

**Evaluation Report: 2012 Career Development Workshop from the Earth
Science Women's Network "Skills for Networking and Communication"
June 4-6, 2012
Madison, Wisconsin**

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EXECUTIVE SUMMARY

Overall, participants were very satisfied with the workshop as a whole. Participants reported impressive gains in networking skills and abilities, as well as confidence in their ability to grow and use their professional networks. Participants reported high satisfaction on all aspects of the format, logistics, and planning of the workshop. Participants reported that the workshop strengths included the diversity of participants, and the positive and empowering atmosphere. Workshop participants reported that their networking would become more deliberate as a result of the workshop and that they planned to use the ESWN listserv as a means of expanding and using their professional network.

PROJECT OVERVIEW

While the number of women receiving advanced degrees in the geosciences has been rising, the face of scientific leaders in academia remains predominantly male. The Earth Science Women's Network (ESWN) aims to promote career development, build community, and facilitate professional collaborations for women in the Earth sciences. ESWN is a peer-mentoring network of women, mostly early-career, which serves the variety of fields within the geosciences discipline.

In 2009 the Earth Science Women's Network (ESWN) received an ADVANCE PAID grant from the US National Science Foundation to foster connections and support the professional development of early-career women in geosciences. As part of this grant-funded project, ESWN committed to the following initiatives: three career development workshops; professional networking events at major scientific conferences; and development of an ESWN web center that will build connections and collaborations for and among women in the Earth sciences.

This workshop, titled "Skills for Networking and Communication," took place in June 2012 in Madison, Wisconsin. The workshop was focused on the following skills:

- Learning to "see" networking opportunities, and take full advantage of them
- Getting the most from your professional network
- Assessing your personal strengths, so that you can connect with colleagues with maximum results and minimum anxiety
- Communicating effectively on a personal and professional level
- Learning about different communication styles to prepare you for a diversity of working environments

- Realizing the opportunities and limitations of online networking
- Working with formal and informal mentors
- Practicing networking skills with leading scientists and educators

The first day of the workshop was facilitated by Chris Olex and the second day of the workshop was facilitated by Kerry Ann Rockquemore. The facilitators' styles differed noticeably, but both incorporated some active-learning activities and hands-on applications into the agenda. Open discussion was also welcomed by the facilitators, although skillfully steered to stay on topic. In this report, we provide an analysis of the workshop outcomes and formative feedback to the project team for use in planning subsequent workshops.

INTRODUCTION AND DATA SET

The Madison workshop spanned two and a half days, with facilitator presentations, open discussions, and hands-on exercises the most common activities. A detailed agenda is attached as Appendix A.

Participants were asked to pre-register online and complete a brief survey one to four weeks prior to their workshop attendance (n=47) and another questionnaire was administered at the end of the workshop (n=60). Some participants registered very late and could not be reached in time to complete the pre-survey, but we did obtain demographic data from them so that we could fully characterize participant demographics on the post-survey. Both surveys included both quantitative items and open-ended questions. Likert-scale items were developed or adapted to reflect participants' personal and professional background, their accomplishment in various professional skills or capacities, their gains from attending the workshop and their perceptions of the overall quality of the workshop. For example, on both pre- and post-workshop surveys, participants assessed their clarity about their career goals for the next year on a scale of one to four (1=None, 2=Low, 3=Medium, and 4=High). The items were borrowed or adapted from the ESWN member survey and also used in evaluating the 2011 workshop on 'defining your research identity'; some new items were added this year to address different workshop goals.

Open-ended questions addressed participants' expectations and motivations for attending the workshop, their impressions and learning from the workshop, and how they may use that learning in their career. Participants reported personal and professional demographic information such as career stage, workplace type, and race/ethnicity, so that we could analyze for differences between groups. Participants also reported their birthday to provide a unique identifier that could be used to match pre- and post- responses on the anonymous surveys. Some items were adapted from prior evaluations of faculty development by our group, and other items were developed based on discussion with workshop leaders about their goals and expectations for participants. In addition, one of the evaluators attended the workshop as a participant-observer.

METHODS

Responses to numerical items were entered into the statistical analysis program SPSS, where descriptive statistics were computed. Pre-workshop and post-workshop survey means, probability statistics and effect sizes were computed for some of the ratings items, and

frequencies were computed for all of the items. Tests of statistical significance were conducted for the paired sample comparison of pre- and post-survey responses. Responses of the participants who completed only one survey (pre or post) were excluded from the pairwise comparison of pre- and post-workshop data. The resulting sample size for the pairwise pre-post comparison was n=47. The sample size for all other items on the post-workshop survey was n=60. Several participants left some items blank; these responses were not included in calculations of the means and standard deviations for survey items. Open-ended responses were entered into MS Excel and analyzed for trends based on the frequency of occurrence of particular qualitative themes.

