula.edu.

Sincerely,

Jennifer Long Martin
Student Technology

cc: Dr. Jack Pace