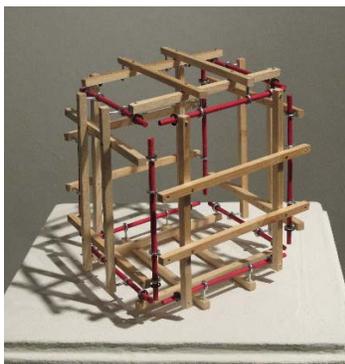
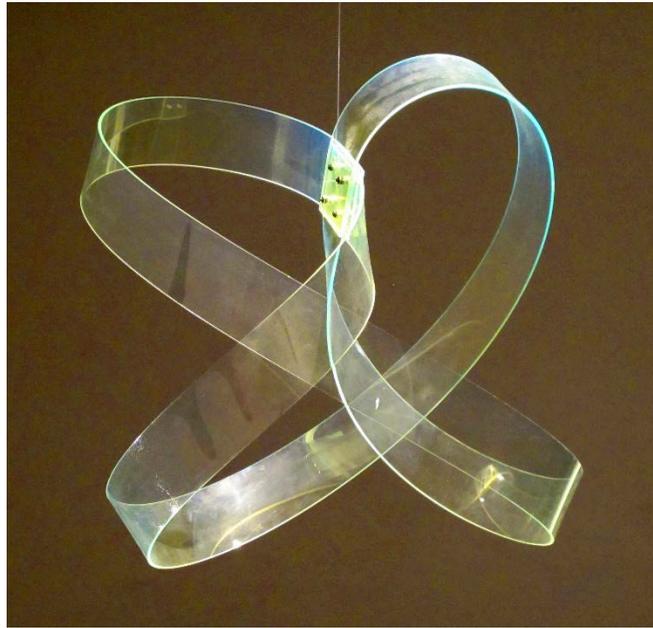


**Art & Science Exhibition: "Vision + Light: Processing Perception"**  
Worth Ryder Art Gallery, 116 Kroeber Hall, UCB, Feb 20-Mar 14, 2019

Presented by **Science at Cal** and the **Department of Art Practice**  
and co-sponsored by UC Berkeley **Arts+Design Initiative**



"Vision + Light: Processing Perception", UCB, Feb 20-Mar 14, 2019



**"Translucent Kross-Knot" Carlo H. Séquin, UCB (1994)**

A 3-inch wide, curved acrylic band in the shape of a twisted trefoil knot, is fused at one of the crossing points.

Without the cross-point fusion, placed in gravity-free space, the resulting shape would be a simple trefoil knot in the 4-fold symmetrical form of a (2,3)-torus-knot.

However, suspended at the fused cross point, the resulting 2-fold symmetrical shape is determined by gravity and by the elastic properties of the acrylic band.

