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### **Fluorescent confocal microscope joins biology department's lab and research equipment**

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# Fluorescent confocal microscope joins biology department's lab and research equipment

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PUBLISHED: Feb 7, 2017 3 pm



An Erlenmeyer flask with a funnel tucked into the top labeled “fly morgue” sits on the counter in the Faculty Research Lab of Nussbaum Science Building. Near the little fly morgue is a darkened corner of the lab separated by curtains. This corner is home to Taylor University’s brand new fluorescent confocal microscope.

Thanks to generous donors, the biology department acquired this cutting edge, larger-than-usual microscope for research and classroom lab purposes.

While other microscopes provide whole-object focuses, the fluorescent confocal microscope allows students and faculty to experience their research through subcellular resolution.

“Regular microscopes, you look through them and you see what’s there, but you just see it bigger,” said Dr. Jessica Vanderploeg, Assistant Professor of Biology. “The confocal part—basically what it allows you to do is see things in 3D. If we’re looking at a cell, if we just see something flat you can’t really see where everything’s at in relation to each other. So, basically what it does is it slices through the tissue and it allows us to make a 3D [computerized] reconstruction of what we’re seeing at a cellular level.”

The fluorescent confocal microscope peers through the layers of the object it’s viewing and produces

a detailed 3D image (it can take up to four hours to do this). By producing a 3D image, the microscope allows the viewer to see the front, the back, and everything in between, down to specific proteins that make up cells.

Before purchase of the microscope, the students and faculty had to travel to neighboring universities to borrow similar equipment. With a fluorescent confocal microscope of its own, Taylor's faculty and students can take their research to a new level.

The university now has the proper equipment to conduct innovative, publication-quality scientific research on campus year-round. This also provides students the opportunity to engage in relevant and current lab and research procedures, and strengthens the possibility of attracting external funding for research projects.

The microscope is currently being used in BIO 450: Directed Research and in BIO 432: Developmental Biology, and it has been introduced to other science students in varying capacities.



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