

Social Science Woven into Meteorology **SSWIM** Annual Report June 2009- June 2010 Eve Gruntfest and Heather Lazrus

The passion for weaving social science inside and outside the National Weather Center is growing. We are pleased to summarize the second year of the Social Science Woven into Meteorology (**SSWIM**) program. Our work has two main components: capacity building and research (www.sswim.org).

SSWIM, a three-year collaboration sponsored by OU and NOAA, is committed to integrating a sustainable social science presence into weather and climate research and practice. As with other groups located in the National Weather Center, we are fostering partnerships within the building, across the U. of Oklahoma campus, as well as nationally and internationally. This year we focused on developing sustainable research relationships and funding as laid out in our strategic plan.

This brief report includes SSWIM's personnel, publications, proposals, presentations, service, and visitors since June 2009. We have actively pursued funding. Gruntfest and Lazrus have 2 proposals in review at the National Science Foundation and two under NOAA consideration. Details are provided below of our recent and planned efforts.

SSWIM personnel

SSWIM group is composed of a small but dynamic team with individual and complementary strengths and areas of expertise including geography, anthropology, communication, and meteorology.

- Eve Gruntfest, Director 25%
- Heather Lazrus, Deputy Director 100%
- Matt McNair, (hourly) Geography Ph.D. student Summer 2010
- Monica Zappa, 50% (8/2009-5/2010)
- Gina Eosco, 50% 8/2008-1/2010
- Stephanie Hoekstra, 50% Master's geography student - Warn-on-Forecast 8/2010-
- Amy Nichols, 50% Master's geography student – Hazardous Weather Testbed 8/2010-

Publications

- Schultz, D., **E. Gruntfest**, C. Benight, M. Hayden, S. Drobot, and L. Barnes 2010 Decision Making by Austin, Texas, Residents in Hypothetical Tornado Scenarios *Weather, Climate and Society* forthcoming
- League, C., W. Diaz, B. Philips, E. Bass, **E. Gruntfest**, K. Kloesel, and A. Gessner 2010 Emergency Manager Decision-Making and Tornado Warning Communication *Meteorological Applications* <http://www3.interscience.wiley.com/journal/114291989/issue>
- **Gruntfest, E.**, I. Ruin and C. League 2009 Learning from Flash Floods: Driver Behavior in High Water Conditions *Colorado Water - Newsletter of the Colorado Water Center of Colorado State U.* 26 4 8-9
- **Gruntfest, E.** 2009 Editorial *Journal of Flood Risk Management* 2 2 83-84
- Kuhlman, K., **E. Gruntfest**, G. Stumpf, and K. Scharfenberg 2009 Beyond Storm-based warnings: An Advanced WAS * IS Workshop to Study Communication of Probabilistic Hazardous Weather Information AMS -ams.confex.com/ams/pdfpapers/150887.pdf
- **Gruntfest:** Textbook proposal submitted, reviewed and contract signed (w. Wiley Publishers) *Weaving Social Science into Weather Research and Practice*

- **Lazrus:** National Weather Service (NWS) Service Review 1/2010. Mt. Redoubt Volcanic Eruptions March - April 2009 (w. M. Doney, R. Fenner, K. Jones)
<http://www.weather.gov/os/assessments/index.shtml>
- **Lazrus:** Learning from Earthquakes: Samoa Earthquake and Tsunami of 9/29/2009. Earthquake Engineering Research Institute 1/2010. <http://www.eeri.org/site/publications-etc/newsletter>

Proposals submitted and funded

- Ethnographic research: Bringing a new understanding of partner cultures to GSD software development- Environmental Systems Research Laboratory Global Systems Division Director Discretionary Funds \$105,000 6/2010-9/2011 (expected)
- Improving 'Short-Fuse' Hazard Information for Severe Weather: Social Science Contributions to Effective Warning Dissemination and Public Response, Geological and Nuclear Sciences Wellington, New Zealand International Science and Technology Linkage Fund Workshop 5/2010 \$3500
- Integrated Hazard Information Services (IHIS) Workshop
fxa.noaa.gov/NGWT/NGWT_Workshop.html Boulder, CO 10/2009-10/2010 NOAA Global Systems Division Earth Systems Research Laboratory \$50,000
- Warn-on-Forecast project National Severe Storms Laboratory – Social Science Research Assistant \$50,000 6/2010-6/2011 (continued funding expected)
- Evaluation of the NOAA Global Systems Division Personal Weather Advisor \$20,000

