

Social Science Woven into Meteorology **SSWIM** Annual Report June 2010 - June 2011 Eve Gruntfest and Heather Lazrus

This is the third and final **SSWIM** annual report. We are pleased with our third year contributions. **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.

When the National Weather Center opened in Norman, OK there were more than 600 physical scientists and students working in the building. There was a recognition that that a cadre of social scientists would broaden National Weather Center research methods, questions and ability to address complex challenges.

In November 2007 Eve Gruntfest was approached by Ken Crawford to design a new social science initiative for the National Weather Center. A coalition of university and NOAA partners entered into an agreement to fund a social science initiative. Gruntfest named the initiative **SSWIM**, for Social Science Woven into Meteorology.

The key element that distinguished **SSWIM** from other social science and meteorology efforts was that it was based on "weaving" social science into the National Weather Center. **SSWIM** was designed to assure that social science was not just "added-on" to existing agencies and projects but that it was woven into existing and new projects. During **SSWIM**'s three years we

- o Weaved social science concepts and methodologies into the fabric of climate and weather research and practice at the National Weather Center. Success was particularly notable with the Storm Prediction Center, the Warning Decision Training Branch, the Multi-Phase Radar project, the Warn on Forecast group, and the flash flood research group of the National Severe Storms Laboratory.
- o Raised more than \$235,000 for additional social science research from NOAA's Global Systems Division for an ethnography of emergency managers, a review of a new Personal Weather Advisor Project, and to assist with the Integrated Hazards Information Services project.
- o Earned a reputation as the center of social science research and practice in weather & climate work in Norman, in the US & internationally.
- o Developed research and built capacity by increasing the appreciation of the value of qualitative as well as quantitative approaches including archival, ethnographic and participatory methods.
- o Was invited to partner on numerous major grant proposals. We applied for sixteen grants and contracts with national and international partners (included in an NSF unfunded Science and Technology Center Living with Floods located at University of Iowa (\$400,000), a public/private NSF proposal that proposed to evaluate how a variety of stakeholders use downscaled climate model data (\$400,000), and also several National Weather Service calls for proposals related to Calls-to-Action (\$125,000) and Tsunami Preparedness (\$450,000).
- o Created partnerships with public, private, and academic sectors, including students, practitioners, and policymakers across the spectrum of stakeholders. Specifically new social science efforts are underway in the Storm Prediction Center and the Warning Decision Training Branch. The SHAVE program and the Flash Flood Effort and the CI FLOW projects at the National Severe Storms Laboratory are open to including social sciences.

This report serves as the year three and the final **SSWIM** report. Earlier annual reports were delivered in June 2009 and June 2010. We are proud of our numerous accomplishments. This brief report includes **SSWIM**'s personnel, publications, proposals, presentations, service, and visitors since June 2010. Details are provided below of our recent and planned efforts.

Personnel

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

- Eve Gruntfest, Director 25% until 6/1/2011
- Heather Lazrus, Postdoctoral Research Associate and Deputy Director 100% until 5/20/2011
- Jen Spinney, Research Associate 100% 10/1/2010 - 10/31/2011
- Stephanie Hoekstra, 50% OU Master's geography student funded by Warn-on-Forecast 8/2010-5/2012
- Amy Nichols, 50% OU Master's geography student - funded by SSWIM as formal liaison with Hazardous Weather Testbed 8/2010-5/2012