KEY FINDINGS

From the pre-workshop survey, we sought to establish the personal and professional background of participants and to have them self-assess their accomplishment in various professional skills and capacities, so that these could be compared with their self-assessment after the workshop.

Demographics of Participants

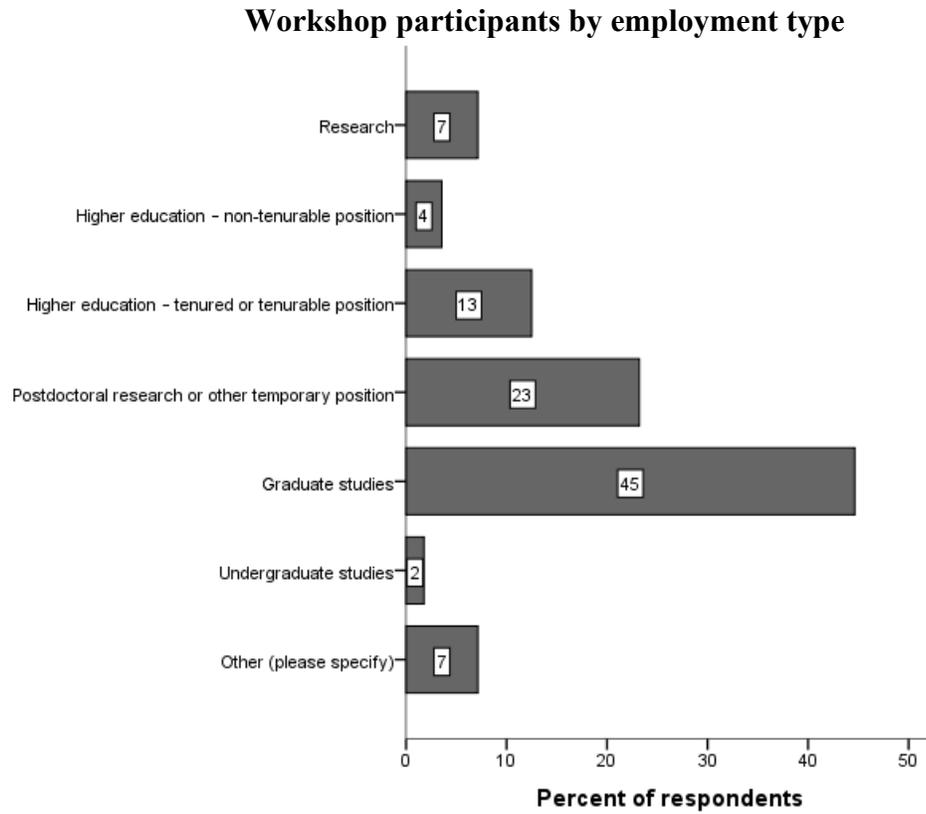
Overall, workshop participants (n=60) came from diverse institutional backgrounds and represented a variety of career stages. The “average” participant was generally young (under 40 years old) and early in her career (graduate students and postdocs), and worked at a university. Participants from the 2011 and 2012 workshops had similar demographic profiles except for participants’ career stage. Participants from the 2012 workshop included a higher proportion of early career participants (approximately 68%) compared to 2011 (approximately 52%).

Employers

Most respondents worked at Ph.D.-granting research universities (80%), followed by government or national labs/agencies (5%), four-year colleges (5%), master-granting comprehensive universities (4%), not-for-profit organizations of NGOs (4%), and consulting/self-employed (2%). The large portion of research university participants reflects both the focus of ADVANCE activities on women in academic employment, and the high number of graduate student and postdoctoral researchers participating.

