

Hosting the Bridges Conference

Bridges: Mathematics, Art, Music, Architecture, Culture

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Summary

This document outlines what is involved in hosting the Bridges Conference. It is intended as a guide to help an organization (usually a university, but in two past cases, a museum) determine if they are interested and have the resources to host the conference. Some aspects of the conference are best managed by the Bridges Organization, which has continuity from year to year, and some aspects are best managed by the local hosts, who are familiar with the local facilities, people, resources, and culture. The exact arrangement of responsibilities is negotiated each year, so the details below are just a guideline for discussion. Everything can be worked out to make the conference as optimal as possible.

Background

The Bridges Conference is the premier international, interdisciplinary conference connecting mathematics and the arts. It began in 1998 and has run annually each summer ever since. In recent years, 350-400 participants can be expected to attend from over 30 countries. The conference includes invited plenary talks, contributed paper sessions, hands-on workshops, a curated mathematical art exhibition, a short-video festival, musical performances, a mathematical poetry reading, a theater event, a fashion show, a free public outreach afternoon, an informal display area, and other activities connecting mathematics with all branches of the arts. It spans five days, usually near the end of July or beginning of August. Four days are academic, filled with talks, workshops and performances. One day is an Excursion Day for participants to see local sites and learn about the local culture. Each year, the conference produces a printed Proceedings, typically 600-700 pages in length, containing roughly 120 articles, and also a printed color Catalog of the works accepted for the Art Exhibition.

The conference highlights original contributions that have a mathematical component, an artistic component, and clear connections between the two. We consider the arts to include fine arts (painting, drawing, sculpture, ceramics, photography, fiber arts, jewelry, etc.), performing arts (music, dance, theater, juggling, magic, etc.), language arts (literature, poetry, wordplay, etc.), cultural arts (cinema, fashion, etc.), and applied arts (architecture, design, mechanical puzzles, culinary art, etc.). Full details about the conference, including a list of all past locations, a freely-available archive of all the published papers for the past twenty-plus years, published conference reports, photos of artworks from the exhibitions, and calls for papers can be found on the Bridges website: BridgesMathArt.org

The conference takes place at a new venue each year. Typically the conference is hosted by a university at which there are one or more faculty whose research involves connections between art and mathematics, who have attended Bridges in the past, who are interested in bringing it to their own community, and who offer to manage the local arrangements. The conference is a powerful way to showcase the hosting institution to an important international audience.

Bridges has been held at the Banff Center (Banff International Research Station for Mathematical Innovations and Discovery, Alberta, Canada), London University (in collaboration with the London Knowledge Lab, UK), University of Granada (home of the Alhambra Palace, Spain), University of Basque Country, San Sebastián (the region of Gehry's Guggenheim, Spain), the City of Leeuwarden (the birthplace of M.C. Escher, the Netherlands), and the Pécs Cultural Center, Pécs, Hungary (2010 European Cultural Capital). The 2011 Bridges Conference was held at Coimbra University, Portugal (one of the oldest universities in Europe). The 2012 Bridges Conference was at Towson University, USA. The 2013 Bridges Conference was a joint project with the University of Twente and Saxion University, Enschede, the Netherlands. The 2014 Bridges Conference was held

in Seoul, Korea, and in 2015 the conference met at the University of Baltimore, USA. In 2016 the conference met in Jyväskylä, Finland, and in July 2017 it was held at the University of Waterloo, in Waterloo, Canada. Bridges 2018 was at the National Museum of Science and Technology in Stockholm, Sweden and 2019 was at Johannes Kepler University in Linz, Austria. Bridges 2020 and 2021 were held online, due to Covid-19. In August, 2022 an in-person Bridges Conference was held at Aalto University, Helsinki, Finland, then Bridges 2023 was held at Dalhousie University, Nova Scotia, Canada.

