

Benefits of Peer-to-Peer Networking: Lessons from the Earth Science Women's Network

ESWN Leadership Board: Tracey Holloway¹ (contact taholloway@wisc.edu), Allison Steiner², Kim Popendorf³, Agatha De Boer⁴, Arlene Fiore⁵, Meredith Hastings⁶, Erika Marin-Spiotta⁷, Galen McKinley¹, Amanda Staudt⁸, Christine Wiedinmyer⁹
www.sage.wisc.edu/eswn

- ¹University of Wisconsin-Madison
- ²University of Michigan
- ³Massachusetts Institute of Technology-Woods Hole Oceanographic Institution
- ⁴University of East Anglia, School of Environmental Science
- ⁵NOAA Geophysical Fluid Dynamics Laboratory
- ⁶University of Washington and Brown University
- ⁷University of California, Santa Barbara
- ⁸National Wildlife Federation
- ⁹National Center for Atmospheric Research



To Join ESWN:
 Send introductory email to taholloway@wisc.edu
 or any ESWN Board Member (co-authors on poster)

Introduction

In the Earth Sciences, women receive 33% of U.S. doctoral degrees¹ yet represent only 10% of full professors at the top 50 U.S. research universities². The reasons for the mismatch between the supply of highly educated female scientists and their representation at the highest faculty ranks are well documented and include academic isolation, family-work balance, low confidence, and subconscious biases³⁻⁷.

Over the past five years, the Earth Science Women's Network (ESWN; <http://www.sage.wisc.edu/eswn/>) has worked to overcome these barriers. Through online and in-person community-building activities, we aim to lessen the isolation of women scientists, share strategies for balancing family and work, exchange resources for research and career development.

The strongest evidence of the group's value to early career women has been its sustained, rapid growth rate. Between 2002 and 2007, we have expanded from an initial group of 6 to nearly 500. Through ESWN, women have found jobs, established research collaborations and built a community stretching around the world. This growth and impact has occurred exclusively through word-of-mouth, with no formal budget and limited resources.

Building a Network

Every ESWN member joins the group through a personal connection with another member, or by introducing herself to a board member. In this way, all members are a "friend of a friend" or a "colleague of a colleague." This organic expansion has produced a cohort of female scientists, mostly in the early stages of their careers.

78% of survey respondents had invited another ESWN member

A number of characteristics of our growth have promoted a feeling of trust among members:

- Any woman involved in the earth sciences is welcome to join
- Membership is free
- New members must have a direct connection to another member (including a simple email introduction to a board member) - no anonymous registrations are permitted
- New members receive a personalized welcome from two different members of the ESWN Leadership Board
- New members are encouraged to send a short introduction to the group
- All members are encouraged to invite their colleagues to become new members
- Updates on member news are shared through a semi-annual newsletter

Benefits of Person-to-Person Growth

- Strong feeling of "trust" among members
- Openness in sharing personal and professional resources
- Free & effective
- Self-evident - women who find value in the group invite their peers

Drawbacks of Person-to-Person Growth

- Reinforces existing networks
- May inhibit diversity (racial, cultural, or disciplinary)

Overcoming the Drawbacks

- Proactive membership invitations to under-represented groups
- Encouraging members from under-represented groups to invite peers to join

"I often feel isolated, and ESWN has helped with that."



Manda Adams, University of Calgary

"...the most important aspect of this network to me is the sense of community..."

ESWN Activities

Online Community Building

In-person Networking
 In person get-togethers at professional society meetings (AGU, EGU, AMS, ASLO ocean sciences, etc) are a major ESWN activity. The Fall AGU Meeting hosts our largest reception each year, with over 100 attendees in 2006, and 250 expected for 2007. Most ESWN activities are self-funded by members - gathering for lunch, dinner, or happy-hour sometime during a major meeting (plan are announced through our email list-serve). The 2006 and 2007 Fall AGU receptions have been generously funded by the National Center for Atmospheric Research (NCAR), with the 2007 reception getting additional support from the interdisciplinary journal Environmental Research Letters, and the Joint Institute for the Study of the Atmosphere and Ocean at the University of Washington.

