

## FY 2008 Technology Fee Proposal

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Submitting Organization:

Major Unit: College of Health and Human Sciences

Department: Division of Respiratory Therapy

Contact Person: Robert Harwood/Anthony Roberts

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1. Project Short Title

Computerized Breathing Simulator for Respiratory Therapy Students
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2. Total Requested

Fiscal Year 2008
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\$ 27,000.00
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3. Executive Summary From neonatal to adult patients, this device

Project Description (three or four sentences)
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This proposal will provide students enrolled in the undergraduate respiratory therapy the latest technology in computerized breathing simulation models. The Active Servo Lung 5000 will simulate almost any breathing profile (from neonatal to adult patients) with incremental changes and adjustments of each breath. This device interfaces with laboratory ventilators and will be programmed to simulate problems that students may not see in a clinical rotation. It is portable and can be used in any laboratory or classroom.
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4. Project Description

This proposal is to upgrade the respiratory therapy laboratory for practical training and education for respiratory care students. The goal is to provide students with experience of multiple patient disease situations and the knowledge of how to manipulate respiratory care to treat these illnesses. Because students rotate through different hospitals in the Atlanta area, the patient population in the intensive care units differs dramatically. Smaller hospitals may not have the type of diseases seen in the larger hospitals so the experience gained will also be different. This equipment allows the full spectrum of breathing simulation challenges, including coughs, apnea, active exhalation, playback of actual recordings and even snoring. These findings are typical in the neonatal, pediatric and adult intensive care units. This proposal includes purchase of a package that includes hardware and software that will provide interactive learning stations for hands-on training and in depth analysis of strategies and ventilator settings for changing patient conditions. This technology will be used in course assignments for

both undergraduate and graduate students. This is an easy portable field instrument that is the size of a carry-on suitcase that will allow it to be used in many different locations. Students will use this equipment prior to attending their hospital rotation and throughout their clinical education to give them consistent experience in basic patient mechanical ventilator management. This upgrade will provide the students with this knowledge.

5. Record the review numbers assigned by IS&T and Facilities. Their assessments must be included in Sections 16 and 17.

IS&T: 08-090
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Facilities: 13880-07
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6. Relevance to Regents Guidelines

- (1) Technology fee revenues should be used primarily for the direct benefit of students to assist them in meeting the educational objectives of their academic unit.
- (2) Tech fee revenues should be used for discipline specific software.
- (3) Technology fee revenues may be used for training of students and, to a lesser extent, staff and faculty.

7. Relevance to Strategic Plan(s)

The university's strategic plan states that part of its vision is to create a culture that provides a learning-centered academic environment with an emphasis on lifelong learning for students. The proposed project is closely aligned with the University's strategic plan because it addresses the need for students to develop clinical skills that are necessary for lifelong learning and provides easy access to clinical resources in a laboratory setting. It will create an opportunity for students to use technology resources to engage in problem-based learning, allow the students to critically think and improve the quality of their educational experiences.

8. Impact on Students Served

Forty-four students in the Division of Respiratory Therapy will be provided opportunities to work with this equipment in a respiratory therapy laboratory. Laboratory assignments will give the students hands-on experience prior to attending hospital rotations in the intensive care units. These assignments will use the equipment to simulate respiratory disease situations that students will encounter in the adult, pediatric and neonatal intensive care units. The Servo Lung is a self-contained unit that has all the software to complete laboratory assignments. No other software or computer hardware or internet

access is needed. The device is attached to mechanical ventilators that are in the respiratory laboratory. The lung simulator provides different disease scenarios allowing students to troubleshoot commonly-seen patient problems. This will develop their assessment skills to critically think in a real-life situation. The students will have access to the laboratory at assigned times as well as on an as needed basis by making an appointment with the lab instructor.

9. Justification of Funding Requirements for Fiscal Year 2007

Please note that any equipment items less than \$4,999 should be categorized "supplies."

