

NSF EPSCoR Water Workshop
Vermont EPSCoR
November 2008 Workshop Follow-Up Evaluation Report
February 11, 2011

In November 2008, Vermont EPSCoR hosted a workshop entitled *Water Dynamics*. The workshop brought together 149 scientists across all EPSCoR jurisdictions to share information, explore collaborations and learn about opportunities for research on water through NSF. Vermont EPSCoR anticipated achieving the following outcomes through the workshop:

- Increased collaborations among NSF EPSCoR jurisdictions
- Identification of opportunities for water research funding across the directorates at NSF
- Creation of resources for the Water Research Community such as templates to succinctly describe research, television episode highlighting the workshop
- Follow-up workshop hosted by Alaska EPSCoR

In order to assess collaborations, as well as the quality of the workshop, participants were asked completed an evaluation at the end of the three day program. Results of this survey indicated that the workshop provided useful content in a well structured and organized format. A key outcome anticipated from the workshop was increased collaboration. Indeed, participants highly valued the opportunity to network and called for more time to do so.

To explore the long-term impact of the workshop, including whether contacts made at the initial workshop led to increased collaboration, participants were asked to complete a Follow-Up Survey during fall 2010. The survey was administered on-line through the Vermont EPSCoR website. This report summarizes results of that survey.

Survey Respondents

A total of 46 Follow-Up Surveys were completed, representing 31% of the workshop participants. Evaluations immediately after the workshop were completed by 44 participants.

Respondents were primarily employed in academic settings (n=39, 85%), although there were public servants employed by municipal, state or federal government (n=5, 11%) and non-profit employees (n=2, 4%) represented. The majority of respondents were male (n=30, 65%) and Caucasian (n=32, 70%).

Follow-Up Survey respondents were asked if they had attended subsequent water workshops following the November 2008 program. The majority (n=26, 57%) had not attended other workshops. However, 12 (26%) had attended the CAUHSIHIS Workshop sponsored by Vermont EPSCoR in June 2009, and 7 (15%) had attended the Alaska EPSCoR workshop in May 2009. Five respondents (11%) reported other water workshops they had attended, including: American Geophysical Union, American Water Works Association Maine Water Conference, Nonpoint Source Pollution Workshops, and Optical Sensor Workshop, as well as “all Streams Project Workshops.”

Value of Workshop Skills Training and Materials

The Follow-Up Survey asked respondents if the 2008 workshop provided them with valuable skills that they currently use. About one-third of respondents said that the workshop “definitely” provided such skills, while another 40% said the workshop “somewhat” provided these skills (see Table 1). About one-quarter of respondents did not feel they gained skills that were currently in use as a result of participating in the workshop.

Table 1: Workshop Provided Useful Skills that Respondents Currently Use

Workshop provided useful skills	Frequency	Percent
Definitely	14	30%
Somewhat	19	41%
Not sure	1	2%
Not really	9	20%
Not at all	3	7%
Total	46	100%

About half of the respondents said they have used materials from the workshop for reference over the past year (see Table 2).

Table 2: Workshop Provided Materials Participants Used for Reference over Past Year

Use Workshop Materials	Frequency	Percent
Definitely	13	28%
Somewhat	10	22%
Not sure	4	9%
Not really	10	22%
Not at all	9	20%
Total	46	100%

Nearly one-third of the respondents (n=13, 28%) had visited the Vermont EPSCoR Water Workshop website “several times”, while the same proportion (n=13, 28%) had visited the website at least once. Under half of the respondents (n=20, 43%) had never visited the website.

Collaborations Resulting from Workshop Participation

Most of the Follow-Up Survey respondents said that they had made new connections with others interested in their field during the 2008 workshop (n=37, 80%). The majority of new connections were made with colleagues in the respondents' field but outside their region (see Table 3).

Table 3: Types of New Connections Made at 2008 Water Workshop

New connections with scientists and engineers...	Frequency	Percent
In my field and region	15	33%
In another field and my region	10	22%
In my field, outside my region	26	57%
In other fields outside my region	15	33%

More than half of the respondents continued to be in contact with the persons they connected with at the 2008 workshop. Indeed, 14 (30%) respondents were in regular contact; 10 (22%) were exploring possible joint research; and 1 (2%) respondent expanded existing joint research. Twelve respondents (26%) had made new connections at the workshop but had not continued the contact.

Of the 15 respondents that reported making new contact with individuals in their region and field at the workshop, 6 (40%) had not continued the contact. In contrast, while less than one-quarter of respondents had made connections with persons in their region but outside their field, only 1 respondent (10%) reported that the contact had not continued (see Table 4). Respondents who had connected with individuals in another field, regardless of whether in or outside of their region, seemed more likely to continue the contact.

