Evaluating WAS*IS and Guiding Future Directions of the Program:
Summary of Survey Results
Final Draft: April 10, 2009

1. Introduction

*a. WAS*IS Background*

The Weather and Society * Integrated Studies (WAS*IS) program was created during the summer of 2005. Dr. Eve Gruntfest envisioned the WAS*IS concept, inspired by the people she met during her career who were passionate about integrating meteorology and social science but were unsure how or with whom they could collaborate. In partnership with Dr. Gruntfest, WAS*IS was created under the NCAR Societal Impacts Program (SIP). Although WAS*IS was initially planned to be only one workshop, it evolved into an ongoing program due to strong interest and support from the meteorology community. To date, there have been six WAS*IS workshops with 171 total participants. More details about WAS*IS can be found in Demuth et al. (2007) or via the WAS*IS webpage (http://www.sip.ucar.edu/wasis).

In addition to these workshops, other WAS*IS-related activities have been conducted or are ongoing, including the three WAS*IS-inspired workshops discussed here. In October 2007, a National Weather Service (NWS) Advanced WAS*IS workshop was held to strategize on further integrating social science in the NWS. In September 2008, an Advanced WAS*IS workshop was held in conjunction with the NOAA Hazardous Weather Testbed's (HWT) Experimental Warning Program (EWP) to discuss ways to make new severe convective storm warning products more user-centric. In January 2009, the NWS Kansas City/Pleasant Hill Weather Forecast Office (WFO) held an Integrated Warning Team (IWT) workshop to work toward better serving their users by integrating social science and developing stronger partnerships among NWS forecasters, broadcast meteorologists, and emergency managers. In addition, an edited volume of WAS*IS-related research projects is being developed[1]. This compendium will highlight the methods, results, and cooperative efforts of projects that integrate meteorology and social science, focusing on both successes and challenges of doing this type of work. Finally, there have been several WAS*IS-influenced sessions at annual meetings of the American Meteorological Society (AMS) and the Association of American Geographers (AAG).

*b. WAS*IS Evaluation Survey Design and Implementation*

Since its inception in 2005, WAS*IS has become a familiar name among members of the weather community and its partners, and it has grown beyond what was originally envisioned. During the summer of 2008, SIP conducted a formal evaluation of WAS*IS by surveying all workshop participants. The two main goals of the evaluation were: (1) to evaluate WAS*IS, including efforts to date in achieving the vision and mission of WAS*IS; and (2) to get input on the future directions of WAS*IS.

[1] Funding for the WAS*IS compendium is provided by the NCAR Weather and Climate Impacts Assessment Science Program (http://www.assessment.ucar.edu/).

Based on these two goals, a survey with open- and close-ended questions was developed, pretested, and revised. The final survey was implemented via the Internet in July-August 2008. Access to the web survey was controlled by an independent survey company; only past workshop participants were invited to respond to the survey, and they could only respond once. The complete set of survey questions and a summary of responses is available on the WAS*IS webpage at http://www.sip.ucar.edu/wasis/evaluation2008.jsp. A total of 124 of the 171 WAS*IS participants completed the survey, for an overall response rate of 73%. The response rate by each WAS*IS workshop is shown in Table 1.

Table 1. Response rate for WAS*IS evaluation survey stratified by workshop

Workshop	Number of Workshop Participants	Number of Survey Respondents	Response Rate by Workshop
Original Boulder WAS*IS (11/05 and 3/06)	23	19	82.6%
Norman WAS*IS (4/06)	32	18	56.3%
2006 Summer WAS*IS (7/06)	31	22	71.0%
Australia WAS*IS (1/07)	30	13	43.3%
2007 Summer WAS*IS (7/07)	29	28	96.6%
2008 Summer WAS*IS (8/08)	26	24	92.3%
Total	**171**	**124**	**72.5%**

Respondents were not required to answer every question, so the sample size varies by question. Moreover, because the 2008 workshop participants were asked to complete the survey within a month of their attending the WAS*IS workshop, they were not asked to respond to questions that asked about longer term impacts and evaluations of WAS*IS.

This report summarizes the survey results and outlines possibilities for the future of WAS*IS. Section 2 discusses the evaluation of the WAS*IS vision, mission, and goals followed by an evaluation of WAS*IS impacts. Section 3 synthesizes respondents' input about future directions for WAS*IS and what constraints they face in continuing to do WAS*IS-type work. Finally, based on the survey responses, Section 4 summarizes SIP's planned future WAS*IS efforts.

2. Evaluating WAS*IS

*a. Evaluating the WAS*IS Vision, Mission, and Goals*

The survey included a set of questions to evaluate respondents' perspectives on the vision and mission of WAS*IS. The questions were framed based on the five goals of WAS*IS and the overall intent to build a community of people who are interested in working at the interface of weather and society. See the text box on page 3 for the complete text of the WAS*IS vision, mission, and goals.

