



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



WAS*IS CULTURE CHANGE

weather & society * integrated studies

www.sip.ucar.edu/wasis/  

Changing from what **WAS** to what **IS**
the future of integrated weather studies

300 WAS*ISers + hundreds more “friends” in US, Canada, Australia, Caribbean, New Zealand, France, Germany Australia



WAS*IS
Students
Weather and Society * Integrated Studies

FaceBook page has more than 850 users

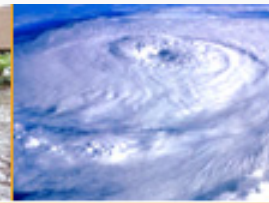
WAS*IS student page has 250 users

SIGN up?

WAS*IS

WORKSHOPS

weather & society * integrated studies



Changing from what **WAS** to what **IS** the future of integrated weather studies

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-metereology capacity*

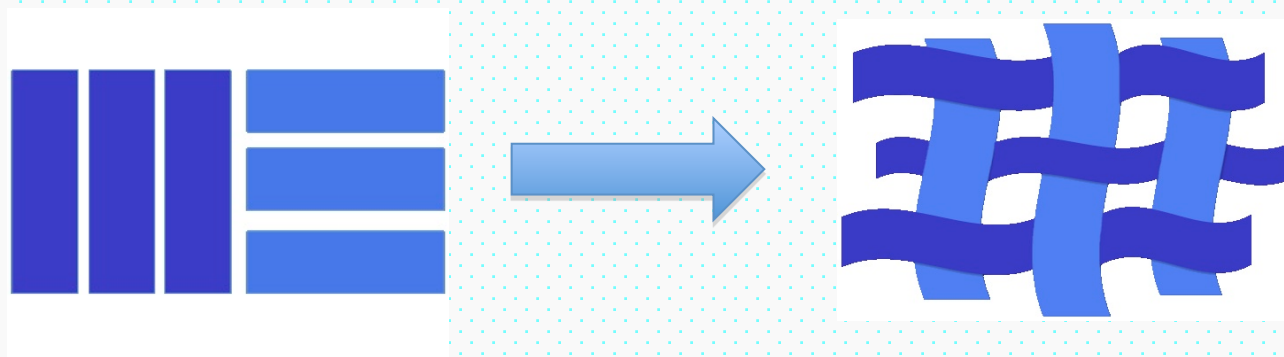
- 1. Build an interdisciplinary community of practitioners, researchers & stakeholders — from the grassroots up — *dedicated to the integration of meteorology & social science***
- 2. Provide opportunities to learn & examine ideas, methods & examples related to integrated weather-society work**

- 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

Smoother 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)



1/6 of funding for social science research - *is this Great news?*

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

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?*



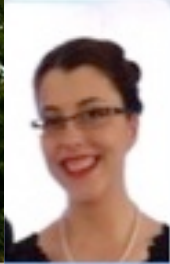
Ph.D. leaders – ambitious & self-directed – *why is there nowhere to study this?*



**Jen
Spinney**
Anthro



**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

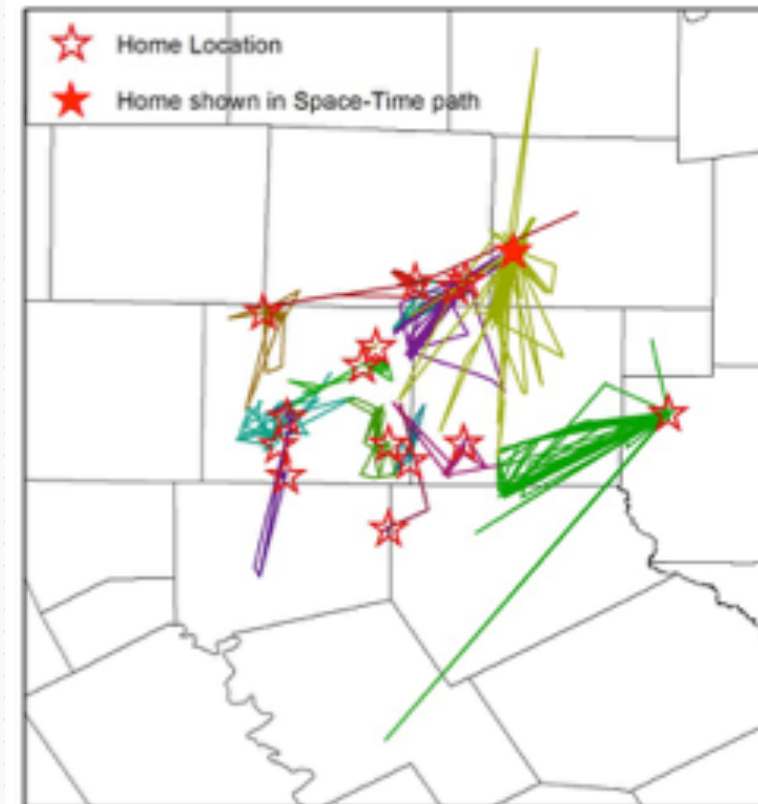
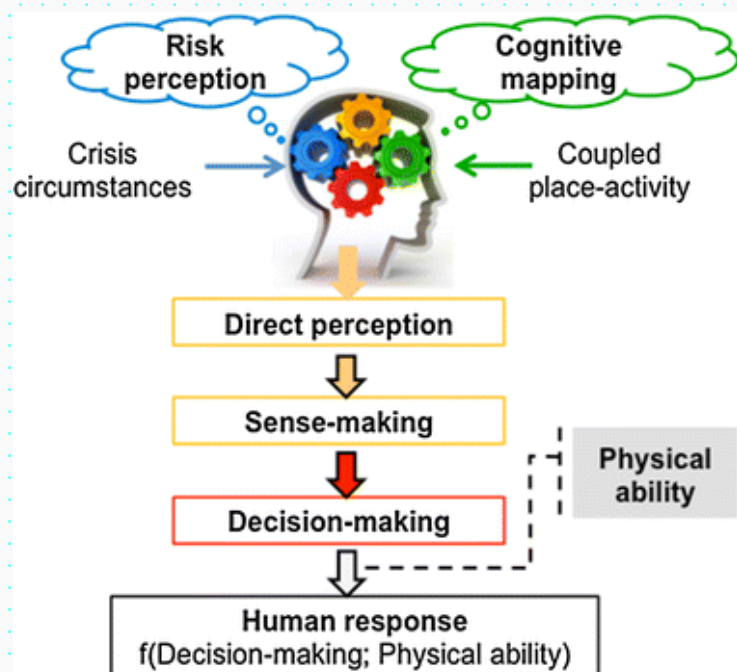
- **Report** from the National Academy Committee on Advancing Social & Behavioral Science Research Application within the Weather Enterprise
- **New Social Science-Extreme Weather Research Alliance** at National Weather Center

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



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



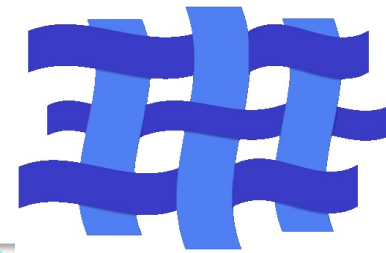
2027

Successes of new fabric of
social science &
atmospheric science

**Socio/hydro/
meteorologists**

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

