HOW TO LAUNCH A RESEARCH NETWORK

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WHY CREATE A RESEARCH NETWORK?

Participants in research collaboration conferences for women (RCCWs) describe their experiences as transformative, and most want to continue their research connections beyond the duration of the conference. A natural way to do this is to invite them to join an associated research network (RN). A research network also raises the profile of women in the research area, assists in recruitment and advertising, maintains channels of communication between researchers, and offers an obvious source for women speakers, panelists, reviewers, organizers, and editors.

AWM has identified three key activities for strengthening ties after the RCCW:

• Publish a proceedings volume from the RCCW
• Establish a listserv and web presence
• Organize a follow-on activity such as a conference special session

Additionally, AWM recommends establishing a steering committee for the RN to ensure network activities occur in a timely and organized fashion.

“When WIN [Women in Numbers] was conceived, there were only 3 female number theorists who had faculty positions at the top research universities in the U.S. Today, there are more than 10, all of whom have been participants in WIN.“

What AWM can provide

AWM offers a venue for publishing a proceedings volume, the AWM-Springer series. AWM can also provide an RN website and listserv, assessment survey templates, and funding for senior participants (as funds allow). AWM also offers connections to a large network of women with experience organizing RNs who are happy to share their expertise and ideas.
MODELS FOR RESEARCH NETWORK STEERING COMMITTEES

The structure and activities of a research network (RN) vary depending on the particular research community. We present here a few different models for RNs and their steering committees.

Small committee

Often, a small but passionate group organizes the first RCCW. For some research networks, the same nimble structure works for the RN steering committee as well. At minimum, the committee should have a web manager and an event organizer.

Women in Mathematical Biology steering committee has four members: web manager, workshop organizer, listserv and communication, and network planning. Members serve two-year staggered terms. RCCWs themselves are organized by another committee, although there is overlap in personnel between the two groups. WiMB had two RCCWs prior to AWM’s ADVANCE grant, hosted at IMA and NIMBioS, and one since hosted at MBI. The group publishes in the AWM-Springer proceedings series.

Women in Shape steering committee also has four members, a chair, a web manager, and two general members. Though it began with a hierarchical structure, it is now very flat in its organization so that the entire committee is aware of communication and has an opportunity to contribute to decisions. Members serve indefinitely, with new members invited from the pool of RCCW organizers. Once the network grows sufficiently, it will move to a fixed term model. WiSh had one RCCW prior to the ADVANCE grant and has held two since, along with several special sessions. Currently, the main role of the steering committee is to invite organizers for an RCCW or special session and then provide support as necessary. In future, it hopes to expand to other kinds of events and community-building. The group publishes in the AWM-Springer proceedings series.

Women in Computational Topology has 3 steering committee members, one of whom (along with a network member) manages the listserv, and a separate volunteer who manages the website. In the future, the group will re-elect steering committee members after every workshop, perhaps with staggered terms. WinCompTop began before the AWM ADVANCE grant through a listserv for women in computational topology that was open to all genders. Because the network preceded the first RCCW, there were sufficient numbers to elect steering committee members at the first workshop. The primary role of the steering committee is to select organizers for RCCWs and special sessions, and to support them through the process. WinCompTop publishes in the AWM-Springer proceedings series.

Large committee

A large committee can help spread the workload of the RN, as well as creating a wide base of committed RN members with an expansive professional network. It can be helpful to have a smaller group of leaders within the large groups to ensure processes move forward.

The Women in Numbers steering committee consists of all past RCCW organizers, now numbering 17. It holds an election for a rotating chair and treasurer position, and also has a webmaster. The steering committee has regular meetings to decide important issues, including inclusivity, website content, new initiatives, and organizational structures. The treasurer keeps track of funds which roll over from conference to conference and support other activities (such as web hosting). It is separate from individual RCCW organization committees, but plays a role in choosing them. WiN has published four proceedings volumes and counting, most in the AWM-Springer proceedings series.

Women in the Science of Data and Mathematics steering committee adds all RCCW organizers by default. A core group of three drivers (including a chair) and a web manager take primary responsibility for tasks, but there is broad sharing of responsibilities and information. The larger group allows for more inclusivity of discipline, profession, and race/ethnicity. The committee’s work to date has been to organize RCCWs, but it is interested in organizing other events in the future that include men. WiSDM has published in the AWM-Springer proceedings series, but will explore a special issue in a journal for its next RCCW.
Rotating event organizers

Some groups may find a steering committee to be unnecessary bureaucracy. In that case, a more fluid structure might be preferable, with safeguards to ensure continuity of the RN.

Women in Topology has chosen not to have a formal steering committee, but rather to have a committee of organizers for an upcoming event whose members replace themselves with organizers for the next event. Each team of event organizers takes on the role of temporary steering committee, with the support and mentorship of past organizers. There are explicit roles only for web and listserv managers.

PUBLISHING A PROCEEDINGS VOLUME

The first step in publishing a proceedings volume is to select editors, typically from among the organizers of the corresponding RCCW. Some RNs identify two or three editors, while others list all the organizers as editors. In addition, RNs should determine how the review process should proceed: how many reviewers, blind or double-blind, time for review, requested information from each reviewer. A proceedings contract will likely ask for a title, estimated book length, and names of chapters. Since these details will not be known until research groups submit papers for review, we suggest using an intent-to-submit form such as the one linked here: https://tinyurl.com/ybk74lt7. You may wish to invite paper submissions from non-RCCW participants, including non-women, along with submissions from the RCCW research groups.

