COLLEGE OF LIBERAL ARTS & SCIENCES

STUDENT TECHNOLOGY FEE PROPOSAL

PROPOSALS DUE: FRIDAY, FEBRUARY 8, 2013

Department: Geosciences

Budget Request:

Year	Hardware	Software	Other	Salaries	Total
2013-2014	$4210	$	$	$	$4210
2014-2015	$	$	$	$	$
2015-2016	$	$	$	$	$
2016-2017	$	$	$	$	$
Totals:	$4210	$	$	$	$4210

Brief description of proposal:

The purpose of this proposal is to request funds to purchase equipment to acquire ultra-high resolution images of otherwise expensive-to-access outcrop exposures for use in classroom instruction, such as for virtual field trips.

Department Contact: Emily Finzel ***Department Campus Address:*** 121 Trowbridge

Department Contact Email: emily-finzel@uiowa.edu

Please attach the following items to this cover sheet:

❑ **Narrative (1-2 pages maximum)** – The proposal narrative must address the following:
- ❑ State the general purpose of the request and the educational needs to be addressed.
- ❑ Describe the role of the requested project in teaching.
- ❑ What specific courses will benefit from the project? Why is the project important for these courses?
- ❑ How frequently are these courses offered, and how many students are enrolled (based on records or projections)?
- ❑ How will it benefit students?
- ❑ Explain why available resources cannot meet this need.

❑ **Budget** – The budget must include a detailed list of expected expenditures, **itemized into the following categories for each year**:
- ✓ Hardware/Other Equipment (computers, peripheral devices, accessories); please specify representative model types for equipment priced over $1,000
- ✓ Software and licenses
- ✓ Other expenses such as furniture, wiring, supplies
- ✓ Salary and wages (salary for staff required to install, maintain, and/or support the project)

❑ **Budget Justification** (1 page) – The budget justification must explain why the budgeted items are needed to fulfill the needs of the proposal. In particular, the types and level of the major equipment purchases must be justified.

❑ **Installation & Management Plan** (1 page) – Please provide a comprehensive plan for the installation, support and maintenance of the equipment and/or facility. It must address such infrastructure issues as space, accessibility, furniture, power, and networking, as well as any technical staffing requirements for the installation and the operation of the facility (including resources to provide that staffing). ITS and Facilities Management will review proposals in order to help assess feasibility. Note that the sponsor of any proposal is strongly encouraged to contact departmental or collegiate Information Technology staff to assess the feasibility and practicality of the project specifications. If this has been done, please document that communication in the proposal.

❑ **DEO Endorsement** (1 page) – The DEO of the department must provide a letter of endorsement describing how the proposal relates to the departmental mission and priorities. For multiple proposals coming from a single department, the DEO must prioritize the projects. Multiple DEO letters can be submitted if several units will share the facility.

SUBMIT PROPOSALS HERE: HTTP://CLAS.UIOWA.EDU/IT-GROUP/STUDENT-TECHNOLOGY-FEES

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2012-13 STUDENT TECHNOLOGY FEE PROPOSAL

COVER SHEET

NARRATIVE

General purpose/educational needs

The general purpose of this request is to purchase a **digital SLR camera and robotic camera mount (Gigapan) system** to capture ultra-high resolution images of outcrop exposures for instructional purposes. It is widely recognized that field training is pedagogically essential for integrating knowledge in the geosciences. Mountainous regions in the western and eastern United States offer spectacular outcrop exposures, but there are many logistical and financial challenges associated with off-campus learning. Unfortunately, surface exposures in the area around the University of Iowa are very limited and often are of poor quality. In addition, the available outcrops represent a limited suite of rock types.

Role of requested items in teaching

The images produced from the items requested in this proposal will be used to develop classroom exercises that take students on virtual field trips to well-exposed outcrops located elsewhere and allow them to develop the skills and knowledge associated with collecting geologic data in the field. Instructors have several options when it comes to employing the equipment in their courses. One option is for the instructor to use the equipment in a targeted area (e.g. where research is already being conducted), and then to use the collected images to develop exercises based outcrops that the students will never actually visit. For example, an Instructional Improvement Award was granted to Emily Finzel the Geosciences Department this year to create a virtual field trip to the southern Appalachian Mountains for the 12:130 Sedimentary Geology course. Another option would be for an instructor to bring the equipment on a class that already has a field trip and use the images for post-field trip discussions, or to create an exercise to prepare future students for the field trip.

