

UNIVERSITY OF LOUISIANA AT LAFAYETTE

STEP Committee

Technology Fee Application

**SMART Classroom Podium for Hamilton
Hall 226**

Title

Dr. Timothy Duex

Name of Submitter
(Faculty or Staff Only)

School of Geosciences

Organization

Title: Smart Classroom Podium for Hamilton 226 Date: 1/15/2021
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ABSTRACT (250 words or less):

The School of Geosciences is fortunate to have had access to classrooms that are equipped with SMART audio/visual (AV) projection systems or at least ceiling mounted projectors. However, after the Geology Program moved to Hamilton Hall in 2011, several of the new classrooms lacked permanently installed AV systems. After nine years, the only classroom that still does not have a SMART upgrade is HH 226. The current portable projector on a front table and a heavily-used white board produce poor quality images for both students and instructors. In this classroom, students are hampered by the rudimentary presentations, and the portable projector has to be hooked up ahead of each class period. The low-quality white board is less than ideal because it produces glare and has dry-eraser marks as well as cracks. Geology is a very hands-on science, and relies heavily upon visual – as well as verbal – presentation of material. Lab courses often rely on video images to show detailed information such as optical properties of minerals, photomicrographs of thin sections, specific microfossils, and techniques for laboratory exercises. This is especially relevant in a time when remote learning and social distancing are relying more and more on projected images. Therefore, we propose to install a permanent ceiling-mounted SMART projection system and accompanying secured computer with direct access to the internet. This system will facilitate the transmission of knowledge to students in both visual and verbal formats and thereby promote active learning.

3.a. Purpose of Grant and Impact to the Student Body

Hamilton 226 is a classroom and lab space that is scheduled for many classes during the year because it is one of the largest in HH, has spacious display desks/tables for maps, sketches, samples, etc., and has the most extensive collection of rocks and minerals in the building, including some new, recently donated materials. Not only is this room used for courses required of geology majors (mostly mineralogy and petrology), but also for students in Environmental Sciences, Elementary Education, and Engineering majors.

The following is a list of the classes that have been offered in HH 226 over the past 4 to 5 years with the range of enrollment (in parentheses - noting that numbers vary considerably from semester to semester): GEOL 112 – Historical Geology (lab 15-20); GEOL 225 – Earth Science (lec & 3 lab sections 50-60); GEOL 291 – Mineralogy (lec & 1-3 lab sections 15-45); GEOL 292 – Petrology (lec & 1-3 lab sections 15-40); GEOL 314 – Structural Geology (labs 20-40); GEOL 315 – Structural Geology for Engineers (labs 20-40); GEOL 363 – Paleontology (lec & lab 10-20); GEOL 491 – Micropaleontology (lec & lab 10-20); ENVS 100 – Environmental Science (lec 40-45).

However, there is no permanently installed projector, no screen, no supplementary audio/video equipment, and essentially no possibility of remote delivery. The current situation has an old whiteboard

as the screen (Fig. 1) and a low-quality portable projector set up on the front table (Fig. 2). The whiteboard has many dry-eraser marks that are difficult to remove and the associated glare (Fig. 3) make it a poor substitute for a real screen. The setup arrangement involved and the antiquated equipment result in students receiving poor-quality, somewhat distorted illustrations. In the past, smaller classes often could be seen huddled around a laptop computer in order to get basic visual images. We believe that students – both geology majors and non-majors – will benefit greatly from the installation of a quality ceiling-mounted SMART audio and video projection system, with an accompanying computer and a permanently installed screen. If all equipment is secured in a standard podium, instructors will have minimum set-up time, and students will benefit from high-quality imagery and an improved learning experience, and it will make remote delivery much more feasible.

Fig. 1 - View of the whiteboard and the front part of HH 226; student desks start at the bottom of this view and extend about 50 feet to the back of the room which makes it hard for images to be seen adequately on the low-quality screen.



Fig. 2 – Current projection system: note the two projectors; an older one used mainly as a stand for the small portable one.



