

Organizing Workshops and Programs at Math Institutes

Brendan Hassett

The only reliable way to be invited to good conferences is to organize them yourself!

I remember getting this advice from a distinguished mathematician—and prolific conference organizer—a few years after my PhD. This article will help you put this into practice.

What are the Institutes?

In the United States, the Division of Mathematical Sciences (DMS) of the National Science Foundation (NSF) currently supports eight Mathematical Sciences Research Institutes: the Institute for Advanced Study in Princeton (IAS), the Mathematical Sciences Research Institute in Berkeley (MSRI), the Institute for Mathematics and its Applications at the University of Minnesota (IMA), the American Institute of Mathematics in San Jose (AIM), the Institute for Pure and Applied Mathematics at UCLA (IPAM), the Mathematical Biosciences Institute at Ohio State University (MBI), the Statistical and Applied Mathematical Sciences Institute in the Research Triangle of North Carolina (SAMS), and the Institute for Computational and Experimental Research in Mathematics at Brown University (ICERM). While these differ in mission and organizational structure, they all offer opportunities to early career mathematical scientists to participate in research programs, ranging from small collaboration groups through week-long workshops to year-long, large-scale thematic programs. Indeed, the long-term pro-

fessional development of early career program participants is a crucial metric of the success of these institutes.

There are other US-based institutes sharing many attributes with the DMS-supported institutes, including the Center for Discrete Mathematics and Theoretical Computer Science at Rutgers (DIMACS), the Simons Center for Geometry and Physics at Stony Brook (SCGP), the National Institute for Mathematical and Biological Synthesis at the University of Tennessee (NIMBioS), etc. However they are funded and organized somewhat differently, so I will focus on the eight NSF Mathematical Sciences Research Institutes listed above.

What do they do?

Successful mathematicians have deep relationships with former mentors, friends from graduate school, past department colleagues, collaborators, etc. These connections form much of the human capital in the field. Institutes create connections among mathematical scientists based on communities of shared scholarly interests. Early career mathematicians often have the most to gain by cultivating such contacts, which can last a lifetime.

Institutes also help focus the attention of the mathematical community on important developments in the field. By helping organize a program, you can have a voice in deciding what these should be.

Who decides on Institute programs?

With the exception of the IAS, where the permanent faculty members play a central role in planning research programs, institutes choose programs through proposals originating from the mathematical sciences community. Typically, institute directors (leaders) help solicit ideas which are then evaluated by a scientific advisory board of outside experts. Criteria differ across institutes, reflecting their varying mis-

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sions. Some prefer pure mathematics programs supporting well-defined disciplinary communities; others focus on applied topics; and still others promote connections between the mathematical sciences and other disciplines.

Where do the proposals come from?

It depends on the size and complexity of the activity. Small collaboration groups, like Collaborate@ICERM and SQuaREs at AIM, bring groups to the institutes for a short period of time to work on specific problems. These are probably the most accessible to early career mathematicians—some explicitly seek untenured participants.

Weeklong workshops can also include early career mathematicians as organizers, often in collaboration with more senior members. But there are successful meetings organized largely by untenured faculty and postdocs.

Graduate summer schools often include early career organizers. Many senior faculty cannot spare three weeks to give a series of lectures to a group of doctoral students. Summer schools often involve postdocs and untenured faculty as group leaders and TAs as well.

Semester and year-long programs are mostly organized by tenured faculty. Such a program may take years to develop. It is hard for untenured people to commit to participating in a program years in advance. However, within such programs there are organizational roles often performed by early career participants, e.g., graduate student and postdoc seminars are often coordinated by students and postdocs.

Why organize a program at an Institute?

Organizing conferences and programs, like writing grant proposals, focuses your own research program in a way that allows you to do more and better research. And it presents opportunities to influence the research directions of your mathematical community in a way that aligns with your mathematical values.

You might assume that it would be easier to run a workshop in your home department than at an institute far away. It saves the trouble of travelling. Also, writing a conference grant can be a great learning experience; they can be less competitive than individual grants and open a window on the grant-writing process.

Institutes do have advantages. Department staff have many regular duties and may not have the time to provide conference support. However, institute staff exist to support the organizers of their programs and are highly trained in the fine points of hosting conferences. The first time I organized a conference in my department (as a junior faculty member) I was personally responsible for creating the webpage, unlocking the lecture hall, delivering food, cleaning up afterward, etc. When I led programs at institutes, all these details were taken care of. Directors and scientific staff at institutes can also share their experience of what makes a successful meeting. A week away from the quotidian demands of students, colleagues, and family can

also help one focus on research. It is easier to make mathematical connections over long coffee breaks and conference dinners. (However, institutes sometimes offer support for childcare and assistance to participants accompanied by young children.)

Another benefit of organizing conferences and programs at institutes is their visibility and prestige, which helps attract speakers and workshop participants and thus increases the impact of your program.

How do I start?

Talk to someone with a connection to an institute. This could be an organizer of a previous program, a member of the scientific or governing board, or an institute director. Sketch briefly what you have in mind and be prepared to get feedback. Most programs are the culmination of an iterative process starting with a conversation at tea leading to a phone call, then a program sketch, and finally a formal proposal. Make sure you review the solicitation instructions before submitting—scientific advisory boards do not want to turn back incomplete proposals.

What are common challenges?

Scientific planning. We have all been to events that bring together the same 25 people regularly to give the same talks to the same audience. Be prepared to involve people outside your immediate circle of friends and collaborators rather than just the ‘old boy network.’

Institutes exist to promote research and develop human capital, including individuals from underrepresented groups or schools with limited research resources. Keep this in mind as you choose speakers and review applications for funding.

Some institutes have specific guidelines for how workshops are structured. AIM emphasizes active collaboration rather than just a series of lectures. ICERM seeks a balance between mathematical theory and computational experiments and examples. There is no point pushing back against guidelines central to an institute’s missions.

Sometimes a workshop does not work out as planned due to factors outside your control and has to be re-imagined in mid-stream. The cause might be a research breakthrough, a competing event, the illness of a leader in the field, etc. Be flexible as new information comes in.

Communication. When an organizing committee maintains radio silence it multiplies the work of institute management. And if some of the group takes this approach it is a burden on the remaining conscientious organizers—the uncommunicative members are delegating their responsibilities.

Be cautious about making commitments to speakers and participants. Most institutes have standard policies and reimbursement rules reflected in their invitation language. Don’t create confusion by giving conflicting information.

Mathematicians tend to be self-reliant—we seldom have secretaries to manage schedules, webpages, refreshments, etc. At an institute, allow the staff to do their jobs and treat them with respect and courtesy. While they can make mistakes or misunderstand what organizers want from a program, institute staff often know more about running a workshop than most mathematicians!

Professional conduct. A challenging aspect of organizing a conference as an early career mathematician is confronting unprofessional behavior: a high status colleague badgering a speaker with repetitive and dismissive questions; heated arguments among participants; and even discrimination or sexual harassment. Bring these to the attention of the directors! They are responsible for maintaining a professional atmosphere and usually have experience with difficult conversations.

The popular view of mathematicians working alone in their offices is a myth. Mathematics is a social activity! Creating conditions where this can occur requires resources, planning, vision, and scientific direction. Institutes rely on members of the community—including early career researchers—for their vision and leadership. Organizing institute programs can have a profound impact on both your personal research and the future development of your scholarly community.

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