Eight survey questions were developed to evaluate the WAS*IS goals, with one question each to evaluate Goals 1, 3, and 4; two questions to evaluate Goal 2; and three questions to evaluate Goal 5 (Table 2). Q1-16 of the survey consisted of two questions for each of eight parts being evaluated. One question asked about the importance of the objective, with response options on a five-point Likert scale ranging from "not at all important" (1) to "extremely important" (5). A subsequent question asked how effectively WAS*IS achieves the objective, with response options on a five-point Likert scale ranging

from “not at all effective” (1) to “extremely effective” (5). This paired question format allows us to evaluate whether we are directing our efforts appropriately and how we might focus our future efforts.

Table 2 shows the means of the responses of importance and effectiveness for the eight objectives evaluated in the survey. The results are rank-ordered by the importance of each objective (middle column), and the corresponding effectiveness rating is shown (right-hand column). The order of the importance ratings largely matches that of the effectiveness ratings; the only differences are in the first three objectives. The respondents indicated that learning about real-world examples of work that integrates meteorology and social science and the community-building aspect of WAS*IS are the two most important objectives. Although WAS*IS is very effective at addressing these objectives, there is room for improvement; some options for more effectively meeting these objectives are discussed in Section 4. Nevertheless, the mean effectiveness ratings by workshop (Figure 1) suggest that WAS*IS is consistently improving how well it achieves nearly all objectives with each new workshop. The mean effectiveness ratings in Table 2 reveal that WAS*IS is most successful at providing a forum to discuss research, application, or educational opportunities for integrating meteorology and social science; this objective is very important, ranking third overall.

The overall high mean effectiveness values shown in Table 2 are further validated by a later question in the survey (Q24). We asked respondents if they have attended professional workshops, short courses, or colloquia (i.e., with a focus on training and collaboration versus only presentation of research results) other than WAS*IS in the past. As Figure 2 shows, 15 respondents (14%) have not attended other similar professional events, but 104 respondents (86%) have; Three people did not respond. We then asked the 104 respondents who have attended similar professional events in the past to indicate how the WAS*IS workshop compares in terms of overall impact (Figure 3). In an overwhelming majority, 74 people (71%) indicated that WAS*IS has had more or much more impact on them. An additional 24 people (23%) indicated that WAS*IS has had equal impact on them. Only 6 people (6%) indicated that WAS*IS has had less or much less impact on them.

WAS*IS Vision, Mission, Goals

Vision: *To change the weather enterprise by comprehensively and sustainably integrating social science into meteorological research and practice*

Mission: *To establish a framework for (a) building an interdisciplinary community of practitioners, researchers, and stakeholders—from the grassroots up—who are dedicated to the integration of meteorology and social science, and (b) providing this community with a means to learn about and further examine ideas, methods, and examples related to integrated weather-society work.*

Goals

1. *Lay the groundwork for conducting interdisciplinary work by learning new strategies and addressing typical challenges.*
2. *Teach basic tools and concepts fundamental for conducting integrated weather-society research and applications.*
3. *Learn about effective integrated research and applications though real-world examples.*
4. *Identify and pursue research, application, and educational opportunities for integrated weather and social science work.*
5. *Improve and further facilitate the ongoing relationships among practitioners, researchers, and stakeholders in meteorology and the social sciences.*

Table 2. Comparison of the response means for the importance objectives and the effectiveness objectives (Q1-16), where 1 means "not at all important/effective" and 5 means "extremely important/effective"

Objective	Mean of importance	Mean of effectiveness
Learn about real-world examples of work that integrates meteorology and social science *(Goal 3)*	4.53	4.01
Community-building aspect of WAS*IS *(Goal 5)*	4.41	3.98
Discuss research, application, or educational opportunities for integrating meteorology and social science *(Goal 4)*	4.27	4.06
Learn how to address challenges of work that integrates meteorology and social science *(Goal 1)*	4.26	3.96
Learn concepts (problem definition, end-to-end-to-end) for conducting work that integrates meteorology and social science *(Goal 2)*	4.10	3.60
Learn tools (surveys, focus groups, GIS) for conducting work that integrates meteorology and social science *(Goal 2)*	4.08	3.54
Stay in touch with WAS*ISers from the same workshop the respondent attended *(Goal 5)*	3.76	3.46
Meet WAS*ISers from other workshops (i.e., that respondent did not attend) *(Goal 5)*	3.50	2.69

