

New WSU virtual reality Cave uses cutting-edge technology

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WSU's Cave immerses people in a 3D, full-color virtual reality experience.
Credit: Lainie Mazzullo

Nestled in a nondescript room in Wichita State's MESA Building is something known simply as "the Cave."

It doesn't look like much – that is, until the lights are turned off and the 12 LED projectors are turned on. Suddenly you're immersed in a 3D, full-color virtual reality experience from the floor up to the three surrounding walls.

The Cave was created by a partnership between WSU's National Institute for Aviation Research, Dassault Systèmes and Mechdyne Corp.

It is the largest reconfigurable Flex immersive visualization system ever deployed by Mechdyne, an international company based in Iowa.

The fixed-front wall measures nearly 19 feet wide and 10 feet high, with hinged side walls that can add stretching an additional 20 feet. The side walls can swing open to display like a flat wall or be turned into a theater or box shape.

It's big enough to create an immersive display of something as large as an airplane – handy considering the number of aviation-related businesses in Wichita.

NIAR researchers and area businesses and manufacturers can create mockups of new designs and test data before ever having to build a physical prototype, making WSU's Cave a true asset to the business community.

"Our primary vision is to transform manufacturing across multiple industries – aerospace and defense, life sciences and industrial equipment – through innovative technology," says Jeff Fisher, WSU's virtual reality lab manager.

That includes enhancing concept and design processes; user experience testing; virtual prototyping, facilities planning and certification; and significantly shortening product development timelines for various industries.

Currently there are six students working with the Cave, and Fisher says he's open to faculty and staff utilizing it, as well.

Mechdyne has been collaborating with Dassault and WSU since early 2014 to fully develop the vision for the [virtual reality](#) system.

Terry Mercer, Mechdyne solutions engineer, helped conceptualize the Flex's design.

"We are very excited to see what kind of work WSU will do with this cutting-edge technology, which will put them at the forefront of their field," Mercer says.

Provided by Wichita State University

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