PROFILE

NAME: JMU X-Labs
LOCATION: Harrisonburg, VA
FOUNDED: 2015
WEBSITE: jmuxlabs.org

CHALLENGE

Provide students and faculty with display technology to enable content sharing, real-time collaboration, and the ability to interact with content as part of the design process and project-based learning approach of the lab learning experience.

SOLUTION

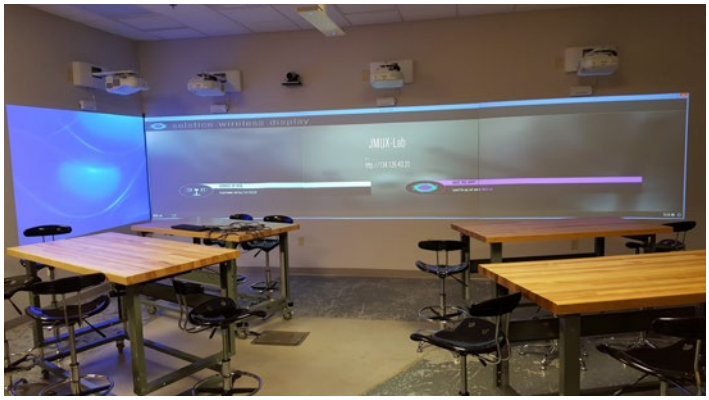
A fleet of BrightLink Pro 1470Ui projectors delivered large display areas, along with built-in annotation tools and networking capabilities to support student creativity and faculty interaction, annotation, and session capture.

BrightLink Pro Interactive Displays Support Student Collaboration at JMU X-Labs

The lab at JMU X-Labs at James Madison University in Virginia is an active-learning classroom in every sense of the word. Students may work on projects that involve designing autonomous vehicles or drones. Or they may use VR technology to practice surgery skills or to develop a virtual tour of the campus. The lab also houses equipment such as vinyl cutters, 3D printers and other maker space equipment for various types of projects and hosts "pop-up" classes on topics ranging from laser cut jewelry to liquid nitrogen ice cream.

JMU X-Labs was created as a way to bring students from multiple disciplines together to work on hands-on, real-world projects that use technology to solve a problem for an organization, community or business. To support these innovative, collaborative classes, JMU X-Labs also needed display technology that would allow students to share their projects with the class and interact with that content. To get large, interactive images, JMU selected Epson's BrightLink Pro interactive displays.

The decision to use the BrightLink Pro came when the lab moved from a conference room into a larger space in a former television studio building now owned by the university. JMU X-Labs



founding director, Nick Swayne wanted students to be able to use the wall space in the new lab as an extension of their laptops or devices. He also wanted a solution that would allow them to share their screens and allow other students to interact with the content.

"Collaboration is at the very heart of what we do," Swayne explains. "Working as teams to brainstorm, problem solve and share ideas is critical to accomplishing our goals. We needed a display solution that would not stand in the way of, or disrupt our efforts," he recalls, "one that would allow us to maximize our creativity. The BrightLink Pro 1470Ui was the answer to our problem. With its large 100" display, built-in annotation tools, and network capabilities, we can easily display presentations or PC-free content as well as use the annotation tools to create

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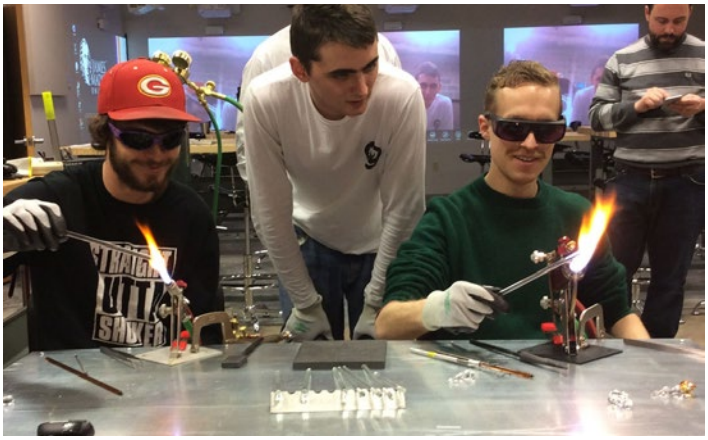
>
> —NICK SWAYNE, FOUNDING DIRECTOR, JMU X-LABS



and develop ideas. Then just as easily, we can capture our sessions back to the PC-free jump drive…which is something nobody else has."

JMU X-Labs set up four of the BrightLink Pros to display on the wall in the front of the room. Another BrightLink Pro projects images onto a wall on the left side of the room. Students and faculty use the BrightLink Pros in different ways depending on the needs of their project. Typically the instructor uses the one on the left as an extended desktop to share his or her screen with the students. The projects require students to work in teams so each team might be assigned to one of the four BrightLinks at the front of the room to use for their work. They use the BrightLinks and ClickShare to display their content on the wall and interact with that content. "Students can share their screen and get up there and talk about their design, and then use their fingers to draw the plans using Epson's Whiteboard Mode," Swayne explains. JMU X-Labs also use the four projectors at the front of the room to display one large image that runs the length of the projected area. "We put them together into a video wall."

Supporting VR, GPS Mapping and Video Conferencing

The BrightLink Pro 1470Ui's large, bright, laser light source makes it a good fit for some of the more visual classes offered at JMU X-Labs. For example, in one class, students used it to help find bugs in a Virtual Reality program. One student wore a VR headset and projected what they were seeing onto the wall. This allowed classmates to clearly see what the student was seeing. The student could easily demonstrate the specific features of the program, or show classmates if a feature wasn't working correctly. "The 1470Ui uses a laser light source which is bright enough to use for this type of class. We have a high-resolution camera so we can project the VR image nicely," Swayne says.

In another example, students were tasked with designing drones to do specific jobs such as shooting an elephant in the wild with a tranquilizer dart or mapping the route of a stream to identify areas of pollution and erosion. Students used the BrightLink Pros to turn the lab wall into an interactive touchscreen and used their fingers to draw their design plans and diagrams.

JMU X-Labs also use the BrightLink Pro and Cisco Codec C90 system for video conferencing. Cameras at the front and back of the lab capture video of the instructor and students and it shares that video in real time with classrooms on other campuses. At the same time, the BrightLink Pro projects the video feed of the students in the other classroom onto a wall in the lab. This allows the JMU X-Labs students and instructor to see what is happening in the other classroom in real time, making it seem like those students are in the room too.

An Innovative Model

JMU X-Labs has received national attention for its innovative model for teaching students. The program is designed to align higher education with industry needs and develop creative, confident, and market-ready leaders who can devise new solutions for problems facing governments, businesses, and communities. "For example, in the Community Innovations class, projects resulted in designing a container shelter for medically treating the homeless and creating a maker space for a high-risk elementary school," Swayne says.

"We don't expect a group of 25 college undergrads to solve the homelessness problem in 15 weeks, but when they look at a problem in a new way, it sparks a solution."

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