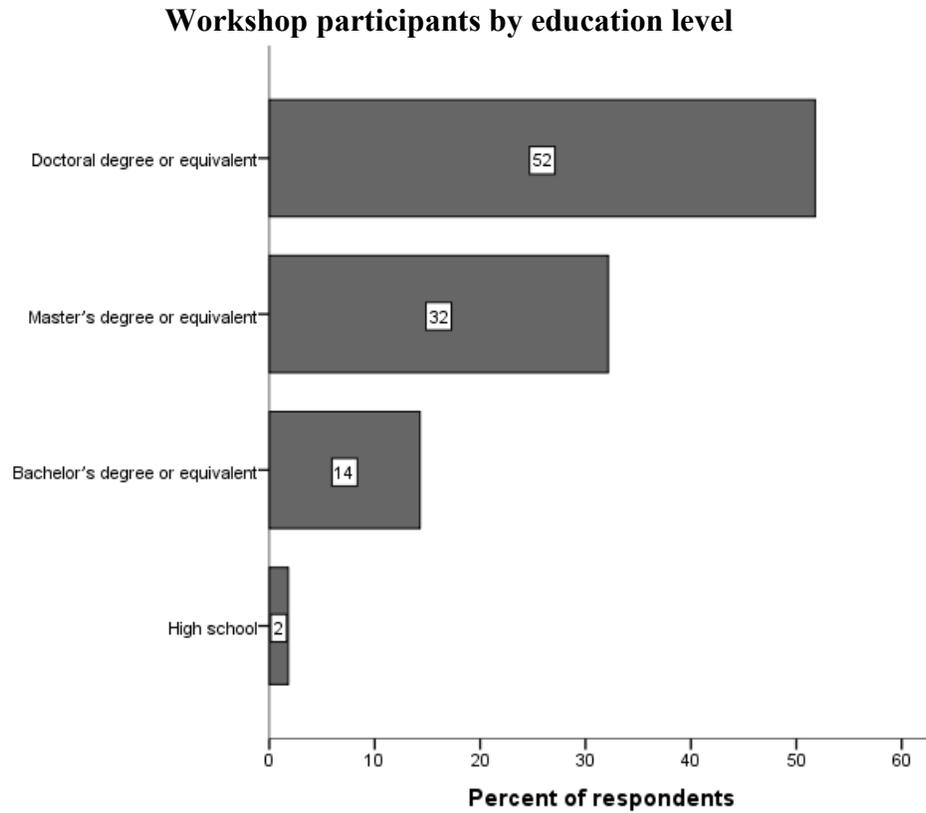
Employment Status

Most workshop participants were graduate students (45%) and postdoctoral fellows (23%), followed by tenured and untenured faculty (13%).



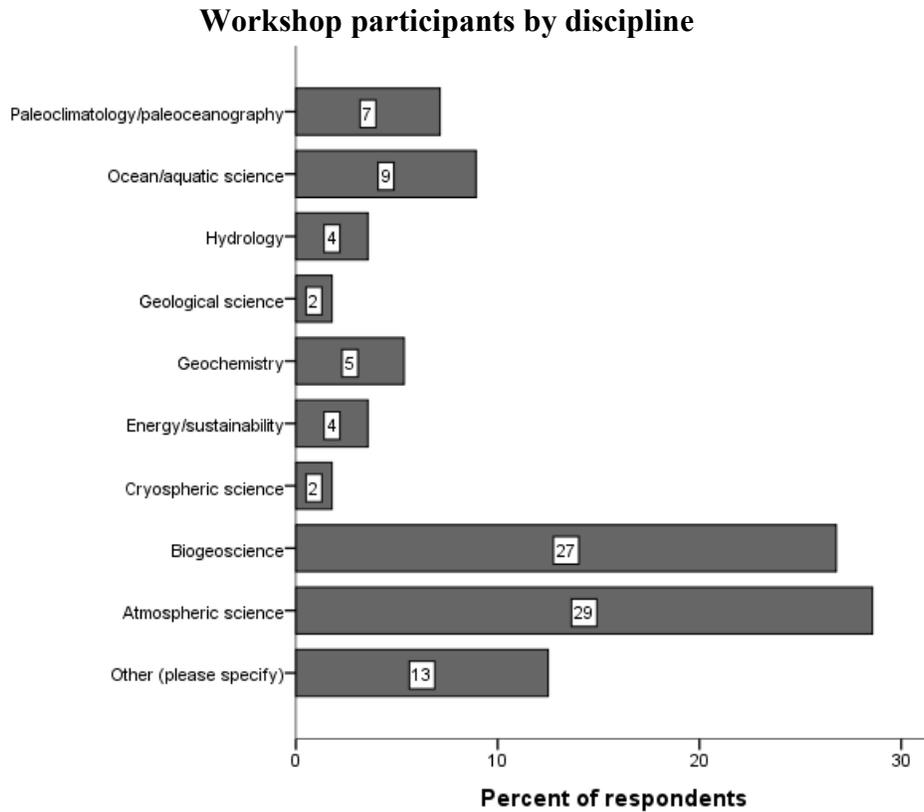
Education Level

Most participants (52%) indicated a Ph.D. as their highest degree, with 32% of respondents indicating masters and 14% bachelor's degrees.