The Bridges Organization is a non-profit organization based in the United States, managed by a board of directors, listed below. We organize the conference and take care of participant registration and most aspects of the content. We put out a call for contributions, create program committees to review the submissions, manage the editing and printing of the Proceedings and Art Exhibition Catalog, organize the art exhibition curation, installation, and removal, invite keynote speakers, schedule the talks, prepare the program, publish announcements on our web site and email list, handle online registration, pre-make name-tags, etc. The Bridges Organization also manages a fund that awards a number of student travel scholarships. Faculty from the host university are invited and encouraged to join the committees and participate in making the content decisions.

The Bridges Organization collects a registration fee from participants, roughly \$250-\$300 (US) which covers the costs of running the conference, creating the Proceedings and Catalogs, overhead expenses, etc. (We work very hard to keep the registration fee low, as a good number of participants are full-time artists without institutional support, so can not afford the expensive fees typical of many large conferences.) In recognition of the support that the hosting institution provides, students and faculty from the host institution are invited to attend the conference sessions at no charge.

Photos from Past Conferences

To give a better sense of the richness of the Bridges Conference, here are a few images from past years. Many more can be found at the Bridges website.



Keynote speakers have included Nobel prize winners and stars in the world of math and art, for example Ernő Rubik, the inventor of the Rubik's Cube, spoke at Bridges 2010.



Contributed talks cover a wide range of topics, here a demonstration of the mathematics underlying a topological magic trick.



The Art Exhibition includes works with mathematical foundations in all media, including painting, drawing, water color, sculpture, woodworking, origami, fashion, fiber arts, etc.



Hands-on workshops bring out mathematical thinking in a physical manner, often with activities that may be used by teachers in a classroom setting.



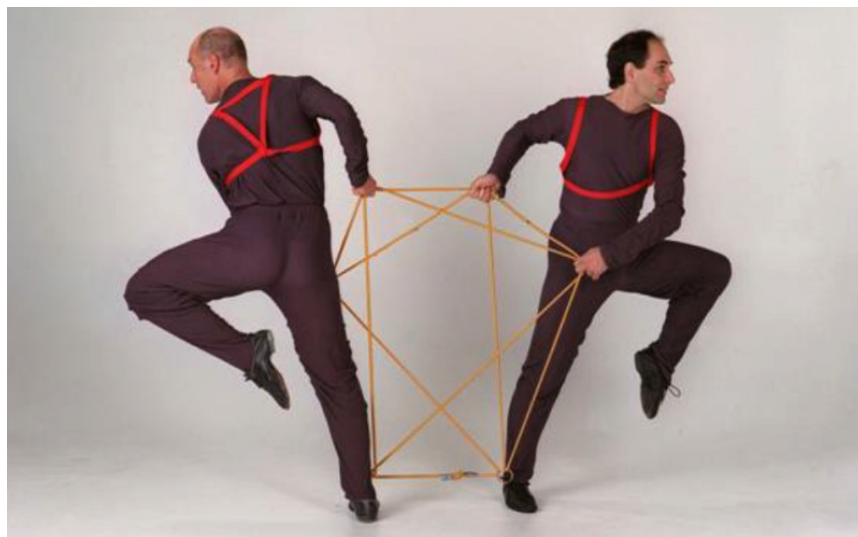
The Bridges Conference has included large Zometool constructions assembled over several days.



There are many connections between mathematics and music. The acclaimed violinist Corey Cerovsek (who also studied mathematics) has performed and spoken at Bridges several times.



Many theater works involve mathematical ideas. "Arcadia" by Tom Stoppard was performed at the 2000 Bridges Conference.



Dance often involves patterns, symmetry, and transformations. Mathematics professors and ballet dancers Karl Schaffer and Erik Stern have performed at the Bridges several times.



Hundreds of people attend Family Day and participate in hands-on activities.

Host Institution Responsibilities

The exact details of the arrangement with the host institution vary each year, depending on the location, the facilities, and the support available. Representatives of the Bridges Organization will visit the site ahead of time, discuss possibilities with the local organizers and administrators, come to terms, and sign a letter of agreement more than a year in advance. Because the resources are different at each site, most of the following expectations are somewhat flexible:

The local institution creates a committee of three or more responsible people (faculty and staff) to work closely with the Bridges Organization to handle all the local arrangements. This includes many decisions about scheduling, room assignment, special local speakers, where to go on Excursion Day, etc.

