CLIMATE SCIENCE COMMUNICATIONS TRAINING

SUMMARY REPORT – June 2013

The National Oceanic and Atmospheric Administration
National Environmental Satellite Data and Information Service
National Climatic Data Center

Submitted by the
Cooperative Institute for Climate and Satellites – North Carolina (CICS-NC)

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CI Research Theme: Administration and Infrastructure

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1. Introduction

Communicating information about climate science, climate variability and climate change has been recognized as a key challenge amongst the scientific community, and those in the role of communications, education and outreach. Climate science is non-intuitive, spans geological time, has complex interactions, and multiple non-linear processes. The information has also become politicized and polarized, and thus it's a common understanding amongst the general public that climate information has "two sides." In addition, climate science and scientific uncertainty has often been mischaracterized in popular media.

Due to these and many other reasons, NOAA, through its Cooperative Institute for Climate and Satellites-North Carolina partner, engaged in a series of workshops on climate science communications to assess the needs for training at 3 of its locations, and provide helpful tips and guidelines for engaging with stakeholders, particularly the media.

The project was intended to provide climate science communications information that can improve the communication skills of leading climate experts and select communicators within the various offices of NOAA. The topics of focus included those areas of interest to the general public and the media on climate science, variability and change. The project included an initial set of one-day workshop sessions at three of NOAA's locations: NOAA David Skaggs Research Center (Boulder, Colorado), NOAA National Center for Weather and Climate Predications (College Park, Maryland) and NOAA National Climatic Data Center (Asheville, NC).

These workshops and the corresponding outputs are intended to provide an updated baseline training for a significant number of climate science experts, help clarify additional needs in each lab location and/or for particular groups and will serve as a foundation for ongoing communications training and support.

At each location, the workshop agendas were created to respond to needs identified at each location. The workshops focused on effectively communicating and messaging the science of climate variability and change to select stakeholders, including the media. It also focused on sharing best practices for interactions with the media via video, phone, e-mail or in person. The targeted participants included climate scientists at the respective locations, cooperative institute members, the public affairs group, communication outreach staff and other management that frequently engaged with the media.

2. Objectives

The purpose of the workshops were to provide basic introduction into the fundamentals about climate science and effective ways to communicating about the state of science that covered the following topics:

- Climate science communications

- Current state of the information on the public opinion about climate change
- Effective communications strategies, and
- Tips for engaging with the media

To achieve this purpose, the following basic goals were identified for each of the workshops:

- Build climate communications capacity among NOAA staff and partners so that they are better able to converse about climate science issues
- Provide communications and climate resources to staff that will help them prepare and respond to questions about climate
- Empower staff with the tools, techniques and tactics to respond to questions about climate science

Additional objectives were identified for each location, following a needs assessment for each location. These additional objectives are provided in Section 3 Workshop Approach and Delivery, which provides the details of each workshop locations and their specific needs.

3. Workshop Approach and Delivery

There were two aspects to the workshop approach:

- A needs assessment at each location, in which we surveyed over 50 scientists and communicators at each location, or those invited to attend and participate in the workshop, and sought to better understand their needs with regard to information on climate science;
- The development of an agenda that corresponded to the needs, and the execution of a workshop training

Generally, each workshop included two parts throughout the day: a morning plenary session and an afternoon Small Interactive Session

- The Plenary Session was open to all workshop participants, staff and relevant partners at a given location who have an interest in learning more about how to communicate about climate science.
- The Smaller interactive sessions that consisted of a smaller group of 15 to 20 climate scientists and/or communicators that are typically engaging with the media to answer questions and participate in interview requests. The afternoon session was designed to be longer, with the goal of providing specific practice and opportunities for participants to hone their skills to become more effective at communicating complex climate science to a general audience.

Boulder Workshop

In preparation for the workshop in Boulder, an initial needs assessment was compiled. The needs assessment was compiled through a set of three questions that each participant was asked to respond to during their registration. The first question inquired about experiences with the media; the second question was asked about their biggest concerns with respect to climate communications and media, and the third question was related to what skills, support or resources would be helpful in their work.

The needs assessment showed that most scientists and participants in the Boulder workshop engaged in climate science communications through the two types of roles: a professional role and a communications role. As a professional, they were either researchers, lab directors, or engaged in some form of, outreach, writing, or coordinating. In their communications role, they engaged in presenting to students, teachers or visitors, in dialogue with colleagues, or in teaching.

In assessing the responses to the needs assessment questionnaire, majority of the participants had no media experience, a few had experience in interviews, and very few had extensive and habitual engagement with media.

Figure 1 shows the survey responses from Boulder on how many people had low, medium or high level of engagement with the media, in response to the first question.

