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2009.0025

Student Technology Fee  
Funding Request Form  
Surplus Funding Fiscal Year 2008-09  
Northwestern State University of Louisiana

This document will not be accepted without complete information, detailed budget,  
specifications of each piece of equipment requested and pricing.

Prepared by: Greg Giering \_\_\_\_\_ For: \_\_\_\_\_ University Campus \_\_\_\_\_

College: Basic Science \_\_ Campus: Natchitoches \_\_\_\_\_ Department: Physics \_\_\_\_\_

Where will requested equipment be located/installed/housed: Bldg. Fournet Hall \_\_\_\_\_ Room N/A \_\_\_\_\_

Are property policies and procedures in place by the department for equipment requested. Yes \_\_\_\_\_

Delivery to the Student Technology office located in Watson Library, Room 113. Date \_\_\_\_\_

1. Describe target audience. Freshmen to sophomore general science classes, Physics and chemistry labs for general science and Nursing majors and Physics labs for higher level Physics and Chemistry majors.

2. Describe project/initiative for which you are requesting funds. General upgrade of physics and chemistry lab equipment used for learning and demonstrations. Most of this equipment will be used to educate students about electrical conduction, photo-electric (solar) power generation and relationships between electricity and magnetism. Solar panels will be used to experiment with potential for generating electricity for the University in order to reduce costs and help NSU implement GO Green policies.

3. State measurable objectives that will be used to determine the impact/effectiveness of the project. Successful implementation of the solar panels integrated into the NSU power grid will in theory show real reductions in power costs. If it can be shown to be financially cost effective this could be installed throughout the University to reduce greenhouse gas emissions and lower heating and cooling costs.

4. Indicate how each project objective will be evaluated. By showing that the production of electricity will substantially reduce costs and comparing to the costs of implementation of the system.

5. Provide a justification for funding of 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 200 students per year will directly benefit by being able to perform hands

on experiments. 500+ more will be able to see demonstrations of experiments they could previously only read about in texts. With successful installation of campus wide solar panels in the next phase of the project the entire university could benefit.

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

1. To improve access to technology by students, faculty, and staff at Northwestern State University.
2. To provide classrooms with updated technology and multimedia.
3. To upgrade student technology laboratories with modern technology.
6. To provide a system for maintenance, upgrade, user training, and support of technology that will extend into the future.
7. To establish processes that encourage technology initiatives by faculty, staff, and students.
8. To encourage innovation and research.
9. To provide a system for maintenance, upgrade, training and support of administrative systems for administrators and physical plant in order to better serve students.

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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. I (Greg Giering) and Dr. Walter Flomer (chemistry dept.) will oversee the implementation of the project in its initial and testing stages. When necessary the Physical Plant and/or City of Natchitoches Power Plant will be involved at our direction.

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| 8. Describe any personnel (technical or otherwise) required to support the project/initiative. None initially. In subsequent stages persons qualified to handle high voltages will be required. |
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| 9. Provide a schedule for implementation and evaluation. Demonstration and experimentation will begin immediately upon receipt of equipment. Installation of solar panels for testing should begin after 3 months or so of testing (preferably during summer months). |
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| 10. Estimate the expected life of hardware and software. Explain any anticipated equipment/software upgrades during the next five years. All of the purchased equipment should remain useful for 15+ years with the exception of the computer interfaces which may need to be upgraded in 5 to 10 years. |
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| 11. Explain in detail a plan and policy that will be in place to ensure property security/controls for any equipment received through Student Tech Fee. Equipment will be tagged and stored in Fournet |
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hall stockrooms when not in use. During use the equipment will be in lecture halls and labs. Standard State Property Control procedures will be followed.

**12.** Attach a detailed budget, including: specs., description, cost, state contract number, and vendor for each item; cost of outside support personnel; and a description of how the proposal will support University/College/unit resources (i.e., cash match, funds from other sources, or reallocation of existing hardware/software or other equipment). **All of the information requested must be attached or the request will not be accepted.**

**13.** Attach a letter of support for the project signed by the requesting unit's Dean, the appropriate Vice President (for non-academic units), or the SGA President from the requesting campus (for student requests).