A natural place to publish a proceedings volume from an RCCW is the AWM-Springer proceedings series. Once AWM is notified of selected editors, a Springer representative will provide a book contract. AWM can provide examples of previous proceedings contracts. Note that many of the details in the contract are assigned a default value, including page limits, number of figures, number of color figures, recipients of free volumes. If something in the contract does not suit your needs, it is likely to be easily changed upon request.

Some RNs have chosen to publish a special issue with a topical research journal. To do so, approach the desired journal with your request. Once a journal has agreed, you will work with editors to set up a referee process that is then handled by the journal (unlike the AWM-Springer series, where the RN oversees the referee process). You may wish to explore how mathscinet counts citations in bibliographies for papers published in a particular journal, as it does not count them for some publishers.

FINDING DATA TO SUPPORT PROPOSALS

As your RN develops, you may wish for data to support grant and workshop proposals. AWM can provide survey data about your RCCWs upon request. Springer can provide chapter download numbers from any proceedings volumes you have published there. In addition, you may want to track data from your network such as:

- Number of members still active \( n \) years after first RCCW
- Number of papers produced and cited, plenary talks given, editorial board appointments, tenure track positions, etc., since first RCCW
- Survey responses for any questions AWM does not ask in its survey
- Selectivity rate for RCCWs, proceedings volumes

Sources for data about the current state of the field include womendomath.org, the AMS Statistics on Women Mathematicians reported annually in Notices, NSF annual reports, reports authored by the American Association of University Women (AAUW), and counts of RCCWs, RNs, and proceedings volumes from the AWM ADVANCE webpage.

Past RNs have noted several benefits of RCCWs and RNs, including increased interdisciplinary connections, decreased isolation and increased community, the ability to address stereotypes and career challenges unique to women, increased research collaboration that continues beyond life of the RCCW, connections to research communities for women in
industry or primarily teaching institutions, and mentorship from established researchers. In addition, participants often describe RCCWs as significantly more productive than the standard workshop format.

**WHY SUPPORT WOMEN IN MATH?**

Research Networks are designed to support women in academic career tracks. Here are 4 reasons why the community should still support women. (Intro needs work.)

- **The leaky pipeline problem.** The leaky pipeline refers to decreasing representation by women in increasing academic ranks. For example, as of 2015, women are 41% of undergraduate math majors, 28% of new math PhD's in the US, 25% of postdoctoral fellows in mathematics, 24% of tenure or tenure-track faculty in math and only 11% of full professors in math (womendomath.org). This trend has been persistent over time. For example, over the last 15 years, the percent of women in the US earning doctoral degrees in math has remained steady (around 30%), while the number of full professors at PhD-granting institutions has been much smaller (around 10-15%) (AMS annual surveys 2003 – 2017). Further evidence of this problem might be presented as rates of hiring amongst women vs. men (for example, see “An update: are women getting all the jobs?” AMS Notices September 2010) or other information about retention rates of women vs. men.

- **Underrepresentation in leadership positions.** Women are still underrepresented in positions which highly impact decision- and policy-making in the profession. For example, 20% of the membership of AMS editorial committees is female (AMS Notices October 2017), while a recent study found that only about 9% of editors on the editorial boards of 435 journals in the mathematical sciences were women (http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0161357). Since the 1990’s, many have questioned whether or not it is more difficult for women to obtain tenure are “top” research institutions. In June 1991, only 4 of the 303 tenured faculty in the “top ten” mathematics departments in the US were women. In 2004, the number of tenured women in these same departments had grown to 16 (“Has the women-in-mathematics problem been solved? AMS Notices August 2004).

- **The gender pay gap.** In addition to the leaky pipeline problem, which may pertain to difficulties with women being advanced or promoted, a disparity in pay between men and women persists, with women earning 80% of men’s salaries, on average (“The simple truth about the gender pay gap” AAUW 2018).

- **Environmental and social barriers.** Women still face stereotypes, gender bias and other climate issues in math and other STEM fields which impede advancement at all stages (see “Why so Few? Women in Science, Technology, Engineering and Mathematics”, AAUW 2010).

**HELPFUL ADVICE**

It is much easier to address disagreements if the format for decision-making is already in place. Consider how you want to handle conflict from the start, before any conflict has arisen.

Find male allies. They can help identify PhD students and young faculty members, and can advertise events.

Make sure there are 1-2 people who feel the responsibility of maintaining the network, and who are clear and frequent communicators. Decision-making should be transparent and inclusive but supported by a predetermined leader.

Invite in all who want to contribute, without regard to seniority or prestige. There can be roles for everyone. Make a point of reaching out to people from traditionally underrepresented groups. They can provide perspectives and networks to strengthen the RN that would otherwise be absent.
OTHER QUESTIONS TO CONSIDER

1. How should we present ourselves to the larger research community (e.g. what vibe, what avenues)?
2. How should we get feedback from the RN community and represent it fairly?
3. Should we tie in with what already exists both at AWM and with the larger research community? What benefits would this offer, and how would we do it?
4. How should we demarcate involvement, especially the role of non-females?
5. Should we organize any non-RCCW events? (These might include AWM workshops, JMM special sessions, or JMM meetups, mentoring models, or career support services/events for key career stages.)
6. What should recruitment look like? Where is the pipeline for young people? What sort of social media or other advertising do we want? How can we best use the RN website?

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