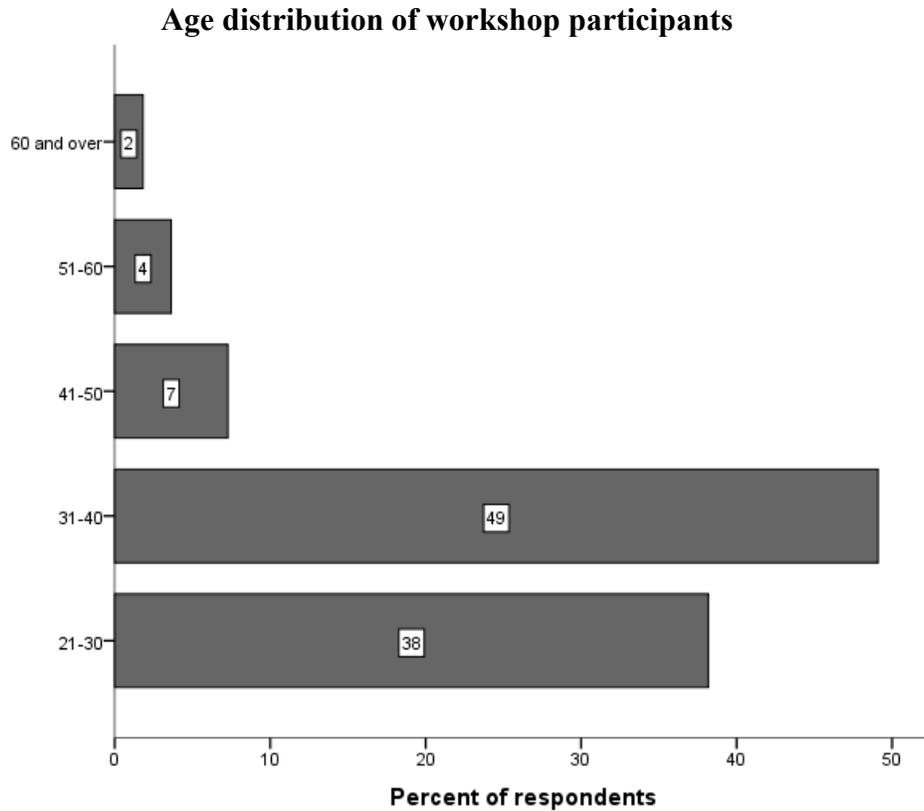
Discipline

Roughly half of the participants reported atmospheric science (29%), and biogeoscience (27%) as their discipline, with the rest of participants distributed somewhat equally across several other disciplines.



Age and Ethnicity

Most women were between 30 and 40 years old (49%), with 33% in their twenties and 6% in their forties. Most of the participants were white (67%); 3% (2) of attendees were Hispanic, 11% (7) Asian, 3% (2) African-American, and 2% (1) were multiracial. Compared to the national diversity statistics of Earth science women Ph.D. graduates, the workshop participants were slightly more racially and ethnically diverse ([S&E doctorates awarded to U.S. citizens and permanent residents, by field, sex, and race/ethnicity: 1998–2007](#), NSF reports). The overall proportion of women of color was comparable to the national distribution.



Workshop motivations and expectations

We asked participants a series of questions related to their motivations and expectations of the workshop. Only 23% of respondents had received similar training to what was offered at this workshop. An open-ended question asking what respondents hoped to gain from the workshop revealed two dominant themes: workshop participants hoped to gain more knowledge and skill in networking, and to learn how to use their professional networks.

The workshop met the expectations of all participants: 83% reported the workshop “fully met my expectations”, and 17% reported the workshop “somewhat met my expectations.” We asked respondents to explain their how the workshop met or did not meet their expectations. The most common themes included:

- Expectations were met because participants felt empowered by gaining skills and confidence in using them.
- Participant felt more networked as a result of their participation.
- Some expectations were not met because they felt the workshop was geared to participants in academia exclusively.

Accomplishment in career development

The table below compares participants' pre- and post-workshop self-assessments of their skills, abilities, knowledge, and perspectives in several areas of career development.

**Pre- and post-workshop survey means, t-test results, and effect sizes
for accomplishment in career development (n=47, matched sample only)**

Survey Item	Pre-survey mean	Post-survey mean	P value	Effect Size <i>Cohen's D</i>
Skill in drawing upon my professional networks to advance my career	2.2	3.0	<.001	1.35
Ability to act upon networking opportunities	2.5	3.3	<.001	1.33
Ability to identify networking opportunities	2.8	3.5	<.001	1.28
Comfort in drawing upon my professional networks to advance my career	2.4	3.1	<.001	1.17
Communication skills	2.8	3.2	<.001	0.76
Preparedness to navigate a path to your career goals	2.7	3.1	0.003	0.65
Self-promotion skills	2.1	2.6	<.001	0.60
Listening skills	3.3	3.6	<.001	0.51
Ability to identify mentors who are right for you	2.7	3.0	0.008	0.46
Negotiation skills	2.2	2.4	0.011	0.38
Access to role models or mentors	2.7	2.9	0.026	0.33
Preparedness to communicate your values clearly	2.7	2.9	0.040	0.32
Clarity about career goals for the next 5 years	2.7	2.9	0.103	0.23
Ability to balance your career planning with your personal and family needs	2.6	2.7	0.181	0.21
Motivation to forge a career path that is right for you	3.5	3.6	0.253	0.15
Clarity about your values as a scientist or professional	3.2	3.3	0.471	0.13
Clarity about career goals for next year	3.3	3.4	0.420	0.12

Mean scores are given on a 4-point scale: 1=no accomplishment, 2= a little accomplishment, 3= some accomplishment, 4= a lot of accomplishment.

