

ZOE: The Perfect Teaching Assistant



Take Fluorescence Cell Imaging Out of the Darkroom and into Your Classroom

Do you remember the first time you looked through the lens of a fluorescence microscope? Seeing the multicolored evidence of life was most likely a beautiful and awe-inspiring experience. Wouldn't it be great to share this with your students? But you have concerns. What if they break this expensive piece of equipment? What if they introduce contamination into the research lab? How will they all fit into the tiny darkroom?

With the ZOE™ Fluorescence Cell Imager you can enrich your students' learning experience without worrying.

The ZOE Imager's benefits include:

- **Light shield** — permits students to visualize cells in ambient light, taking you out of the darkroom and into the classroom
- **Small footprint (13 x 12.6 x 11.6 in)** — allows for easy portability between your teaching lab and the classroom, making the ZOE Imager a multipurpose teaching tool
- **Intuitive touchscreen interface** — eliminates technical hurdles that can hinder your students' learning, allowing them, instead, to focus on the task at hand
- **HDMI connectivity** — enables you to project live images so all your students can see the same thing at the same time
- **Affordable price** — makes the ZOE Imager a worry-free instructional tool to share between classroom and lab-based courses



Here's what some educators are saying about the ZOE Imager:



Light Shield + Small Footprint + HDMI Connectivity = Great Instructional Tool

A frequent challenge of using a traditional fluorescence microscope is the need to go to a separate darkroom. The ZOE Imager's light shield allows users to visualize cells at their bench or in the classroom in ambient light.

Dr. Rorie, an assistant professor at North Carolina A&T State University, is excited about the ZOE Imager's small size and portability because it will finally allow him to demonstrate cell culture techniques to his cell biology class. "Having the students in the tissue culture lab increases the risk of contamination," he explains. "But the ZOE Imager will allow me to show them the images outside of the tissue culture room." Rorie also likes the ability to display images by connecting the ZOE Imager to a projector.

"I could envision students playing with cells right there during their lab time" says Dr. Menze, who teaches a cellular and molecular biology lab at Eastern Illinois University. "The ZOE Imager's small size would also be convenient in a teaching setting", he says, because "you can easily carry it from one classroom into another."

With the ZOE Imager, everything but the sample and dyes is included. You don't have to add on the lenses, the camera, the computer, or anything — you just need the instrument. "With a traditional microscope you have the scope, the camera, the computer. It takes up a lot of space. With the ZOE Imager, the fact that everything is in one machine that's portable — I really like it," says Rorie.

Affordable Price + Intuitive Touch Screen Interface = "What Worries?"

Traditional fluorescence microscopes can be difficult to use, especially for students. The ZOE Imager doesn't have that problem. Beta-testers said they didn't even have to consult the user manual.

"With the touch screen and how you zoom in and out, this type of technology, I believe, is going to be the preference of the younger generation," says Dr. Rorie. He was impressed that one of his students, who had no experience with immunofluorescence experiments, was able to create and overlay images. "He was able to sit down and generate those pretty images. That was my proof of how user-friendly the system was."

Dr. Maness, an assistant professor at Tulane University, agrees. "It's very iPad-like — you just turn it on and the icons on the screen are self-explanatory."

Here are some of the ways you and your students can use the ZOE Imager in the classroom:

- Teach cell structure/function concepts: visualize organelles such as the nuclei, mitochondria, lysosomes, actin filaments, and microtubules
- Practice experimental optimization: students can monitor transfection efficiency
- Inspire curiosity: watch the immune system in action

Download "Fluorescent Cell Imaging Activities for Your Classroom" at bio-rad.com/web/ZOEactivities for more detailed ZOE Imager activity ideas.