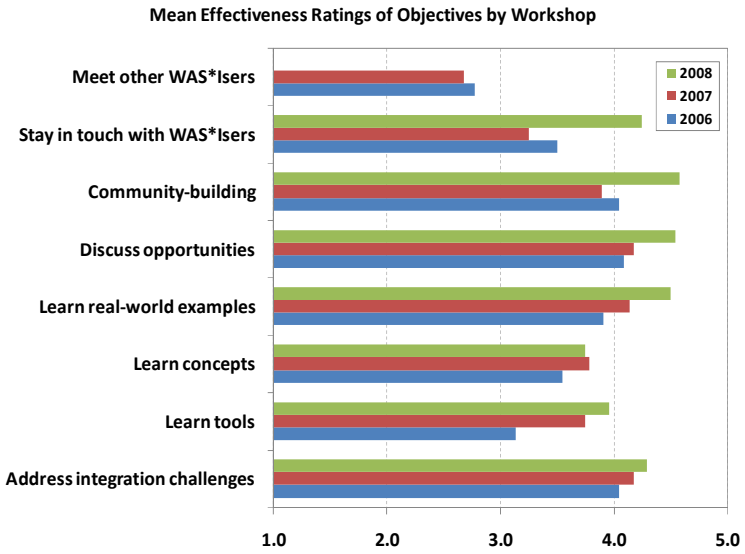

Figure 1. Comparison of mean effectiveness ratings for the 8 objectives evaluated, where 1 means "not at all effective" and 5 means "extremely effective". The 2006, 2007, and 2008 Summer WAS*IS Workshops had similar structures, so results are compared only among these three workshops. Participants from the 2008 workshop were not asked to evaluate how effectively we facilitate their meeting WAS*ISers from other workshops, because the survey was implemented soon after their attendance.

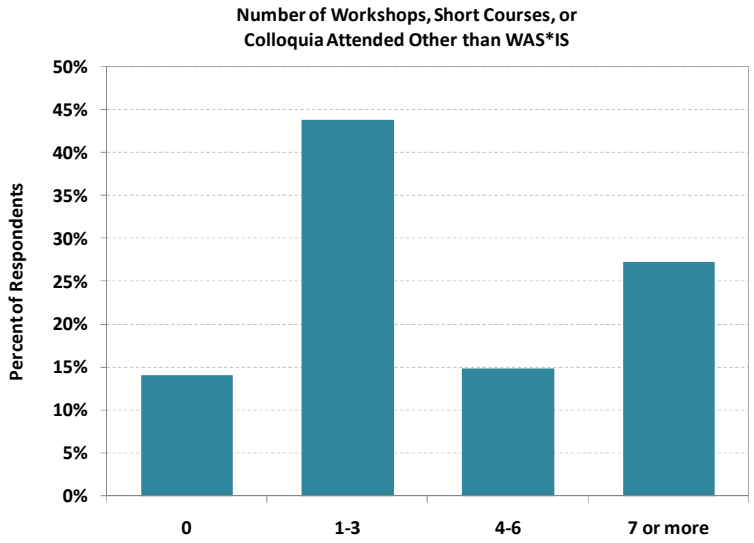

Figure 2. Not including WAS*IS, the number of professional workshops, short courses, or colloquia (i.e., with a focus on training and collaboration versus only presentation of research results) that WAS*IS participants have attended in the past (N=121)

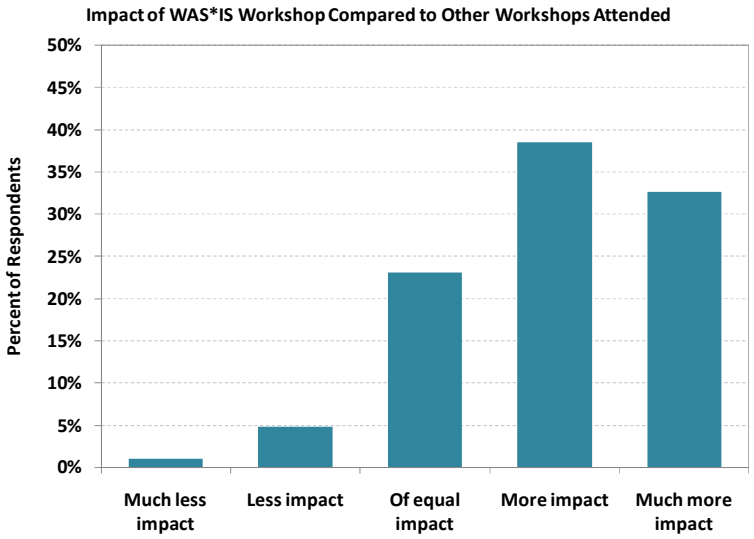

Figure 3. For the 104 people who have attended other workshops, the overall impact of WAS*IS on them compared to those other professional opportunities (N=104)

A final pair of questions to evaluate the WAS*IS vision, mission, and goals were open-ended questions[2] that asked what aspects of WAS*IS have been the most beneficial (Q25) and least beneficial (Q26). In a strong majority, 77 of 117 people (66%[3]) indicated that the networking and capacity building aspect of WAS*IS has been the most beneficial to them. Respondents discussed that the networking was important because it provided them with an opportunity to meet people with similar interests and with unique or complementary knowledge and skills to learn from. The next most commonly stated beneficial