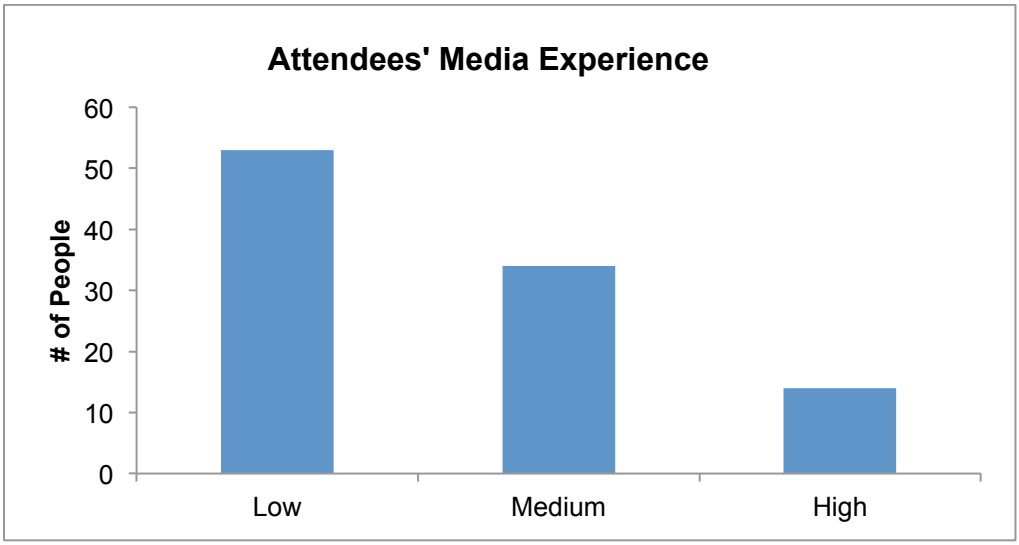

Figure 1 Attendees' Media Experience (Boulder, CO)

Figure 2 shows the respondent's perspective on why they engaged in climate communications, and what their interest was in climate science communications.

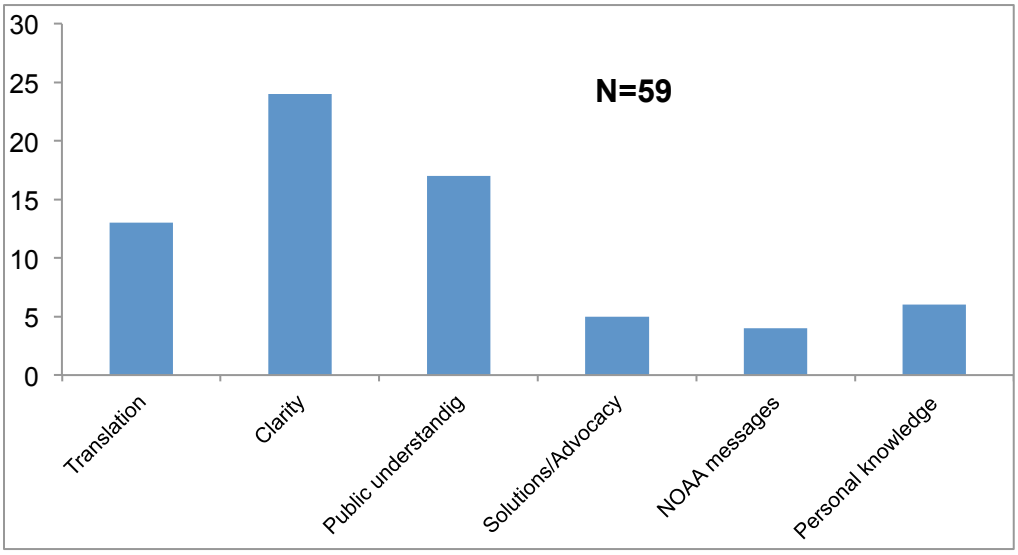

Figure 2 Respondent's Perspective on Importance of Climate Change Communication (Boulder, CO)

The information compiled from the needs assessment shaped the development of the agenda for the workshop, which included 2 sessions: a morning plenary session and an afternoon session.

David Fahey of NOAA provided the welcome introduction for the morning session. The facilitators for the morning sessions included the following:

- Susan Buhr, Director of CIRES Education and Outreach
- Jane Palmer, CIRES Communications Coordinator
- Katy Human and Carol Knight, NOAA ESRL Communications and Outreach
- Jenny Dissen, Director Outreach and Engagement, Cooperative Institute for Climate and Satellites – North Carolina

The morning plenary session focused on these key discussion areas:

- Engaging with the media (best practices and tips)
- Climate communications skills, and
- Resources available to you

The afternoon session at Boulder included three hands-on training activities facilitated by team of 4 climate communications, educators and directors from both NOAA and CIRES. The afternoon hands-on activity consisted of the following:

- Crafting your message and sound bite, where participants practiced writing their main climate message in simple language, tailored to the audience without jargon
- Myth busting, where participants were asked to practice responding to FAQ on climate
- Speak to your audience, which allowed the participants to practice engaging in dialogue relevant to the person to whom they are speaking to

Successful tips that arose from the activity preparation were then discussed as part of the debrief. These tips are captured in the Project Deliverable Presentation "Climate Communications Best Practices."

Additional details on the specifics on the workshop agenda are provided in the Appendix.

College Park Workshop

Similarly, in the College Park workshop, a needs assessment was gathered as part of the registration process. The 3 questions asked of Participants during their registration were the same as those in Boulder. A total of 77 participants registered for the workshop.

Figure 3 shows the survey responses on how many people had low, medium or high level of engagement with the media, as a response to the first question.

