

Visit the AOS Building in This Video Game

The Department of Atmospheric and Oceanic Sciences leverages a popular gaming/simulation platform as an outreach tool.

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It feels familiar to anyone who's visited the Atmospheric, Oceanic and Space Sciences Building on West Dayton Street. The signage out front certainly looks the same.

But there are some tipoffs that we're not in the real

 Tracey Holloway

world. For one, a digitized Bucky Badger is standing by the door, waiting to speak to us. And to the right, cartoonish versions of the Sun Dogs – the AOS department's faculty house band – are set up on a stage, jamming away on their instruments.

Welcome to the Roblox universe of AOS, created in the uber-popular gaming platform that's been around since the early 2000s. Most people, including the 162 million plus kids and teenagers who play it, use Roblox to create original games, from first-person shooters to simulations and role-playing games.

Tracey Holloway, a professor of atmospheric and oceanic sciences

and the Jeff Rudd and Jeanne Bissell Professor of Energy Analysis and Policy, used it to recreate the AOS Building – and showcase some of her department’s faculty and research.

Holloway’s teenage son is a huge Roblox aficionado. He clued her in to the charm and utilities of the platform. But there was also another powerful connection: Claus Moberg, an AOS alum who worked with Holloway during his time as a graduate student back in 2011, is the vice president of engineering for Roblox.

“I was aware of Roblox as a cool thing, both through Claus’ work, and through my son, but I’d always just thought of it as a game,” Holloway says.

Holloway’s love of 3D modeling in her atmospheric work also drew her to Roblox. Her first thought was to create a museum framework – a perfect outreach tool for the 75th anniversary the department celebrated last month.

“What a real museum does in physical space, you could also do in the Roblox space,” says Holloway. “And atmospheric and oceanic sciences are well suited to that because most of the cool things about the atmosphere, you can’t just put in a physical museum exhibit. You can’t fly through a cloud or zoom through the ozone layer. But in Roblox we can.”

Roblox is free-to-play, but users must download the Roblox software package and create an account to use it. Purchasing in-game currency offers access to cosmetic upgrades. The AOS department created a getting-started page for Roblox rookies.

The Roblox version of the AOS Building’s physical lobby is much larger but has some of the same features highlighting the history

of the department and its contributions to satellite meteorology.

On the upper floors, there's a networking lounge where virtual visitors can chat and tour virtual exhibits, including one that features a dynamic representation of the Butterfly Effect, an atmospheric concept that stems from the 1960s-era work of meteorologist Edward Lorenz. You can encounter and have scripted conversations with tiny digitized versions of AOS faculty members – like department chair Ankur Desai – or AOS alumni. You can even take the elevator up to the building rooftop and score a selfie with the massive satellite dish – something you can't do in real life.

“One of the things we're trying to do is to push the capabilities of Roblox in ways that are fun for us, but hopefully useful for others as well,” explains Holloway.

One example of that is a mechanism that takes real-world weather data and pulls it into the Roblox environment – in other words, if it's raining in Madison, it's raining in the Roblox sim. Another is more practical: using Roblox to host scientific poster sessions.

“The joy of a poster session is you walk into a room, and you see lots of cool science and you can decide what you want to approach,” says Holloway. “We built that same ability in Roblox where we can upload real scientific posters, and you can see them arranged and the presenters can stand virtually next to their

poster and answer questions much in the same way that a real poster session would be conducted.”

Using flexible funds available through her endowed professorship, Holloway was able to hire Olivia Goins, a recent College of Agriculture & Life Sciences graduate who had worked as a communications intern for AOS. Goins had never used Roblox before, but picked it up quickly, using her digital media skills to create and maintain a virtual AOS universe.

“The first thing I made that was really cool was the Globe Room, which is also in the AOS building,” says Goins, who hopes to eventually pursue a career in user experience. “I’m adding things as we go, and I’m always play testing it or checking if everything’s running smoothly. There’s definitely a lot more to be added soon.”

Holloway recently submitted a grant proposal to the National Science Foundation, proposing to use Roblox in future undergraduate atmospheric science courses, for poster sessions and more.

“One of the things that’s exciting about Roblox is that they’ve designed the platform specifically to empower everybody,” says Holloway, who touts the low startup cost and barrier to entry. “You don’t need to have a degree in computer science to make a model. I think we could end up filling a lot of needs in science communication that we might not even be thinking about right now.”

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