Publications

- Hoekstra, S., K. Klockow, R. Riley, J. Brotzge, H. Brooks, and S. Erickson 2011 "A preliminary look at the social perspective of Warn-on-Forecast: preferred tornado warning lead time and the general public's perceptions of weather risks" *Weather, Climate, and Society* (forthcoming)
- Lazrus, H., J.A. Sepez, R.G. Felthoven, and J.C. Lee 2011 "Post-rationalization restructuring of commercial crew member opportunities in Bering Sea and Aleutian Island crab fisheries" U.S. Dept of Commerce NOAA Technical Memo NMFS-AFSC-217 62p
- Orlove, B., H. Lazrus, G. Hovelsrud "Place matters: How reference to and construction of place matters in climate change discourse" (in review)
- Farbotko, C. and H. Lazrus 2011 "Whose voice? Questioning climate refugee narratives" *Global Environmental Change* (in review)
- Lazrus, H. 2011 "Climate change, water, and development in daily life in Tuvalu" *Water, cultural diversity and environmental change - emerging trends, sustainable futures?* book. Jakarta: UNESCO; Netherlands: Springer
- Marlatt, H., C. W. Trumbo, L. Peek, M. Lueck, E. Gruntfest, B. D. McNoldy and W. H. Schubert 2011 "Dynamics of hurricane risk perception" Preprints, American Meteorological Society Seattle, WA
- Trumbo, C. W., L. Peek, B. D. McNoldy, W. H. Schubert, E. Gruntfest, H. Marlatt and M. Lueck 2011 "Dynamics of hurricane risk perception" Preprints, Engineering Research and Innovation Conference, Atlanta, GA National Science Foundation
- Trumbo, C. W., H. Marlatt, L. Peek, M. Lueck, B. D. McNoldy, W. H. Schubert, E. Gruntfest and J. Demuth 2010 "Changes in risk perception for hurricane evacuation among gulf coast residents 2006-2008" Preprints Society for Risk Analysis Annual Meeting Salt Lake City, UT

New funding

- Ethnographic research: What Makes Our Partner's Tick? An Ethnography of Emergency Managers to Inform Weather Product Developers - Earth Systems Research Laboratory Global Systems Division Director Discretionary Funds \$105,000 6/2010-9/2011 - Funds used to hire anthropologist Jen Spinney
- Warn-on-Forecast project NOAA National Severe Storms Laboratory – Social Science Research for 6/2010-6/2012 at \$50,000 per year - One month funding for Gruntfest and 50% Graduate Research Assistantship for Stephanie Hoekstra
- Evaluation of the NOAA Global Systems Division Personal Weather Advisor 10/2010-4/2011 \$20,000

Proposals submitted in review

- Lazrus w. others "Water Decisions for Sustainability NOAA Climate and Societal Interactions" NOAA Climate Program Office 8/2010 \$300,000

Research projects and reports

- Lazrus (w. P. Heinselman and D. LaDue): Phased Array Radar Innovative Sensing Experiment - Research designed to attaining a better understanding of the impact of high-temporal resolution data on the warning decision making process and warning lead time Spring 2010 - Spring 2011
- Lazrus and Spinney (w. L. Stoppkotte and J. Peters): Decision Maker Use of Storm Prediction Center Products - Research project designed for Hollings Student Sarah Stough to interview Storm Prediction Center partners Fall 2010 - Spring 2011
- Lazrus (w. S. McNeeley) Cultural theory of risk for understanding climate change adaptation in Alaska and Tuvalu Spring 2011
- Gruntfest (w. P. McCaslin) "Toward an evaluation of the personal weather advisor" final report submitted to Global Systems Division, Environmental Systems Research Division, Boulder, CO 3/2011

