#3

Student Technology Fee
Grant Proposal Request Form
Fiscal Year 2011-2012
Northwestern State University of Louisiana

FF 2012.011

S-2-7597

Ct. # 2

88.3

ALL BLANKS MUST BE FILLED COMPLETELY

Prepared by: Steven Gabrey For: _____

Department/Unit: Biology College: STB Campus: Natchitoches

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

Requested equipment will be located/installed/housed? Building 90 Room 231

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

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

Signature: Steven Gabrey Date: October 28, 2011

Grant Proposal Requested Amount: $6299.90 Budget Attached (circle one): (YES) NO

Grant delivered to Student Technology located in Watson Library, Room 113. Date _____

The grant proposal must include all specifications, description, model number, quotation, cost, state contract number, and vendor for each item. If the proposal does not include all requested information, it will be retuned to requestor.

1. Describe target audience.

This proposal is intended to enhance the classroom, laboratory, and field experiences of students in the Biology Department. In particular, it targets those students in the natural science concentration, wildlife management minor, or who are interested in careers in environmental assessment, monitoring, and natural resources management.

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

This proposal is for the purchase of five Oakton PCD650 pH/DO/conductivity/temperature meters and associated supplies for use in natural sciences classes in the Biology Department. pH, dissolved oxygen, conductivity, and temperature are standard measures of water quality used by environmental scientists for environmental impact studies; biological inventories in aquatic environments; fish and aquatic invertebrate habitat quality assessments; aquaculture; fisheries biology; aquatic ecology; waterbird (waterfowl, shorebirds, wading birds, etc.) habitat monitoring and evaluation; pollution prevention and remediation; monitoring adherence to pollution discharge permits, and other programs.

3. State measurable objectives that will be used to determine the impact/effectiveness of the project.

Students will learn how to use state-of-the-art technology to assess water quality conditions by collecting data during various lab classes, and learning to process, present, and apply those data to solve specific problems or address specific ecological questions.

4. Indicate how each project objective will be evaluated.

Success will be evaluated by assessing the students' understanding of operating the meters and by the quality of research projects or other class assignments for which the meters were used.

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

NSTEP 1: This purchase would expand student's access to and familiarity with water quality meters because the meters are expensive and specialized; therefore, students are unlikely to have their own or have access to them outside of the university setting.

NSTEP 3: This purchase would upgrade the technology available to students at NSU because currently NSU has no water quality meters.

The Biology Department plan follows the same guidelines as in the university NSTEP plan.

6. Provide a justification for funding of this 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.

Maintaining the quality of Louisiana's water resources is essential to maintaining ecosystem function and the health of the public. Such resources include not just municipal water supplies but also the many rivers and lakes that are an integral component of Louisiana's landscape and natural history. Agricultural and industrial activity, as well as urban expansion, has the potential to adversely affect water quality and consequently aquatic animals and plants. Impaired water quality may result in physiological and developmental abnormalities or lead to reduced population densities and possible extirpation of sensitive organisms. Consequently, policy-makers, land managers, conservationists, and other stakeholders must have reliable data on the current condition of freshwater resources if they are to make sound water-management decisions based on the best available science. Professional scientists trained to assess the ecological health and productivity of freshwater resources are essential to improving the quality of the state's water resources.

The recent increase in the number of oil and natural gas development projects in the NSU service area poses significant risks of pollution to the region's water resources. Consequently, there has been an increased demand for environmental scientists skilled in assessing the impacts of this development on the region's water and other natural resources. State and federal resource management agencies (Louisiana Department of Wildlife and Fisheries, US Fish and Wildlife Service, for example) and regulatory agencies (Louisiana Department of Environmental Quality) monitor water quality to protect fish, bird, mammal, and other wildlife populations and to protect the public from health risks associated with pollution or other forms of water contamination. Oil

and gas companies, chemical companies, and other industries employ environmental scientists to ensure that their actions are within regulatory guidelines. Use of the latest in water quality monitoring technology is essential for employment in the increasingly important and technical environmental services field. At present, NSU does not have the technology necessary to train students in water quality assessment skills. By using these water quality meters in select Biology classes, NSU students will gain the technological background necessary for collecting and processing water quality data. In addition, they will learn how to apply these data to address specific ecological problems. These skills will enhance their ability to compete for and secure employment in the environmental sciences field.

The meters will be incorporated into the curriculum of several classes: BIOL2290, BIOL2050/2051, BIOL3220/3221, BIOL4180/4181, BIOL4220/4221, and BIOL4400/4401. These classes are offered either every other semester or every other year. The most recent enrollment numbers for each of these classes is as follows:

Spring 2012 BIOL2050/2051 Invertebrate Taxonomy (20 students anticipated)
BIOL4400/4401 Ecology (25 students anticipated)

Fall 2011: BIOL2290 Intro to Wildlife and Fisheries Management (26 students enrolled),
BIOL4220/4221 Comparative Vertebrate Physiology (27)

Spring 2011: BIOL4400/4401 Ecology (25)

Fall 2010: BIOL3220/3221 Wildlife Management Techniques (18)
BIOL4180/4180 Biology of Fishes (20)
BIOL4220/4221 Comparative Vertebrate Physiology (26)

Based on these numbers, about 40 students per semester (or about 80 per academic year) would have the opportunity to use the requested equipment. In addition, Drs. Marshall and Gabrey are currently mentoring student research projects (fish behavior and giant salvinia growth, respectively) in which use of the multimeters could provide additional data that cannot be obtained with the technology currently available in the Biology Department.

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. Steven Gabrey teaches botany, soil science, and fisheries and wildlife management courses at NSU and has several years of experience in researching and assessing wetland and aquatic habitat management programs. Current research projects include assessing water quality effects on giant salvinia growth.

