

# UNIVERSITY OF LOUISIANA AT LAFAYETTE

STEP Committee

Technology Fee Application

Idea Board & Audio Visual (AV) Equipment for  
Undergraduate Teaching Laboratories in the  
Department of Biology

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Title

**Sophie Plouviez, Sherry Kraysky-Self,  
William Schmidt, Ritwij Kulkarni**

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Name of Submitter  
*(Faculty or Staff Only)*

**Department of Biology**

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Organization

**Title:** Idea Board & Audio Visual (AV) Equipment for Undergraduate Teaching Laboratories in the Department of Biology **Date:** 01-12-2021

**Name (Contact Person):** Sophie Plouviez

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**Department/College/Org:** Department of Biology, College of Science

**ABSTRACT (250 words or less):**

The Department of Biology has approximately 900 students as majors. We also provide service classes that affect many other departments including, but not limited to Nursing and Kinesiology. Thousands of students pass through the Department's classrooms each semester. STEP grants and funds from Distance Learning have allowed us to upgrade the audio-visual (AV) equipment in all three of our large lecture halls. However, the rest of our classrooms and laboratories need attention desperately. This grant proposes to focus on two laboratory classrooms: Billeaud 113 and Wharton 416. Billeaud 113 was recently equipped with an idea board, but because of lack of funding, the AV in this room was only partially completed. Limitations of this type decrease the effectiveness of the new equipment. Wharton 416 houses important equipment used for teaching molecular engineering and immunology. However, currently it has no AV equipment. Absence of AV equipment greatly limits the ability of students and faculty to use the room for on-campus teaching of any type. It also makes any remote lab from this room impossible. In the current covid19 context this is very unfortunate. To improve students experience, it is fundamental to connect existing equipment in Billeaud 113 and to add AV equipment in Wharton 416.

**Project Description:**

**a. Purpose of grant and impact on student body as a whole:**

This grant proposes to upgrade the AV capabilities of two laboratory classrooms (Billeaud 113 and Wharton 416). Each room has different needs, therefore, the equipment we have requested for each room varies. Billeaud 113 has an idea-board that was purchased by the Student Government Association fall 2020. These idea-boards allow for interactive learning by combining a whiteboard, Power Point presentation and video/digital imaging at once. Idea-boards used as a whiteboard can save content to send via email or moodle. Instructors and students can annotate images directly on the idea-board and email those images to everyone in the class. Idea-boards added to the traditional AV tools will modernize these two classrooms, matching the advanced courses taught in them.

*Billeaud 113 (BLD 113)*, we are requesting a new computer that will support the digital speed and capability of the idea-board, a projector mount to raise the projector that is present in the room, two white boards at the front of the room and connections to the idea-board that are missing. An idea-board was mounted in Billeaud 113 (October 2020), but lack of funding did not allow for the purchase of a new computer. The older operating system of the current computer is limiting the capabilities of the idea-board. White boards will eliminate chalk dust that is very damaging to electronic equipment. Biology 113 (biology major) and biology 123 (non-major) regularly meet in room BLD-113. These courses hold 24 -26 students in each section, 10 to 15 sections collectively meet in a given semester.

*Wharton 416 (VLW 416)* currently has no projection capacity at all. We are requesting the purchase and installation of an idea-board, as well as a laptop for wireless connection to the idea-board. The choice of a laptop rather than a desktop/podium is due to the compact space in the laboratory. Molecular engineering and immunology are taught in VLW 416. These courses seat 15 to 30 students each. Immunology is taught yearly, and molecular engineering every other year. Improving the capabilities of this room will encourage more faculty to use the room to teach. This room is an advanced lab with important equipment housed in it. However, the ability to communicate in this room is limited. For example, Dr Ding would like to use VLW 416 for Advanced Cell Biology (15-30 students a year) because it is the only teaching room in the Department of Biology that hosts a laminar flow (essential for developing new cell biology experiment), but he needs projection capacity.

The minimum number of students this grant will affect per year is 1000. However, that number does not account for courses that currently cannot be taught in Wharton 416 because there is no projection capability. It also does not count the students who use BLD 113 outside of formal courses. If measured over the lifetime of the equipment, this grant will affect thousands of students with a variety of majors represented. Furthermore, BLD 113 is normally used in Science Day, Preview Day and visiting science teachers and their classes. The condition of this classroom is important for recruitment of new, talented students.

