

Video Technology Links VIMS to the World

Teaching to an empty classroom might be considered an instructor's nightmare, but for Dr. Mike Newman and other users of VIMS' new video conferencing system, it's the fulfillment of a long-standing dream.

Newman, a Professor in Environmental and Aquatic Animal Health, used the system last fall to teach his Quantitative Ecotoxicology course to students at the Eastern Shore Lab in Wachapreague.

While Newman stood before an empty classroom at VIMS, a digital video camera transmitted his image via a high-speed Internet connection to a classroom on the Eastern Shore. There, students saw his image inset upon an underlying picture of selected course materials—at times a PowerPoint® slide, at times a computer-generated visualization, statistical software program, or interactive computer model.

Gretchen Arnold, a senior marine scientist at the Eastern Shore Lab, participated in Newman's course along with other ESL staffers. "The cost and

time involved in traveling to Gloucester Point usually kept us from taking advantage of academic opportunities at VIMS," says Arnold. "So we were really psyched when we had the chance to take Mike's course through the new distance-learning technology. It was a great course and we're excited about taking others in the future."

"I was surprised at how human you can make it," says Newman. The system is capable of instantaneous two-way communications, so that instructor and students can interact in real-time, posing and answering questions, highlighting screen elements with the computer mouse, and collaboratively running software programs. The voice-activated video camera can even swivel to follow a pacing professor or reveal a shy student.

The system became operational in summer 2002, after three years of collaborative planning and implementation by VIMS' Information Technology and Networking Services (ITNS),

Department of Facilities Management, and Graduate Dean's Office.

ITNS analyst Kevin Kiley configured the system to record the lectures, which were then posted to the VIMS' web site so that students could review them at any time. Newman and Kiley also created a web "backbone" for the course by posting lecture notes, web links, and related databases on the VIMS' web site.

"This technology lets us reach out and communicate with colleagues around the world," says Kiley. "That's a real advantage in a field as unique and far flung as marine science."

Newman was the first VIMS faculty to use the system for a comprehensive distance-learning course, but based on the popularity of the course among his students, he won't be the last. In fact, given the variety of uses to which the new technology has already been put (see sidebar), future uses seem almost endless.

"This technology can benefit all facets of the VIMS community," says Dean and Director Don Wright. "It gives VIMS students easier access to classes at the main campus, the Eastern Shore lab, and institutions such

as ODU and Virginia Tech, and vice versa; allows outside scientists to attend a class or a conference when their physical presence isn't possible; facilitates interaction with K-12 science teachers and state agencies such as VMRC; and helps VIMS scientists collaborate and exchange data with research colleagues."

Funding for the video-conferencing system was recommended by the Governor and funded by the General Assembly in 1998. The system includes a number of fixed and portable video conferencing units. Purchase and installation of these units proceeded in tandem with a larger project to upgrade VIMS' telecommunications infrastructure so that it could provide the bandwidth needed for transmitting video over the Internet.

"Our telecommunications network is key to our strategic growth," says Director of Planning and Budget Carolyn Cook. "By enhancing our network infrastructure and adding video conferencing, we've begun to take the steps we need to move into the 21st century as a world-class marine science institution."

VIMS' new videoconferencing system allows members of the VIMS community to interact with colleagues around the world with much less difficulty and expense than previously possible. During the past year VIMS staff have used the system to facilitate communication in education, research, and administration with colleagues from the Eastern Shore to New Zealand.

Distance Learning Courses

Quantitative Ecotoxicology—Three VIMS staff members at the Eastern Shore Laboratory in Wachapreague took this course during the Fall 2002 semester (see article).

Principles of Chemical Oceanography and Sediment Biogeochemistry—John Pohlman, a Ph.D. student in VIMS' Physical Sciences Department, is attending these courses from the Naval Research Lab in Washington, D.C.

Environmental Statistics—John Walter, a Ph.D. student in VIMS' Fisheries Science Department, is taking this University of Maryland course at VIMS.

Recorded Lectures

Instructors for *Fundamentals of Marine Science*, *Quantitative Ecotoxicology*, and *Coastal and Estuarine Processes and Issues* have recorded their lectures for later playback by students who may have missed a class or need a review.

Seminar Series

Faculty and students from the University of Virginia and Christopher Newport University "attended" several lectures during the VIMS Fall and Spring Seminar Series.

Student Committee Meetings

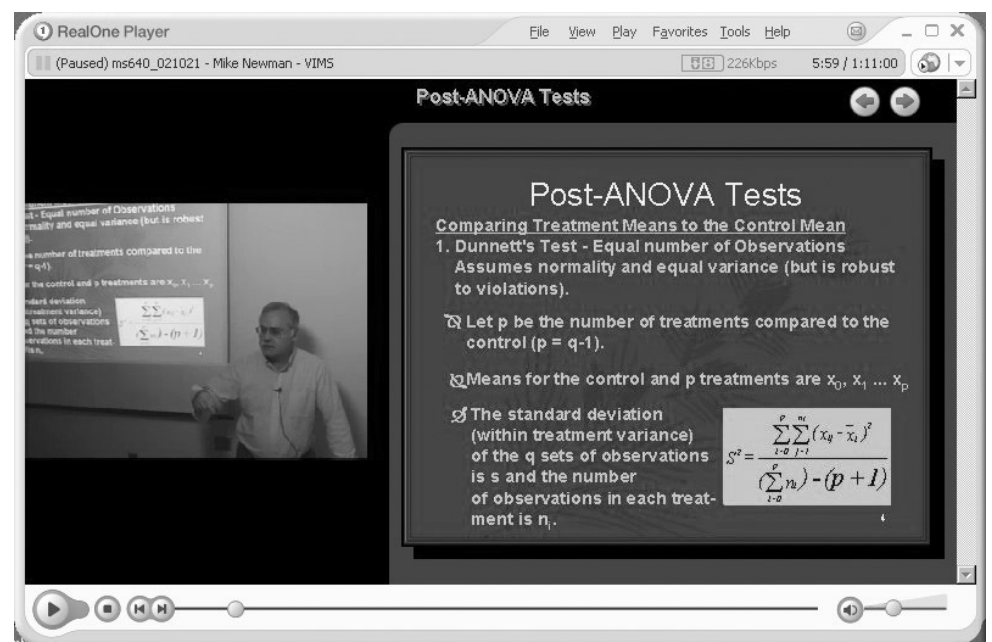
PhD student Art Trembanis' qualifying exam was streamed live to outside committee member Dr. Mal Green in New Zealand. Wes Dowd's Ph.D. qualifying exam was videoconferenced to outside committee member Dr. Peter Bushnell at Indiana University.

Research

Drs. Iris Anderson and Linda Schaffner conducted a proposal "pre-briefing" with the Department of Defense via videoconference from VIMS. Mark Patterson conducted a meeting via videoconference with fellow researchers in Florida.

Administration

Kevin Kiley and ITNS Director Newt Munson participated in Ohio State University's *MegaConference IV*, an interactive videoconference with more than 100 participants from all over the world.



VIMS' video-conferencing system allows faculty, staff, and students to interact with colleagues around the world. Top: The video display seen by students at the Eastern Shore Lab during Dr. Mike Newman's distance-learning course last fall. Left: Dr. Newman's view of two of his Eastern Shore Lab students in their Wachapreague classroom.