Academic Resources and Computing Committee

Proposal for Funding

Due Thursday, April 1, 2004 (4:30 p.m.)

Project Title: **GEAR (Geospatial & Environmental Applied Research) Lab & SL 328 Classroom Upgrades**

Project Director: Michael W. Hernandez

Department(s): Geosciences

College(s): College of Science

E-Mail: mhernandez@weber.edu **Extension:** 8186

Other Members of the Project Team: Adolph Yonkee, Marek Matyjasik, Jim Wilson, Richard Ford, and Jeff Eaton

Instructions:

1. Please complete each section in the space provided. The justification section should not exceed two single-spaced typed pages. (An addendum may be attached describing details of specific hardware and/or software that are requested with this proposal.)
2. You are required to obtain the signature of an ARCC representative for your college, indicating that she/he is familiar with the proposal, and can speak to it during funding deliberations.
3. Your department chair's signature is also required, indicating that she/he supports the proposal, and that the proposal is in keeping with departmental goals related to information technology and its applications to the academic mission of the institution. Your Chair's signature also indicates her/his commitment to help support the project financially if so indicated on the budget page.
4. Your dean's signature is also required, indicating that she/he has read and supports the project. Your dean's signature also indicates her/his commitment to help support the project financially if so indicated on the budget page.
5. Your college's computer committee must rank the proposal, and the committee chair's signature is required.
6. For certain projects an IT expert's signature is required. You must contact the appropriate individual if you are implementing a wireless network, multimedia classroom, software/hardware purchase that will require use of a campus server or work with online course software like WebCT Vista or ChiTester. You must give time before the deadline - the recommendation is 3 weeks - for that person to do an evaluation.
7. Submit one copy of the proposal, together with all relevant signatures, by 4:30 p.m., Thursday, April 1, 2004. NOTE: the ARCC no longer requires seventeen copies.
8. You must both email a soft copy and mail a hard copy of the proposal to the chair, David Ferro, MC 2401.

ARCC Representative:

I have read the proposal and discussed it with the Project Director.

_____

ARCC Representative

Comments:

Department Chair:

The Department has reviewed this project within the context of overall information technology planning within the Department. If the budget page indicates financial support from the Department, I agree to commit those funds to this project.

_____

Department Chair

Comments:

College Dean:

I have reviewed this project. If the budget page indicates financial support from the College, I agree to commit those funds to this project.

_____

College Dean

Comments:

College Computer Committee Chair:

This proposed project has been reviewed and discussed by our college's computer committee. It is the consensus of the committee that this proposed project is consistent with information technology goals within the college. Furthermore, after ranking all of the proposals submitted by our college, we rank this proposal in priority as

_____ out of a total of _____ proposals submitted this year.*

*Note: Each proposal must be given a separate ranking; no two proposals may receive the same rank.

_____

College Computer Committee Chair

Comments:

IT Representative:

For certain projects an IT expert's signature is required. You must contact the appropriate individual if you are implementing a

WIRELESS NETWORK (**contact Brook Chase at bhchase@weber.edu or x7192)**,

MULTIMEDIA CLASSROOM (**contact Bob King at rking@weber.edu or x6865)**,

CERTAIN SOFTWARE/HARDWARE purchases that will require use of a campus server or work with online course software like WebCT Vista or ChiTester (**contact Ted McGrath at tmcgrath@weber.edu or x7196**).

I have read the proposal and discussed it with the Project Director.

_____

IT Representative (printed and signed)

Comments (including status):

Justification

Your proposed project should be described as clearly and succinctly as possible in the spaces provided below. Be sure to review the "Criteria for Funding" document. *The entire justification section should not exceed two single-spaced pages.*

Abstract (project summary): This proposal seeks funding to purchase three higher-end desktop PC workstations to support running the latest geospatial analysis (Remote Sensing, GIS, and GPS), and numerical modeling (e.g., ModFlow, RockWorks) software used in upper division courses and undergraduate student research. The greater number of students using this lab due to higher upper division course enrollments, more courses now using the lab, and greater undergraduate research activity, combined with evolving software system requirements has strained the limited lab resources. Currently, the lab has five older Pentium III desktop PCs that are not able to support updated geospatial and numerical modeling software applications. This limits the number of students who can work on assignments or research at any one time. This lab is a critical resource not only to the Department of Geosciences, but also to the College of Science, where an increasing number of students from other departments (e.g., Botany and Zoology) are taking upper division courses to minor in Geospatial Analysis or to earn the Geomatics certificate. There are also increasing numbers of students from other colleges (e.g., Geography) or professionals coming back to school who want to minor in Geospatial Analysis or update their skills and earn the Geomatics certificate. These specialties are high-growth areas for employment and the department must maintain adequate lab resources to support the community need for such education.