**b. Projected lifetime of enhancement:**

AV equipment and the technology that supports it tend to improve and advance quickly. The estimates we propose here are conservative. The Department of Biology takes care of the equipment and we intend to continue to do so. Furthermore, we will be requiring all users of the AV equipment to document their training. This includes new faculty and graduate students. Based on our best practices we estimate that the computers will last 3 to 5 years before they need replacing. The digital projector should last longer, 5 to 7 years. We estimate the lifetime of the idea boards and audio-visual equipment to vary

greatly, dependent on its use 3 to 10 years. The electrical wiring and screens may last the lifetime of the building.

**c. Person responsible for, implementation, installation, maintenance, operation and training:**

Dr. Sophie Plouviez has obtained two quotes from GoMedia. This company will install the AV equipment. Dr Krayesky-Self has already worked with GoMedia in fall 2020 to implement the mounting of the idea-board funded Student Government Association by the in Billeaud 113. Dr Sophie Plouviez and Sherry Krayesky-Self will implement and oversee the project. They will design and help implement a plan for training all users of the AV equipment after it is installed. Training all users is meant to enhance the life time of the equipment by eliminating user error. Dr. William Schmidt is the online teaching expert in the Department of Biology. He will be beta testing each system after it is installed making sure it meets the Department's needs. He will also help design and help lead the training required for each user. Dr. Sophie Plouviez currently oversees inventory in the Department of Biology. She will work with GoMedia to make sure all equipment is recorded to inventory and that any problems are reported to GoMedia and corrected. She will also coordinate and communicate with Dr Heather Birdsong who is the Department's AV maintenance person. Dr Heather Birdsong will communicate with the STEP office about all maintenance issues involving this AV equipment. Dr Sophie Plouviez and Dr Ritwij Kulkarni are the current main users of room Wharton 416. Dr Heather Birdsong, Kristina Porthouse, Dr. Will Schmidt are the current main users of Billeaud 113. Collectively, we will quickly and efficiently finish all of the AV up-grades, without disturbing classes in session, within one year.

**d. Justification:**

The classes taught in the laboratories we plan to equip with new AV equipment include but are not limited to: Freshman Lab for majors' semester 2, Non-majors lab, immunology, and cellular and molecular engineering. Other examples of courses that could be taught in these rooms include advanced cell laboratory, and development biology. Fully connected and functional idea-boards will allow for direct projection of live images of organismal details and dissections as well as the ability to annotate directly on the images such as pictures of molecular gels, living cells, dividing sea urchin eggs and more.

The Department has been working on improving the AV capabilities in their classrooms. This look a feel of a well equipped system is critical to recruiting good students to the Department. In our new virtual world top of the line AV equipment also allow faculty to share a meaningful experience virtually. We acquired equipment that will capture the images, like an HD video camera-enable, stereomicroscope (purchased in 2017 with STEP funds to Dr. Beth Stauffer) and new compound microscopes (purchased in 2018 with STEP funds to Dr. Sherry Krayesky). Now we need good AV

equipment. At present Billeaud 113 has a computer that sits on a cart with a projector next to it and a microscope on the other side. Images are projected on to a small, old screen that is positioned next to a chalk board. The cart takes up a lot of space in an already small room. We can move the cart to a better location, if the projector is connected through wires in the ceiling. The Department has recently acquired 1 idea-board for Billeaud 113 (Via a special SGA fund). This idea-board has been mounted and tested as a digital whiteboard. However, to fulfill its capability and be able to project images from the stereomicroscope and compound microscopes, we need to complete the set up in this room. The idea-board, white boards and digital projectors will be invaluable, allowing for the flexibility to have side-by-side display of power point slides and video, and for annotating lecture slides that can be uploaded to Moodle for students to study from. 5-9 sections of second semester freshman biology lab (BIOL 113), and 3-6 section of non-majors biology lab Freshman Lab (BIOL 123) are taught every semesters in Billeaud 113, making the room a high impact area.

The Department has acquired high-end molecular equipment, such as quantitative PCR and Gbox gel system imaging (lab fees/Department) used by courses taught in VLW 416. However, use of this room is challenging because of the absence of AV equipment. One cannot project any results, such as gel pictures or cDNA quantification curves. The room is underutilized. The requested purchase and connection of an idea-board to a wireless laptop will tremendously improve student's experience, allowing annotation of gel pictures or visual data and that can be uploaded to Moodle or OneNote as a digital lab notebook. Adding room 416 to the room that can be used as teaching labs would better distribute upper-level courses in the Department of Biology forcing better usage of resources as a whole.

