PHOTO BY LINDA KASTLEMAN

Embracing technology to teach millennials

Dr. Jim Porto (standing, left) visits a class taught by Dr. Sue Hobbs (right).

Most students in Dr. John Paul's large lecture class have smartphones, and they all have laptops. To boost student engagement, Paul puts the ubiquity of the devices to good advantage. He intersperses lectures with brief polls, and his students respond with text messages that lead to lively discussions.

Dr. James Porto Jr. has developed a sophisticated simulated state entity, complete with tornados, chemical spills and health systems facing financial crises. His simulation game, called FranklinStateSim, lets students in the executive master's program make team decisions and instantly see the results.

> It's important to meet students where they are.
>
> —*John Paul, PhD*

Dr. Suzanne Hobbs brings together a cohort of far-flung doctoral students in health leadership for weekly online classes. Although they live all over the U.S., in Europe, Africa and even Papua New Guinea, her students can glimpse each other's lives and interact face to face – and they say they feel more connected than they ever did in a conventional classroom.

In these and other ways, members of the School's faculty have adopted new technologies in the classroom.

"The old ways of teaching and learning may not apply to the new type of student we're seeing," says Dr. Anna Maria Siega-Riz, associate dean for academic affairs. "They have grown up with technology that allows them to have information at their fingertips."

New pedagogies such as "flipping the classroom" facilitate engagement, she says. "Instead of the teacher's providing all the information, the teacher becomes the facilitator of information. Students research the topic and exchange information they acquire online and from other sources. Then the teacher can facilitate discussion of what they've learned."

"Moving toward more collaborative teaching and learning changes the demands on physical classroom space," notes Rob Kark, management engineer. In response, the School's learning spaces are being updated.

Now in progress are two large projects – the establishment of a large multimedia classroom and the conversion of existing space into a collaborative classroom with docking stations, multimedia screens and Web-conferencing stations. On the drawing board is renovation of an open study room to promote collaboration. Two additional classrooms already have

been equipped with whiteboards, projectors and moveable chairs.

School leaders hope eventually to provide cutting-edge technology in additional spaces, including the Fred Mayes Center, the Design Center (see page 10) and Rosenau Auditorium. Small "hotspots" around the School, such as the one already installed in Michael Hooker Research Center's Armfield Atrium, will facilitate student teamwork. An updated conference room will enable the dean and others to videoconference with peers around the world, solving public health problems in real time.

Creating technology-rich spaces is "definitely not cheap," Kark observes. "The technology is as costly as the construction of the space itself."

Still, the investment is no longer optional. Students must be provided with the technologies they will be expected to master in their professional lives.

Siega-Riz says technology-equipped spaces can facilitate ways of teaching that have advantages over traditional methods. "We have technology that allows students to review the material repeatedly until they master it. We've encouraged flipping the classroom because we believe if we make students responsible for their own education, it's more effective."

When students view taped lectures before they come to class, for example, class time can be used for teamwork, group discussion and

In Dr. Hobbs' class, students work in groups to master information quickly. Left to right are Madison Lackey, Caroline Crews and Michael Edwards.

PHOTO BY LINDA KASTLEMAN

Dr. John Paul uses new technologies to boost student engagement.

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individual presentations. "That allows you to focus more on critical thinking skills and on the essence of the content," Siega-Riz says.

Using the simulation Porto has developed allows students to practice high-stakes decision making with no risk to a real community.

"I'm an old helicopter pilot," Porto notes. "We practiced flying by using simulators, which can really reduce the time to expertise."

Other technological and pedagogical advances make it possible to extend the School's reach through established online programs. Currently, the online program Hobbs directs helps build public health leadership capacity in the countries that need it most, since participants earn a doctorate while

continuing to work full-time in their communities. Hobbs also is working with UNC's Center for Faculty Excellence to develop the University's first hybrid course, one that will coordinate online and residential sections so that students can move between the two.

Soon, the first massive open online courses (MOOCs) will be offered at the School. Paul, who serves on the provost's task force on MOOCs, says the new approach certainly will affect how residential classes are run. "Studying the techniques and approaches they use definitely will affect how I teach. I find it very exciting."

All these developments depend on constantly updated infrastructure – and on constant innovation by faculty members.

"It's important," Paul says, "to meet students where they are."

—Kathleen Kearns

RESEARCHERS FEATURED IN THIS ARTICLE:

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> *—Dr. Anna Maria Siega-Riz*

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Room 2308 McGavran-Greenberg Hall is undergoing changes to make it a more technologically versatile and learning-friendly classroom. Seating and wiring will allow students to work in different configurations, and a glass wall will introduce natural light. RIGHT: Rob Kark, Dr. John Paul and Dr. Jim Porto (l-r) discuss the changes. BELOW: A drawing of the empty room as it will appear from the hallway.