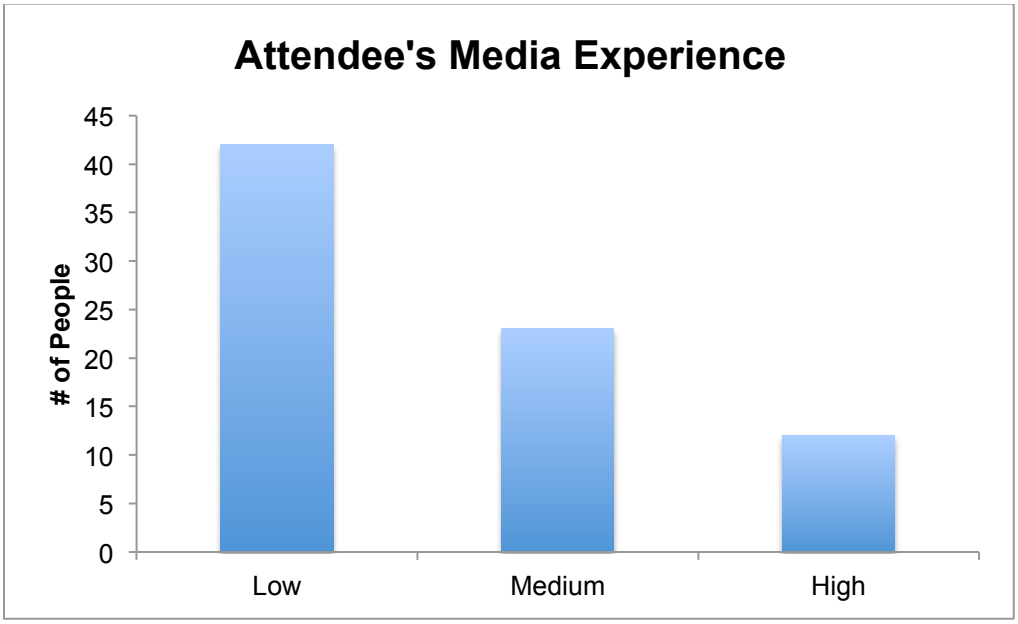

Figure 3 Attendees' Media Experience (College Park, MD)

The information compiled from the needs assessment shaped the development of the agenda for the workshop, which also included 2 sessions: a morning plenary session and an afternoon session.

The morning session discussion was led by Dr. Robert Detrick (OAR Assistant Administrator); the remaining presentations included discussions on the following topics:

- Importance of communication about climate science
- Climate overview – the changing context
- Engaging with the media (what are some tips of effective communications)
- Resource available to the team

The afternoon session in College Park, MD included a blend of science overviews on two climate science topics, followed by a break-out session that provided training on

engaging with the media on those science topics. Specifically, the agenda included the following:

- Engaging with the media – best practices
- Science overview on climate change influences (natural variability and anthropogenic), followed by hands-on training activity on communicating on this topic
- Science overview on weather and climate extremes, followed by a role-playing and hands-on training activity on effectively communicating with the media on this topic
- A recap from the breakout sessions on best practices.

Additional details on the specifics on the workshop agenda are provided in the Appendix.

Asheville Workshop

In preparation of the Asheville workshop, the participants were asked to answer three questions about their needs as part of their registration on the CICS Website (www.cics.org /events).

The first question inquired about experiences with the media; the second question was asked about their biggest concerns with respect to climate communications and media, and the third question was related to what skills, support or resources would be helpful in their work.

Figure 4 shows the survey responses on how many people had low, medium or high level of engagement with the media, as a response to the first question.

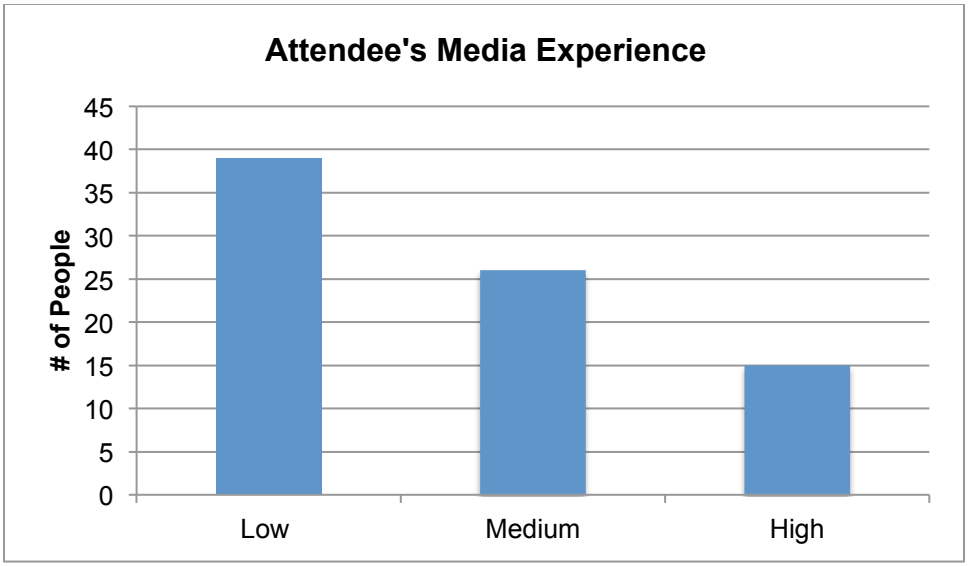

Figure 4: Attendees' Media Experience (Asheville, NC)

Figure 5 shows the 4 most common participants' concerns regarding their relation with the media.