[2] The write-in responses were coded by two researchers with categories created inductively from the data.
[3] Because people could mention more than one thing in response to the open-ended questions and each point was counted separately, the total percentages corresponding with open-ended question could add to over 100%.

aspects were (a) the tools, concepts, and knowledge learned during WAS*IS, mentioned by 17 respondents (15%); (b) the various perspectives and disciplines of fellow WAS*IS participants, mentioned by 16 respondents (14%); and (c) the opportunities for discussing and brainstorming ideas, mentioned by 15 respondents (13%). Among the many additional responses were the importance of learning from real-world experiences, learning more about working with users, and developing strategies for integrating meteorology and social science more broadly.

When asked what aspect of WAS*IS has been the least beneficial, the most common answer — mentioned by 42 of 117 respondents (36%) — was that there were no non-beneficial aspects. Of the people who did identify aspects that were not of benefit, the modal response from 19 people (16%) was that some workshop sessions were not of interest, either because the topic was beyond the scope of what was relevant to them or because they already were familiar with the topic. The second most common response from 6 people (5%) was the lack of communication with other WAS*IS participants. Some people indicated this was due to their lack of trying, but some wanted an interface for discussion. However, it should be noted that this survey was implemented just prior to the time that SIP launched an online Societal Impacts Discussion Board, so this should now be less of a problem. Other responses to this question were that some workshop session topics were discussed too broadly, some topics were discussed too technically, and that there wasn't enough time for some sessions.

*b. Evaluating WAS*IS Impacts*

The survey included a section about the impacts of WAS*IS on participants' work or education, existing and new projects, and interactions with colleagues, friends, family members, and others. All survey respondents were asked to rate themselves on a scale of 1 to 7, where 1 means "WAS" and 7 means "IS," both before (Q40) and after (Q41) they attended the WAS*IS workshop. As Figure 4 shows, the distribution of responses shifts from being nearly normal before WAS*IS to more skewed toward "IS" after WAS*IS.

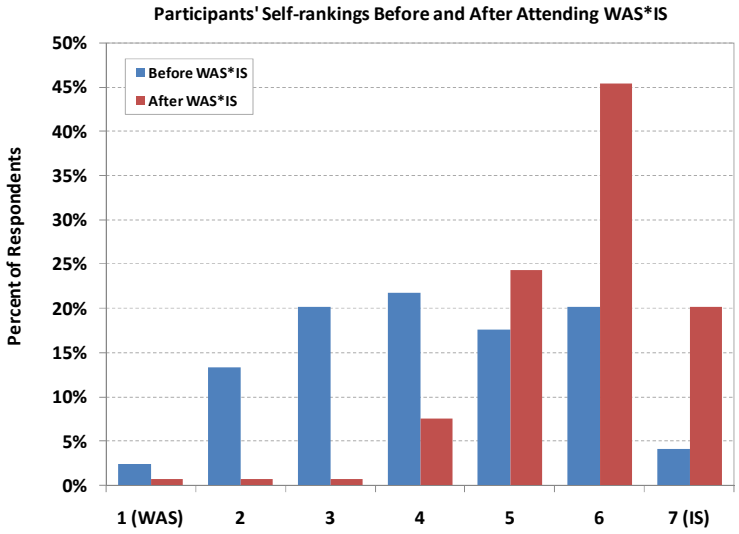

Figure 4. Comparison of how WAS*IS participants ranked themselves on a scale of 1 to 7, where 1 means "WAS" and 7 means "IS" before and after they attended the WAS*IS workshop (N=119)

All other questions in the WAS*IS impacts section were answered only by respondents who had attended a WAS*IS workshop prior to Summer 2008. It was assumed that the 24 survey respondents from the Summer 2008 workshop would not have had adequate time to evaluate the impacts the workshop had effected.

(Q21) When asked whether they had discussed WAS*IS tools, concepts or topics with non-WAS*ISers, 95 of 97 respondents (98%) reported that they had. Figure 5 shows with whom these discussions occurred. The tools, concepts or topics most frequently discussed included: general integration of social and natural sciences (26 of 89 respondents; 29%); specific information about WAS*IS workshops and how to participate (20 respondents; 23%); using surveys, interviews, and focus groups (20 respondents; 23%); specific information about integrating social science and meteorology (16 respondents; 18%); integrating stakeholders and end users (13 respondents; 15%); general communication (11 respondents; 12%); GIS (6 respondents; 7%); concepts of vulnerability and risk (6 respondents; 7%); communication of uncertainty (5 respondents; 6%); problem definition (4 respondents; 5%); and the concept of end-to-end-to-end process (4 respondents; 5%).

