

Department

Resident Artist

Gary Singh

A TESTAMENT TO the power of artist residencies, Adrien Segal (<http://www.adriensegal.com>) went from Northern California to Homer, Alaska, and then back again, all to create sculptures that physicalize data from sea ice melt patterns. A multidisciplinary visual artist based in Oakland, Segal became an artist in residence at the Bunnell Street Art Center in Homer in 2014. During a presentation of hers, an audience member introduced Segal to the importance of the Albedo effect—the reflectivity of a surface—in studying energy absorption and ocean temperatures. As a result, Segal became intrigued by how the Albedo effect can indicate the warming of the Arctic climate due to polar amplification. However, her future project, *Sea Ice/Albedo* (see the cover image and Figures 1 and 2) would still need more time to percolate, so she placed it on the back burner for a few years. It was not until another artist residency, this time at Bullseye Glass in Emeryville, California, that Segal discovered cast glass might be a suitable medium to realize the *Sea Ice/Albedo* idea.

“Before that, I had never used cast glass in my work, nor did I have access to the studio facilities required to be able to cast glass,” she said. “I spent two months developing the project at Bullseye where I was able to learn about the material properties of working with glass and the processes required for mold-making and glass casting, which are quite complicated.”

Segal's research started with finding open source photos of sea ice patterns from various online sources, which she then pulled into a CAD modeling program in order to translate the photographic imagery into a 3-D surface. For the next step, she modified and scaled the model in order to cut it from medium density fiberboard using a computer-controlled router. This provided a “positive” form, which she then used to make the “negative” plaster silica mold for casting the glass.



Figure 1. Completed sea ice sculptures, photo by Bryce Gaspard, used by permission.

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Figure 2. Side view of sea ice sculpture.

BETWEEN OBJECTIVE AND SUBJECTIVE

Segal's degree is in Furniture Design from the California College of the Arts, where her academic training essentially focused on the principles of design and fabrication of furniture and sculpture, including woodworking, metalworking, welding, and casting. She also worked with nonfunctional forms and began using data in her senior year, creating a thesis project with tidal data from San Francisco Bay. Data remains an integral part of her work, although finding common ground between an objective scientific approach and a creative aesthetic in the realm of the emotional is not always easy. After all, art is about asking questions, not answering them, with the subjective viewer usually expected to determine their own meaning from the experience of encountering the artwork. Emotional responses are the whole point.

"Finding a balance between the objective and the subjective poles in my work is quite a struggle for me personally, and plays out in a unique way in the projects I take on," says Segal, adding that the data embedded within her projects helps drive the ideas or concepts, which then helps direct her decisions about what forms,

methods, and materials will best represent the idea as a physical artifact.

"Because of this I regularly find myself in unfamiliar areas, as opposed to someone who specializes in a particular field or an artist that only uses one medium," she says. "It is a challenge, but also it keeps my work interesting, exposes me to new research, and challenges me to learn new methods."

As a result, when it comes to using data as inspiration for a physical work of art, Segal says that as an artist her work is not assessed based on the integrity of her objective scientific approach. Instead, art is supposed to trigger curiosity and wonder about the world, so subjective experiences and emotional engagement are absolutely necessary for "information" to become "knowledge." In this way, physicalizing the data as sculpture might resonate more with viewers, hopefully introducing concepts to people that wouldn't otherwise have discovered them. This is why Segal focuses her practice on the subjective experiences that happen after the scientific methods of data collection have already been completed.

However, the responses come from both directions. Segal can rattle off many examples of viewers with no scientific background that came to her work and then left with more knowledge of the subject matter, the issues, or the questions she was trying to ask, much more than if they had just looked at graphs and charts. On the flipside, scientists are often thrilled to see research being represented in unexpected, poetic formats, so they also appreciate her work.

"I find that when scientific research is represented as evocative forms and in physical materials, people can interact and comprehend the ideas being represented from a more poetic and emotionally responsive place," Segal says. "I also believe that representing analytic data as a physical experience makes the information accessible to the body and the mind simultaneously. Layering the science with the technique with the material also invites people with varying areas of expertise to engage across disciplines."

DATA MANDALA

Most of Segal's work tends to be exploratory. She aims to unearth and reveal a "story" from



Figure 3. *Puccinia Striiformis* from the Wheat Mandala series, inspired by agricultural data from the University of Lethbridge.

swaths of data already available on a particular subject. Her *Wheat Mandala Series* (see Figure 3 and Figure 4) was different in that scientists approached her with a specific dataset to drive a project. Dr. Jaime Larson and Dr. Andre Laroche from the Data Physicalization Lab at the University of Lethbridge in Alberta developed agricultural data, and then, in collaboration with the Southern Alberta Art Gallery, six artists including Segal were invited to respond to the data. The mandalas diverge from her other sculptural works in that Segal pulled imagery



Figure 4. *Year Without a Summer* from the Wheat Mandala series, inspired by agricultural data from the University of Lethbridge.

from a variety of online resources in order to layer and build a graphic narrative rather than using a 3-D sculpture to communicate the dataset.

When asked what will come next, Segal says the future looks bright. The data will still inspire.

“[I will] keep pushing the limits of my abilities and experience, and see what other research and opportunities come my way.”

Gary Singh lives and writes in San Jose, California. Contact him at <http://www.garysingh.info/>.