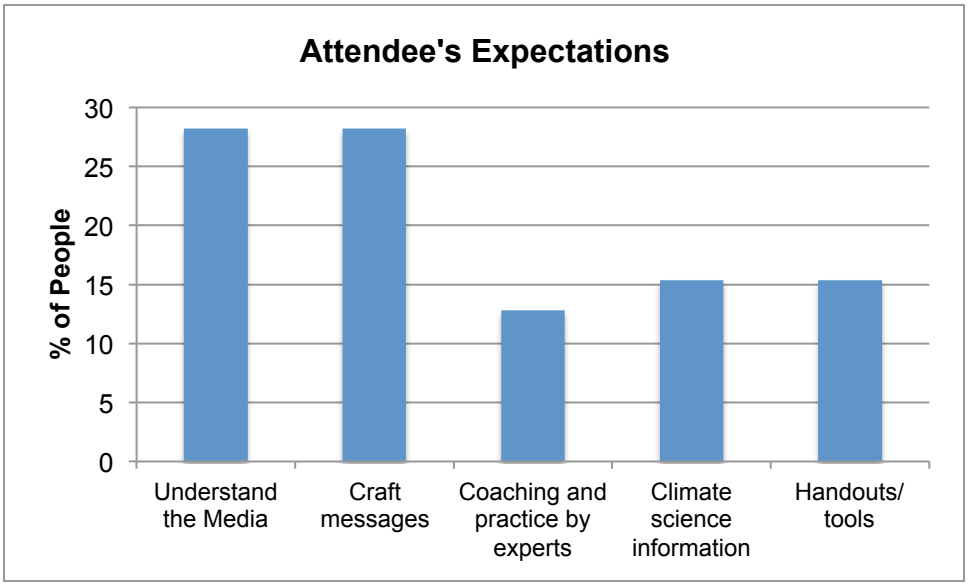

Figure 5: Attendees' expectations (Asheville)

The responses to the questions as part of the needs assessment provided us with additional specific objectives identified by the participants for Asheville. These additional needs included:

- Increase NCDC and CICS employees' confidence in their relation with the media
- Understand the rules of working with the media
- Bridge from the reporters questions to the best answers
- Develop messages that have impact
- Understand that a media interview is an *opportunity* to share information
- Create tools for the participants with tips to be successful in their media relations, and terms that have different meanings for scientists and the public.

As in other locations, the Asheville Workshop included 2 sessions: a morning plenary session and an afternoon session. The morning plenary session focused on the following topics:

- The importance of Climate Communications at NCDC
- How to engage with the media and understand how journalists think and work, what exactly is an interview, and how to prepare the interview
- A mock interview between Susan Hassol (role of the scientist) and Daniel Glick (role of the journalist)

The Afternoon session focused on:

- Understanding the importance of preparing simple and effective "quotes"
- Crafting messages and be able to present their research/activity
- Engaging in mock interviews; several scientists from the group were interviewed by the journalist in front of the large group (volunteers, participation agreed and prepared in advance).

4. General Outcomes

Participation

The interest and response from participants was strong at each location. The table below shows the total number in attendance at each workshop.

Location	Total Plenary Session Participants	Total Afternoon Interactive Session Participants
Boulder, Colorado	~65	15
College Park, MD	77	23
Asheville, NC	~80	18

Participation in the Boulder workshop included members from NOAA's National Geophysical Data Center (NGDC), NOAA ESRL Chemical Sciences Division (CSD), NOAA's National Climatic Data Center, ESRL's Global Systems Division (GSD) and Cooperative Institute for Research in Environmental Sciences.

Participation in the College Park workshop included members from NOAA's National Weather Service (Headquarter, Climate Prediction Center, Climate Services Division, and Hydrologic Services Division), Climate Program Office, some NESDIS Regional Climate Services Directors (RCSD), Marine Ecosystems, National Ocean Service and the Cooperative Institute for Climate and Satellites Maryland.

Participation in the Asheville workshop included members from NOAA's National Climatic Data Center (NCDC) and the Cooperative Institute for Climate and Satellites North Carolina (CICS-NC).

Boulder Workshop

There are several key outcomes from each of the workshops that demonstrate the objectives being met.

Morning Session

In Boulder, the participants indicated they have:

- Learned what others say are issues/benefits of media interaction (from needs survey and afternoon exercises)
- Learned what NOAA climate science discussions are on climate variability, change and attribution
- Increased their awareness of some strategies for use in climate communications generally that can be applied to any stakeholder engagement
- Obtained of tips on engaging with the media, and what is more effective
- Participated in whole group discussions to critique or react to good and bad interview experiences, and tailor their own messages for effective communication

- Resources/links to additional information for preparation for communications in the future.

Afternoon Session

In Boulder, Colorado, the key outcomes from the afternoon session included the following remarks:

- Both scientists and communicators felt they should meet and support each other to arrive at standard answers to tricky climate questions. The participants felt that the iterative discussion approach allowed everyone to gain clarity on issues, help establish where they stand on the "honest broker" to advocacy spectrum, and become aware of pitfalls in possible responses.
- There was a desire to establish an elective mentorship program where people who had prior experiences in dealing with the media/climate communication could be advisers/mentors to anyone else who wished to contact them.
    - Similarly, the mentorship program was also sought after by those who experienced negative interactions with the media, and requested informational sessions on how to overcome their negative experience (e.g. a "Dealing with the Dark Side") brown bad seminar

College Park Workshop

Morning Session

- Participants found the talk on tips for framing messages on effective climate communications most useful, but indicated the need for more hands-on training; “I think the information is of broad interest to many at NOAA. It would be great to open the morning session up to more NOAA staff in Silver Spring.
    - All NOAA staff should have the opportunity to access this experience. I suggest creating a 15-20 minute articulate presentation with featured clips from the workshop speakers.
- The session on the Six Americas presentation and the presentation from NOAA's Public Affairs Office were both beneficial
- They participants benefited from the presentation discussion on what to do and what not to do in talking with the media
- Dr. Katherine Rowan’s discussion on the social science of climate communication was new to many of the participants, and most found it insightful