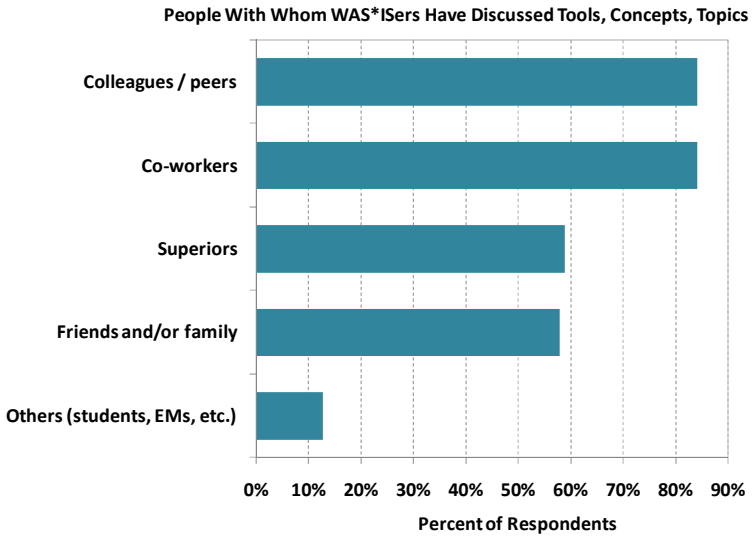

Figure 5. Discussions with Non-WAS*ISers (N=95)

(Q19) We also asked respondents whether they had been able to integrate something they took away from WAS*IS into their work or education. 81 of 99 respondents (82%) reported that they had. When asked to describe what they had incorporated into their work or education, 30 of 78 respondents (39%) said general considerations of societal impacts. Twelve respondents (15%) said more effective communication, while 12 respondents (15%) said they had incorporated the WAS*IS message into their lectures and presentations. Other specific examples respondents provided included: a thesis developed entirely as a result of the WAS*IS workshop; the integration of societal impacts considerations into a forecast and warning program; incorporating GIS into research and courses taught; the development of a flash flood management strategy; utilization of concepts of risk and vulnerability; and the incorporation of more effective communication.

(Q23) When asked whether WAS*IS had influenced their career, 78 of 97 respondents (80%) reported that WAS*IS had influenced their career. The most common way respondents reported that WAS*IS had influenced their career was by enabling them to undertake work at the science/society interface, which

many of them were not previously doing (35 of 75 respondents; 47%). Fourteen respondents (19%) reported that WAS*IS provided them a network of like-minded individuals through which to effect change, while 12 respondents (16%) reported that WAS*IS gave them increased confidence to pursue integrated work by providing a reinforcement of their beliefs. Eleven respondents (15%) said that they had been able to incorporate the WAS*IS education they received in disciplines outside their own field into their work, while seven (9%) and five respondents (7%) respectively reported that WAS*IS had influenced their education or led to a new job entirely.

(Q20) We asked respondents whether their attendance at a WAS*IS workshop had changed how they do their job or schoolwork. 59 of 97 respondents (61%) reported that WAS*IS had changed the way they do their job or school work. The majority of respondents (16 of 53 respondents; 31%) said they had incorporated a general awareness of social science/meteorology integration into their work, while 12 respondents (23%) reported undertaking projects in their work that directly integrate meteorology and social science. Other ways respondents said their work had changed due to WAS*IS included: Being more proactive in seeking out collaborations and related opportunities (9 respondents; 17%); designing a new societal impacts course based on WAS*IS or incorporating related ideas into an existing course already being taught (7 respondents; 13%); incorporating a new or increased consideration for end users (5 respondents; 9%); and having more general confidence in integrating meteorology and social science (4 respondents; 5%).

(Q17) When asked whether WAS*IS influenced respondents to modify existing projects to better integrate meteorology and social science, 55 of 99 respondents (56%) reported that they had modified existing projects to better integrate meteorology and social science. Of those who said they modified existing projects to integrate meteorology and social science, the majority of respondents (25 of 54 respondents; 46%) reported doing so by including general societal impacts considerations. Other common WAS*IS-based project modifications included consideration of end users (7 respondents; 13%), incorporation of multidisciplinary methods and tools (7 respondents; 13%), establishment of improved connections and partnerships within existing projects (5 respondents; 9%), addition of survey-based research methods (5 respondents; 9%), promotion of WAS*IS within existing projects (5 respondents; 9%), and incorporation of GIS (4 respondents; 7%) and communication (4 respondents; 7%) methods and tools.