A paired sample T-test was conducted to determine differences in average scores of accomplishment in career development between individuals' pre workshop means and post-workshop means. A 95% confidence interval was selected to determine statistical significance. Because nearly the entire population of workshop participants was sampled, we do not necessarily need to rely upon significance testing to determine difference between pre and post-test means. Cohen's *D* was calculated for each mean difference (posttest mean minus pretest

mean); this measure characterizes the magnitude of the differences between pre and post-test means. Cohen's *D* should be interpreted as follows: ≤ 0.20 = minimal effect, ≤ 0.50 = typical effect, ≥ 0.80 = substantial effect of the intervention on the participants.

The mean scores of accomplishment in all career development items were higher in the post-survey than the pre-survey, indicating that participants perceived higher levels of accomplishment in career development after participating in the workshop. Workshop participation had the greatest effect on participants' level of accomplishment in networking. All four items relating to networking showed substantial effect sizes (all greater than 1.17), larger than for any other aspect of career development accomplishment. Ten other aspects of career development accomplishment were statistically significant and showed medium effect sizes.

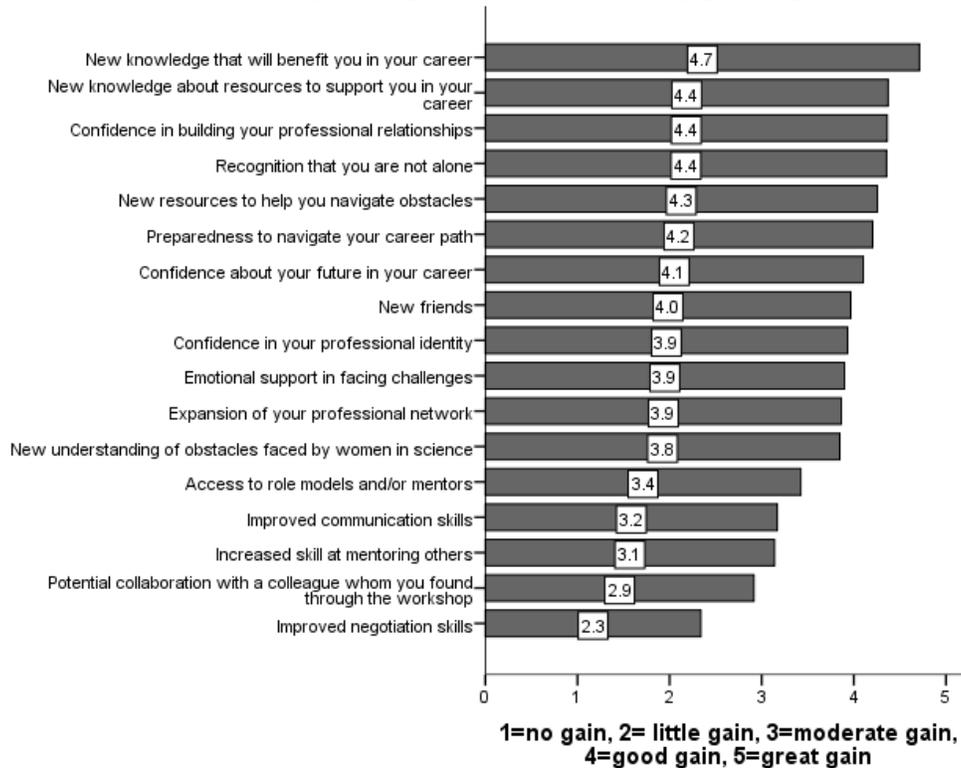
These results indicate that on average, participation in the workshop produced a medium to large improvement in several domains of career development accomplishment for participants in areas most relevant to the workshop goals. Little to no improvement was seen in four domains less strongly related to the workshop goals.

Differences for three aspects of career development relating to clarity of career goals and paths to them, and one item relating to clarity of values as a scientist, were not statistically significant between the pre- and post-test means and exhibited low effect sizes. These aspects were not emphasized in the workshop; the items were developed for last year's survey and used here for comparison. The results from both the 2011 and 2012 workshops indicate that our instrument demonstrates content validity in pre-test and post-test measurements. Results from the 2011 and 2012 workshops showed the largest improvements in areas of focus of the each workshops, and significantly lower gains in aspects of career development that were not emphasized. If the results showed similar gains across all career development measures, then the validity of our measurement would be questionable. These findings suggest that our pre-test and post-test instruments accurately reflect real changes in participants' perceived career development.

Gains of workshop participation

Workshop participants were asked to rate their level of gains resulting from participation in the workshop for 17 items related to career development. The figure below shows aspects of career development in order of gains (lowest to highest). Participants reported gains in all 17 aspects; eight items showed “good” to “great” gains, eight items showed “moderate” to “good” gains, and one item showed “a little” to “moderate” gains. While the content of these items overlaps with the pre/post measurements discussed above, they are included so that workshop results can be more easily compared with gains items on the broader membership surveys, which are not longitudinal but do reflect gains from other ESWN experiences.