Proposals submitted in review

- Letter of interest Water Decisions for Sustainability NOAA Climate and Societal Interactions (CSI) (Lazrus P.I.) (w. others) 6/2010 \$300,000
- Tsunami Hazard Mitigation: Program Evaluation and Social Science to Reduce Vulnerability submitted to NOAA 2/2010 (Gruntfest P.I.) \$444,457
- Integrated Social and Natural Systems Approach for Sustainability of the Arbuckle-Simpson Watershed to National Science Foundation (Lazrus w. R. McPherson, P. Spicer and others) 4/2010 \$5,000,000
- Call to Action: Understanding the Continuum from Warning to Action for Weather and Water Hazards to NOAA-NWS-NWSPO-2-1-2002134 (Lazrus P.I. w. C. Silva) \$125,000
- A Meteorological, Social and Economic Assessment of Downscaled GEFS Ensemble Weather Forecasts to National Science Foundation (w. B. Lynn, R. Pielke, Sr. and others) (Gruntfest P.I. OU portion) \$426,00

Proposals submitted and denied

- Tornado Stories in the Breadbasket Revisited: Perception, Vulnerability and Action Quick Response to Natural Hazards Research and Applications Information Center (w. R. Pepler and others) \$3,000
- Graduate Research Assistant funding Southern Climate Impacts Planning Project

Presentations

- Gruntfest: Socio-Hydro-Meteorological Approaches to Mediterranean Flash Flood Risk (w. I. Ruin) poster at HYMEX meeting, Bologna, Italy 6/2010
- Lazrus: Information for Severe Weather: Social Science Contributions to Effective Warning Dissemination and Public Response 5/2010 Wellington, New Zealand
- Gruntfest: Working Together on Flash-Flooding: the Versilia (Italy) Case Study, poster at European Geosciences Union (w. E. Caporali, T. Pileggi, I. Ruin, and G. Federici) 5/2010

- Lazrus: Further Integrating Social Science into the National Weather Service Invited Hydrologists/Meteorologists-in-Charge Leesburg, VA (w. J. Demuth and J. Lazo) 5/2010-
- Gruntfest: Invited lectures (3): Joseph Fourier U. 5/2010
- Lazrus: Examinations of Adaptation to a Changing Climate in a Social World Society for Applied Anthropology, Merida MX (w. E. Marino) 3/2010
- Lazrus: Session organizer and presenter Climate Change in the Pacific Islands Association of Social Anthropologists in Oceania, Alexandria, VA (w. P. Shankman) 2/2010
- Lazrus: Weathering the Waves: Climate Change, Politics, and Vulnerability in Tuvalu: poster AMS, Atlanta, GA 1/2010
- Lazrus and Gruntfest: Social Science Woven into Meteorology: A New Partnership at the National Weather Center, poster AMS 1/2010
- Gruntfest Invited presenter Geography Graduate Group U. of California Davis 12/2009
- Lazrus: Invited presenter - Oklahoma Climate Adaptation Planning Kick-Off Meeting
- Gruntfest: Local Communities Response to Flash Floods and Debris Flows, Conference on Road Map Towards a Flood Resilient Urban Environment, Paris, FR (w. M. Brilly) 11/09
- Lazrus: L. Smith's geography class, Geography department colloquium 8,9/2009
- Gruntfest, Zappa, Eosco: OU Introduction to meteorology class 10/2009
- Lazrus: Invited participant and presenter at the National Research Council Board on Atmospheric Science, Woods Hole, MA 8/2009
- Zappa: Social Science Initiatives in the Development of the Next Generation Hazardous Weather Products AMS Atlanta, GA 1/2010
- Eosco: Pictures May Tell It All: Use of Draw-and-Tell Methodology to Understand the Role of Uncertainty in Individuals' Hurricane Information Seeking Processes, AMS Atlanta, GA 1/2010
- Eosco: Same Risk, Different Visual Design: Public Interpretations of Hurricane Track Maps Society for Risk Analysis Abstract 12/2009
- Gruntfest: Invited visiting scientist Environmental Science Program (2 weeks, 4 presentations) U. of N. Florida Jacksonville 11/2009
- Gruntfest: Invited keynote lecturer for the workshop launching the International Flash Flood Laboratory, Hydro-Socio-Meteoro-logy: Essential Elements for Flash Flood Mitigation and Research Texas State U. San Marcos, TX 10/2009
- Gruntfest: Invited speaker Water and Society * Integrated Studies Kansas City, MO 8/2009
- Gruntfest: Co-leader WAS * IS (Weather and Society Integrated studies) workshop Boulder, CO 08/2009

Service: Gruntfest

- Member NOAA Science Advisory Board 3/2010 - 3/2013
- Visiting Scientist Laboratoire d'étude des Transferts en Hydrologie et Environnement and Geography Department Joseph Fourier U. Grenoble, France 2/2010-7/2010
- Member M.A. committee of OU student Rachel Butterworth Interdisciplinary Research Thesis "Role of New Media and Radar Technology"
- Elected member Commission Steering Committee (CSC) of the Commission on the Weather and Climate Enterprise American Meteorological Society (AMS)
- Member President's Advisory Committee on University Relations (PACUR) UCAR 2007-10/2009
- Chair AMS Board on Societal Impacts 8/2008-1/2010
- Associate editor *Weather, Climate and Society* 12/09 -
- Associate editor *Journal of Flood Hazard Risk Mitigation* 12/08-9/10
- Appearance on WeatherBrains interactive podcast 10/2009
- Invited Board member for Research Application Laboratory National Center for