In addition, funding is also requested for an LCD projector for use in both the GEAR Lab and SL 328 classroom to support course lecture and lab presentations. These rooms do not have LCD projectors, but the instructors using them have a critical need to show graphic-intensive material and simulations that reinforce earth science concepts taught in the courses. In the GEAR Lab, instructors also need to effectively demonstrate the capabilities and techniques available in the geospatial analysis and numerical modeling commercial software used today in both industry and government. This instruction is critical to student success in finding employment in the geosciences and related fields. Through completion of lab assignments and course projects, students learn to solve real-world problems that better prepares them for the job market or graduate studies.

Objectives and goals of this project:

1. Purchase three desktop PC workstations to support increasing numbers of students from across campus taking upper division courses taught in the GEAR Lab and students working on undergraduate research projects. The listed specifications of the PC workstations are for typical systems that will support both software and network needs for the next three years. The pricing is based on the higher education quotes from Dell.
2. Purchase an LCD projector to facilitate instructor needs for effective student learning in both the SL 328 classroom and the GEAR Lab. The listed specifications are for a Panasonic model that is listed just under $1,000 based on an ongoing contract with this campus.

Identify specific courses and/or programs that will directly benefit from this project:

(You may also want to describe how specific courses may be enhanced by this project.)

Geosci PS/SI 1110 Dynamic Earth: Physical Geology *(LCD Projector only)* (50 students)
Geosci 3060 Structural Geology (10 students)
Geosci 3080 Water Resources (30 students)
Geosci 3400 Remote Sensing I (20 students)
Geosci 3880 Ground Water (10 students)
Geosci 4210 Introduction to Computer Mapping and Geographic Information Systems (20 students)
Geosci 4220 Technical & Application Issues in Geographic Information Systems (20 students)
Geosci 4400 Remote Sensing II (15 students)

Approximately 135 students in the above courses would benefit from upgraded workstation PCs in the GEAR Lab. In addition to those 135 students seeing lab demonstrations and getting software instruction using a new LCD projector in the GEAR Lab, another 50+ students being taught Physical Geology in two sections as well as other students in additional overflow courses would also receive enhanced instruction using the projector in SL 328. Therefore, at least 185 students will benefit from these upgrades.

If applicable, describe how this project will help to increase faculty productivity or enhance competency in some area of information technology.

Additional up-to-date PC workstations will allow more students to simultaneously work on lab assignments and class projects, allowing instructors to more efficiently and effectively teach concepts in the appropriate learning environment. Bottom line: it will save time.

The LCD projector will allow instructors to develop lesson plans more efficiently and effectively demonstrate complex earth science concepts using higher level graphics and animations. The use of the projector in the GEAR Lab will ensure the instructors can demonstrate software use and digital analysis techniques consistently to all students.

Describe how the success of this project will be evaluated.

(If reports or publications are anticipated from this project, please indicate such.)

The effectiveness of the GEAR Lab and the new workstations will be evaluated in terms of improved student learning of geoscience concepts and specific software applications (assessed partly by lab and test results and student feedback), and increased student participation in undergraduate research and presentations. As more students complete the upper division courses, they will be prepared to take on other challenges such as research and present their results at regional and national professional society meetings. We would also expect to see some success in acquiring student internships/employment with both the private sector and local, regional, state, and federal government agencies.

The success of the use of the LCD projector in the upper division courses taught in the GEAR Lab as well as other courses taught in SL 328 will be evaluated based on better student learning outcomes measured by their comments on course assessments and informal feedback during each semester.

Timeline:

(If funded, when will this project be implemented?)

Immediately. The equipment would be ordered when funds become available and set up during the summer for immediate use.

Budget

Note: Please be as specific as possible regarding requested hardware, software, or other resources (you may include an addendum to describe the hardware). If funds are being committed from other resources, please so indicate.

Hardware:	**ARCC** (Requested)	**Department** (Committed)	**College** (Committed)	**Other** (Committed)
3 Desktop Computer Workstations, Dell Optiplex GX270: Pentium 4 processor, 2.8GHz, 1 GB DDR SDRAM, 64MB NVidia graphic card, 80GB HDD, CD-RW/DVD Combo, 17" flat panel monitor	$2,670	$500	$1,000	
Panasonic LCD Projector Model PT-LC56U	$499	$500		
Hardware Subtotals:	$3,169	$1,000	$1,000	

Software:	**ARCC** (Requested)	**Department** (Committed)	**College** (Committed)	**Other** (Committed)
Software Subtotals:				

Other:	**ARCC** (Requested)	**Department** (Committed)	**College** (Committed)	**Other** (Committed)

Other Subtotals:				
Grand Totals:	$3,169	$1,000	$1,000	

TOTAL FOR PROJECT: ____$5,169_____ (Sum of all columns)

Additional Resources

Please describe what other resources will be required to implement this project:

(Additional resources may include needs such as Academic Computing technical support or hardware installation through Electronic Services.)

NONE.