

Science & Art

Meet the Scientist-Artists

Robert Lang — Origami - Not Just For Fun!



From the time Robert Lang was a child, he was passionate about rendering beautiful figures from nothing but a square of paper. In 2004, he became a full-time origami artist, after nearly three decades as a physicist and engineer, when he authored or co-authored more than 80 technical publications and was awarded 40 patents involving semiconductor lasers, optics, and integrated optoelectronics.

Origami comes from the Japanese words for folding (ori) paper (gami). Lang's skill in folding origami and in mathematics led him to become one of the pioneers of a type of origami known as origami sekkei, or "technical origami," in which computer algorithms aid in the creation of crease patterns for highly complex sculptures. He uses geometry, trigonometry, algebra, calculus and graph theory in the process of creating his art, and is recognized as a master in the rarified world of origami artists.

Lang and other scientists use origami to help solve engineering problems — especially those problems related to fitting large objects into small spaces. Scientists at the Lawrence Livermore National Laboratory in California wanted to build a

really big telescope (about the size of a football field) and send it into outer space. It was an interesting idea, but the cargo space in the rocket is only about as big as a school bus. Lang and other scientists thought origami might provide a solution. Lang hit on a design that opens and closes similar to a

collapsible umbrella. This design would allow a large telescope to be collapsed into a bundle just a few meters across.

"The cool thing about origami is that it is a very mathematical art. In many arts, there's pure artistic skill. In origami, it's almost half and half. You can do things with pure art, you can do things with pure math, but if you put them together, you get far more satisfying results than either one alone."

—Robert Lang

Lang's work, as well as information about origami and its connection to geometry.

For more info: www.langorigami.com

