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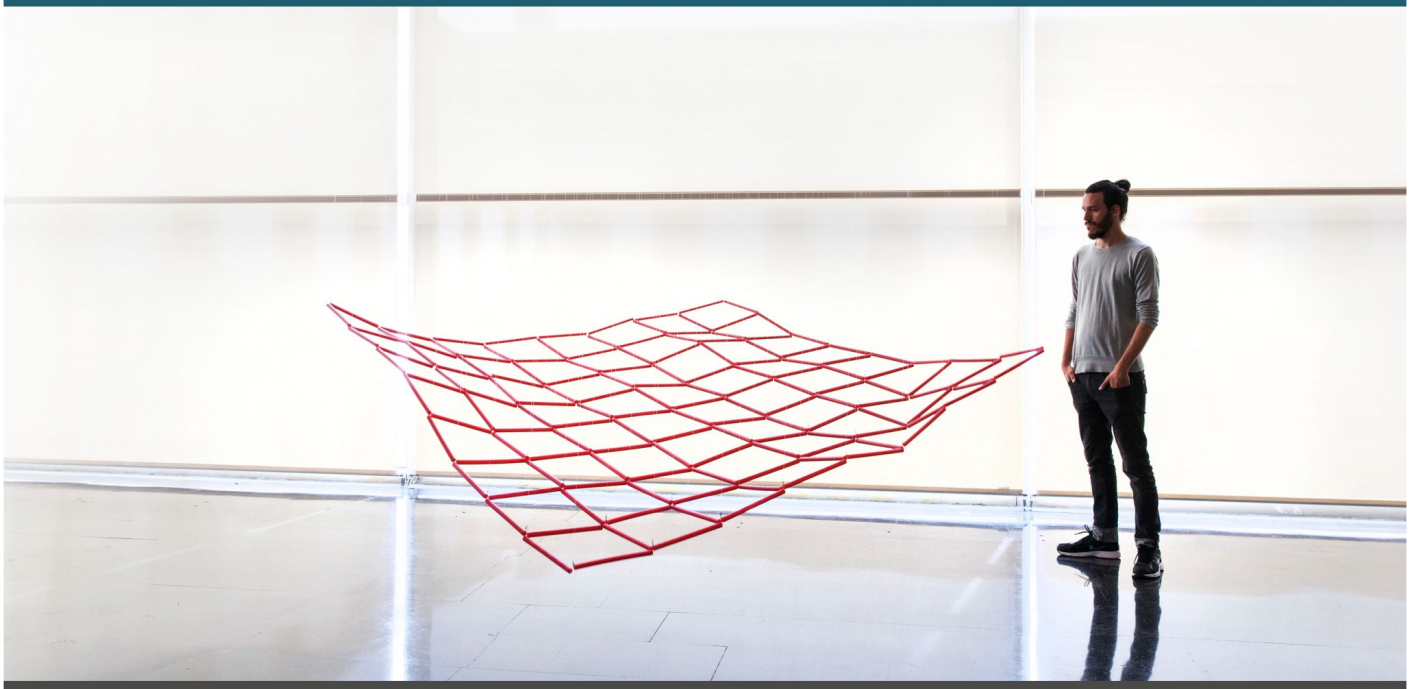

David Bowen's *tele-present water* uses live data from US National Oceanic and Atmospheric Administration buoys to re-create the movement of the surface of the ocean. It is shown here as part of the 2014 Big Bang Data exhibition at the Centre de Cultura Contemporània de Barcelona. Photo by Gunnar Knechtel Photography, CCCB

Five Things

1600 words / About 8 mins

Amplifying Data Through Art

Five artists who make meaning out of science by translating hard data from the world's oceans.

by Raina Delisle

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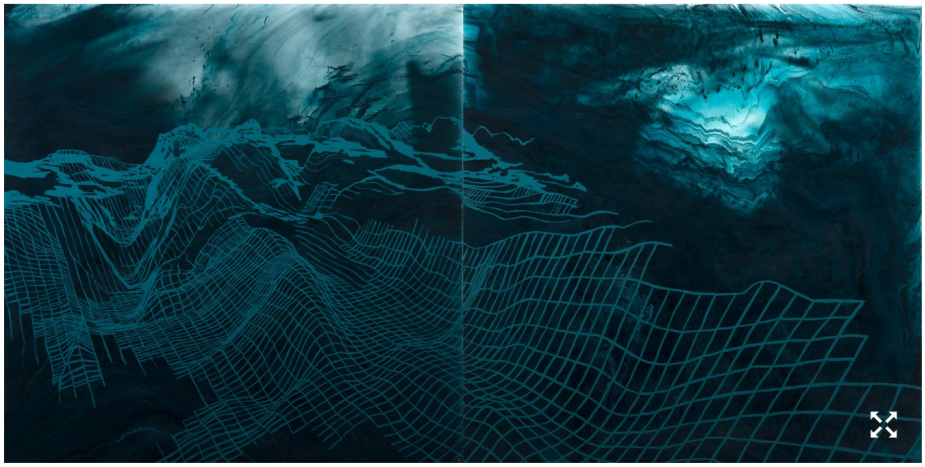
Here are five artists who are turning on lights, helping us look at scientific data differently.

