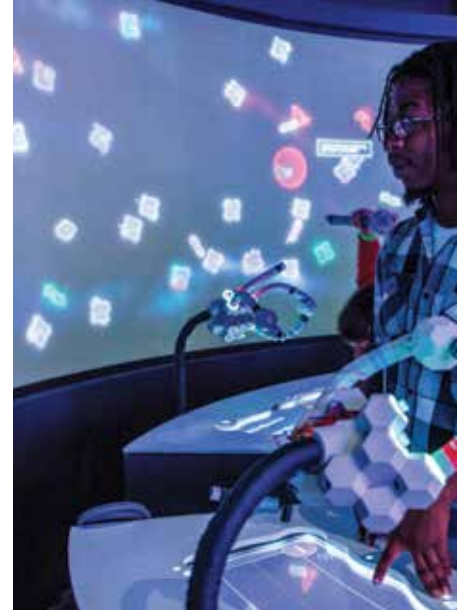
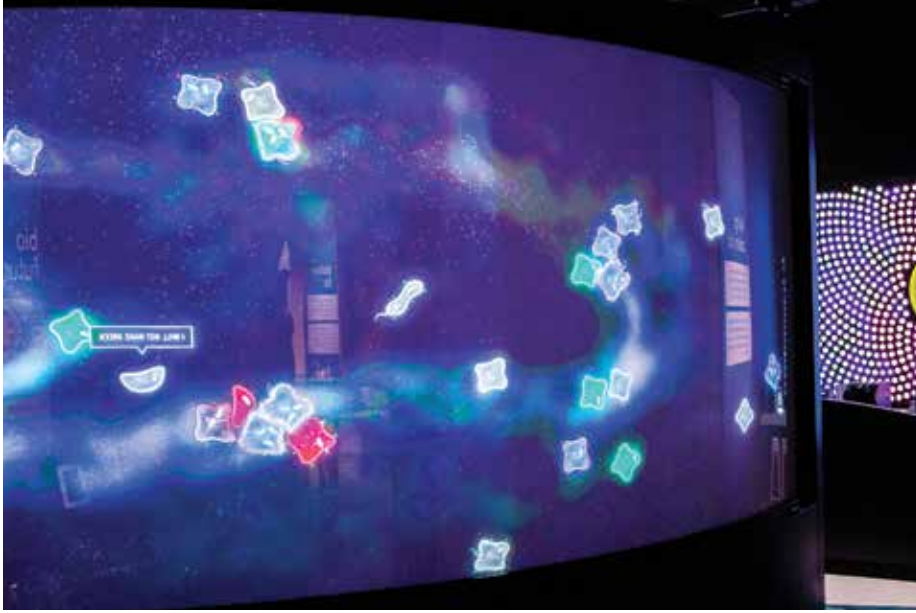


CASE STUDY

PROJECTION SCREENS

DRAPER SCREEN HELPS BUILD SYNTHETIC ORGANISM



Product: Irus VersaRoll Rear Screen. Location: Creature Creation Station, Bio Design Studio, Tech Museum of Innovation, San Jose, CA. Photos: by Na'im Beyah

- A San Jose museum teaches people about synthetic biology with Draper's help.

The field of synthetic biology is very complex, but a Draper projection screen is helping one museum make it a little easier to understand.

Synthetic biology takes in disciplines, including biotechnology, genetic engineering, evolutionary biology, molecular engineering and computer engineering. The Tech Museum in San Jose, California, built an interactive Bio Design Studio to explore the basic concepts of this complex—and sometimes controversial—field of science. It was also a tricky topic to address from a design perspective.

“Most science museums tackle these subjects by imparting information or demonstrating phenomena, but we really wanted visitors to think, create, and test their ideas in ways they could do nowhere else,” said Romie Littrell, curator and exhibit developer at the Tech Museum of Innovation. “Recent advances in bioengineering has made this type of ‘biodesigner’ a valuable and necessary role in the new and growing bio-economy, which resonated with our mission of inspiring future problem solvers.”

