



## Penn State University

Reliable and Secure Streaming of Live and On-Demand Video via Internet

### Organization

Penn State Milton S. Hershey  
Medical Center,  
Penn State College of Medicine

### Industry

Education and Training

### VBrick Products

- VBrick Windows® Media Encoder
- VBrick MPEG Encoder
- VBrick Enterprise Media System Software

### Applications

- Streaming live video via Internet protocol
- Video-on-Demand content for training medical students and staff

Most students attending one of Penn State's fourteen campuses can earn their degree based entirely from what they glean from textbooks. Those at the university's medical school, Penn State College of Medicine in Hershey, Pennsylvania, however, study a far more complicated text: the workings of the human body.

Medical students – and particularly Penn State's surgeon candidates – must learn their profession by observing how others perform it, and ultimately by performing it themselves. Thus, streaming and on-demand video from Penn State Milton S. Hershey Medical Center has become an essential part of the curriculum for students on the College of Medicine campus.

### THE CHALLENGE: Seamlessly capture and stream live video of surgical procedures via Internet protocol, while recording them for future editing and access

Whether learning routine or advanced surgical techniques, few learning tools compare in value with watching an actual procedure performed by qualified surgeons.

As one of only four U.S. medical colleges that streams live video from the operating room to the lecture hall, Penn State College of Medicine is a recognized trendsetter in using video technology to enhance the learning of its surgical candidates. Its use of streaming video not only allows more students to witness live procedures, it also allows them to engage with the operating surgeon in real time.

But live surgeries are difficult to orchestrate. They do not always coincide with academic schedules or curriculum. Plus, as Russ Scaduto Ph.D., the college's Director of Education Technology explains, "Streaming live video doesn't allow you to edit the content. Eighty percent of a surgical operation is often routine work. So by capturing video, you can edit out all but the most important stuff."

Consequently, Penn State College of Medicine decided to compile a video library that would allow faculty to show select parts of specific surgical procedures. Key to achieving this goal was finding a platform that seamlessly combined video capture, storage and retrieval.

### THE SOLUTION: VBrick appliances for capture, streaming and recording video in Windows® Media and MPEG formats

The college's search for a streaming video solution coincided with an expansion from three video-equipped operating rooms to eleven. Its underlying network platform was designed to route video. But the additional video traffic would certainly sap bandwidth in a conventional ISDN framework.

Instead, Scaduto searched for a solution that could stream live and on-demand video over Internet protocol. Already a key enabler of the college's video conferencing suite, VBrick's versatile video-over-IP solution was an obvious candidate. It allowed the college to stream video across their network. And all it required was the installation of additional video appliances from VBrick and its VEMS (VBrick Enterprise Media System) portal.

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- Russ Scaduto

Director of Education Technology

“Integrating VBrick’s streaming capabilities to the network was simple, since our network vendor used a lot of commodity video switches and control systems,” he said. “All we did was add VBrick’s appliance to our racks in the ORs, and we could stream video from our ORs over the public Internet.”

In all, the College of Medicine implemented 14 VBrick appliances – most of them designed to stream video for playback on Windows Media® players. But the installation also included three VBrick MPEG appliances, which have a lower latency more suitable for live surgeries.

## THE BENEFITS: Reliable, secure streaming of live and on-demand surgical video via Internet

Staff and lecturers at Penn State College of Medicine can now access on-demand Internet video sourced from any network-enabled computer across the campus and Hershey Medical Complex. That capability extends to video captured by endoscopic cameras which surgeons use to perform non-invasive laparoscopic surgeries. Another VBrick appliance is embedded in a microscope in the college’s pathology suite, allowing OR staff to request real-time video of a patient’s tissue from the pathologist.

In addition to capturing surgical video, VBrick appliances can also automatically store it for later editing. Controlled access to the center’s video library is possible through VBrick’s VEMS video portal. The portal provides credentialed users with access to the video library, while also protecting patient privacy under HIPAA, the Health Insurance Portability and Accountability Act.

“Video showing the inside of a body cavity doesn’t fall under the umbrella of patient identification under HIPAA,” said Scaduto. “But sometimes footage may include shots of a tattoo, or a person’s face. VBrick’s system provides controlled access over our surgical videos, and negates the need for anyone to transfer them to a portable device that we can’t track.”

VBrick’s technology also enabled the Hershey Medical Center to take part in “Surgery Live”, a program held in partnership with the Whitaker Center for Science and the Arts in Harrisburg, PA. The program allows high school students visiting the Whitaker Center to watch live video of surgical teams performing operations at Penn State Hershey Medical Center. Students can even ask the surgeon questions about the procedure at appropriate times. One of only four similar programs in the U.S., the Center’s participation relies on VBrick appliances to create a point-to-point link with the Whitaker Center, ensuring a highly secure and reliable video feed.

## About VBrick Systems, Inc.

VBrick is the leader in Enterprise IP Video solutions, with over 6,000 corporate, education and government customers and 60,000 installations worldwide. VBrick solutions work over standard IP networks and the Internet to deliver rich media communications that connect people everywhere -- from employees and customers, to partners and shareholders. Our comprehensive product suite and end-to-end solutions are used in a wide range of live and on-demand applications including meeting and event broadcasts, distance learning, digital signage, TV distribution, video surveillance, and Web-based marketing campaigns. Headquartered in Wallingford, CT, VBrick’s products and services are available through industry-leading value-added resellers.

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