Object of Expense	Itemized Descriptions	Quantity	Per unit price	Extended Total
<b>Supplies</b> (Note: PCs under \$5,000 go here. Also, use standard dollar amounts and replacement thresholds from sections 11/12, or provide explanation in sections 11/12.)	Item 1			\$0.00
	Item 2			
	Item 3			
	Item 4			
	Item 5			
	Item 6			
	Item 7			
<b>Equipment</b>	IngMar Medical Adult/Pediatric/Neonatal Breathing Lung Simulator-Active Servo Lung 5000			\$27,000.00
	Item 2, etc			
<b>Software</b> (Note: Include Vendor and Product Name.)	Item 1			\$0.00
	Item 2			
	Item 3, etc			
<b>Maintenance or Contractual Services</b>	Item 1			\$0.00
	Item 2, etc			
<i>Board of Regents Guidelines state "In almost no cases should technology fee revenues be used for ... space renovation, or other items or activities that do not have a direct and immediate impact upon students instructional objectives." (See Attachment 1, #8)</i>				
<b>Construction Services</b> (Requires review of Planning & Facilities)	Item 1			\$0.00
	Item 2			
	Item 3, etc			
<b>Network Connections and Infrastructure Costs</b> (Requires review of UCCS)	Item 1			\$0.00
	Item 2			
	Item 3			
	Item 4, etc			
<b>Physical Security</b> (Note: Costs normally should not exceed 2.5% of Total Requested.)	Item 1			\$0.00
	Item 2			
	Item 3			
	Item 4, etc			
<b>Other Expenses</b> (explain)	Item 1			\$0.00
	Item 2, etc			
<i>Board of Regents Guidelines state "Technology fee revenues may be used - with caution - for new staffing that is either temporary or ongoing." (See Attachment 1, #6)</i>				
<b>Staff Salaries</b>	Item 1			\$0.00
	Item 2, etc			
<b>Fringe Benefits</b>	Item 1			\$0.00
	Item 2, etc			
		<b>Hours/wk</b>	<b>Hourly Rate</b>	
<b>Student Assistant Salaries</b>	Item 1			\$0.00
	Item 2, etc			
<b>Graduate Student Assistant Salaries</b>	Item 1			\$0.00
	Item 2, etc			
<b>TOTAL</b>				<b>\$27,000.00</b>

10. Consequences of Partial Funding

The project would not remain viable.

11. Standard Dollar Amounts

N/A

12. Standard Replacement Thresholds

N/A

13. Prerequisite, Non-Technology Fee Funding

N/A

14. Matching Funds

N/A

15. Staffing and Other Support Availability

N/A

16. Space Availability and Impact on Facilities

**This project has no impact on facilities.**

## 17. Impact on Computing/Networking/Information Security Infrastructure

<p><u>Information Security Review (Tammy Clark):</u> Impact: No Assessment:</p> <p><u>Wireless and Network Ports Review (Mark Roberson):</u> Impact: /No Assessment:</p> <p><u>Server Connections (Charles Hollingsworth, Tammy Clark, Keith Campbell):</u> Impact: (No-CWH) , No impact – KEC Assessment:</p> <p><u>External Connections (Charles Hollingsworth):</u> Impact: (No-CWH),MR-NO Assessment:</p> <p><u>DVR Installations (Mark Roberson, Tammy Clark, Charles Hollingsworth):</u> Impact: (No-CWH), (MR-N/A) Assessment:</p> <p><u>Lab and Classroom Configurations (Joe Amador):</u> Impact: Yes/No NO Assessment:</p>
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## 18. Physical Security Needs

N/A

## 19. Post-Project Assessment Criteria

Faculty will develop related course assignments and evaluation tools for student practical experience during the 2007-2008 academic years. Student evaluations and testing will provide feedback as to the usefulness of this learning experience at the end of each course and clinical experience. Additionally a specific questionnaire will be developed for this specific piece of equipment for feedback as to how the student was prepared prior to attending clinicals.

## 20. Review and Acknowledgements

Dr. Lynda Goodfellow, Chair, Division of Respiratory Therapy

Dr. Susan Kelley, Dean and Professor

Anthony Roberts, College Admin. Officer