Afternoon Session

- The discussion on how to deal with media was helpful; some plan to use “some of the tactics in [their] own media encounters”
- Participants requested that the afternoon training become available to all those attended the morning (e.g. in the afternoon session is where “they got it.”), and to all of NOAA in general
    - There was a suggestion to made the presentations be available as part of a recorded video for others

- The group preferred to have more dedicated time for breakout sessions and activities; the ability to discuss in small groups about opportunities to tailor the messaging on targeted topics for targeted venue was very productive.
- Participants preferred and desired additional presentations by Deke and Susan; discussions led by Susan Joy Hassol and Derek Arndt were effective, particularly in the use of metaphors
- There was desire for more 1-on-1 or group instruction time. "Scientists are not naturally outgoing, so they need to build in time to break down their natural inhibitions to get us to practice communicating."
    - There was desire for more hands on practice for mock interview preparation.
- The peer feedback during the mock interview process was most useful; it helped hearing first hand from informed audience of what points are really worth the attention, particularly to the media; it would be helpful to have more emphasis on using real-world analogies in discussing climate information, as Deke was applying in his talks
- There was desire for additional examples of good communication (not just video clips of bad communication).
    - "It would have been better to have less science and more messaging/presentation help. There was desire to increase the interaction with communications professionals. Why not put a professional communicator at each table and have each person give their "pitch" to this professional (and the group) for feedback?"
- There is desire to receive additional training on how to handle questions received from the skeptics and deniers
- The participants indicated that it was absolutely essential that this be more interactive and interpersonal. Even in the auditorium this could have been accomplished by moving everyone to the first few rows, calling on people to try out their messages, having them work for a few minutes in a small group to engage them in the learning process. This was essentially lecture format, which was not only boring but gave me no confidence to communicate anything beyond information which we know is not at all effective in climate communication.
- There was desire for additional time to be allocated to the Q&A and discussion.
- "The focus was too much on the types of communication NCDC is likely to do, and not enough on the broader range of climate communication issues faced by others in NOAA. There are two aspects of this. First, some of us [scientists] tend to deal with the media regarding new research results, often on rather esoteric issues, rather than the bread and butter climate issues that Deke and Susan wanted to stress. Second, many feel there is a problem with NOAA's overall climate communication strategy, which is less effective than it might be. There are a plethora of voices and messages.... Managing the chorus of voices to better serve the agency and the public requires discussion and training for all the folks who speak publicly on climate matters. This is a challenge, but it's an important issue we have too long neglected."

Asheville Workshop

Morning Session

- The dynamic interaction between the two speakers was a success and was perceived as a very positive, new and original way to enhance engagement with the speakers.
- The morning session taught the participants the importance of preparing an interview.
- The participants were very interested in the opportunity to listen and interact with a journalist (Daniel Glick).
- The participants learned about what journalists expect during an interview.
- The quality of the contents and the mock interview between the journalist and Susan Joy Hassol was very useful and found very valuable by the participants.
- The dos and don'ts of engagement with the media was very helpful advice on how to prepare an interview.
- The participants expressed a need for a clear briefing on the state of climate change addressed to center-wide employees, so they know the basics.

Afternoon Session

- Participants liked the opportunity to discuss with peers on message development and fine-tuning answers to questions.
- The focus given by the speakers on the importance of the preparation of their interview was found very helpful.
- This small group session was a great opportunity to explain the participants' work in terms that the public or media could understand.
- The participants found extremely valuable to have the opportunity to interact with a journalist and have his direct feedback on how to respond and improve their talking points and techniques.
- After this session, the participants felt more confident in their relation with the media and more ready to respond to an interview.

Key Themes from the Climate Science Communications Engagement

In addition, several key areas of themes were identified in why effective climate science communications is needed internally to NOAA.

Scientific presenters and non-scientific receivers: Scientists are taught, and rewarded, to communicate with each other through such mechanisms as publishing articles in peer-reviewed journals, giving presentations to other scientists at conferences, or other technical forums. Not many scientists receive the needed training on engaging and communicating with the public that is both understandable and relevant to a non-scientific public. This has created a gap in the understanding of scientific information and how the general public perceives it. In recently years, due to the advancement in social science research on messages or communication techniques and styles that better resonate with the general public, particularly in the area of climate scientists, there is an opportunity for synthesizing the vast amounts of social science data out there for effective communication on climate science to the general public.

Uncertainty/Risk. NOAA is a science agency, and for scientists, uncertainty quantification is critical component of the research. However, for the general public, "uncertainty" has either been misinterpreted or mischaracterized to mean "unsure" or

"don't know". There is a tendency for scientist to underestimate how "confident" they really are about their findings. This comes into play when talking about climate change and extremes, where there is uncertainty in future projections. This is also true when talking about impacts and risks. The use of the word uncertainty (amongst other words)[1] creates confusion in the general public due to their understanding of the definition. Scientists should consider alternative forms of explanations when engaging or communicating with the general public.

Clearly Conveying What Question your Research Addresses and What it Doesn't. Often times, climate scientists being interviewed for information by the media are not clear in communicating the climate information or their research findings. This issue gets magnified when NOAA scientists or NOAA's partner organizations publish papers on similar topics, and there appears to be "conflict" or different perspectives in the research findings. In some cases, the interviewee simply states to the interview "this is not my areas of expertise" which results in a missed opportunity to inform the general public of the science. In other cases, there is not really a conflict in the findings after the information is understood; for example, in some cases, they are different methods being investigated, or the researcher is asking different questions. Scientists should be explicitly clear on what question they are responding to the media.

