Crestron DigitalMedia™ Helps University of Central Florida College of Medicine Train Health Care Leaders of the Future

Background

Located 25 miles south of the University of Central Florida's Orlando campus, the Health Sciences Campus at Lake Nona is a 50-acre, modern complex for medical education, health sciences education and biomedical research. The UCF College of Medicine is a forward-looking medical school with a culture based on partnerships and collaboration.

The campus is home to the new 168,000 square foot, four-story Silver LEED certified medical education building encouraging innovation and utilizing cutting-edge technology. Home to the Health Sciences Library and Clinical Skills and Simulation Center, the complex provides an ideal environment for medical students.

"As the academic center of the emerging 'medical city' at Lake Nona, we had a unique opportunity and responsibility to create a building and a campus that reflects our role as Central Florida's Medical School," said Dr. Deborah German, UCF Vice President for Medical Affairs and Dean of the College of Medicine.

"We designed our building to be iconic, to be a welcoming, life-giving magnet for the Central Florida community we serve," added German.

The Challenge

UCF College of Medicine is one of the first new medical schools to be built in the past 20 years. The goal was to be a leader in the delivery of first-class medical education, making the technology used to deliver the curriculum extremely important.

CRESTRON®

"This meant having the latest Crestron technology available to accomplish our objectives," said Ron Knappenberger, UCF College of Medicine Assistant Director of Systems Engineering.

The objective was to design and install a high tech College of Medicine, incorporating the latest control and video technology in all classrooms and conference rooms throughout the building.

"Medicine and technology is advancing so quickly that we needed to future proof for whatever comes next," added Knappenberger.

With digital becoming the norm, even in medical technology, UCF College of Medicine needed an expandable video and control infrastructure.

The biggest challenge was making sure that the technology was able to meet the current needs while remaining flexible enough to meet future demands.

The Solution

UCF is an A+ Partner and has a longstanding relationship with Crestron. The entire systems engineering staff has attended numerous Crestron training classes. One of the school's engineers is a Crestron certified programmer who recently became a DMC-E (DM Certified Engineer), demonstrating proficiency in system setup, diagnostics, testing and reporting of Crestron DigitalMedia™ (DM). These factors, combined with the constant innovation, product quality and customer support, made the decision simple to work with Crestron.

The project requirements were developed by an internal group at the UCF College of Medicine in collaboration with faculty, Crestron and additional vendors. The systems engineering department was tasked with designing, installing and maintaining all of the AV infrastructure and equipment so it was important that everyone worked closely throughout the process.

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> **Dale Voorhees,** Assistant director of learning systems and educational technology services, UCF College of Medicine

Crestron provided UCF with updates on the newest equipment available and discussed how product advancements could meet the project requirements. When DigitalMedia became available, the team made changes to the plan to improve the system design.

Systems at a Glance

Crestron MPS-200 Multimedia Presentation System controllers provided the essential interface for control of numerous devices including flat panel displays, video projectors, projection screens, audio mixers, P/T/Z Cameras, lighting and shades. The MPS-200 gives the systems maximum flexibility for signal switching, expandability, audio capabilities and control.

Crestron DigitalMedia was installed to handle high definition signal routing, switching and long distance distribution of all analog and uncompressed HD digital signals throughout the facility. CresFiber® supplied the long distance AV distribution, transmitting all signals up to 1000 feet. The distribution of DigitalMedia enables live demonstrations in one location to be viewed by faculty and peers in another classroom on another floor.

State-of-the-art Classrooms

Crestron technology allows faculty members to coordinate multiple sources of information. During a recent lecture, Assistant Professor of Neurology, Dr. Garrett Riggs presented diagrams on a PowerPoint, showcased up-close video of a brain model, played a video interview of a patient, and projected 3D images of the brain from his iPad – all in the same lecture. Students then performed an interactive assessment of the 3D brain from iPads at their desks.

"The technology makes education more interesting, more visually appealing and more interactive," said Dale Voorhees, assistant director of learning systems and educational technology services. "Crestron makes the study of medicine a 3D experience."

State-of-the-art Lecture Halls

UCF School of Medicine puts educational technology at their students' fingertips through the use of digital cameras, projectors and high-definition imagery.