Fig. 3 – Glare on the fuzzy, smudgy whiteboard with vertical seams or cracks; all of this makes for poor-quality images.



Because Geology is a very visual science, instructors have historically relied on 35-mm slides and overhead projections to present information that otherwise cannot be described and discussed adequately. With the expansion of technological capabilities in the last few decades, Geology instructors now rely heavily on Powerpoint presentations that incorporate state-of-the-art textbook materials, personal supplementary information, as well as video clips, internet animations, and geology-related news items. The students of today are more visual learners than students of 25 years ago, and most students now prefer this type of presentation (e.g., Goia and Brass, 1985-86). Mayer and Anderson (1991) further confirmed the importance of combined visual and auditory instruction. However, when internet connections and projection systems are not readily available or are poor quality, the classroom session can often degenerate into “chalk and talk” sessions. Currently it is essentially impossible to do remote delivery from this classroom.

Geology has the further characteristic of becoming more reliant on computer technology in recent years (e.g., subsurface geology, remote sensing, field geology, petrology). An assortment of images, video clips, DVD’s and websites exists or are available on the internet, all of which can supplement traditional instructional material. However, much of the current material is not always implemented in this classroom because instructors are reticent to incorporate the latest information with the limited technological formats available and setup time involved.

The addition of a SMART projection system to Hamilton 226 will ensure that University of Louisiana at Lafayette students that meet in this classroom will have access to the latest information and technology. The current situation is unfavorable because the poor-quality images and glare created by the use of the whiteboard as projection screen render most viewing areas in the classroom less than optimal. A wireless internet connection currently exists in Hamilton 226, therefore, the internet can be accessed during lecture and lab activities with a secured computer system.

Benefits

Because students have a variety of learning styles, presentations that vary from the traditional lecture by engaging the student in interactive exercises help to promote learning. In addition, many of the class curricula in Geology rely on internet resources, including large databases of the United States Geological Survey and NASA. With a modern AV projection system and computer set-up, these resources can be actively incorporated in the classroom. A large and diverse student population will be the beneficiary of the proposed AV expansion in Hamilton Hall.

Access

The AV projection system will be mounted on the ceiling, with amplifier, computer system, and remotes housed in a locked custom-built SMART podium. Instructors will have access to the system, but unauthorized personnel will not. Students will also be able to use the system for presentations (by bringing in their presentation on USB memory, disk, or remote access) with the approval and assistance of instructors.

3.b. Projected Lifetime of Enhancement

It is expected that the computer and other equipment included in the SMART podium will function capably without the need for repair or replacement for approximately five years. The average lifetime of the projector is also about five to ten years. However, the projector bulb may need to be replaced before the end of the five years. Depending on the use, some of the equipment may need repair or replacement after three years.

3.c. Responsibility

The company providing the equipment, GoMedia Technologies, has installed similar systems in many other buildings on the University of Louisiana at Lafayette campus. They will be responsible for the installation of all AV equipment in Hamilton 226. The equipment will be operated by instructors and students using Hamilton 226 as a classroom. Training is not required as the operation is straightforward and many identical systems are already on campus.

Timeline

We anticipate that GoMedia Technologies will provide the equipment within 30 days of the order. We also anticipate the installation of the system to require no more than 60 days from receipt of equipment, pending availability of GoMedia Technologies personnel. Should this proposal receive funding, we expect the podium to be installed and functional for the Summer and Fall 2021 semesters. An alternative that may save time and money is to transfer the SMART technology that is currently in HH 223 – just across the hall from HH 226 - which has been converted from a classroom to a research lab, and the equipment is not needed in that room. If the equipment can be transferred from HH223 to HH 226 then the time frame could be even shorter, depending on availability of labor.

