Proposal to Create a Sculpture for the SCGP

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I propose that I serve as Artist in Residence at the SCGP for a period in the 2012-2013 academic year. In this residency, I will: (1) interact with scholars at the center discussing possible mathematical themes for a sculpture, (2) design a large sculpture which can be assembled by a group of participants as a "sculpture barn raising," (3) have the components fabricated and delivered to the site, (4) give a lecture about the design and the assembly process, and (5) lead the community in the construction of a large, permanent, metal sculpture.

Background: I am a mathematical sculptor with a technical background. (MIT B.S. Mathematics and MIT Ph.D. EECS, previously on the faculty of Columbia Univsity and Stony Brook University) I have extensive experience designing and building constructive mathematical sculpture. For many examples please see my web site, but follow these links for several similar community assembly projects of mathematical sculpture:

- The American Mathematical Society commissioned me to create a sculpture, Gyrangle, which was assembled by the public in 2010 on the Mall in DC outside the Smithsonian and is now at Towson University department of mathematics.
- At the 2010 Gathering for Gardner conference I led sculpture barn raising for Wormhole in which almost 100 people participated.
- Albion College commissioned me in 2008 to create sculpture, Comet!, for their new 120-foot long science center. Over 100 people assisted in the assembly.
- As Artist in Residence at MIT in 2003, I led a group construction of the sculpture Salamanders, which is permanently on display in the MIT Stata Center.
- As a commission for the Northport Public Library, in 1999 I led a community construction of the Millennium Bookball, celebrating the best books of the century.

Five Aspects to the Process:

1. Theme: I do not want to narrow my options down yet about the theme for this sculpture, except that it will somehow relate to ideas from geometry and/or physics. I feel the process will be more exciting and the result more relevant to the community if I can develop the theme during discussion with scholars at the SCGP. For this phase of the project, I expect that I would give a small internal seminar about the project where I would encourage brainstorming. I could later chat informally with people at teas and in more detail with interested individuals. This phase would take two to three weeks.

2. Design: Over a period of a month or so, I would flesh out the design and work out the engineering details of the components and the assembly sequence. Most likely the parts would be designed to be assembled with nuts and bolts, as I have found this to be very successful with other barn raisings. At the end of this phase, I would present the design and cost estimate to the Arts committee for final review and approval.

3. Fabrication: A likely material is powder-coated aluminum. This is a versatile, corrosion-resistant

material for outdoor sculpture. Powder coating allows for bright colors. I have dealt with a number of industrial vendors on past projects and can generate parts drawings and supervise the component fabrication. Typically, vendors request four weeks after they receive the OK to fabricate.

4. Lecture: When the parts are ready and the date for the barn raising is set, we can announce a public lecture at which I will describe the sculpture and the assembly process. At this event, I will also recruit volunteers who I can train to assist me as special helpers during the assembly.

5. Sculpture Barn Raising: The project will culminate in a day devoted to the assembly. Depending on the complexity of the sculpture and the space available at the site, we can limit the participants to just SCGP invitees or open it to the whole SBU community.

Size and Location: A possibility for the location which I have discussed with the Art Committee is the corner of the terrace patio outside the cafe. This offers excellent visibility for the finished sculpture. It is a bit cramped for the actual assembly process, but I expect we can work around that by building modules at another location and carrying them to the terrace for the final assembly. For that site, an appropriate sculpture might be from five to twelve feet tall. I am also open to ideas for other sites. If there are other options, this can be finalized during Phase 1 of the project.

Schedule: I am flexible about the time-frame and can work around other scheduled events. For an outdoor sculpture, to avoid weather issues, it is convenient to finish by mid-December, or wait until April for the assembly event. If it is desirable to complete this in the Fall semester, it is possible to to do so if we start in September and have the assembly event in mid-December.

Facilities: A secure work and storage space would be required for receiving the components. There, I could verify the inventory, inspect for damage, check the fit, measure for accuracy, etc., before the assembly. Coordination with the building manager would be required to work out the details of the permanent mounting. It is likely that bolt holes would be drilled in the slab. Tables and chairs would be needed for the assembly event. Additional lighting might be considered, to highlight the sculpture at night.

Budget: I request $25K as an artist's fee for my time. For a large outdoor sculpture in laser-cut, powder-coated, 6061-T6 aluminum, I estimate up to $100K for costs of materials, cutting, coating, shipping, videography, etc. Given a smaller budget, I can design a smaller sculpture, with $40K being the minimum for something of a size worthy of the terrace location. I would receive quotes from fabricators during Phase 2, so all the major costs would be known before the committee is asked to make the final approval. If for any reason, the committee does not approve the final design, there would be no costs other than my artist's fee. I propose an account be set up so the fabrication charges can be billed directly to SCGP.

Note: I already have made one group-assembled sculpture at SBU, Spaghetti Code, a two-meter diameter orb that is hanging in the Computer Science building lobby. The sculpture for SCGP will be purposely different: colorful and non-spherical (and with a very different theme, of course).