Artist turns to science for his sculptures

Julian Voss-Andreae masters 3-D technique

By SARA HOTTMAN
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Artist Julian Voss-Andreae gets very excited about proteins.

For his latest sculpture, he used compound cuts to make one-dimensional pieces of metal into three-dimensional objects—"just like amino acids do" to create proteins, he says. "It's the same trick nature uses to go from 1-D to 3-D."

The German artist has a deep science background. He studied physics, mathematics and philosophy at the universities of Berlin, Edinburgh and Vienna, focusing on quantum physics for his graduate research.

But when he moved to the U.S. with his Portlander wife, he returned to art. In 2004, he graduated from Pacific Northwest College of Art in the Pearl District, and now he works out of a large warehouse in the Northwest Industrial District.

His understanding of atoms and molecules gives his science-related and female-form pieces depth that appeals to institutions like Rutgers University, which recently commissioned him to create a piece for its Center for Integrative Proteomics Research. The new facility seeks to foster studies of complex biomolecular phenomena across disciplines—computational chemistry, structural biology, mechanistic enzymology and bioinformatics.

The center's founder, Dr. Helen M. Berman, is a fan of Voss-Andreae's other science-related sculptures, fascinated that someone from the arts could do something so beautiful with science, she told him.

"I always felt like a tourist in science," says Voss-Andreae, 43. "It's critical to put science in an art context and give it associations and interpretation. It becomes something that's alive again."

Last week he shipped the 20-foot-tall, 3,200-pound sculpture of a collagen molecule. The glass-and-metal lighted structure seeks to convey synergy: 

"Collagen seems to be the perfect metaphor, because collagen is meaningless alone," he says. "It can only make sense together."

Voss-Andreae's three-dimensional work is captivating, cleverly creating shapes and forms that respond to movement and perspective.

"It shows that when you look at things from a different perspective, they can look extremely different. That's part of the quantum message," Anton Zeilinger, a physicist at the University of Vienna and Voss-Andreae's former group leader, told Chemistry World magazine in 2008 regarding his former student's sculptures.

Although some in the art world remain skeptical of the process, Voss-Andreae's designs start on a computer.

"Computers have gotten so complex now that intuition can flow like with a chisel or brush," he says.

His first sculpture was a small, 58-amino-acid protein, designed on a computer for precise cuts to create a three-dimensional structure.

Over the years, he's mastered the 3-D technique. The large-scale collagen sculpture is made of 60 pieces of thick, custom-made steel from New Jersey, laser cut to produce a 3-D molecule. There are 204 colored windows set into the metal, the first time he's used glass on such a scale, he says.

As he put the finishing touches on the collagen piece, he was excited to unveil a patina bronze sculpture commissioned by a collector in Palm Desert. The three-dimensional, hollow female form will go by the pool. Its turquoise-colored form appears to be made out of the patterns that take shape in a pool's depths.

He's working on another female form as an experiment: He hopes to make her out of hollow metal triangles, then fill the triangles with glass triangles he made in a borrowed kiln. Structurally, it may not hold up, he said, but through his work Voss-Andreae seeks to challenge himself and push the limits of sculpture.

"These sculptures born from scientific data," he wrote in a Leonardo magazine column, "are capable of imparting an artistic experience of life that complements the understanding provided by reductionist science alone, and thereby inspire a more holistic view of nature."

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