

AMS Commission on the Weather and Climate Enterprise (CWCE) Board on
Enterprise Communication (BEC)

Town Hall Meeting: Ad Hoc Committee on Uncertainty Forecasts (ACUF)

January 23, 2008

AMS Annual Meeting

Minutes by student assistants: Shannon Cohen and Jason Hwang

George Frederick, CWCE Commissioner

Providing forecast uncertainty information to Nation

Almost 60 volunteers made up of Private, Government and Academia sectors.

Purpose: To allow committee to share its initial plan of attack.

Speakers:

Jack Hayes, NWS

NOAA supports an enterprise initiative.

Probabilistic guidance to help communicate level of certainty or uncertainty

Best next step solution to take is to tackle this and make it a success

Joel Myers, President and Founder, Accuweather

Introduced probability forecasting in 1960.

PhD and thesis in 1971 on probability and precipitation.

Has done surveys on meteorologist and met students in his class on probability.

Bob Ryan, WNBC-4 in Washington, D.C.

Report on "Completing the Forecast..."

To better communicate uncertainty to NOAA

1st recommendation: Enterprise-wide effort

Many people on the committee believe that this is a revolutionary time in applying science to better the world

Need to better communicate inherent uncertainty

Bring in sciences from outside the field including social sciences for a better understanding about completing the forecast

How can we go forward together (community and science), to better help us help what we are doing.

Need to realize the full potential of our science in the next 20 years, including the enhanced use of computer technology

Pam Stephens, NSF

Emphasis at NSF is on Science and there is a lot we need to do to incorporate the social scientists.

Still lots of questions: trying to support work in behavior sciences to help people understand how to better communicate.

Opportunities for collaboration, so both sides can help each other. Visit NSF website

Motivation: Elliot Abrams (ACUF Co-chair, AccuWx)

Does 30% of rain really give a good basis to start with? Does not give info on how long and when.

Paul Hirschberg, ACUF Co-Chair, NWS

Vision: Enterprise-wide partnership that generates and communicates forecast uncertainty information meeting Nation's needs for informed decisions.

Want to work with stake holders and get into listening for action. Develop plans to immediately implement.

Want to build an end to end plan, starting with pulling together the needs and opportunities.

Defining specific goals: product information and how good it is

How will we get there once we have vision and goals?

 Involves a host of items from observations, models and research.

What is the road map?

Split up into 5 workgroups to look at 5 different components in parallel

 Will take a lot of collaboration among all groups.

Needs, Goals, Solutions, Roles and Responsibilities, Roadmap

Will look at wikis: which allows for mass communication.

Betty Morrow: Group 1, National Needs and Benefits

What kinds of needs to people see, such as public, Emergency manager, etc.

Will take any suggestions, because they know there is a lot which has not been brought to life.

Cost Benefits analysis: what is the downside of using uncertainty? Who gains from this?

Alan Stewart UGA: Group 2, Formulating and Articulating Enterprise Goals

Conceptualize in terms of outcome, output goals

Outcome:

Looking first off at impacts; Are lives saved? Injuries prevented?
Enhance Productivity? Decreased negative impacts of severe weather.
More effective decisions on water resources.

Better education on forecast products for users.

By 2015

Timely availability of data and information

Highly reliable

Competitive in skill with the best offered worldwide

Forecast verification readily available

Good idea to standardize undergraduate and graduate probabilistic forecasting

Public education.

Ways to get to these goals: input from forum

Tom Hamill (OAR): Group 3, Solutions

What do we need to reach this vision?

Workgroup co-leads will interact with ACUF leads and other group leads to formulate a coordinated overall direction

Brenda Phillips: Group 4, Roles and Responsibilities

Role is to figure out who are the different players and that all are being involved.

Will provide a list of all enterprise partners: contact info and expertise

How do you bridge language gaps? Need cross-enterprise collaboration

As groups develop plans will develop and implementation plan including an advocacy plan.

Going to do this through information gathering: climate and enterprise meetings

Create a database

Interviews with ACUF members.

Steve Tracton, retired from NOAA, Group 5 Roadmap

Enterprise-wide strategic roadmap, including alternatives.

Integrate from all subgroups.

Going to reach out and push as well as pull

Strategic road-mapping: achievable action plans

Need to incorporate and accommodate newly identified opportunities and strategies.