Presentations

- Nichols and Hoekstra: "Weather information use and preferences in decision making during severe weather events in K-12 schools and institutions of higher education" American Meteorological Society Communication Meeting Oklahoma City, OK 6/23/2011
- Spinney and Bryon Lawrence: "Integrated hazard information services (IHIS): a demonstration of prototype and presentation of social science research results" Integrated Warning Team meeting Grand Forks, ND 6/3/2011
- Spinney, Gruntfest and Lazrus: (poster) "Integrated hazard information services (IHIS): improving the warning partnership through enhanced two-way communication" Fargo, ND 6/2011
- Gruntfest: Invited lecture "How to build a new interdisciplinary and multi-disciplinary network" Water and Society Summer School Chamonix, France (w. J.J.Gourley) 5/2011
- Hansen, T., Lawrence, B., Chien, W., Spinney, J. and Joe Wakefield: Integrated hazards information services technical seminar Boulder, CO 5/3/2011
- Gruntfest: "Learning from Gilbert F. White" Invited talk at Association of American Geographers meeting commemorating White's 100th birthday Seattle, WA 4/22/2011
- Nichols: Thesis proposal defense: "Sources of hazardous weather information and decision making at universities during tornado warnings" 4/4/2011
- Hoekstra: Thesis proposal defense: "Weather information use and decision making for K-12 schools during tornado warnings" 4/4/2011
- Gruntfest: Invited speaker "Weather, society and emergency management" National Hurricane Conference Atlanta, GA 4/2011
- Gruntfest, Lazrus: Distance Learning Operations Course (DLOC) four presentations to new National Weather Service employees Warning Decision Training Branch Norman, OK Spring 2011
- Gruntfest: Invited keynote lecturer Severe Weather Workshop "Hydro-socio-meteoro-logy: Essential elements for flash flood mitigation and research" U of the Incarnate Word San Antonio, TX 4/2011
- Gruntfest: Invited live appearances as flash flood expert on The Weather Channel via Skype 2/26, 27/2011
- Gruntfest and Lazrus: (Distance Learning Operations Course) DLOC for National Weather Service "Social science woven into meteorology" Norman, OK 2/17/2011, 3/3/2011
- Lazrus: Invited presenter to National Research Council Committee on Climate, Energy and National Security. Weathering the waves: Climate change, politics and vulnerability in Tuvalu Washington, DC 2/2011
- Lazrus: Climate Change and Pacific Islands Communities session at Association of Social Anthropologists in Oceania Honolulu, HI (w. P. Shankman) 2/2011
- Gruntfest: AWOC (Advanced Warning Operations Center) "Progress in weaving social science into the warning response process for National Weather Service" lecture prepared and recorded for on line

training <http://www.wdtb.noaa.gov/courses/awoc/ICCore4/Lesson4/player.html>

- Gruntfest, Hoekstra, and Nichols: "Social science contributions to Warn-on-Forecast" Norman, OK 2/23/2011
- Gruntfest: Invited presentation "Weaving social science into the work of NWS scientific operations Officers" Southern Region National Weather Service Scientific Operations Officers, Norman, OK 2/23/2011
- Gruntfest: "Weaving social science into atmospheric science: progress and challenges" American Meteorological Society Annual Meeting Seattle, WA 1/28/2011 <http://ams.confex.com/ams/91Annual/flvgateway.cgi/id/17793?recordingid=17793>
- Spinney, Gruntfest, and Lazrus: "The culture and communication of weather information" American Meteorological Society Annual Meeting 27th Conference on Interactive Information Processing Systems, Seattle, WA 1/26/2011 <http://ams.confex.com/ams/91Annual/flvgateway.cgi/id/16909?recordingid=16909>
- Heinselmann, P., Torres S., Ladue, D. and H. Lazrus: "The phased array radar interactive experiment" American Meteorological Society Annual Meeting, 27th Conference on Interactive Information Processing Systems Seattle, WA 1/28/2011
- Gruntfest: "Lessons from an evaluation of the personal weather advisor" NOAA Boulder, CO 1/17/2011 Boulder, CO <http://esrl.noaa.gov/gsd/research/events/lessons.html>
- Spinney, Gruntfest, and Lazrus: IHIS Ethnography Project Progress Report NOAA Boulder, CO 11/23/2010
- Orlove, B., H. Lazrus, G. Hovelsrud: "Place matters: How reference to and construction of place matters in climate change discourse" American Anthropological Association New Orleans, LA 11/2011
- Lazrus: Sessions organizer Ways of knowing: Dismantling the divide between social and natural science I, II American Meteorological Society Seattle, WA (w. R. Peppler) 1/2011
- Gruntfest and Lazrus: SSWIM Advisory Council 10/24/2010
- Gruntfest: Invited presentation "How social science is being integrated into weather work" Integrated Warning Team meeting Cedar Rapids, IA 8/24/2010
- Gruntfest and Lazrus: Invited presentations at the Storm Prediction Center - How can social scientists and social science help the SPC understand how people use their products? 5 presentations during Fall 2010
- Lazrus: "Considerations for co-producing climate record data: Connecting local insight to regional and global environmental issues" Association of American Geographers Seattle, WA 4/2011
- Gruntfest: Invited presentation "Placing social science in the nationwide network of networks" American Meteorological Society Summer Community Meeting State College, PA 07/2010

