
Foldscores: An Unassuming Technology with a Big Impact

Lydia Marcus
Dordt College

Follow this and additional works at: <https://digitalcollections.dordt.edu/voice>



Part of the [Christianity Commons](#), and the [Higher Education Commons](#)

Recommended Citation

Marcus, Lydia (2017) "Foldscores: An Unassuming Technology with a Big Impact," *The Voice*: Vol. 63: Iss. 1, Article 8.

Available at: <https://digitalcollections.dordt.edu/voice/vol63/iss1/8>

This News is brought to you for free and open access by the University Publications at Dordt Digital Collections. It has been accepted for inclusion in The Voice by an authorized editor of Dordt Digital Collections. For more information, please contact ingrid.mulder@dordt.edu.

FOLDSCOPE: AN UNASSUMING TECHNOLOGY WITH A BIG IMPACT

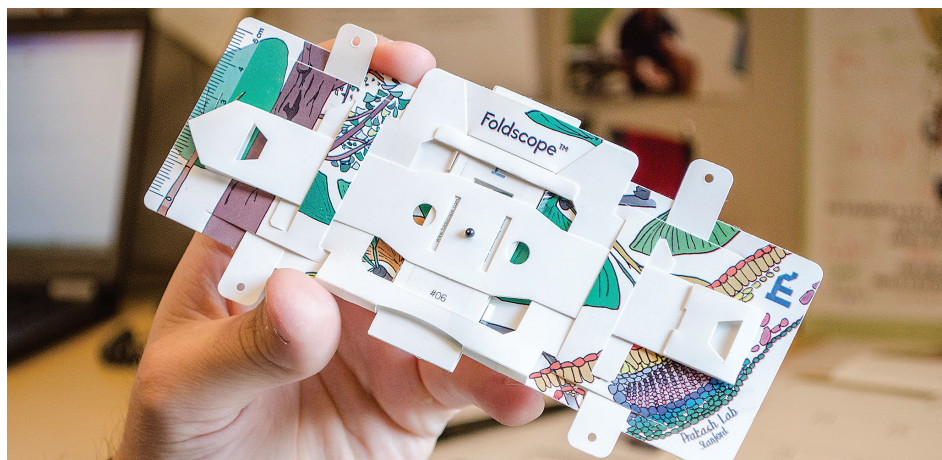
The two-by-six-inch folded origami-like paper lying on Professor Jeff Ploegstra's desk does not look like it belongs in a lab. And it doesn't.

It is a Foldscope, and it belongs out in the world. A Foldscope is a microscope that can magnify objects by up to 140% and slip easily into a student's pocket. Even better, it only costs a few dollars and can be put together in 20 minutes.

The Foldscope was designed at Stanford University to help students around the globe who might not otherwise have access to scientific equipment see the microscopic world. When Ploegstra read about these devices, he wrote to the lab at Stanford. Because the Foldscopes were still in beta testing, the lab sent him a shipment of scope kits for free.

"Understanding the microscopic complexity of the created world can create opportunities to appreciate and praise God in unique ways," says Ploegstra in his grant proposal. "Providing K-12 students with the tools to easily access this microscopic world has the potential to revolutionize their personal worlds."

This past summer, Ploegstra was awarded a Dordt College teaching innovation grant to buy and use Foldscope kits in his secondary science methods class.



JONATHAN FICTORIE (20)

A Foldscope is a microscope that costs only a few dollars and can be constructed in 20 minutes.

In the methods class, education majors will develop curricula to help their students understand and appreciate the world they see through a microscope. The curricula will include directions for using the Foldscopes and strategies that encourage children to explore and delight in the natural world. All learning objectives will be aligned with Next Generation Science Standards. The curricula will be flexible enough that it can be used in international settings, where students may have different levels

of understanding about how the world works. As seniors, methods students will take a set of Foldscopes to their student-teaching classrooms and use the curricula they developed.

Ploegstra also plans to bring some Foldscopes and his students' curricula on the biennial Puerto Rico off-campus study program next summer. While there, his Dordt students will visit three or four orphanages and schools to teach children how to make and use Foldscopes as well as how to make slides of things they want to inspect. Ploegstra hopes that as children are set loose to examine the complexity of creation with these simple scopes, it will transform the way they see the world.

"I sometimes fear that we are too objective-driven when we teach, leaving curiosity behind," says Ploegstra. "Encouraging people to be curious is a necessary part of science education, and helping students see the world in a different way can encourage curiosity. Curiosity brings great opportunities for joy, and ultimately, for praising our creator God."

LYDIA MARCUS (17)

HOW TO USE A FOLDSCOPE



JONATHAN FICTORIE (20)

Each Foldscope kit contains a sheet of paper punch-outs, low magnification lenses, high magnification lenses, a condenser lens, transparent stickers for making slides, and magnetic strips to attach a Foldscope to a phone for imaging. After following the directions for assembling the scope, find a small, thin sample you'd like to observe and sandwich it between the transparent stickers. Feed the stickers into the Foldscope, hold the scope to your eye, and orient it toward a light source such as a window or light fixture. Focus the image by moving the tabs on either side of the ocular with your thumbs. Voila! The microscopic world is yours to explore.