Mean of self-reported gains from workshop participation



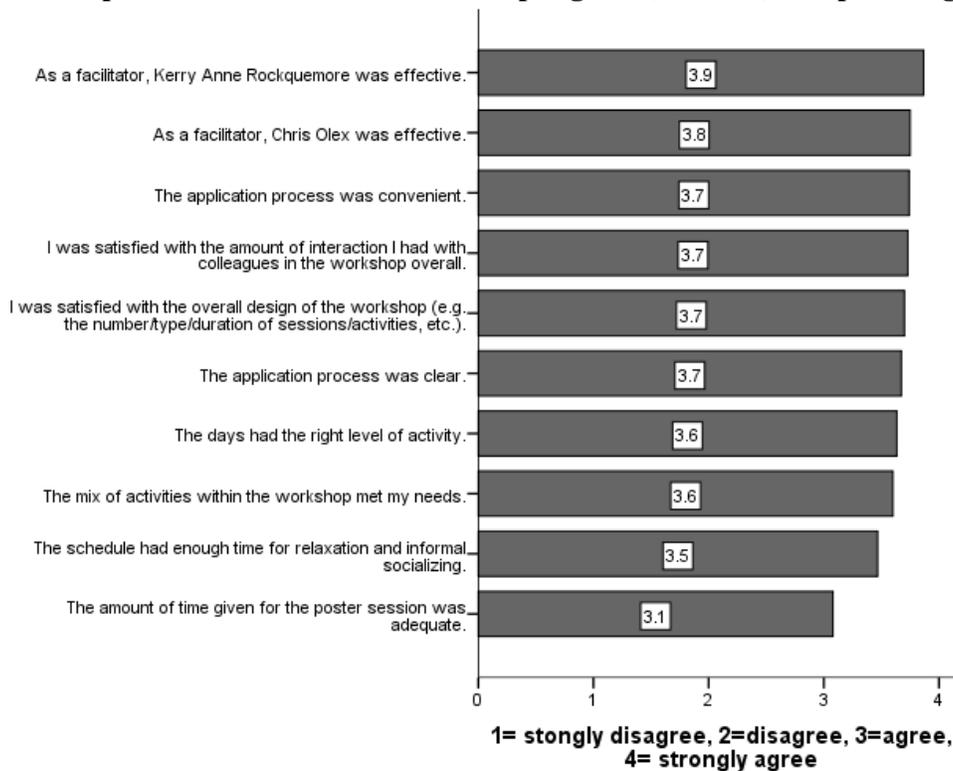
Logistics, format, and planning process of workshop

Overall, workshop participants were very satisfied with the logistics, format, and planning of the workshop. All but one respondent agreed that they were satisfied (68% strongly agree, 25% agree) with the overall design of the workshop. Fewer than 5% disagreed with any one item shown in the figure below, except for one item, “the amount of time given for the poster session was adequate.” Twenty-nine percent of respondents disagreed that the amount of time for the poster session was adequate, suggesting that they would have liked to participate in the originally scheduled poster session. Comments suggested that the intent of this session was unclear to participants and most did not bring a poster, but would have liked to participate in this form of scientifically focused exchange.

Respondents indicated that the length of the workshop as a whole was just right (93%) with the balance of respondents indicating the workshop was too short (7%). Most respondents felt the length of individual sessions was just right (93%) with the remaining 7% evenly split among respondents who felt they were either too long or too short.

We asked respondents for comments on the mix of activities or any particular activity. Some common themes were praise of both facilitators, the network mapping exercise, and the blend of complementing activities.

Participant satisfaction with workshop logistics, format, and planning



Participant experience

We asked respondents to tell us the greatest strength of the workshop and which aspect of the workshop most needs improvement. The most commonly listed strengths included:

- Content of the workshop was specific to women
- Networking opportunities
- Opportunity to make new friends
- The variety of career stages of fellow participants
- The effectiveness of the facilitators
- The effectiveness of the activities
- An empowering, positive atmosphere.

The most commonly listed areas for improvement included:

- Breaking into smaller groups for more discussion opportunities
- Communication before the conference: there was confusion about the poster session, and many participants would have liked a more detailed schedule in advance.
- Name tag print was too small and hard to read.

After the workshop

We asked respondents how they plan to use their new knowledge and networks in their career.

The dominant themes included:

- Be more deliberate in networking activities
- Prioritize, schedule, and execute academic writing
- Perform network mapping more often
- Fill holes in personal networks
- Make use of existing professional networks instead of focusing on network development

We asked how respondents planned to stay in touch with or collaborate with colleagues from the workshop. The dominant themes included:

- Increased participation on the ESWN listserv
- Follow up via phone, Skype, email, and/or in person with other ESWN members.
- Join or become more involved in a writing group.