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 University of Grenoble, France 2/2010 - 7/2010
- Elected member American Meteorological Society Steering Committee of the Commission on the Weather and Climate Enterprise
- Associate editor *Weather, Climate and Society* 12/09 -
- Member 2011-2012, Chair 2008-2010 Societal Impacts Board American Meteorological Society

Service: Lazrus

- Designed and taught GEOG 3443 at OU: Environment and Society (granted general education status) spring semester, 2011

- Co-organizer NCAR Early Career Scientists Assembly - Junior Faculty Forum on Climate and Water Boulder, CO 7/2010
- Member of Societal Impacts Board National Weather Association 8/2009 -
- Invited to join the AMS Board on Enterprise Communication ad hoc committee on Climate Change Improving Communication 08/2010
- Proposed and serving on new American Anthropological Association Task Force on Climate Change

Service: Spinney

- Member American Meteorological Society Board on Societal Impacts 2011-2014

Other activities

- Spinney, Lazrus, Nichols, Hoekstra: Invited to collaborate with Storm Prediction Center on Hollings project survey design 3/1/2011
- Gruntfest and Lazrus: Invited to collaborate with Warning Decision Training Branch on Risk Communication Course Development Spring 2011
- Gruntfest: Invited to submit ideas for online course on social science and meteorology through COMET 8/2010
- Gruntfest and Lazrus: Invited to participate in Storm Prediction Center training series Fall 2010; provided foundation for new societal impacts focus in the Storm Prediction Center

SSWIM hosted visits

- Lisa Vitols social scientist (Engagement and Strategy Advisor) with Environment Canada 9/2010

Meetings

- All: Meeting with P. Lamb regarding current graduate research progress: 12/10/2010
- All: Hazardous Weather Testbed Research Collaboration Meeting: 12/6/2010
- All: Participating in weekly Hazardous Weather Testbed brown bag lunches: Tuesdays
- All: Warn-On-Forecast Social Science Roundtable: 10/27/2010; 2/14/2011
- All: Hazardous Weather Testbed Research Collaboration Meeting: 9/24/2010
- All: Warn-On-Forecast Social Science Meeting: 9/23/2010

Conferences

- Spinney and Gruntfest: Weather and Society* Integrated Studies (WAS*IS) 2011 summer workshop Boulder, CO (several invited presentations) 8/4-12/2011
- Hoekstra, Nichols, Spinney, and Gruntfest: American Meteorological Society/ National Communication Association Weather, Climate, and Communication Conference Seattle, WA 1/22-23/2011
- Nichols: American Meteorological Society 2011 Annual Student Conference Seattle, WA 1/22-23/2011
- Spinney: Emergency Communication "Latinos a Salvo" Forum San Marcos, TX 11/5/2010
- Spinney and Nichols: International Association of Emergency Managers Annual Conference San Antonio, TX 10/29-11/4/2010
- Nichols: International Association of Emergency Managers Universities and Colleges Caucus Workshop San Antonio, TX 10/30-31/2010
- Nichols: Southwestern Division of Association of American Geographers Annual Meeting Tahlequah, OK 10/14-16/2010