**Previously funded STEP grant are:**

- 2018: STEP Grant: *Acquisition of Autoclave for Billeaud Hall, Department of Biology:* \$19,250.
- 2017: STEP Grant: *Compound Microscopes for Teaching Laboratories in the Department of Biology:* \$126,973.27
- 2017: STEP Grant: *Upgrading a Molecular Biology Teaching Lab:* \$29,392.20 (replacing old molecular equipment in Wharton 416, Yi-Hong Wang & Sophie Plouviez)
- 2016: STEP Grant: *Specialized research equipment is required for undergraduate research activity in marine biology (phycology/marine botany):* \$34,675.00
- 2006: STEP Grant: *Stereomicroscopes (Dissecting microscopes) for upper and lower division student laboratories in the Biology Department:* \$181,253.40
- 2006: STEP Grant: *Computers required for Biology Study Room-Computer Lab:* \$8,744.00
- 2005: STEP Grant: *Technological Enhancement of the Biology Freshman/Sophomore Laboratories:* \$80,899.00 (complete remodeling of laboratory room 115 in Billeaud hall)

# Budget Proposal

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- 1. Equipment [see quote below]**
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|-----------------------------------|-------------|
| Room 113 Billeaud Hall: See quote | \$3,987.46  |
| Room 416 Wharton Hall: See quote  | \$12,631.24 |

**Computers:**

**Standard Desktop Dell 3000 with Monitor (room BLD 113) \$965.00**

- 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 Dell Pro Stereo Soundbar
- Latest Windows OS
- Microsoft Office
- Sophos Security Suite

**Laptop Dell Latitude Enhanced Series (room VLW 416) \$1,295.00**

- i7-10610U Processor
- 16GB RAM (expandable)
- 512GB Solid-State Drive
- 14.0" Display FHD (1920 x 1080) Anti-Glare with Embedded Touch
- IR Camera & Microphone
- Weight: 3.26 lb
- Carbon Fiber outer shell
- Universal Audio Jack
- x1 USB 3.2 Gen 1 with Powershare
- x2 USB 3.2 Gen 1
- HDMI display out
- Thunderbolt™3 with Power Delivery and DisplayPort (USB Type-C™)
- uSD Memory Card Reader
- Ethernet Port
- ProSupport Plus Warranty, 3 Years
- Windows OS
- Microsoft 365
- Sophos Security Suite

**2. Software \$ 0.00**

**3. Supplies \$ 0.00**

**4. Maintenance \$ 0.00**

5. Personnel \$ 0.00

6. Other \$1,000.00 per room x 2 = Electrical wiring will be required \$2,000.00

**TOTAL: \$20,878.70**

**Quote to complete AV system in Billeaud Hall room 113.**



Quote Number	UL Billeaud 113 Additions
Company:	Univ of Louisiana
Contact:	Sophie Plouviez
Address	
City, St Zip	Lafayette, LA
Date	01/08/21

Scope of Work: Multimedia Room Note: Electrical power and computers provided by university.

Qty.	Part #	Manufacturer	Description	Price Each	Extension
1	CMS440	Chief	Drop-Ceiling Projector Mount	\$107.20	\$107.20
1	CMS006	Chief	6" Extension Pole	\$15.12	\$15.12
1	RPMBU	Chief	Universal Projector Mount Bracket	\$211.20	\$211.20
2	CG41371	Middle Atlantic	50' Active High Speed HDMI Cable	\$222.44	\$444.88
1	39874	C2G	HDMI/USB Pass Through Wall Plate	\$26.04	\$26.04
1	CG38999	Middle Atlantic	40' USB A Male to Female Active Extension Cable	\$29.03	\$29.03
1	26-663-15	Extron	15' HDMI Ultra Series Cable	\$70.67	\$70.67
1	60-600-02	Extron	MLC 226 IP MediaLink Controller	\$1,020.00	\$1,020.00
1	70-1097-03	Extron	SMB113 3-Gang Surface Mount Box	\$153.33	\$153.33
1	60-1449-01	Extron	MPA 601 70V 60W Amp	\$333.33	\$333.33
2	42-141-03	Extron	FF220T Ceiling Speakers (Pair)	\$340.00	\$680.00
2	26-712-01	Extron	Display Port to HDMI Adapter	\$53.33	\$106.66
200	D25430GY1000	West Penn Wire	Plenum 2p 22g, Individually Shielded Mic/Control Cable	\$0.43	\$86.00
100	25225BBK1000	West Penn Wire	Plenum 16g Stranded, Unshielded Speaker Cable, 1 ft	\$0.24	\$24.00

<b>Parts</b>	\$3,307.46
<b>Labor</b>	\$680.00
<b>Shipping</b>	\$0.00
<b>Project Subtotal</b>	<b>\$3,987.46</b>
<b>Sales Tax</b>	\$0.00
<b>Project Total</b>	<b>\$3,987.46</b>