Outcomes of ESWN Receptions

- giving a "real face" to members of the on-line community
- personal and professional connections
- reconnecting with friends and colleagues
- recruiting new members

ESWN Listserv
 The listserv reaches all members about various topics of interest. Recent postings include:

- new member introductions
- articles relevant to women in science
- questions about career decisions (e.g., postdoc fellowships, grant-writing)
- questions on childcare
- networking opportunities in various geographic regions and at national conferences

Jobs List
 In 2007, we started an open job listing listserv that is:

- open to the public as well as ESWN members
- gender neutral
- dedicated to job advertisements in the Earth Sciences

To join, visit http://mailman.ucar.edu/mailman/listinfo/es_jobs_net

Discussion Board
 In 2007, we launched a discussion board (hosted at the University of Wisconsin) to allow for further discussion of topics of interest to women in science. Registration on the discussion board is required. Recent topics on the discussion board include:

- resources for women in science
- job hunting and negotiation
- work-life balance
- finding roommates for national meetings



Kim Popendorf & colleagues at sea



Tracey Holloway speaking on climate and air quality with Congresswoman Tammy Baldwin (right)



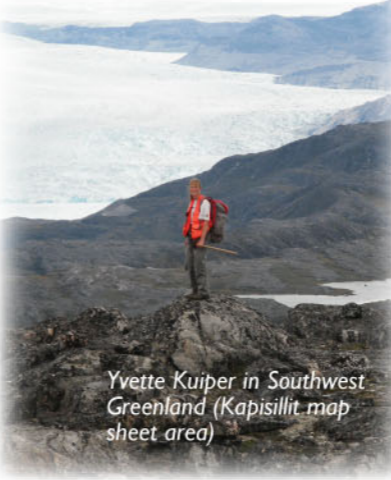
Meredith Hastings drilling an ice core in Summit, Greenland



Gilian Galford taking green leaf spectra of soybeans with our field spectrometer.



Erika Marin-Spiotta in the field studying soil biogeochemistry

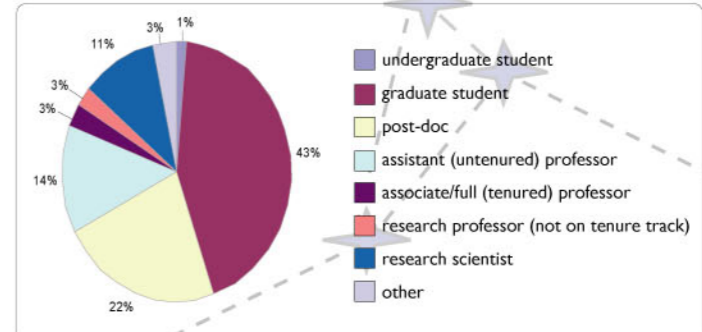


Yvette Kuiper in Southwest Greenland (Kapisillit map sheet area)

"Many of the issues ESWN seeks to address, including equity in hiring and advancement, the two-body problem, and work/family balance are ones that I face and that are important to me."

Self Evaluation

In 2007, we surveyed our members about their interests and experience with ESWN and what resources they need to further their careers. We had a response rate of 57% (201 responses out of 350 members), representing 29 different countries of origin working in 10 different countries (85% in the US) with the following career distribution:



The responses to the survey showed that the group is 87% were white/non-Hispanic which correlates well with the ethnicity of graduate students in the Earth, Atmospheric, and Ocean Sciences⁸. This highlights the need and our own desire to diversify the group and the field as a whole.



Marilyn Fogel in Svalbard, Norway, collecting xenoliths on Sverrefjell Volcano.

Summary

There is a demonstrated demand for networking opportunities among young career scientists, as evidenced by the interest and involvement in ESWN and similar programs including DISCCRS, MPOWIR, MSPhDs, and others. A network developed through personal connections and word-of-mouth can help fill this need.

- even basic online tools can go a long ways towards supporting extensive networks!
- A mix of online and real-world interactions creates a network that is accessible, far-reaching, and personal enough to build meaningful mentorships and collaborations

"My own experience hasn't been one of barriers, but just a whole lot of extra work, time, commitment, effort, and endurance. We can't change that, but it is really helpful to have a conversation about it with others who 'get it' and especially those who have survived it."



Becky Anderson on a field campaign to study atmospheric chemistry



ESWN Board Members attending the 2006 AGU Reception: Christine Wiedinmyer, Amanda Staudt, Arlene Fiore, Tracey Holloway, Allison Steiner, Meredith Hastings (not pictured: Agatha De Boer, Erika Marin-Spiotta, Galen McKinley, Kim Popendorf)

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- ⁸National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, <http://www.nsf.gov/statistics/nsf07321/>