Atmospheric Research 11/2009 -

Service: Lazrus

- Co-organizer NCAR Early Career Scientists Assembly - Junior Faculty Forum on Climate and Water Boulder, CO 7/2010)
- Invited participant Rocky Mountain Workshop Series on Social Science and Global Change Fort Collins, CO 4/2010
- Sessions organizer Ways of Knowing: Traditional Knowledge as a Key Insight for Dealing with a Changing Climate I, II AMS Atlanta (w. R. Pepler) 1/2010
- Session organizer Responding to the Shifting Planet: Examinations of Adaptation to a Changing Climate in a Social World, Society for Applied Anthropology, Merida MX 3/2010 (w. E. Marino)
- Invited member OU Center for Applied Social Research (CASR) Board 1/2010 -
- Member of Societal Impacts Board National Weather Association 8/2009 -
- Invited team member on Earthquake Engineering Research Institute post- tsunami disaster team in Samoa 10/2010
- Presentations to Board on Atmospheric Science and Climate Norman 10/2009 -
- Invited facilitator at the UN University Summer Academy on Social Vulnerability Munich, Germany 8/2010
- Invited presentation Placing Social Science in the Nationwide Network of Networks at AMS Summer Meeting in Norman 7/2010
- Invited to join the AMS Board on Enterprise Communication ad hoc committee on Climate Change Improving Communication 8/2010
- Participated in AMS Summer Policy Colloquium Washington, DC. 6/2009

Other activities

- Distance Learning Operations Course (DLOC) four presentations to new National Weather Service employees Warning Decision Training Branch – Spring 2010
- Invited revisions to on-line lecture on social science and meteorology through Warning Decision Training Branch (in preparation)
- Lazrus: Drought Ready Communities to Develop a Water-Supply Planning Toolkit for Communities, Watersheds, and Industries (w. Southern Climate Impacts Planning Program National Drought Mitigation Center, the Oklahoma Climate Survey, and U. of Illinois) 2/1010 -
- Lazrus: Attaining a better understanding of the impact of high-temporal resolution data on the warning decision making process and warning lead time Phased Array Radar Innovative Sensing Experiment (PARISE) (w. P. Heinselman and D. Ladue) 5/2010
- Lazrus, Eosco and Zappa conducted focus groups at National Severe Weather Workshop to provide stakeholder feedback regarding new watch, warning and advisory visuals for weather.gov webpage (w. K. Scharfenberg. and J. Ferree) 3/2010
- Meetings with NSSL's S. Van Cooten and J.J. Gourley to develop flash flood projects with French and Texas colleagues
- Invited to provide informal feedback on new NWS policy on "calls to action", on changing colors for webpage display of current watches/warnings, and on new RADAR displays

SSWIM's Advisory Council and Steering Committee provide valuable guidance and feedback on our research and applied activities

- Convened **SSWIM** Advisory Council (steering committee) 10/2009
- Convened Advisory Council meetings 11/16/ 2009, 4/8/2010

SSWIM hosted visits

- *Dr. Kenneth Blumenfeld* geographer WAS * I Ser 10/2009 “Using a High-Density Rain Gauge Network to Estimate Extreme Rainfall Frequencies in Minnesota” Research Associate, U. of Minnesota and Lecturer
- *Brittany Perrin* 10/2009 potential graduate student Hollings Fellow meteorology senior U. Missouri
- *Lisa Vitols* social scientist with Meteo-Canada 9/2010 – invited by NSSL (anticipated)
- *Greg Dobson* geographer WAS * I Ser Renaissance Computing Institute (RENCI) U. of North Carolina, Asheville 9/2010 – (anticipated)
- *Dr. Ilan Kelman* climate scientist CICERO, Oslo, Norway 10/2010 – (anticipated)

With this report we want to initiate discussions on extending **SSWIM's** OU and NOAA support. We want to obtain sustained full-time funding for Dr. Heather Lazrus and continued part-time affiliation for Dr. Eve Grunfest. We expect to develop productive relationships with the new administrators at the National Weather Center and continue building our reputation for integrative research and practice inside and outside of the National Weather Center. As this report shows **SSWIM's** work reflects significant accomplishments for such a small team and such an innovative and interdisciplinary mission of weaving social science into weather and climate research and practice.

Thank you for supporting **SSWIM**. With your help we are leading local, national, and international efforts to weave social science into the fabric of weather and climate research and practice.