Overall, the qualitative data showed some evidence of an “empowerment” outcome for many participants. Common themes throughout the write-in answers were framed in actionable terms (e.g. “I will prioritize networking”). Many participants showed strong positive attitudes and confidence towards their abilities to have an impact on their careers and their career development. Conversations during the workshop, particularly comments made during reflection and sharing sessions near the end, seemed to reflect a degree of shift from passive views of a career as “happening” to oneself, toward a recognition that, while some aspects of career success are externally controlled, members can take control of many aspects of their professional lives to shape their own careers. Indeed, such an empowerment outcome may have more impact on participants’ career development than increased knowledge or skill in any single domain. Knowledge and skill are more easily implemented when strong motivations are also present.

Anecdotally, we noticed a significant surge in listserv traffic after the workshop, much of which could be directly linked to the workshop as participants self-identified as “de-lurking.” Several

workshop participants introduced themselves on the list, initiated activities (e.g. conference meetups and writing groups), and launched discussion topics. This appears to have inspired other members to participate as well.

Conclusion

Overall, participants were very satisfied with the workshop as a whole. Participants reported impressive gains in networking skills and abilities, as well as confidence in their ability to grow and use their professional networks. Participants reported high satisfaction on all aspects of the format, logistics, and planning of the workshop. Participants reported that the workshop strengths included the diversity of participants, and the positive and empowering atmosphere. Workshop participants reported that their networking would become more deliberate as a result of the workshop and that they planned to use the ESWN listserv as a means of expanding and using their professional network.

Appendix A



2012 Career Development Workshop from the Earth Science
Women's Network

Skills for Networking and Communication

June 4-6, 2012
Madison, Wisconsin

Contacts: **Rose Kontak**, cell 415-412-7673; **Martina Gross** 608-265-9119

OVERVIEW: Networking may be the most important scientific skill that we don't learn in grad school. Effective networking helps connect you with jobs, collaborators, funding, mentors, and recognition for your work. Person-to-person connections also lead to a more rewarding professional experience, reducing feelings of isolation and helping to build support systems and friendships.

The workshop is focused on the following skills:

- Learning to "see" networking opportunities, and take full advantage of them
- Getting the most from your professional network
- Assessing your personal strengths, so that you can connect with colleagues with maximum results and minimum anxiety
- Communicating effectively on a personal and professional level
- Learning about different communication styles to prepare you for a diversity of working environments
- Realizing the opportunities and limitations of online networking
- Working with formal and informal mentors
- Practicing networking skills with leading scientists and educators



DAY ONE

Christina Olex is a trainer and facilitator specializing in corporate team development. Her programs are designed to promote teamwork, improve communication, and stimulate creative problem solving through safe, yet challenging elements.

DAY TWO

Kerry Ann Rockquomore, PhD is Executive Director of the National Center for Faculty Development & Diversity. After Dr. Rockquomore became a tenured professor, her focus shifted to improving conditions for pre-tenure faculty by creating supportive communities for writing productivity and work/life balance.



Summary Draft Agenda

Monday, June 4 (Facilitator: Chris Olex)

8:30-9:00 – Check in and breakfast
9:00-9:15 – Welcome and Overview
(ESWN Hosts, Tracey Holloway & Erika Marín-Spiotta)
9:15-10:45 – Networking 101
(Break)
11:00-12:30 – Getting to Know Your Strengths
(Lunch at the Pyle Center)
1:30 – 3:00 – The Human Factor
(Break)
3:15 – 4:45 – Strategies for Success
4:45 – 6:00 – Networking Reception. *Put your skills to work over drinks and appetizers, connecting with workshop attendees along with senior scientists and educators.*
6:30 – Panel Discussion & Dinner at the University Club

Tuesday, June 5 (Facilitator: Kerry Ann Rockquemore)

9:00 – 10:30 – Re-thinking mentoring
(Break)
10:45 – 12:00 – Mapping our networks
(Lunch on the Memorial Union Terrace)
1:30 – 3:00 – What keeps academics from networking?
(Break)
3:30 – 5:00 – Getting what you want & need from the scientific community
(Break & Dinner)

Wednesday, June 6 (Facilitators: Tracey Holloway & Erika Marín-Spiotta)

9:00 – 10:00 – Survey
10:00 – 12:00 – Poster session
Concurrent – Setting Personal Goals & Developing Resources
12:00 – Reimbursement paperwork
(Lunch)
END of workshop

