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Campus News

Archive

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Weekly Features

Headlines

Editor's Picks

Spotlights & Profiles

Inside IU » Spotlights & Profiles » Faculty & Staff Spotlights » IU East professor brings art, science together through 3-D maps

spotlights & profiles

featured
spotlights

student
spotlights

faculty &
staff
spotlights

Faculty & Staff Spotlights

IU East professor brings art, science together through 3-D maps

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by Amanda N. Marino, IU Newsroom

Carrie Longley is taking visual communication to a whole new level.

The assistant professor of fine arts at IU East has taken on the challenge of creating a three-dimensional map to make scientific data more user-friendly.

Longley is completing an exhibit for "Places and Spaces: Mapping Science Exhibition," an IU-based collaboration of digital maps that represent 30 different scientific disciplines. She will present her work to date in a lecture titled "Recontextualizing Form and Surface" at noon April 18 in Woodburn Hall Room 200.

Longley said the idea for the project came from Katy Börner, a professor of information sciences at IU Bloomington who created the "Places and Spaces" digital exhibition, in spring 2014. Börner asked Longley if she would be interested in creating an exhibit that made scientific data easier to conceptualize.

Because Longley's style is heavily based in organic growth and movement, she was an ideal candidate for the challenge.

"This is very biomorphic," she said. "It's organic and it's three-dimensional."

While Longley said she'd never done a 3-D collaboration like this before, the project made sense to her. Data doesn't grow in just one direction, she said. Instead, it morphs three-dimensionally, changing in a variety of ways and moving organically.

The project Longley took on involves visually illustrating how different scientific disciplines connect to each other.

Think of it as a family tree of sciences. In fact, Longley's design revolves around a tree-shaped design for that specific reason: It allows for connections and growth in all directions.

"And that's a very traditional way of organizing knowledge growth," she said.

Longley said her design has a central stem with growth platforms for each of the different disciplines that grow into each other. Essentially, the "trunk" of the display acts as a timeline.

The struggle, she said, was to decide what size to make each platform. After much thought, she realized the best way was to relate the size of the science in the model to the size of the science in the universe. Using this model, her structure makes cosmology the largest platform, while sciences such as mathematics or logic are much smaller.

"That was like a huge epiphany for me," she said.



IU East assistant professor of fine arts Carrie Longley's 3-D depiction of the five branches of science. | PHOTO COURTESY OF CARRIE LONGLEY

This project challenged Longley in the form of materials and scale as well. Generally working with clay on projects that were no more than 30 inches tall, she has now put more than two years of work into a 4-foot-tall project made out of foam, resin, fiberglass and steel. This is also her first attempt at a piece of interactive art.

"I'm uncertain about that, and it will be really challenging for me," she said.

Longley also realized how involved the process of creating art around a data set can be. With every decision being tied to information, she has found that there is less creative freedom involved.

"I've never, ever thought so much about a piece of art in my life," she said.

Along with wanting to present accurate information, Longley said she still wants the sculpture to be visually appealing while it sends a message to and educates its audience.

"It reinforces the fact that I am a visual communicator," she said.

Longley's work aligns with priorities outlined in the university's [Bicentennial Strategic Plan](#), including a vibrant community of scholars and creating a culture of building and making.

https://news.iu.edu/news-for/faculty-and-staff/index.html?utm_source=2016-04-19&utm_medium=Newsletter&utm_content=Carrie-Longley-IU-East&utm_campaign=2016-inside-iu-distribution