|      | MFR     | Product                                 | Number | Cost       | Total       | Benefits   |
|------|---------|---|--------|------------|-------------|--|
| 7280 | Pasco   | Photo-Electric Effect System            | 10     | \$1,969.00 | \$19,690.00 | Freshmen Physical Science classes and Physics Labs |
| 7280 | Pasco   | Complete e/m System                     | 10     | \$2,749.00 | \$27,490.00 | Physics Labs (Freshmen through Senior levels)      |
| 7282 | Pasco   | Diffusion Cloud Chamber                 | 10     | \$535.00   | \$5,350.00  | Physics Labs (Freshmen through Senior levels)      |
| 7282 | Cenco   | Argon Spectrum Tube                     | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Carbon Dioxide Spectrum Tube            | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Chlorine Spectrum Tube                  | 5      | \$47.25    | \$236.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Helium Spectrum Tube                    | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Hydrogen Spectrum Tube                  | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Iodine Spectrum Tube                    | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Krypton Spectrum Tube                   | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Mercury Spectrum Tube                   | 5      | \$47.25    | \$236.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Neon Spectrum Tube                      | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Nitrogen Spectrum Tube                  | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Oxygen Spectrum Tube                    | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
|      | Cenco   | Xenon Spectrum Tube                     | 5      | \$33.25    | \$166.25    | Freshmen through Senior Physics and Chemistry Labs |
| 7282 | Vernier | Force Plate                             | 10     | \$215.00   | \$2,150.00  | Physics Labs (Freshmen and Sophomore levels)       |
| 7282 | Vernier | LabPro Interface                        | 5      | \$220.00   | \$1,100.00  | Physics Labs (Freshmen and Sophomore levels)       |
| 7282 | Cenco   | Stackable Banana Plug Wires 36" (red)   | 20     | \$7.95     | \$159.00    | Physics Labs (Freshmen through Senior levels)      |
| 7282 | Cenco   | Stackable Banana Plug Wires 36" (black) | 20     | \$7.95     | \$159.00    | Physics Labs (Freshmen through Senior levels)      |
| 7282 | Cenco   | Deluxe Metric Micrometer                | 5      | \$177.68   | \$888.40    | Physics Labs (Freshmen through Senior levels)      |
| 7282 | Vernier | Chemistry Starter Package               | 15     | \$561.00   | \$8,415.00  | Freshmen through Senior Physics and Chemistry Labs |
| 7282 | Pasco   | 1.2 m Pascar Dynamics System            | 4      | \$239.00   | \$956.00    | Physics Labs (Freshmen and Sophomore levels)       |
| 7282 | Pasco   | Mass and Hanger Sets                    | 3      | \$79.00    | \$237.00    | Physics Labs (Freshmen and Sophomore levels)       |

|      |       |                         |    |          |             |   |
|------|-------|-------------------------|----|----------|-------------|---|
| 7282 | Pasco | Force Table             | 2  | \$209.00 | \$418.00    | Physics Labs (Freshmen and Sophomore levels)  |
| 7282 | Pasco | alligator clip adapters | 4  | \$21.00  | \$84.00     | Physics Labs (Freshmen through Senior levels) |
| 7292 | Pasco | Conductive Ink Pen      | 20 | \$23.00  | \$460.00    | Physics Labs (Freshmen and Sophomore levels)  |
| 7282 | Pasco | Plane Mirror            | 2  | \$40.00  | \$80.00     | Senior Physics Labs                           |
|      |       |                         |    | Total    | \$68,492.40 |   |

Wish List

|  |            |                             |    |            |             |  |
|--|------------|-----------------------------|----|------------|-------------|--|
|  | Pasco      | Millikan Oil Drop Apparatus | 10 | \$1,659.00 | \$16,590.00 | Physics Labs (Freshmen through Senior levels)  |
|  | Solar Home | 200 Watt Solar Panels       | 10 | \$1,504.06 | \$15,040.60 | The University? Experiments performed by Freshmen through Senior Physics students may lead to NSU going green on power consumption |
|  |            |                             |    | Total      | \$31,630.60 |  |

Description

Visual device for measuring energy of photons (light)

Desktop device for measuring charge to mass ratio of electrons

Small apparatus for detecting alpha particles and cosmic rays

glass tube used to emit wavelengths of light  
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1 foot square plate for measuring strength of forces in lab

Electric device for connecting lab equipment to computers

For electricity experiments

For electricity experiments

Small hand held device for making fine lab measurements

Assortment of probes for measuring in lab

Aluminum track for conducting mechanics experiments

Mass sets to be used for weighing in labs

Graduated table for investigating the addition of vector forces

Converts banana plugs to alligator clips for electricity labs

Silver Ink Pen (write in conductive ink) for studying field patterns

Used for reflecting Laser light (upper level research)

Desktop device for measuring charge of electron (duplicates a classic physics experiment)

Large roof mounted panels for generating electricity