(Q18) When asked whether WAS*IS had influenced respondents to undertake new projects that integrate meteorology and social science, 55 of 99 respondents (56%) reported that they had undertaken new projects to integrate meteorology and social science based on their attendance at WAS*IS Of those who said they undertook new projects, the majority of respondents (23 of 54 respondents; 43%) said they began a new, collaborative, research project. 14 respondents (26%) reported utilizing new connections and partnerships for a project, while nine respondents (17%) said they were exploring ideas for new research projects. Five respondents (9%) said they pursued a new job opportunity, degree or thesis/dissertation topic, while three respondents (6%) reported created and teaching a new, university-based societal impacts class.

(Q22) When asked whether they had made connections with non-WAS*ISers that they would not have otherwise made had they not attended the WAS*IS workshop, 46 of 97 respondents (47%) reported that they had made these types of new connections with non-WAS*ISers based on their attendance at the workshop. The majority of these respondents (37 of 44 respondents; 84%) reported making connections with others in the social sciences and meteorology including colleagues, other students, and other interested non-WAS*ISers. Ten respondents (23%) said they were introduced to new societal impacts

resources, such as the societal impacts discussion board and new conferences, workshops and symposia.

(Q34a) When asked whether the extent to which their WAS*IS-related efforts are considered part of their job or schoolwork had changed since they attended WAS*IS, 31 of 95 respondents (33%) said it had. Ways in which respondents said this had changed included: More colleagues and/or supervisors began considering WAS*IS-type work relevant and important (8 of 30 respondents; 27%); Respondents began making WAS*IS-type work more of a priority in their current position (7 respondents; 23%); Respondents took a new job or position where WAS*IS-type work is more of a priority (6 respondents; 20%); Respondents were given more time or money to work on WAS*IS-type projects (4 respondents; 13%); and respondents and colleagues began placing more emphasis on user needs (2 respondents; 7%).

(Q27) When asked whether their involvement in WAS*IS had led to changes in the way their business, agency or department does business, 30 of 96 respondents (31%) said it had. Most commonly, respondents said their business, agency or department is now actively integrating meteorology and social science as a result of their training through WAS*IS (16 of 30 respondents; 53%). Examples respondents provided included integrating impacts into warning decisions, communicating uncertainty, and shifting focus to integrate user needs. Ten respondents (33%) said their business, agency or department, including upper management, has an improved general awareness of the need for integrating meteorology and social science.

(Q28) When asked how effectively WAS*IS tools and concepts helped respondents do their job or schoolwork, 81 of 96 respondents (84%) said they were able to at least “somewhat” more effectively do their job, while 49 respondents (51%) said WAS*IS tools and concepts were “very” or “extremely” effective. The mean value for the responses was 3.53, where 1 indicated that WAS*IS tools and concepts were “not at all” effective and 5 indicated that WAS*IS tools and concepts were “extremely” effective.

(Q29) When asked how effectively their supervisor or school advisor thought WAS*IS tools and concepts have been useful to participants’ work, 54 of 96 respondents (56%) said their supervisor/advisor thought WAS*IS tools and concepts were at least “somewhat” useful to respondents’ work, while 30 respondents (31%) said their supervisor/advisor found the tools and concepts to be “very” or “extremely” useful to respondents’ work. The mean value for the responses was 3.22, where 1 indicated that a respondent’s supervisor or advisor thought WAS*IS tools and concepts have been “not at all” useful and 5 indicated that a respondent’s supervisor or advisor thought WAS*IS concepts have been “extremely” useful.

3. Guiding Future Directions of WAS*IS

a. Suggestions for Future Directions

As a follow-on to the question discussed in Section 2a above about professional workshops, short courses, or colloquia other than WAS*IS that respondents have attended in the past, we asked which, if any, aspects of those other workshops respondents thought should be a part of future WAS*IS workshops (Q24a). Of the 77 people who responded, the modal answer from 36 people (47%) was that there was nothing else they thought should be part of WAS*IS. Of the people who did provide suggestions, answers were varied and included (a) more hands on training with tools, methods, etc., mentioned by 8 people (10%); (b) hosting special speakers, stakeholders, and/or high-level people,

mentioned by 3 people (4%); (c) including situational concepts (e.g., role playing to evaluate tools, hypothetical proposal development), mentioned by 3 people (4%); (d) having more focus on meteorology for social scientists, mentioned by 2 people (3%); and (e) mentoring, mentioned by 2 people (3%).

We also asked a series of open-ended questions to elicit more detailed feedback from respondents. One of the most useful questions was an open-ended question (Q30) that asked, "What activities or efforts do you think would be most beneficial for maintaining, strengthening, and growing the WAS*IS community?" Figure 6 shows the most common suggestions. The creation of a discussion forum and holding social events were the modal responses, with both ideas suggested by 31 people each (27%). This underscores that the community-building aspect of WAS*IS is very important.