**Questions to ponder:**

**What is the overall twist of the acrylic band?**

**Is the resulting sculpture 1-sided or 2-sided?**

"Vision + Light: Processing Perception", UCB, Feb 20-Mar 14, 2019



### **“Touch & Peek”**

**"Sculptures You Can Touch" Carlo H. Séquin, UCB (2019)**

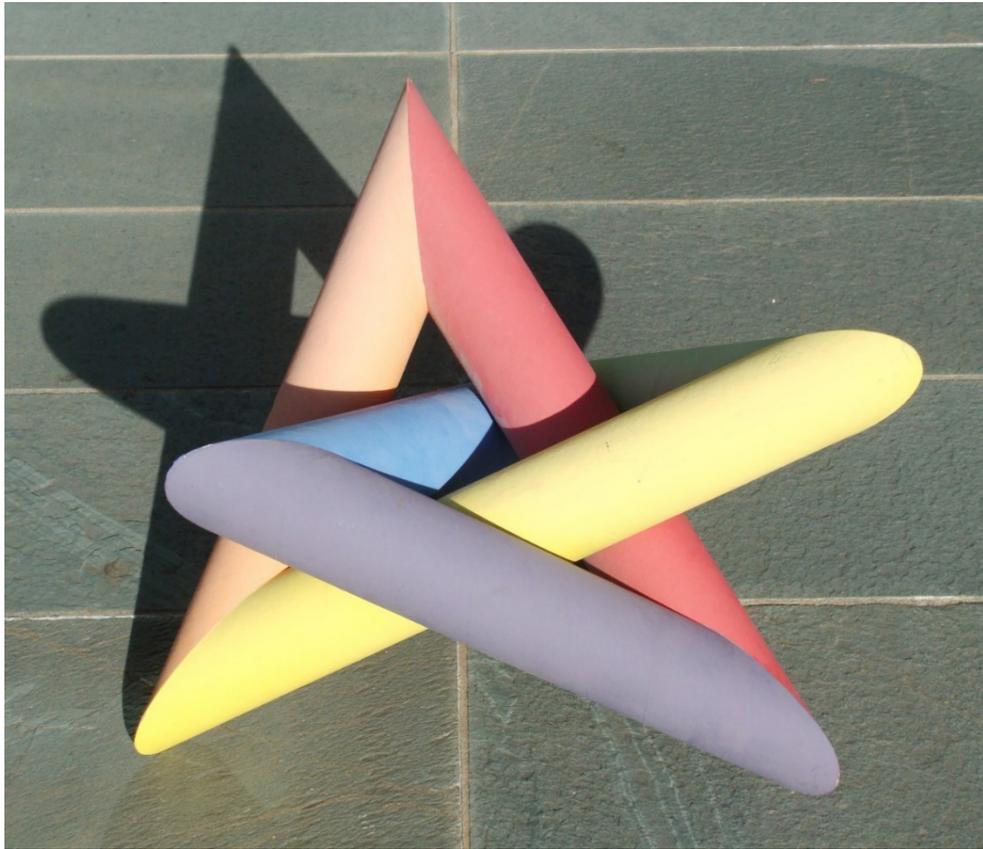
In this black box there are 3 pairs of openings (labeled “touch here !”) through which gallery visitors can reach inside and explore three sculptures with their hands in a tactile manner.

The three sculptures have quite different forms and textures.

Once the visitors have formed a mental image of what a sculpture might look like, they can then lift a small flap (labeled “peek here !”) and visually confirm or correct their initial impressions.

**Spoiler Alert!** -- This is what is inside the black box ...

"Vision + Light: Processing Perception", UCB, Feb 20-Mar 14, 2019



**Carlo H. Séquin, UC Berkeley: "Tubular Trefoil" (1984)**

Cardboard Tubes, painted, 25" diameter.

The tightest possible trefoil knot made from 6 cylindrical tube segments.

Background Story:

In the mid 1980s we had a large 36-inch-wide Versatec plotter in the CS department. I collected the sturdy cardboard tubes that used to hold the paper for our printer. One of my uses for them was to make models of mathematical knots. The trefoil knot is the simplest possible knot, and six straight sticks is the minimal number that can form a model of this knot. A mathematical optimization procedure was used to find exact lengths and the cutting angles for all tube segments.

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**Carlo H. Séquin, UC Berkeley: "TorusKnot\_5-3" (2010)**

Bronze with patina, 15" tall.

**A crescent-shaped cross section is swept along the path of a (5,3)-TorusKnot (a path that makes 5 passes around a doughnut and 3 passes through its hole).**

Fabrication Notes:

This sculpture has 3-fold symmetry; so the detailed geometry need be specified for only one third of it. This was done by fabricating a 3D print of one such branch. This printed model was then used to make a mold in which three wax copies could be cast. Those were turned into bronze parts with a classical investment casting process. The three casts were then welded together, polished, and provided with a nice patina by Steve Reinmuth in his Bronze Studio in Eugene, Oregon.

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**Carlo H. Séquin, UC Berkeley: "Figure-8 Klein Bottle" (1997)**

Woven paper strands, 16" tall.

A Klein bottle generated by sweeping a figure-8 shaped cross section along a circular sweep path.

Background Story:

On Christmas 1997, my daughter Eveline (a biology major) surprised me by presenting me with a small woven Klein bottle, made in basket weaving course in the EEC in Tilden Park. In addition, she also gave me several rolls of colored paper strands. We then spent the next 10 days together, weaving other neat mathematical models, like the special Klein bottle above. It was a wonderful father-daughter experience.