The PROCISE™ High-Definition Professional Surround Sound Processor PSPHD brings world-class cinema audio to the facility. The 7.3 HD surround sound processing impacts the digital and analog sources within the unique acoustical environment, and enhances the learning experience of the medical students.

Microscopy Lab

The 5300 square foot laboratory of the future is where students compare normal and abnormal tissues simultaneously using virtual digitized slides. The lab features two Crestron control podiums, each equipped with a DM transmitter connected to a DM switcher, allowing the user to select a dedicated desktop computer or laptop input.

The Crestron systems at each lecture podium can be used independently when the lab is divided into two classrooms or linked for use through a single control point when the entire lab is open.

The lab enables groups of students to study traditional slides through a 10-headed microscope equipped with digital image capture and multiple video monitors. By using the DM system, the professor can show microscopic images on any of the four, 3000 lumen HD projectors or stand-alone 52-inch LCD HD monitors mounted near the microscope in the room.

Anatomy Lab

Anatomy is taught in a high-tech 8100 square foot world-class lab with 23 dissection tables, two preparation rooms, cold storage, demonstration area, and space for future research. Ceiling-mounted computer terminals adjacent to the dissection tables provide easy access to anatomical information during dissection.

Signals to the displays are switched through two DM switchers equipped with fiber output cards. The input signals are supplied

through two separate input plates (QM-WCC-2 and a QM-WMC-VCC), and include desktop computers mounted in portable carts, two HD video cameras and various medical devices such as an Ultrasound machine. The switching is controlled by MPS-300 and MPS-200 controllers and two Crestron TPMC-8X WiFi touch screens.

Digital cameras permit the professor to record the subject matter during a dissection and then link it simultaneously to every terminal in the lab and to lecture halls throughout the facility.

Like the Microscopy Lab, the Anatomy Lab can be divided into a medium-size lab with 13 dissection tables and a smaller lab with 10 dissections tables. The audio and video output signal from the lab can be switched from the fourth floor lab to any or all lecture halls on the first floor of the building. This enables larger groups to see and hear anatomical information from the lab wherever instruction is taking place.

Clinical Skills and Simulation Center (CSSC)

The 7500 square foot Clinical Skills and Simulation Center features 12 examinations rooms, a consultation area, a monitoring and control room, as well as training rooms for standardized patients. Equipped with training simulators and medical mannequins, the CSSC is used to teach clinical assessment and intervention skills. Additionally, the center provides space exclusively for research and development in virtual simulation technology.

Each examination room is equipped with two cameras and microphones which record the interaction between students and patients. The cameras are controlled using a Crestron PRO2 control processor, and all audio and video signals are recorded on dedicated digital video recorders.

The training room features a dedicated desktop computer, laptop interface and 3000 lumen projector. The control and signal switching is provided by an MPS-200, DM-TX-300N and a TPMC-8X WiFi touch screen.

Interactive Donor Wall

Charles Roberts, UCF College of Medicine Vice President of Development envisioned more than the typical wood and brass

plaques to recognize the school's major donors. Instead, an interactive donor wall with touch screen monitors allows visitors to select a specific donor using a touch screen. With a tap on the touch screen, the monitors display pictures, text and videos of a specific donor, explaining their reasons for making the donation. This type of system is flexible and permits updates to be made anytime.

The solution involves the use of two, wall-mounted, 52-inch video monitors. One monitor incorporates a touch screen overlay interfaced with a Crestron TPS touch screen interface. The second monitor is connected to an iPod installed in a Crestron iServer®. The Crestron touch screen controls the interaction, and the iServer supplies the audio and videos files for the donor wall. The iServer is also connected to the data network, and files are simply uploaded using iTunes® when updates are required.

" Faculty members now don't have to fuss with technology," said Knappenberger. "They can concentrate on teaching."

Ron Knappenberger, Assistant Director of Systems Engineering, UCF College of Medicine

Benefits

Educational technology is a cornerstone at the UCF College of Medicine, which is working to become the premier 21st century college of medicine in the country – a national leader in education, research and patient care. The Crestron solution helps faculty members use technology to better train students who will be health care leaders of the future.

Before the Crestron integrated solution, faculty members had to push myriad of buttons and switches to operate the technology and hope for the best.

"Faculty members now don't have to fuss with technology," said Knappenberger. "They can concentrate on teaching."