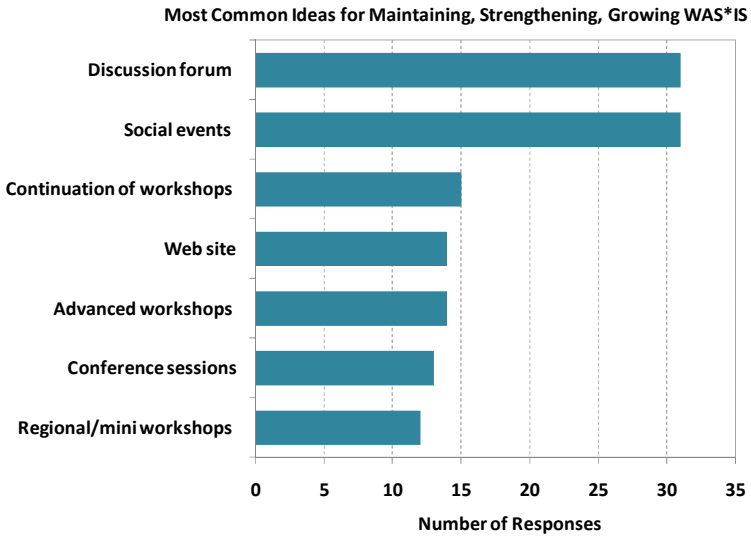

Figure 6. Most common write-in ideas for maintaining, strengthening, and growing the WAS*IS community. (N=115)

Following this question, we then asked a similar close-ended question that asked respondents to rate how useful specific options would be for maintaining, strengthening, and growing the WAS*IS community (Q31). Table 3 on page 11 shows the mean rank order of respondents' preferences. Although the ordering of the options in Table 3 varies somewhat from those in Figure 6, this may be due to people responding to a list of specific options versus generating ideas on their own. Moreover, nearly 75% or more of respondents indicated that all the ideas summarized in Figure 6 are "extremely" or "very useful".

Table 3. Mean rank order of options for maintaining, strengthening, and growing WAS*IS community. Due to rounding, not all sets of responses add to 100% (N=119).

Answer	Percent Extremely or Very Useful	Percent Somewhat Useful	Percent A little or Not at All Useful
Organized sessions at conferences for anyone	91%	6%	3%
Organized sessions at conferences for WAS*IS	85%	8%	8%
Advanced WAS*IS workshops	83%	13%	4%
Funding for collaborative research	82%	13%	4%
Advanced activities within specific organizations	78%	16%	6%
Social gatherings at major conferences	78%	15%	7%
Email list or discussion forum	73%	19%	8%
Professional development series	66%	21%	13%
Integrating WAS*IS with related efforts such as the AMS Summer Policy Colloquium	57%	35%	8%
Stand-alone WAS*IS conference	50%	37%	13%

b. Constraints on Future Directions

Respondents were asked to describe the major constraints they faced in continuing to do WAS*IS-type work (Q32). Of the 114 responses, the most common response from 48 people (42%) was that time is the major constraint, followed by 36 people (32%) who indicated that funding is a problem. Other common constraints included: constraints from superiors, mentioned by 24 people (21%); lack of seniority, mentioned by 8 people (7%); lack of understanding from physical scientists, mentioned by 7 people (6%); and difficulty in finding collaborators, mentioned by 5 people (4%). Twelve respondents (11%) reported no constraints.

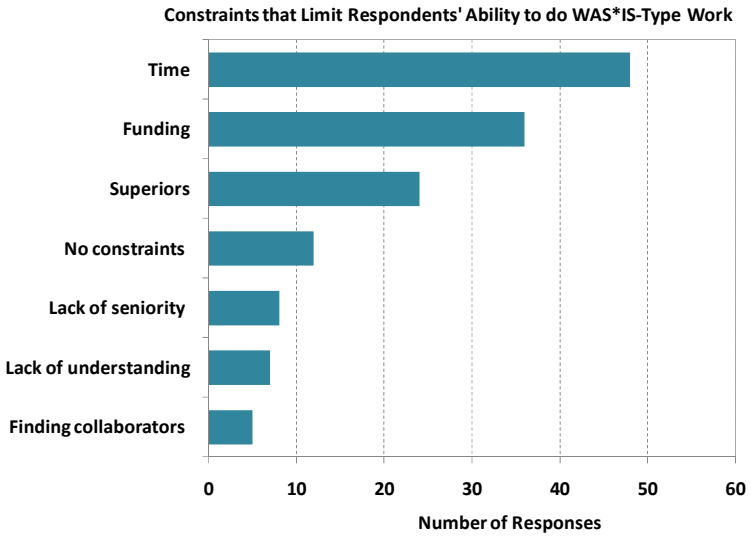

Figure 7. Most common write-in constraints that limit respondents' ability to do WAS*IS-type work (N=114)

We also asked respondents about the importance of various factors in order for them to successfully continue doing WAS*IS-type work (Q33). These results were similar to the previous question about constraints, with the majority of respondents indicating that more time was most important, but that funding and support were also very important (Table 4).