Rebecca Rutstein—Shining Light on the Hidden Seafloor as an Artist-at-Sea

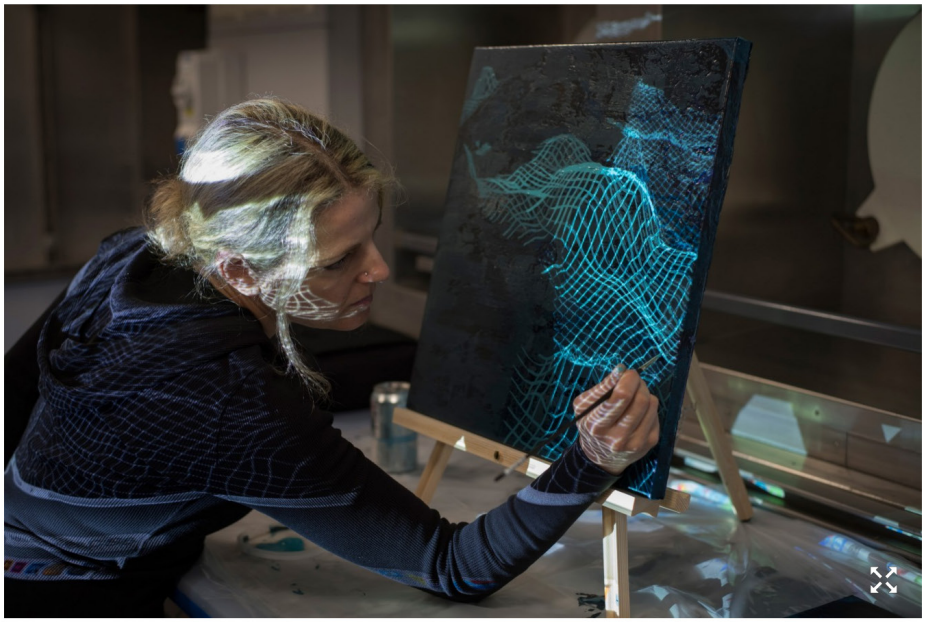
As the exploration vessel *Nautilus* traveled from the Galápagos Islands to California last summer, artist-at-sea Rebecca Rutstein watched in awe as images of the ocean floor appeared in real time on a screen. The terrain had never before been mapped in high resolution, and Rutstein was bearing witness to the science team's gleeful discovery of seamounts and submarine volcanoes. "It was like watching this hidden landscape unravel in front of us," she recalls. "Looking at the ocean floor with satellite data is like looking at a set table with the tablecloth on top. Using high-resolution multibeam sonar is like pulling off the tablecloth."

After the data was collected, Rutstein retreated to her makeshift studio in the vessel's wet lab, where she used 3D visualization software to "fly" through maps of submarine landscapes and select interesting viewpoints to incorporate into her acrylic paintings. After pouring paint to create gemstone-like backgrounds, she projected the topographic maps onto her canvases and traced the lines in acrylics. The resulting pieces invite viewers to imagine the landscapes that lie beneath the sea.

"Artists and scientists share a desire to make sense of the world around them, but they do so from different perspectives," says Rutstein, who recently returned from a second artist-at-sea residency, this time aboard the Schmidt Ocean Institute's research vessel *Falkor*. "The artist aims to communicate ideas visually, seeking out creativity and innovation, and ultimately thinking about the viewer." It's an approach, Rutstein says, that can help scientists make their ideas and findings more accessible to the public.



Following her residency aboard the *Nautilus*, Rutstein created this large piece—about the size of a dining room table—in her Philadelphia studio. *Galápagos I* is based on the sonar map of the Galápagos rift zone created aboard the *Nautilus* last year. Photo courtesy of Rebecca Rutstein and Bridgette Mayer Gallery



After pouring paint to create abstract backgrounds, Rutstein superimposes topographic maps of the ocean floor onto her paintings. To be as true to the data as possible, the artist first projects the maps onto a canvas before carefully tracing the lines. Photo courtesy of SOI/Chris Linder

Lázaro Cárdenas Canyon depicts a canyon off the coast of Mexico named after the former Mexican president. The canyon was mapped in high resolution for the first time on the *Nautilus* in 2015, and the painting was created at sea right after the data was collected. Photo courtesy of Rebecca Rutstein and Bridgette Mayer Gallery

Rutstein was busy aboard the Schmidt Ocean Institute's research vessel *Falkor*. In her two-week residency this summer, she created eight paintings in the vessel's wet lab. In addition to using mapping data, she also worked with satellite images of the Mekong River plume dispersing into the South China Sea. Photo courtesy of SOI/Rebecca Rutstein and Bridgette Mayer Gallery

Working in the cramped wet lab of research vessel *Nautilus* presented Rutstein with some unique challenges, including adapting to the motion and vibration of the ship, which made it difficult to keep a steady hand when tracing intricate seafloor maps. Directed by Katie Bryden