One of the exhibits in the Bio Design Studio is the Creature Creation Station. Here visitors use DNA—flexible building blocks—to create new organisms, much like what would

happen in an actual lab. Once they've finished, visitors release their creations in an ecosystem that includes everyone else's creations. Then they can watch as survival of the fittest plays out on a huge curved projection screen.

That's where Draper comes in. The double-sided, curved screen serves two functions.

“From the outside we wanted to create an aquarium-like feel, reminiscent of real living creatures, enhanced by the fluid-like flow of the visuals,” Littrell said. “By walking around and seeing the inside, it's revealed that all the creatures in the aquarium are created by visitors, and it becomes an interactive space where they can become immersed in the unique scale and possibilities of the exhibit. This is particularly important because biology behaves differently than the more familiar mechanical and even robotic objects we see every day.”

For the display, Draper recommended the unique IRUS VersaRoll rear screen. Draper's exclusive IRUS (Infinite Resolution Uniformity Screen) coating is specifically designed for blending and wide viewing applications, and its unique antiglare finish was a must in the high ambient light of the Bio Design Studio.

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This 65-inch by 20-foot wide curved screen needed to produce a vivid, uniform image in a fully lit environment. The IRUS coating was chosen specifically to yield the best results for this challenging 11 projector blend. Christie DUV555-GS Laser Projectors projecting in portrait mode were selected for the job.

Just as important as the IRUS coating, however, was the VersaRoll semi-rigid substrate. It ships rolled on a core, and once unrolled can be installed to meet a large number of curved specifications. This solves the key problem that is faced with large rigid screens: access to the facility. Often, installers must resort to knocking out windows and craning in materials too big for a service elevator. Not so with VersaRoll.

The screen and frame were assembled over a large flat area, so the screen could be stood up during the frame assembly process. Once assembled, additional supports were added vertically to hold everything together until the screen was installed in the hole opening.

When it came time to install the screen and frame in the wall, the sheer size of the unit meant steps had to be taken to keep the screen from warping while it was maneuvered into position. Fortunately, Draper offers installation support on projects like this.

“It took six to eight people to lift the screen into the hole opening and then, once anchored, remove the vertical supports,” said Draper rental and strategy market manager Jim Hoodlebrink, CTS, who was on site to assist in the installation. “The curve was tight enough you were pushing the limits of its capabilities, but it worked out in the end with a unique, fantastic look.”

Littrell agreed.

“We are very happy with the end result. It was a gamble as it was an ‘off-label’ use of this type of screen,” he said. “Yet it paid off and the seamless, double-sided curve is something unique to our museum, and is a great example of how fusing digital and physical architectures can create a new immersive reality.”

There were initial concerns that, in an interactive environment, the IRUS coating might eventually wear away. To mitigate this possibility, images are projected onto the opposite, coated side of the screen to protect it from the millions of tiny hands it will need to resist. So far, it’s working great.

“The screen performs very well under some significant abuse,” Littrell said. “Projecting directly on the film creates a slight haze as seen from the inside, but the large scale, motion, and distance of the viewer to the visuals more than compensates. The corresponding sharp detail on the outside gives those visitors a high-quality image from even inches away.”

The overall project was designed by the Tech Museum and Local Project, an exhibit consultant out of New York City. Draper dealer BBI sold the IRUS VersaRoll screen, while Audio Visual Design Group from San Jose handled the system integration. All of the various elements and exhibits come together, not only as an impressive interactive learning experience, but also as a purely beautiful AV installation.

“It’s a work of art on its own,” Littrell said. “You can definitely tell who the AV people are when they look up and stare. We also had reporters comment opening day on how visually stunning the display is. They may not be thinking about how it works, but they definitely take notice of the effect.”

For more information on Draper’s VersaRoll, click here draperinc.com/projectionscreens/productdetail/897/versaroll.

To learn more about The Tech Museum of San Jose, California, click here thetech.org.

For more on BBI, click here bbinet.com/.

To connect with AVDG, click here avdg.com/.

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