Applicability to Real-World Examples. Uses and applications of climate information is very helpful particularly when conveying the importance of how the changes are impacting the society. Uses and applications of climate information also help to convey the information in a language that resonates with that particular group. For example, when talking about drought, it helps to use language and climate information that resonates with the water resource managers and farmers, who are dealing with the impact and challenges. It is important for the user / decision-maker to understand the core essence of the research / science finding and how it relates to their operations and decision-making. The ability to engage and connect science information with the user also helps to generate the needed requirements for scientific research.

Expert vs Manager: Within NOAA, everyone has a role in engaging and communicating with various stakeholders on climate information. There is a great deal of knowledge and expertise within non-scientists / non-researchers. However, there is a reluctance or hesitancy from these roles (e.g. program mangers) as they are not actively engaged in the research or identified as experts. However, there are deep expertise in NOAA (e.g. communications, public affairs, education, outreach and engagement, etc.) that have the knowledge and ability to communicate effectively on related climate science topics such as impacts, risks, opportunities, economics, etc. This group of skilled resources should be able to articulate with stakeholders to state what whey do know and what they don't know with confidence, rather than just saying they are not experts.

[1] Susan Joy Hassol (http://www.cicsnc.org/assets/pdfs/events/comm-avl/Susan%20Joy%20Hassol%20list%20of%20words.pdf)

5. Recommendations

As a result of the interactions with various scientists at the 3 locations, there are several requirements and follow-up for additional communications related workshops, training, and continued conversations. The table below summarizes the needs identified by the various scientists, a CICS-NC perspective on the prioritization and a suggestion of how the requirement may be met through continued communications engagement.

Engaging in frequent webinars focused on communications may be effective in achieving many of these requirements.

"Want to improve ability to tell a story."

"Practice makes perfect (or at least better).... So, feedback from those with further experience would be welcome!"

"A vetted central repository of climate outreach materials would be great help."

"...a regular brown bag luncheon on this topic, climate trivia, or anything that...engages us as a group around this topic in a fun way.."

Additional Requirements for Training

Needs / Requirements	Priority	Proposed Options for Response
There is a need for NOAA across the various locations and centers to conduct further communications training to keep abreast of current social science research and advancement of climate science.	**H**	• Develop a yearly plan of key climate science and communications topics, and deliver a webinar for all NOAA once-a-quarter • Twice a year, engage in brownbag lunch sessions or branch seminars on effective communications discussions • Develop database of tips and tricks on engagement with the media
There is need for additional training that allows participants to practice the following: • How to develop elevator speech • Anticipate misconceptions or denialist myths in specific area. • Practice a short, debunk based on an existing myth, then apply to one's own area. • Practice what to do with truculent or difficult interviewer.	**H**	• Incorporate more hands-on training for specific individuals as part of continued communications training activities. • Build a specific webinar topic related to this need.
There is a need to engage in communication workshops that focus on the IPCC AR5 and the National Climate Assessment.	**H**	• Develop webinar series or host interactive workshop sessions at each NOAA laboratory / centers that also

Needs / Requirements	Priority	Proposed Options for Response
		has webinar access for those in remote locations •
There is need for follow-up workshop/seminar that addresses the "what", now that we have been exposed to the "how". These sessions would offer more on the science side so we could all talk more intelligently about what scientists are observing and the implications. There should be continued building of climate science knowledge that reflects the current state of the climate science, the responses to issues and what data sources are available.	**M**	• Offer several short talks from climate scientists in the respective locations to present high-level observations, irrefutable facts, the fundamental principles of science, etc. • This can be done through branch seminars or as part of the climate education webinars • Develop NOAA slides, facts sheets, and standard messages as a response to this need.
There is a need for continual practice and support of effective communications, esp. with the media with the guidance from mentors; this could be part of a recurring brown bags session.	**M**	• Provide frequent presentation or seminar series to discuss best practices in engaging with the media on climate science.
There is a suggestion for continued learning on dealing with controversy (e.g. responding to common questions and misconceptions), and how to effectively debunk common misconceptions.	**M**	• Continue to have frequent training with the target audience for the communications in the room, responding to the messages. prepared and demoed by the audience. • Could be considered as a stand-alone topic for the continued webinar series
Provide training information to other parts of NOAA, and include other personnel in future sessions (NOS, NMFS, NWS) to obtain their experiences in communications.	**M**	• Engage in quarterly webinar series focused on communications that includes all of NOAA
There should be a session focused more on climate communications for coastal resilience, marine ecosystems, etc. would also be very useful; many work on these mission areas and are frequently communicating about climate to	**M**	• Develop a focused half-day discussion or a VTC workshop engagement focused on audiences in these communities

Needs / Requirements	Priority	Proposed Options for Response
stakeholders associated with these interests/topics.		
It would be useful to have workshops that are a bit more focused on discussing climate impacts to NOAA's mission areas (e.g. protecting coastal communities, ensuring sustainable fisheries, etc.), as many of us work with these communities and stakeholders, so the general climate and extreme events 101 is useful as background but would be even more useful if connected to these mission areas.	**M**	• This discussion could be part of the overall roll-out strategy of the communications webinar series.
State partners (NERRS and CZM) are very interested in climate communications. They would benefit greatly from a training such as this.	M	• Extend the invitation to participate in the webinar series to NOAA partners
Develop a database of NOAA climate science experts by key topic areas.	**L**	• NOAA Communications Team to develop a database of climate science experts by key topic areas, and share them internally to NOAA and NOAA partners. •
Future communication training should lay the focus on communicating on the scientists' areas of expertise, but not on climate change only.	**L**	• This can be incorporated into the future agenda for communications webinars or occasional communications training.