Table 4. Mean importance ratings of factors needed to successfully continue doing WAS*IS-type work, where 1 means "not at all important" and 5 means "extremely important" (N=119)

Factor	Mean of importance
More time	4.10
Financial support	3.90
Support from colleagues	3.74

4. SIP's Future WAS*IS Efforts

As shown by the results of this evaluation survey, WAS*IS has been very successful and influential on the workshop attendees but also on the greater meteorological community. Yet, there exist numerous needs and possibilities for future growth of WAS*IS. First and foremost, as WAS*IS grows and evolves, SIP must revisit the vision, mission, and goals to ensure they adequately reflect what WAS*IS encompasses. In addition, several future WAS*IS possibilities are outlined below. These are stratified into two possibilities for future WAS*IS efforts — a baseline WAS*IS effort and a fully resourced WAS*IS effort.

The baseline WAS*IS effort is based on current resources, so it primarily consists of plans to continue current WAS*IS efforts with some new activities to strengthen collaborations among existing WAS*IS participants. Although this baseline program is successful, it is greatly limited in its reach. The more robust, fully resourced WAS*IS effort has the potential to increase the impact of WAS*IS. This enhanced effort would provide compelling and effective means to more adequately empower the existing WAS*IS community, continue entraining new members, and further increase the influence of WAS*IS. These efforts will help more fully realize the WAS*IS vision of comprehensively and sustainably integrating meteorology and social science to better serve society.

*a. Baseline WAS*IS effort*

- Continue holding the annual 8-day summer workshop in Boulder, CO, for 25-30 invited participants, with a focus on increasing representativeness of social scientists, broadcast meteorologists, and other private-sector personnel in the WAS*IS workshops.
- Continue supporting WAS*IS gatherings at AMS and AAG meetings..
- Continue supporting Societal Impacts Discussion Board
- Develop more diverse capacity for implementing WAS*IS workshops by involving prior WAS*IS participants in design and implementation of future workshops.
- Complete the WAS*IS compendium, make it freely available online, and focus on efforts to advertise it for use in classrooms and by researchers and practitioners.
- Provide input and guidance to colleagues from Environment Canada who are interested in organizing a WAS*IS Canada.

- Organize mechanisms, such as webinars, for participants of past WAS*IS workshops to connect virtually on a regular basis. Such opportunities would be beneficial for re-connecting WAS*ISers, introducing WAS*IS participants from different workshops, and providing opportunities to learn about a specific topic or issue.
- Establish a mentorship program in which participants from past WAS*IS workshops would volunteer to mentor (a) people who have been selected to participate in future WAS*IS workshops, and (b) people who have not or cannot participate in WAS*IS workshops but who are interested integrating meteorology and social science and have related questions.

b. Fully Resourced WAS*IS effort

In addition to the baseline activities outlined above:

- Explore the needs and opportunities to extend the "NWS Kansas City / Pleasant Hill WFO Integrated Warning Team Workshop: Using the WAS*IS Approach" workshop to other NWS forecast offices. This will complement traditional, nationwide WAS*IS efforts by building capacity and partnerships at more local levels among NWS forecasters, broadcast meteorologists, emergency managers from the local county warning area, as well as social scientists from nearby universities.
- Organize advanced WAS*IS workshops focused on specific topics (e.g., survey design, communicating forecast uncertainty information, science policy). These workshops would involve participants of past WAS*IS workshops but, to further build capacity within the meteorological and social science communities, they could also entrain new colleagues based on the context, topic, or tool that is the workshop focus.
- Develop a WAS*IS workshop that focuses on introducing meteorology to social scientists, to further build capacity and interest among social science communities.
- Work with people who have expressed an interest in the past about WAS*IS (i.e., Texas, Australia, Pacific) to explore organizing WAS*IS workshops in their communities.
- Explore options with WMO to develop truly international WAS*IS effort specifically designed for developing and less-developed countries to build capacity and as well as applications in these countries.
- Develop a one-day AMS short course that introduces the integration of meteorology and social science (perhaps geared toward higher-ups who cannot attend a full 8-day WAS*IS workshop).
- Organize a competitive program analogous to the Natural Hazard Center's Quick Response Program in which people could apply for a few thousand dollars of seed money to undertake small, tractable projects that fall within the spirit of WAS*IS. As a unique complementary component to this seed money program, SIP could identify a pool of people with expertise in a given area (e.g., survey design, communication theory, operational forecasting, economic analysis) who are willing to collaborate on one or more seed projects.
- Develop online courses, possibly through UCAR's COMET modules, that teach integrated meteorology and social science topics.
- Develop university curriculum for undergraduate and graduate level seminar classes that introduces the integration of meteorology and social science.

References

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