Table 4: Type of Connections Made for Respondents Who have Not Continued Contact

Type of connection made	Frequency	Percent
In my field and region	6	40%
In another field and my region	1	10%
In my field, outside my region	7	27%
In other fields outside my region	3	20%

Twenty-five (54%) respondents reported continued contact with persons they connected with at the workshop. Of these 25 respondents, 10 (40%) were exploring possible joint research with their new contact; 3 (12%) initiated joint research; and, 2 respondents (8%) expanded existing joint research.

Twenty-three respondents (50%) reported that some form of collaboration had resulted from the workshop. These collaborations most frequently yielded research activity with the potential for grants or publications (see Table 5). About one-quarter of the new collaborations resulted in grant proposals, and one-quarter yielded presentations or posters. Still, nearly 40% of the collaborations have not yet led to research activities.

Table 5: Output Resulting from Collaborations Initiated through Workshop

Output of Collaborations	Frequency	Percent
Research activity that may lead to grants and publications	10	43%
Grant proposal	6	26%
Grant award	1	4%
Presentation or Poster	5	22%
Manuscript	1	4%
Publication	2	9%
To date no research activities have resulted	9	39%

Program and Policy Developments

Follow-Up Survey respondents were asked if they had implemented any new programs “that enhance diversity among students and/or faculty in STEM fields” in the past year following the workshop. Twelve (26%) of the respondents said they had initiated a new program. These new programs or initiatives included:

- “A program to attract and retain minority students in STEM programs”
- An internship program in geosciences for University of Puerto Rico students
- Three undergraduate students from Puerto Rico brought into research lab
- Latino student admitted to graduate program in Aquatic Ecology and Watershed Science
- Program “to develop pathways for Native American Indian students to engineering through tribal colleges, pre-engineering in tribal community colleges”
- In 2011 will initiate Center for Workforce Development and Diversity
- Expanded outreach activities
- Vermont ESTEEM Network

Since participating in the workshop, 20 (44%) of respondents said that they had been involved in “the development or implementation of programs that involved community based research.” These programs have included:

- Projects involving “citizen scientists from area high schools” in data collection
- Community based research on water quality and source water protection
- Service learning project involving UVM, IBM and the ECHO center
- Collaborative research with private company
- Collaboration with non-profit organization to win new grant supporting research
- Grant submitted to investigate microbial source tracking from wildlife sources “by involving community members as wildlife biologists”

About half of the survey respondents reported that over the past year they had been involved in developing or implementing new programs to engage undergraduates in STEM careers (n=23, 50%). In addition, 20 (43%) of respondents had developed or implemented new programs to support graduate students entry into STEM careers. One third of the respondents (n=17, 37%) had developed or implemented new programs to support community based researchers.

The Follow-Up Survey asked respondents if the workshop had contributed to any changes in water policy. None of the respondents reported that the workshop had contributed to policy changes.

Respondents were asked if for any additional comments on long-term impact of the workshop; 22 (49%) provided comments. Most often, these comments referred to the value of networking with colleagues (n=7), for example:

Meeting/networking with colleagues from across the U.S. (universities as well as small business owners) was the most beneficial part of the workshop.

Though no collaborations resulted directly for me, I had the opportunity to refer some of my faculty colleagues to the participants of the workshop. No collaborations.

I met some great scientists at this meeting. Although I'm not collaborating with these people I feel more comfortable approaching them at subsequent meetings. I plan to contact one about a post doc.

Two respondents felt the workshop had long-term value for students that participated. *"It was great to get undergraduate students presenting to a national audience. One of those students is now in graduate school."*

The workshop provided long-term benefit in understanding how NSF and EPSCoR programs work for two of the respondents.

One respondent said the workshop *"helped us design database and architecture. We are now using HIS and techniques discussed at the workshop."*

Three respondents suggested more follow-up workshops to disseminate materials and encourage collaboration. One respondent felt that instead of the workshop format as a series of research presentations, it would be helpful to offer *"smaller group workshops on the EPSCoR process, grants, etc."*

Summary

The Follow-Up Survey of participations in the 2008 Water Dynamics Workshop indicates that the workshop had lasting impact for many who attended.

The workshop provided participants with valuable skills that they continue to use, as well as materials used for reference. In the past year, about a quarter of workshop participants developed or implemented new programs to enhance diversity among students and/or faculty in the STEM fields. Nearly half of the participants have been involved in developing or implementing community based research programs. Moreover, half of the participants have worked on programs to engage undergraduate students in STEM careers, and nearly half have been involved in programs to support graduate students entry into STEM careers.

A key goal of the workshop was to facilitate the development of new connections and collaborations among participants. Most participants report that they did establish new connections with others at the workshop. Indeed, many respondents identified networking as the most valuable aspect of the workshop. More than half of the respondents continue to be in contact with persons they connected with at the workshop. While few collaborative relationships have yet resulted in research funding or publications, many have led to activity that has the potential for grants or publications. It may require more time for these collaborations to yield successful grant proposals and publications.

Overall, the workshop achieved the goal of facilitating new connections and collaborations, while providing participants with useful skills and materials. As one respondent noted:

This was easily one of the best workshops I've attended. The level of excitement and stimulation was great.