In addition to the above-identified recommendations, NOAA should develop a short reference guide, a one pager with quick tips on how to prepare for an interview. There should also be a longer reference guide that provides in detail explanation and preparation guides. This reference guide should provide information on how to stay on topic, sticking to the point, redirecting, and correcting misconceptions.

As part of this training project, CICS-NC has compiled the best training tips and guidance documents from across NOAA and its partners into a best practices guide. This information is available as part of the deliverable (PowerPoint presentation) "ClimateCommunications_Best Practices."

6. Appendix

i. Boulder Workshop Agenda

Morning Plenary Workshop - Agenda

8:30–8:45 Welcome and Overview — Sandy McDonald

- Introduction, goals and objectives
- Why communications about weather and climate are important
- Key challenges faced by the scientific community in climate communications

8:45–9:15 Overview of Needs Assessment Results — Susan Buhr

- Tips and best practices on engaging with the media

9:15–10:15 Engaging with the Media — Jane Palmer

- Media interviews - preparation and execution for different types of media

10:15–10:30 Break

10:30–11:15 Communication Skills — Susan Buhr

- Effective climate messages and communications strategies
- Crafting your message and responding to common questions and misconceptions

11:45–12:00 Communications Resources Available to You — Susan Buhr/ Jenny Dissen

Afternoon Workshop - Agenda

1:00-1:10	Introduction to Communications Training	Susan Buhr
1:10-2:00	**Activity 1**: Preparing Your Sound bite • Breakout into 5 groups	Jane Palmer
2:00-2:45	**Activity 2**: Effective Climate Message • Breakout into 5 groups	Susan Buhr
2:45-3:00	- **Break** -	
3:00-3:45	**Activity 3**: Speak To Your Audience	Susan Buhr
3:45-4:10	Debrief / Review of Best Practices	Susan Buhr
4:10-4:15	Wrap Up, Evaluations and Future Training	Jenny Dissen

Climate Science Communications Workshop - Afternoon Session
Final Participant List (Invited)
April 25th, Boulder, Colorado

CSD nominees
Tom Ryerson
Owen Cooper
Allison McComiskey
Ru-Shan Gao
Greg Frost

GMD nominees
Lori Bruewhiler
Steve Montzka

GSD nominees
Eric Hackathorn
Hilary Peddicord
Sara Summers

PSD nominees
Chris Fairall
Kelly Mahoney
Matt Shupe
Jessie Creamean
Gil Compo – cannot come

NCDC nominees
Eugene Wahl
David Anderson
Stephanie Herring -- trying to confirm

NWS/WFO nominees
Nezette Rydell– cannot come April 25
Bob Glancy – cannot come April 25

ii. College Park, Maryland Agenda

Morning Plenary Workshop - Agenda

9:00 – 9:05 **Welcome and Introductions** **Brady Phillips**
- Purpose and goals for workshop

9:05 – 9:20 **Importance of Communicating about Climate Science** **Dr. Robert Detrick**
- Importance and need to communicate about science and NOAA's role
- NOAA's scientific integrity policy as it relates to communicating with media
- Climate mission goals and messages

9:20 – 10:00 **Climate Overview - The Changing Context** **Dr. Wayne Higgins**
- Overview of climate trends and known linkages between weather extremes and climate change

10:50 – 10:40 **Communicating Climate Change** **Dr. Katherine Rowan**
- Current state of issues and opportunities in communicating climate information
- Social science review on communicating climate change (current public opinion)
- Effective climate messages that resonate with the public
- Effective communications strategies

10:40 – 10:50 **Break**

10:50 – 11:50 **Engaging with the Media** **Susan Buchanan /Chris Vaccaro**
- Do's and don'ts of effective communications
- Media interviews - preparation and execution for different types of media
- Crafting your message and responding to common questions and misconceptions
- Overview of NOAA communications team and available resources

11:50 – 12:00 **Resources Available to You** **Jenny Dissen**
- Communication resources available to you

12:00 – 12:30 **Lunch Break**

Afternoon Workshop - Agenda

12:30 – 1:15	**Engaging with Media – Best Practices Overview**	**Susan Hassol**
1:15 – 1:20	**Introduction to Breakout Session**	**Jenny Dissen**
1:20 – 1:40	**Science Overview** *Session 1: Climate Change Influences: Natural Variability vs. Anthropogenic*	**Deke Arndt** *via VTC in Asheville*
1:40 – 2:40	**Session 1 - Training Activity** Role-playing and hands-on training	**Susan Hassol**
2:40 – 2:50	**BREAK**	
2:50 – 3:10	**Science Overview** *Session 2: Weather and Climate Extremes*	**Deke Arndt** *via VTC in Asheville*
3:10 – 4:10	**Session 2 Training Activity** Role-playing and hands-on training	**Susan Hassol**
4:10 – 4:25	**Recap of Group Breakout Session and Summary of Best Practices**	**Susan Hassol**
4:25 – 4:30	**Closing**	**Brady Phillips**