Critical Path Analysis

- Project co-dependencies

- Identify critical activities

- Identify float activities

- What-if scenarios? What are the consequences and implications

Comments:

Goes back far enough to realize the right words and expressions of commitment have all been there. Hopefully now we can expect that we will indeed move ahead. Very optimistic.

Timeline: Year and a half to two years

Where are we currently: Discuss and review work plan at AMS annual meeting

First draft of Workgroup sections by Oct. 8, 2008

Open Discussion:

- Louis Uccellini, Director, NCEP
- ACUF outline seems to be process oriented:
- Seems like we've been standing still for ten years.
- Whatever process: Very rapidly go from glossy documents (which already includes planning and societal impacts) and tactical point of view, really need to get things done. Plan needs to recognize what really has been down.

Response:

- The tools and procedures are on the table, the issue is how do you exploit the capability.

Rebuttle:

- We need to get moving a lot faster.

Response:

- This group does not view itself in a position to reinvent the wheel.

- Scott Sandgathe University of Washington
- UW Dedicated to communicating mesoscale meteorology: team composed of
- Highlight 2 Things:
 - Local broadcast meteorologist broadcasts were researched to see how users see and use the uncertainty of information. Found the response was to change the channel.

- Psychologists have asked people if they understand the information uncertainty.
- Need to give users training: convey with different visual and verbal means. Really difficult to convey information in a way that the general public can understand it.

Response:

- Have to feel and recognize that UW enterprise encompasses many disciplines, besides meteorologists. Need to actively communicate.
- Job is not done until decisions that we anticipate are followed up on
- Progress can be made, and we need to realize the full potential of the application of our science to the general public.
- A cookie-cutter approach to uncertainty will not be productive
- Member of Group 4: When you look at the literature of uncertainty, we are not to assume they do not understand, but negotiate, to try and figure out what level they are comfortable with. We need a bottom up process.

Response:

An idea of test-beds: Wide range of professionals: ask does this product work or not work for you?

Issuing forecasts have all kinds of emotional implications

- Paul Schultz, Earth Systems Research Laboratory Representative. Concern is in provision. Participates in weather committee and uphold the forecaster to the available tools. Fairly large portion believe that humans cannot add value to ensemble forecasts. Is it possible to build something to have the forecasters add value? Do we have any chance to infuse forecaster understanding in the probabilistic forecast process?
 - S. Tracton – there will more of a connection to the users – enhanced relationships for forecasters
 - T. Hamill – short-term would have value added for protection life/property – long-term not as much value added by forecaster
- Response: Forecasters with experience and the right tools will be able to add value.
- Will be in a position to communicate with their users. Believes role of forecasters will be enhanced, not reduced.
- What does the user specifically need?

- It's asking a lot of the forecaster to potentially modify automated products. Right now the weather service is concerned with loss of life and property. What should we leave to an automated algorithm?
- Rebuttle (Paul Schulz):
 - The gov't has time constraints and are blocked to dynamic changes.
- Representative from NCEP: Include outcomes of Thorpex program.
- Worried about loss of information. There is a May workshop that we should have some attendance at.
- Rebuttle:
- Bring together all previous resources and knit them together (again, not having to re-invent wheel. Weather service has a lot of work to do on forecast uncertainty
- David Titley: Representative from Navy: Concern with making decisions based on fact rather than folklore. Make sure there's cross-talk between organizations. Having a trusting relationship with the customer, knowing your customer (qualitative forecasts). Letting customer know how confident we are with our forecasts.
- D. Reynolds, NWS: What is the role of the forecaster? They should be more accessible for high impact events as IMETs and in CWSUs. Example of west coast storm in Jan – 7 days preparation with emergency managers/state/etc...
- Ed Johnson, NWS: Asking people what do you understand of a probability uncertainty product. Two differing education and outreach problems: the experts understanding the meaning of the products and identifying the needs of the end-user.
- Representative of NASA, Kennedy: The problem is finding the event you are forecasting for uncertainty. Don't use "uncertainty" rather use "risk."
- Response: Issue—underestimating or overestimating the understanding of the general user. We must take advantage of what's already available.
- People deal with uncertainty all the time.

Contact Andrea Bleistein to give more feedback:

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