The 24-7 Microscope: Courses Introduce Virtual Microscopy

A new "virtual microscopy" solution implemented by the Columbia Center for New Media Teaching and Learning (CCNMTL) may change the way medical and dental students learn about tissues—and may make toting around a microscope a thing of the past. Patricia Spitalnik, M.D., assistant professor of clinical pathology, and Jay Leikowith, M.D., professor of clinical pathology partnered with CCNMTL to develop the virtual microscope.

Students can still view glass slides with traditional microscopes, but now they also have access—both in the classroom and remotely—to the Sciences Basic to the Practice of Medicine and Dentistry Online Laboratory Manual, a Web-based interface that allows them to view high-resolution histological slides online.

"The virtual microscope allows for self-paced study as students have the flexibility of viewing slides anytime, anywhere," says Michelle Hall, an educational technologist at CCNMTL.

CCNMTL installed and configured the software developed by an outside company specializing in digital pathology management systems. This virtual microscopy technology allows slides to be viewed at the same resolution as if they were being seen through a microscope lens.

The virtual microscopy system is now being used in the first-year Sciences Basic to the Practice of Medicine and Dentistry course but will probably soon be found in other courses as well. "Previously, we had a range of microscope slides—some older, some newer, some good, some not. The students couldn't always see what they were supposed to see," says Dr. Spitalnik.

With the virtual microscope, for the first time, all students are looking at the same slide, making it easier for instructors to highlight specific cellular elements. "And now, for each case, we only need to scan one new slide for all the students, instead of having to create 150 slides," Dr. Spitalnik says.

Just as with Google maps, students can take a big picture, move it around, and look at it at higher and lower power. "The images are beautiful, and the quality is better than ever. Students can now work in groups and the instructors and I can walk around and discuss specific elements of the images. It's like having a microscope on your computer wherever you go."

Although students still have the option to use their microscopes in class, says Dr. Spitalnik, almost all choose to use the virtual microscope.

—Gina Shaw