References Cited

- Gioia, D. A., and Brass, D. J. (1985-86). Teaching the TV generation: The case for observational learning. *Organizational Behavior Teaching Review*, 10, 11-18.
- Mayer, R. E., & Anderson, R. B. (1991). Animations need narrations: An experimental test of a dual-coding hypothesis. *Journal of Educational Psychology*, 83, 484-490

Quote for Digital Smart Classroom Medium – STEP/SMART website

Quote Number	Digital Smart Room Medium
Company:	UL Lafayette
Contact:	
Address	
City, St Zip	Lafayette, LA
Date	

Scope of Work: Custom Multimedia Classroom (Medium Install) Note: Electrical, computers and network not included.

Qty.	Part #	Manufacturer	Description	Price Each	Extension
1	PT-RW330U	Panasonic	3500 Lumen Lampless Projector	\$2,609.33	\$2,609.33
1	CMA440	Chief	Ceiling Grid Mount	\$100.00	\$100.00
1	CMS006	Chief	6" Pole	\$13.60	\$13.60
1	20877LS	Dalite	65" X 104" Contour Electrol w/LV	\$1,122.40	\$1,122.40
1	HC-1	Chief	Cable Lock	\$68.00	\$68.00
1	LCD LOC II MW	BMS	Locking Projector Mount 15" x 17" Keyed 020	\$187.81	\$187.81
1	FMJ Pad Lock	FMJ Pad lock	Universal Full Metal Jacket	\$146.67	\$146.67
1	60-600-12	Extron	MLC226IPAAP	\$1,026.67	\$1,026.67
1	60-1081-01	Extron	IN1606	\$1,593.33	\$1,593.33
1	60-844-03	Extron	MPA152 Stereo Amp	\$246.67	\$246.67
1	26-650-50	Extron	50' HDMI Cable	\$246.67	\$246.67
1	70-1045-02	Extron	Cabble Cubby 500	\$200.00	\$200.00
1	60-1384-01	Extron	Cable Cubby 500 Power	\$260.00	\$260.00
1	26-566-03	Extron	12' Micro HR Cable for Laptop Connection	\$40.00	\$40.00
1	26-650-12	Extron	12' HDMI Cable (Aux Input)	\$60.00	\$60.00
1	26-614-02	Extron	6' DVI-D to HDMI	\$33.33	\$33.33
1	60-1294-02	Extron	3 gang wedge	\$146.67	\$146.67
1	42-133-02	Extron	SM3 Wall Mounted Speakers	\$186.67	\$186.67
1	PD915R	Middle Atlantic	9 Outlet Power	\$87.33	\$87.33
1	VT3	Middle Atlantic	3 Space Vented Rack Blanks	\$16.69	\$16.69
1	VT2	Middle Atlantic	2 Space Vented Rack Blanks	\$13.65	\$13.65
1	VT1	Middle Atlantic	1 space Vented rack blank	\$11.31	\$11.31
1	Custom 26	Exact	Custom 26" Podium	\$1,532.00	\$1,532.00
50	16-2C-TTP-WHT	Liberty	Speaker Cable 23000	\$0.43	\$21.50
1	TEG-S50g/A	Trendnet	5 Port Gigabit GREENnet Switch		
				Parts	\$9,970.30
				Labor	\$2,550.00
				Shipping	\$0.00
				Project Subtotal	\$12,520.30
				Sales Tax	\$0.00
				Project Total	\$12,520.30

Quote for standard desktop

PC Depot Desktops

Desktop Standard - Dell Optiplex 3000 Series with Monitor



- Intel Core i5-8500 Processor (6 Cores/9MB/6T/up to 4.1GHz/65W)
- 8GB 1X8GB 2666MHz DDR4 UDIMM
- 256GB SATA Class 20 Solid State Drive
- 8x DVD+/-RW 9.5mm Optical Disk Drive
- 4 - USB 3.0 (2 front/2 rear), 4 - USB 2.0 (2 front/2 rear), Internal USB 2.0, RJ-45, Display Port 1.2, HDMI 1.4, 1 UAJ, 1 Line-out
- 5-year warranty
- Dell 23 Monitor with USB Soundbar
- Windows 10
- Office 2016
- Sophos Security Suite

965.00