## Artists in residency bring color and community to NCEAS

Muralist Leila Youssefi and textile artist Bonnie Peterson exhibit their art and science projects in a public exhibition.

NCEAS joined downtown Santa Barbara's first Thursday art walk tradition with a public event on the evening of September 7th. Hundreds of visitors came to our transformed third floor to see expansive murals by Leila Youssefi and interactive maps by Bonnie Peterson – impressive environmentally inspired products from their immersive summer long residency. Their pieces illustrate how art and science can intersect to solve society's ecological issues, from ocean acidification to invasive species to climate change. NCEAS Director Ben Halpern commented on the success and importance of the artists in residency program, now in its sixth year: "It's so gratifying to see how embedding artists into a scientific community creates energy and shared insights. The artists get inspired by the people and the work being done here, and the science they do." Below, we sat down in an interview with the artists to gain insights into their experiences and the impactful work that emerged from their time at NCEAS.



Let's start with the exhibition! Can you tell me more about the piece you created?

Left: An enlarged USGS topographic map of Santa Cruz Island is the background for a complex spider web connecting atmospheric, oceanic polar and land climate variables. Right: Bonnie installing the annotated map in the entryway to the Monarch room at NCEAS.

Bonnie: "My work is motivated by the urgency and consequences of climate change. The basis of this piece is that different studies through modeling and observation have predicted the consequences of increased temperature. At first I separated out different outcomes by each degree of temperature change in Fahrenheit

with consequences for land, water, and air, but it became more generalized and this is where I landed! I used a variety of markers to write on a USGS map of Santa Cruz Island and then had it photographed and blown up for installation. The dimensions are about 90 inches tall by 60 inches wide – I think the size is important because there is a lot going on. I wanted it to be human sized so you could really follow all the arrows."





Top left and right: "A Novel Future" walls one and two by Leila Youssefi with spray paint, acrylic, and paint markers. Wall one highlights the overfished, warming Pacific ocean, with great white sharks and urchins in the present to an imagined future with adapted giant kelp, sea otters, sea stars, and more. Wall two covers the mountains with wildfires and unbalanced ecosystems, featuring oaks, acorns, poppies and other native

species. Below: Leila by the ocean wall, where symbols that represent the NCEAS synthesis model are painted in fluorescent pink..

Leila: My two part mural reflects ecological transformations of both Santa Barbara's ocean and mountain landscapes. I started informally calling it "A Novel Future" based on novel ecosystems I learned about at NCEAS, like the productive habitat by the oil platform Holly. These aren't ecosystems nature would have created alone, but they are here now because of our additions. These murals are on one hand an interpretation of what the future could be like if we intentionally combine humans, nature and technology, like with prescribed burns for example.I wanted to use the ecological shifts as an underpinning or a grounding for people to then look further into how these integrative shifts come to fruition - through synthesis. This is where the idea of overlaying the "synthesis symbols" came about. The symbols move clockwise as one enters the space, following along both of the murals and ending at the end of the second wall. The symbols are a visual interpretation of the synthesis process, showing how differing ideas eventually become a cohesive solution. Together, the symbols and the transformed landscapes aim at providing a reflection of the impactful work being done at NCEAS.

## Tell me more about your exhibition - how did the public react to your pieces?

Leila: The exhibition was a whirlwind! I received a lot of thought-provoking questions. People seemed to notice the colors,fluorescent synthesis symbols, and the creatures the most. The mural is meant to be looked at both up close and far away, moving back and forth between views, but throughout the busy exhibition it was more viewed for its detailed texture. It was great to talk about those hidden or less easily noticed parts, and to hear what they evoked.

Bonnie: People came from all over Santa Barbara. Ginger was worried about finishing the cheese, but we had nothing to worry about! I got the chance to talk to a lot of people - they would come off the elevator and immediately start looking at the map. It was a great opportunity to meet people and find out what they discovered. I also noticed that people in Santa Barbara were already pretty cognizant of climate change. They were also really interested in the actual topography of the map, which is why I wanted to use a nearby map such as Santa Cruz Island. Some people had actually worked on a facility on the island and were really invested in finding that location!





Top: NCEAS residents and members of the public gather at NCEAS to view the 2023 artists in residence exhibition. Bottom left: A close up from Leila's mural of a kelp forest otter holding a purple sea urchin. Bottom right: a closeup of Bonnie's map with climate consequences.

## How would you describe your immersion at NCEAS during your residency?



Left: Leila adds details to her ocean mural wall. Right: Bonnie and Leila sit in their shared office for the summer, working on concepts for their pieces.

Leila: Very deep! It was a full-on immersion. Having the opportunity to be there and talk with scientists in person made it easy to be fully encapsulated in that world. When I was still conceptualizing, I had many disparate ideas and was able to get feedback in real time. I was also able to change the mural as I was painting it. The immersion gave the art space to breathe simply by having the ability to iterate with others simultaneously.

Bonnie: I loved having the meetings with all the NCEAS researchers. It was great hearing everybody's perspective on their job, which all have so much to do with using data, cataloging it, putting it on websites, and maintaining it. It was interesting for me because I was expecting to meet people with a bunch of publications that would just send me graphs to embroider, but most people here have more to do with other aspects of data collection so that was really interesting. The people I met at NCEAS had a more global perspective, like people working on the permafrost discovery gateway to visualize the issues in the Arctic. It was an education for me!

## I would love to hear more about your relationship with the other artist in residence and your reaction to their piece.

Leila: Overlapping with Bonnie was inspiring. Her work at the intersection of art & science is already incredibly prolific. I really enjoyed seeing her integrate all the new concepts at NCEAS into the effective mapping structure she already has. It also really enriched the whole process to be able to talk about what we were excited about, and process this deluge of information together. In our shared office we were able to work on our own things but we were also talking about our challenges and creative blocks. It was also nice to have someone to discover and explore with, like when we went on our field trip in the Santa Barbara mountains. I loved her final display being so immersive. And it being on a map of Santa Cruz island was an effective, smart and beautiful way to display the information.

Bonnie: Leila's murals are just amazing. She works at this impressive sense of scale. I was impressed she could plan and execute the concept so quickly. It was also really interesting to watch her think about the mural, research components, draw it on her ipad, test different colors and put paint on the wall. I enjoyed our trip to the Chumash Cave. She has such great ideas and people really resonated with it. It gives this completely renewed vibe to that room - it was kind of sterile before, but her sense of color and shape and neon design brought life to the space.



Left: A selfie of Bonnie and Leila during their trip to the Chumash Painted Cave, a California state historic park outside of Santa Barbara. Right: Bonnie and Leila at the exhibition in front of Bonnie's installed map.

Now that you've finished your residency, what would you say about the relationship between art and science?

Bonnie: I think it's important to learn from science and be exposed to it. I don't see people paying attention unless it's placed in front of them. I think climate change in particular is becoming more salient, but it's important for people to see science in unexpected situations. That's what I see as the link between art and science. Most people don't read scientific journals every day – somebody has to translate.

Leila: Going through this residency, I found more in-depth parallels of the processes of how art and science are created. We're both, at our core, trying to find a truth. To get there, there is a synthesis process within itself which is investigative in nature. Conversation, iteration, conclusions that need to be rewritten, etc...The main difference I see with art is the ability to storytell. NCEAS really showed me that specializing in one's own discipline is important, but without the integration of disciplines, the hard-mined truths don't often make it to the light of day. Through communication, art can offer a way to increase science's ability to affect change.