How Social Sciences Are & Are Not Being Woven Into Atmospheric Science

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Today’s remarks Brief Look Back & Look Forward

 Efforts to integrate the social sciences & atmospheric scientists go way back

Inspired by life & work of hazards geographer pioneer
Gilbert F. White

My own efforts began as a human geographer in 1976 after the Big Thompson Flood
Weather & Society * Integrated Studies

WAS*IS movement - funded 2005-2011

FaceBook page has more than 850 users
WAS*IS student page has 250 users

SIGN up?
Changing the weather enterprise by comprehensively & sustainably integrating social science into meteorological research & practice
WAS*IS capacity building initiative addressed two persistent issues

I want to do work that integrates meteorology & societal impacts BUT....

- I don’t know how &....
- I don’t know anyone else who does this kind of work
WAS*IS mission — *building socio-meteorology capacity*

1. Build an interdisciplinary community of practitioners, researchers & stakeholders — from the grassroots up — dedicated to the integration of meteorology & social science

2. Provide opportunities to learn & examine ideas, methods & examples related to integrated weather-society work

- **Tools** — qualitative methods, surveys, interviews
- **Concepts** — speaking the same language, problem definition
- **Topics** — intros to social sciences, vulnerability & resilience
Social Science Woven into Meteorology
National Weather Center, Norman, OK 2008-2012

- Funded collaboration between NOAA & U of Oklahoma
- Capacity building
- To sustainably weave together social science & atmospheric science in the National Weather Center
Russ Schumacher  Colorado State U

2013, 2014 SPREAD workshops (Studies of Precipitation, Flooding & Rainfall Extremes Across Disciplines)
Bring together hydrology, meteorology, sociology PhD students

*NSF funded*
Develop improved ways to predict heavy rainfall that lead to flooding & ways to communicate that information more effectively
Statistician describing extreme value theory to hydrologist, economist, historian & meteorologist

New paradigm (?) Socio-hydrology is flourishing
> than 80 articles & 20 Ph.D. students
National Hydrologic Warning Council
Smother public/private sector relationships

“One of the strong points of the workshop was how it opened my eyes to how other fields look at flood events”

“Interdisciplinary research is inherently difficult, but the workshop reminded me that it's one of life's fun challenges. I feel reinvigorated & optimistic about doing good science”

“I have so much more insight into the social science perspective & their methods after this workshop”
Vortex SE 4 Social science research projects
Addressing risk awareness & response & tornado damage mitigation ($741k)

1. Addressing interconnections between the built & natural environments through post-event damage surveys
2. Tornado warning response in the Southeast US: Advancing knowledge for action in Tennessee
3. Complacency & false alarms in tornado affected communities
4. Understanding the flow of weather information & associated uncertainty & its effects on emergency managers & publics

1/6 of funding for social science research - is this Great news?
Some of many challenges

1. Many still underestimate value of social science (dilutes physical science, not rigorous)

2. Need for genuine collaborations- include social scientists as projects launch

3. Little follow through – constantly re-inventing (*five year project lifespans*)?

4. Social scientists not interested in being add-ons or marketing forecasting tools invented in a laboratory

5. WAS*IS  reinvention requires culture change

Some efforts to re-invent undermine progress & reinforce old stove piped ways of doing business at the intersection of weather & society
More challenges

6. Adjacent vs integrated projects
7. Cheerleading for social science is considered social science

Placeholders

- Some of the brightest people have vested interest in keeping things the same
- Is it strategic to stand still as a hedge against losing ground?
Ph.D. leaders – ambitious & self-directed – *why is there nowhere to study this?*

Jen Henderson
Sci & Tech In Society

Amber Silver Nelson
Geog

Julie Demuth
Comm

Gina Eosco
Comm

Kim Klockow
Geog

Danielle Nagele
Soc

Heather Lazrus
Anthro

Castle Williams
Geog

Dereka Carroll
Atmos Science

Chris Uejio
Geog

Plus
Alan Black & many others making significant contributions
Developing collaborations has to be considered as metric for promotion – not a “hobby” or “outreach”

Repeat our message until people say it to us in their own words?

More seniority
More funding
Yet....

• Work is being done by dedicated brave charismatic policy entrepreneurs who weave social science into their daily work

• EXHAUSTING & unsustainable without institutional support
In 2017

- Report from the National Academy Committee on Advancing Social & Behavioral Science Research Application within the Weather Enterprise

- New Social Science-Extreme Weather Research Alliance at National Weather Center

**NEED**

- Sustained capacity building efforts for early career atmospheric scientists & social scientists including communication experts, sociologists, psychologists, geographers, economists, risk analysts & others
Exciting new initiatives: Interactive, real-time, agile, apps - Motorists behavior in flash floods

- Isabelle Ruin Grenoble, France
- Brenda Philips U Massachusetts

Living Lab Test Bed for Wireless Emergency Alerts

![Image of a flowchart showing risk perception, cognitive mapping, coupled place-activity, direct perception, sense-making, decision-making, and human response.]

![Image of a map showing home locations and a Space-Time path.]

![Image of a woman with a map and a diagram.]

The committee recognizes that

- thorough assessments of the benefits of weather forecasting or of other weather services do not exist

- that dissemination of information to the public is largely based on traditional procedures using outmoded technology &

- that there is often insufficient interaction between the user & the information system

National Research Council Committee on Atmospheric Sciences *The Atmospheric Sciences & Man’s Needs Priorities for the Future* 1971
2017 AMS Looking back / Looking forward-
Add on social scientist > 40 years

2007 AMS – WAS* IS
Australia
Investment in capacity building specifically for moving from WAS to IS
Momentum was building (still is?)
Social science is no longer considered weird & exotic but adjacent at best not integral part of team

2017
Universities & agencies need formal emphasis on intersection of social science/atmospheric science
Group(s) must be dedicated to building long-term capacity building sustainable career opportunities

2027
Successes of new fabric of social science & atmospheric science
Socio/hydro/metarologists
Not add-on, adjacent social scientists engineers/physical scientists
From parallel universes to woven fabric of physical & social science
Thanks for today’s invitation
evegruntfest@gmail.com

Informal Meet up this evening –
Get to know others who share your passion
Etta’s 2020 Western Ave, Seattle, WA 98121 6pm