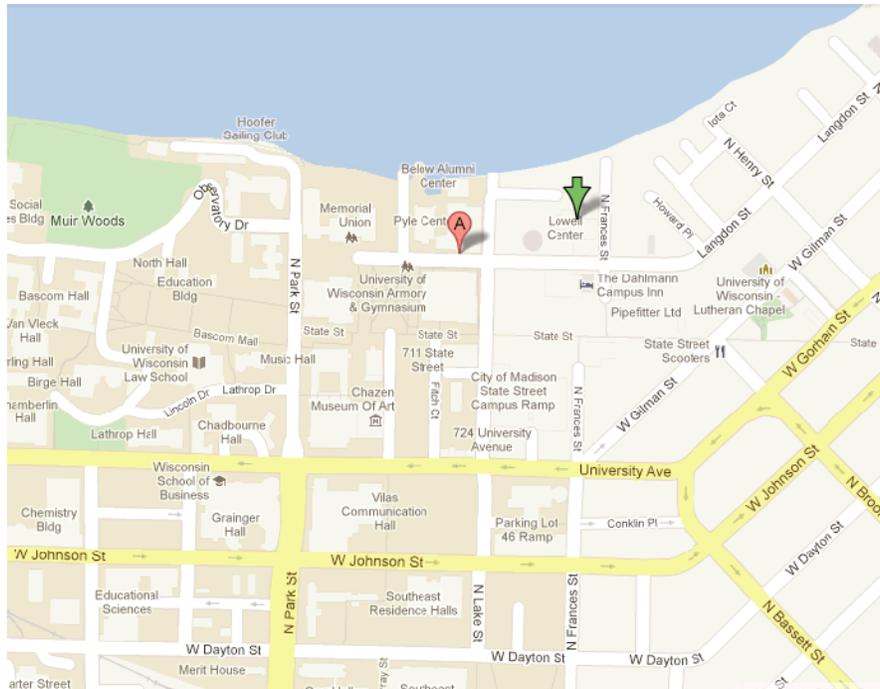
We thank the following for supporting this ESWN workshop



THE NELSON INSTITUTE
FOR ENVIRONMENTAL STUDIES
University of Wisconsin-Madison

Logistics

The workshop will take place at the Pyle Center (A on the map below), 702 Langdon Street in Madison, and out of town participants will be staying at the adjacent Lowell Center (green arrow on the map below) in double rooms booked by ESWN for Sunday-Wednesday: 610 Langdon Street. Assistant Manager: 608-263-4799 Reservations: 866-301-1753 Front Desk: 608-256-2621



Meals will be provided starting Monday morning through lunch on Wednesday. There will be vegetarian options, but if you have any other dietary restrictions please let us know.

Travel arrangements are the responsibility of participants. If you have previously requested travel support from ESWN and have confirmation of approval, please bring your receipts and be prepared to fill out the appropriate paperwork that will be provided.

Detailed Draft Agenda

Monday, June 4

8:30-9:00 – Check in and breakfast

9:00-9:15 – Welcome and Overview
(ESWN Hosts, Tracey Holloway & Erika Marin-Spiotta)

Day 1 Facilitator: Chris Olex

9:15-10:45 – What is networking?
▪ What is it, really?
▪ Why do it at all?
▪ Why do YOU do it? Why do you do EACH thing?

(Break)

11:00-12:30 – Am I good at networking?
▪ What are my network building strengths?
▪ Which one do I want to work on the most?
▪ What do I know about me?
▪ What gets in the way of networking?

(Lunch at the Pyle Center)

1:30 – 3:00 – What does it take to be good at networking?
▪ Know yourself
▪ What is my 'me' introduction?
▪ How many good questions do I know?
▪ Does it really matter that I am a woman?

(Break)

3:15 – 4:45 – Strategies and Opportunities for Success
▪ What do I actually do and why?
▪ Tips to make those conferences more valuable
▪ What about social media?
▪ Best practice sharing
▪ A commitment for yourself

4:45 – 6:00 – Networking Reception. *Put your skills to work over drinks and appetizers, connecting with workshop attendees along with senior scientists and educators.*

6:30 – Panel Discussion & Dinner at the University Club

Tuesday, June 5

Day 2 Facilitator: Kerry Ann Rockquemore

Learning Objectives:

- Understand the common errors that keep academics from networking to get the mentoring and sponsorship needed to be successful in the academy.
- Create an individual mentoring map to identify the strengths and weaknesses in participant's current professional network,
- Identify areas for growth in participant's current professional network and relationships and commit to a plan of action to address weak points.

9:00 – 10:30am Re-Thinking Mentoring

- Introduction and overview of the workshop
- Standard models of mentoring and why they don't work (aka, the most common errors that keep academics from getting the mentoring and sponsorship they need)
- Particular pitfalls for female academics

(Break)

10:45 – 12:00 Mapping Our Networks

- The components of a thriving academic network
- Exercise: network mapping

(Lunch)

1:30 – 3:00 What Keeps Academics From Networking?

- Quick share – insights from the previous session
- Exploring the fears that keep academics from networking and filling in the empty spaces in their networking map.
- Developing a personal framework to diagnose obstacles to networking
- Exercise: Diagnosing your networking resistance

(Break)

3:30 – 5:00 Getting What You Want & Need from the Scientific Community

- Quick share – insights from the previous session
- Targeting areas of need with specific strategies
- Exercise: Getting organized to move forward

5:00 Break and dinner

Wednesday, June 6

9:00 – 12:00 – Poster session +

Setting Personal Goals & Developing Resources
(Facilitators: ESWN Board)

12:00 Reimbursement paperwork

(Lunch)