What specific courses will benefit from these items?

Many courses in the geosciences department have the potential to benefit from the acquisition and usage of ultra-high resolution images of outcrop exposures:

Course No./Title	*Frequency Offered*	*2011-2012/2012-2013 enrollment*
12:112 – Field Methods	Summer	25
12:113 – Field Analysis	Summer	12
12:130 – Sedimentary Geology	Fall	34
12:132 – Structural Geology	Spring	18
12:138 – Fluvial Geomorphology	Fall (alt)	13
12:172 – Glacial & Pleistocene Geology	Spring (alt)	11
12:175 – Mineral & Petroleum Expl.	Fall (alt)	25
12:177 – Global Stratigraphy	Spring (alt)	7
12:191 – Geoectonics	Spring (alt)	13

How many students will benefit from these items and in what ways?

The list of courses that would benefit from the purchase of the proposed items has total enrollment of 158 students over two academic years. Many of the top Geology departments in the U.S. are located in regions where the geology is spectacularly exposed and readily accessible, and therefore their students have an obvious advantage when it comes to the quantity of field-based training they receive. Given the limited geologic exposures in Iowa, other options for exposing students to inquiry- and field-based projects must be considered. The development of projects such as those discussed above will help to make Iowa students more competitive with their peers from better-positioned universities.

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COVER SHEET

One of the top goals of the Department of Geosciences is to continue to improve student success by updating course offerings to provide more opportunities for quantitative and field based training. Field trips for our courses are generally expensive, and part of the goal for this proposal is to find ways to defer the costs of these trips for students while still providing the appropriate training. Inclusion of field-based projects that use real-world geologic data and can be completed in the classroom, such as the one being proposed here, will help the department to realize this important goal.

BUDGET

Hardware/Other equipment		
Gigapan EPIC Pro		$895
EPIC Pro rechargeable battery		$49
Battery charger		$29
Camera mount clamping system		$104
EPIC Pro backpack/carrying case		$119
Camera trigger cable		$20
Canon EOS 6D digital camera body		$2099
Canon EF 70-300mm f4-5.6 lens		$650
Camera digital gadget bag/carrying case		$100
Camera tripod		$45
Shipping/handling		$100
	TOTAL	**$4210**

BUDGET JUSTIFICATION

The Gigapan EPIC Pro is the most versatile and advanced model of the Gigapan line-up. It uses a reachargeable battery, so a battery charger is also required. The camera mounting system can be attached to any tripod to use the system. A stable tripod and the camera-specific trigger cord is required due to the high sensitivity of the system to movement. The camera/lens combination specified (or a similar set-up) is the recommended type to produce the best images. Carrying cases for both items are required for proper storage and security in the field. The software to "stitch" the digital images and create the panoramas is included in the purchase of the EPIC pro.

INSTALLATION AND MANAGEMENT PLAN

Initial acquisition of these items is a one-time expense. The equipment requires no scheduled maintenance. The equipment will be stored in a locked cabinet and will be available to be checked out to University Personnel for educational purposes by Department employee: Matthew Wortel.

THE UNIVERSITY OF IOWA

COLLEGE OF
LIBERAL ARTS & SCIENCES
Department of Geoscience
121 Trowbridge Hall
Iowa City, Iowa 52242-1379
319-335-1818 *Fax* 319-335-1821

February 6, 2013

Instructional Technologies Committee
College of Liberal Arts & Sciences, 130 SH

Dear Committee:

As DEO of Geoscience, I enthusiastically endorse the Student Technology Fee Proposal submitted by Emily Finzel to acquire a Gigapan EPIC Pro system, digital camera, and associated equipment for a total of $4,210. The proposed purchases will allow the assembly of a Gigapan robotic camera system for detailed imaging of field sites to be used to create virtual field trips for Sedimentary Geology and several other courses. This purchase would allow us to advance towards a primary goal of the Department of Geosciences, which is to provide more opportunities for quantitative and field based training to our undergraduate students. Actual field trips are expensive and create time conflicts for students because they need to leave campus. Purchasing the Gigapan system will help us bring real-world field training to students at lower costs of time and money.

I rate the purchase of Gigapan imaging system as a lower priority than most of the purchases outlined in the Department of Geoscience's main STF proposal. If the Gigapan system had been included in the main Department proposal, then I would have ranked behind the purchase of the projector and screen for 15 TH, but ahead of the digital sign for Trowbridge Hall.

Sincerely,

Mark Reagan
Professor and Chair