Climate Science Communications Workshop - Afternoon Session
Final Participant List
Monday, May 6 at NWCPC in College Park, MD

Line Office	Name	Title	Expertise
NWS/ NCEP	Wayne Higgins	Acting Director, National Centers for Environmental Prediction (NCEP)	Climate extremes
NWS/NCEP/ CPC	Mike Halpert	Acting Director, Climate Prediction Center (CPC)	CPC climate outlooks, Hurricane outlook
NWS/ OCWWS/CSD	Fiona Horsfall	Chief, Climate Services Division (CSD)	Climate products and services
NWS/OCWWS	Chris Strager	Acting Director, Office of Climate, Water and Weather Services (OCWWS)	Weather and water trends and forecasting
NWS/CPC	Dan Collins	Seasonal Forecaster	1 and 3 month outlooks, ENSO
NWS/CPC	Matt Rosencrans	Seasonal Forecaster	Drought
NWS/NCEP/CPC	Michelle L. Heureux	Seasonal Forecaster	ENSO
NWS/NCEP/CPC	Gerry Bell	Lead for Hurricane Seasonal Outlooks	Hurricane trends
NWS/OCWWS/MSD/Fire & Public Weather Services Branch	Elliott Jacks	Chief, Fire & Public Weather Services	Fire weather, drought
OAR CPO	David Legler	Climate Obs. Division Director	Climate system, observations & monitoring
OAR CPO	Melissa Kenny	Environmental Decision Scientist at Univ. of MD	National Climate Assessment Indicators
OAR/ARL	Dian Seidel	Environmental Scientist – Air Resources	Climate change in the upper atmosphere
OAR CPO	Laura Petes	CPO program mgr	Climate adaptation, decision support, marine ecosystems
OAR, CPO	Frank Niepold	Education Coordinator	Climate education
NESDIS/STAR	Cheng Zhi Zou	Physical Scientist	Satellite oceanographer
NESDIS/STAR	Mark Eakin	Physical Scientist	Satellite oceanographer
NESDIS/STAR	Eric Leuilette	Research Oceanographer	Satellite oceanographer
NMFS, OST	Roger Griffis	Climate Change Coordinator	Impacts on marine ecosystems
NMFS, OST	Richard Merrick	Director Scientific Programs, Chief Scientist	Fisheries research and science
NMFS, OST	Ned Cyr	Director, Office of Science and Technology	Fisheries research and science
NOS, OCRM	Laurie McGilvray	Chief, National Estuarine Research Reserve Division, NOAA LCC Liaison	Coastal Inundation, Preparedness and Resiliency
NOS, COOPS	Bill Sweet	Oceanographer	Sea level rise and coastal inundation
CICS-MD	Stephanie Schollaert Uz	Researcher, U of MD	Satellite oceanography – phytoplankton

iii. Asheville / National Climatic Data Center Agenda

Morning Plenary Session - Agenda

10:00 – 10:05	**Welcome and Overview** • Introduction, goals and objectives	**Katy Vincent**
10:05 – 10:15	**Importance of Climate Science Communications at NCDC**	**Tom Karl**
10:15 – 10:20	**Summary of Internal NCDC Needs**	**Katy Vincent**
10:20 – 11:40	**Climate Communications and Engaging with the Media** • Effective climate messages and communications strategies • Media interviews - preparation and execution for different types of media • Crafting your message and responding to common questions and misconceptions • What is a journalist how does he work? Different messages and answers for different types of media • Needs Assessment from the Journalist Perspective: an Overview of the Ecology of News Media	**Susan Hassol** **Daniel Glick**
11:40 – 11:50	**Questions and Answers**	
11:50 – 12:00	**Communications Resources Available to You**	**Jenny Dissen**

Lunch

Afternoon Workshop - Agenda

1:30 – 3:30	**Small Groups Training Sessions** • Learn about the different types of media and how to respond to their needs and expectations • Training on engagement with media via the phone and emails • Using best practices and effective communications tactics for media engagement	**Susan Hassol** **Daniel Glick**
3:30 – 3:45	**Recap of Group Breakout Sessions: Summary of Best Practices**	**Susan Hassol** **Daniel Glick**
3:45 – 4:00	**Closing Remarks and Future Workshops**	**Katy Vincent**

Climate Science Communications Workshop - Afternoon Session
Final Participant List
Wednesday, May 29 at NCDC, Asheville, North Carolina

Organization	Name	Title
NOAA NCDC	Ansari Steve	Physical Scientist
NOAA NCDC	Arguez Anthony	General Physical Scientist
NOAA NCDC	Banzon Viva	Physical Scientist
CICS-NC	Bell Jesse	Research Associate
NOAA NCDC	Blunden Jessica	Contractor
NOAA NCDC	Crouch Jake	Physical Scientist
CICS-NC	Guillevic Pierre	Physical Scientist
NOAA NCDC	Hammer Greg	Meteorologist
NOAA NCDC	Houston Tamara	Physical Scientist
NOAA NCDC	Menne Matthew	Physical Scientist
NOAA NCDC	Palecki Mike	Physcial Scientist
NOAA NCDC	Privette Jeff	Program Scientist, Climate Data Record
NOAA NCDC	Sanchez-Lugo Ahira	Physical Scientist
CICS-NC	Schreck Carl	Research Associate
NOAA NCDC	Semunegus Hilawe	Physical Scientist
NOAA NCDC	Smith Adam	Physical Scientist
NOAA NCDC	Vose Russell	Chief, Product Development Branch