Usually one morning of the conference schedule features talks by speakers from the hosting institution or country and/or highlighting work by mathematicians and artists from the host country, e.g., “Canada Day” when in Banff or “Escher Day” when in The Netherlands. The local committee is encouraged to select speakers and talks appropriate for this.

The host institution provides space, equipment, and local AV staff needed to run the conference. The minimum room requirements are:

- An auditorium for 350+ participants for plenary sessions, including keynote talks and evening music or theater events. Ideally there is a piano available for one evening.
- Four 70+ seat lecture rooms, with projectors and screens, a computer, and Internet access, for speakers to present talks. (One could be the auditorium, if it is available all day.)
- Two 40+ seat workshop rooms (with movable flat tables and chairs) for hands-on workshops.
- Space for the Art Exhibition and the Informal Display Area (approximately 3500 square feet in sum) with 50+ flat tables. Ideally, the Art Exhibition space is near the auditorium.
- Space for registration tables.
- Space for the Family Day public outreach afternoon in which the community is invited to participate freely in hands-on math/art activities. Sometimes this is off-site, arranged in partnership with another organization, but we still welcome the public to visit the conference Art Exhibition.

The host institution typically provides seven coffee and tea breaks, one for each morning and afternoon with talk sessions (not the Family Day afternoon or the excursion day). Local pastries or snacks are always appreciated.

The host institution provides local marketing, e.g., promoting the free Family Day afternoon to the public.

The host institution designs a poster, a banner, a postcard, and a video promoting the conference in the context of the local environment. (Usually the host institution has a public relations office with stock images and video

footage of the campus and local attractions that go into the video.) Postcards are printed for distribution at conferences. The poster and video are distributed online, e.g., <https://www.bridgesmathart.org/b2023/>.

The host institution provides 15-20 rooms at a local hotel for up to seven nights, which are assigned by the Bridges Organization to conference organizers and invited speakers. This is typically the largest expense for the local conference budget, but often the local institution has a discount contract with a local hotel allowing a reduced rate, lower than outsiders can arrange. To aid in local budget planning, we ask the local host to cover at most 100 nights, with Bridges paying for any nights beyond that.

The host institution may provide travel support for some invited speakers, in the interest of bringing in high-quality names.

The host institution provides staff to help with the on-site logistics, e.g., someone available at the registration table with keys to the conference rooms and with access to the local management and AV personnel.

We ask the local institution to provide a mailing address where artworks for the exhibition can be shipped and stored up to a month ahead of time. Local staff receive the works and place them in storage until the day of the exhibition setup. If any customs fees are charged upon arrival, Bridges will reimburse the local institution.

The host institution may print copies of the conference program if they wish to make paper copies available, but in recent years we have found that an online program is sufficient.

The host institution may find sponsors that cover some of these costs. Sometimes in addition, the host institution finds sponsors that cover the cost of a dinner or a reception for conference participants, adding to the participants appreciation of the local culture.

All the above may be adjusted and adapted to the local situation through discussion between the local hosting institution and the Bridges Organization, with the goal of providing the best conference experience for participants.

Mini Bridges: As an optional addition to hosting Bridges, some venues have chosen to also host a "Mini-Bridges" event some time in the year preceding the conference. This might take the form of a one-day or half-day event with some talks about connections between math and art, plus one or two hands-on activities. The goal is to introduce the host personnel to the Bridges ethos, advertise to local audiences, and allow key Bridges organizers to meet in person and discuss the facilities and arrangements. The date, scale, and details of the event are totally flexible, depending on what makes sense for the host institution. If it is six months or more ahead, it may inspire faculty at the host institution to prepare materials in time for the content submission deadlines.

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The Bridges Conference was founded by Reza Sarhangi (1952–2016), Department of Mathematics, Towson University, USA, who as founding President created a large and enthusiastic community that continues to keep the conference thriving each year.