Dr. Samuel Marshall teaches Ecology, Entomology, and Invertebrate Taxonomy at NSU and has received graduate training in limnology as well as conducted research in wetland ecosystems.

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

No additional personnel will be required.

9. Provide a schedule for implementation and evaluation.

Meters will be purchased as soon as possible after notification of funding, likely either late in the Fall 2011 or early Spring 2012 semester. BIOL2050/2051 and BIOL4400/4401 are scheduled for the Spring 2012 semester. It is expected that use of the meters in those classes can begin then. Most of the remaining classes for which this is purchased (BIOL3220/3221, BIOL4180/4181) will likely be offered in the Fall 2012 semester. BIOL2290 and BIOL4220/4221 will likely be offered again in Fall 2013 as they are on an every-other-year rotation.

Evaluation would be based on number of students that used them and in what classes, maybe count at the end of Fall 2012 semester.

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

No software is required, and the meters are warranted by the manufacturer for 3 years. The only future costs associated with the meters would be replacement batteries and replacement calibration standards. Meters will not need to be upgraded during the next five years.

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 Technology Fee. If you are requesting equipment that will be either/or checkout to students or moved within the department, you must provide a checkout/loan policy.

The meters will be stored in room 221 in Bienvenu Hall. The room is always locked, and only faculty have a key to this room. Students will be able to take the meters into the field only in conjunction with a class in which they are enrolled and only when accompanied by the instructor.

12. Does the department that is requesting equipment receive lab fees? If so, please provide a justification for requesting funds from tech fee funds over using lab fees from your department.

The Biology Department does receive lab fees from those courses with labs. However those fees are generally reserved for purchasing supplies, consumables, and fuel for the departmental vehicle when used on official field trips. Lab fees are not used to purchase the equipment itself. Lab fees will be used to replace the calibration standards, solutions, and DO membranes. Biology faculty have relied on grants to purchase most of the technology and equipment used in labs.

13. Attach a detailed budget.

The attached quote from Fischer Scientific at the State Contract rate is for $6299.90 for 5 Oakton PCD650 kits (Catalog No. 15-500-056; $1259.98 each). Kits includes the following: Meter; batteries; pH, conductivity, and dissolved oxygen probes; pH calibration and conductivity calibration standards; carrying case; replacement DO membrane.

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:

_____ Is all information requested provided (items 1 – 11)?
_____ Is a detailed budget attached?
_____ Is all specifications, description, model number, quotation, cost, state contract number, and vendor provided for each item?
_____ Are your two (2) letters of support attached?
_____ If equipment is to be checked-out/loaned, is your policy attached?

Sales Quotation

Quote Nbr	Creation Date	Due Date	Page
1298-5022-95	10/25/2011		1 of 1

Payment Terms	Delivery Terms
NET 30 DAYS	SP
Valid To	Prepared By
11/24/2011	RUFF, KATELIN M.
Customer Reference	Sales Representative
RFQ: 10/25/11	KATELIN RUFF

To place an order	Ph: 800-766-7000	Fx: 800-926-1166

Submitted To:	Customer Account: **481040-001**
STEVEN GABREY STEVENG@NSULA.EDU 318-357-5375	NW STATE UNIV 998 S JEFFERSON ST CENTRAL RCVG NATCHITOCHES LA 71497

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PLEASE REFER TO THE QUOTE NUMBER ON ALL CORRESPONDENCE

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www.fishersci.com/salesterms

Nbr	Qty	UN	Catalog Number	Description	Unit Price	Extended Price
1	5	EA	15 500 056	OAKTON PCD650 METER KIT Vendor Catalog # WD-35434-70 Hazardous Material This item is being sold as 1 per each List Price: 2,615.76 CDC: 028	1,259.98	6,299.90

MERCHANDISE TOTAL 6,299.90

NOTES:
We now offer highly competitive financing with low monthly payments. Please contact your local sales representative for more information.

Tell us about your recent customer service experience by completing a short survey. This should take no longer than three minutes. Enter the link into your browser and enter the passcode: USA-PGH-CS2
http://survey.medallia.com/fishersci

ID - also email password - setup
FS.
2615.76 ea.

COLLEGE OF SCIENCE, TECHNOLOGY, & BUSINESS
OFFICE OF THE DEAN

October 26, 2011

Dear Committee Members:

I am pleased to recommend the proposal to you submitted by Dr. Steve Gabrey. The acquisition of these meters will make a huge difference in the way the laboratories are taught. Students need this type of technology and they need to know how to manipulate the instruments. This type of knowledge may make the difference between a student getting a job or not getting a job.

I appreciate your consideration of this proposal and I know of no better way to make a difference in this academic department than to purchase this much needed equipment.

Very truly yours,

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

DEPARTMENT OF BIOLOGICAL SCIENCES
COLLEGE OF SCIENCE, TECHNOLOGY, AND BUSINESS
Phone (318) 357-5323, Fax (318) 357-4518, Email: Bio_Sci@nsula.edu, URL: biology.nsula.edu

October 27, 2011

Mrs. Jennifer Long Martin
Student Technology Fee Office
Watson Library

Dear Committee Members,

It is with pleasure that I write in support of Dr. Steven Gabrey's grant application to purchase equipment and supplies necessary to measure water quality in several biology teaching and research lab settings.

Dr. Gabrey teaches a wide variety of courses that cater to biology majors interested in natural science and wildlife management. Many of the labs he teaches involve field trips and assessing environmental conditions such as water quality. These courses and hands-on and provide students with excellent experience in "real world" work.

I am certain that funding of this grant will improve our curriculum and enable Dr. Gabrey and his students to carry out experiments that we currently are unable to conduct.

Thank you.

Zafer Hatahet, Ph.D.
Professor and Department Head