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AGU NATURAL HAZARDS FOCUS GROUP NEWS

No. 4 (December 2010)

1. Natural Hazards at 2010 AGU Fall Meeting in San Francisco

The 2010 Fall AGU meeting will feature a range of sessions on Natural Hazards. The NH Program will run from Monday, 13 December till Friday, 17 December. It will include 331 oral talks and posters in 32 NH sessions that will cover various aspects of natural hazards, including hazard assessment techniques and mitigation strategies, data collection approaches, extreme events, interaction with government, policy and decision makers, as well as numerous case studies.

We are looking forward to see you in San Francisco!

2. Group Reception at the 2010 AGU Fall Meeting

The Natural Hazards Focus Group Reception
Tuesday, 14 December, 6:30-8:00 PM
Grand Ballroom C, the InterContinental San Francisco Hotel
888 Howard St, San Francisco
(415) 616-6500

The group reception is a good chance for all of us to meet and to develop personal bonds for future achievements. Please join us for the presentation of 2010 AGU Natural Hazards Focus Group Graduate Research Award to Dr. **Ning Lin** (MIT) and for the invited talk by **Mr. Rowan Douglas** (Willis Re).



Dr. Ning Lin obtained her PhD from Princeton in June 2010, her M.S. from Texas Tech in 2005, and B.S. from the Huazhong University of Science and Technology, China, in 2002. Being in China, Ning studied local wind forces on tall buildings. In Texas Tech she investigated the aerodynamics and trajectory of wind-borne debris. In Princeton, as a research assistant to James Smith, Ning studied extreme winds, heavy rainfall and storm surge from hurricane Isabel (2003). Under a supervision of her PhD adviser, Erik Vanmarcke, she developed an innovative wind-borne debris risk model based on Poisson random measure theory and integrated the debris risk model and a pressure damage model to create a structural vulnerability model to study cumulative wind damage to residential neighborhoods during storm passage. She also played a key role in developing collaborations with the Geophysical Fluid Dynamics Laboratory and in incorporating advanced numerical weather forecasting models into

hurricane risk analysis. Ning Lin visited MIT in 2009 for several weeks and worked with Kerry Emanuel on hurricane storm surge risk assessment. Starting in July 2010 Dr. Lin will be a postdoc at MIT to continue this study. She published 10 journal articles and 10 conference papers. She has been nominated by Erik Vanmarcke from Department of Civil and Environmental Engineering at Princeton.



Mr. Rowan Douglas is the managing director of Willis Analytics for Willis Re, the world's third largest insurance and re-insurance broker. He is also Chairman of the Willis Research Network. After graduating with degrees in Geography from Durham and Bristol Universities and underwriting reinsurance at Lloyds, Mr. Douglas founded WIRE Ltd, an intellectual broking company arranging research between financial markets and academia. WIRE was sold to the Willis Group in November 2000. Mr Douglas has since held a number of senior positions with the organisation including head of e-business and executive director, Willis Capital Markets.

In 2005, whilst in his current post with Willis Analytics, Mr. Douglas founded the Willis Research Network (WRN), which has become the world's largest collaboration between academia and the insurance industry, supporting university research in Europe, North America and across Asia pacific. The WRN undertakes research to evaluate the frequency, severity and impact of natural catastrophes, and develop

private and public sector risk financing to share the costs of these extreme events across populations.

Rowan Douglas will speak on *"Natural Hazards Reshape Landscapes in Finance, Public Science & Policy"*

Abstract – The plates are moving, a revolution has begun, geography is relocated back to the core. Natural hazard modelling, married to risk, financial and economic modelling has created a new scientific and social organism – a rich and diverse community representing how nature, property and populations perform at the extremes. An urgent need and a common medium is uniting academic disciplines, industries, public/private sectors, and technology in a shared journey. This drives a powerful intellectual fusion, creativity and impact: the shock waves are breaking down the walls. The true stars will shine brightly across a wider plane.

3. Executive Committee Business Meeting at the 2010 AGU Fall Meeting

http://www.agu.org/focus_group/NH/events/meetings/

The business meeting of the Executive Committee of the AGU Natural Hazards Focus Group will take place in San Francisco on **Wednesday, 15 December, 6:45–7:45AM**. The agenda topics include

- New AGU: first steps
- AGU Natural Hazards FG Award for Graduate Research: Future Calls
- Proposal for Gilbert F. White Distinguished Lecture Award
- Nomination to AGU Fellowship, Awards and Medals
- Chapman Conference and Joint AGU-EGU meeting on Natural Hazards
- Budget of the Focus Group and Current Financial Statement
- Preliminary results of NH Focus Group activity at the 2010 AGU FM
- AGU Index terms for Natural Hazards
- Web page and Newsletters
- Outstanding Student Paper Awards
- Advisory Board for the AGU Natural Hazards Focus Group
- Integrated Research on Disaster Risk – a new International Program (invited speaker Jane Rovins, Executive Director of the International Program Office)
- AGU involvements in the international ENHANS project

4. Natural Hazards Focus Group Voluntary Contribution Campaign Report

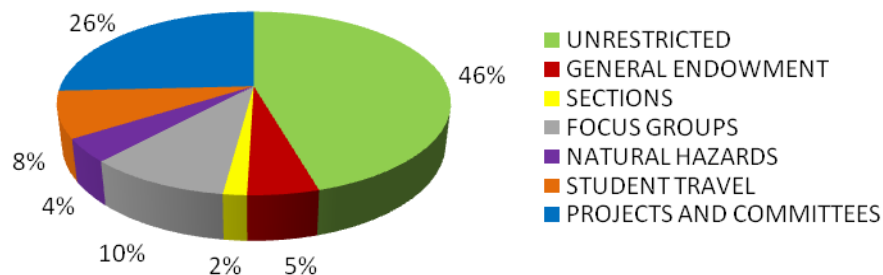
As of 2 July 2010, 46 members of the Natural Hazards Focus Group made 57 gifts, totalling \$1,156. This represents 22% of Natural Hazards membership (this includes only regular AGU members, i.e. non-student, dues paying members). In addition to these gifts, 7 Natural Hazards members participated in the Capitol Cause Check-off and 7 participated in the Fund-a-Fellow Check-off.

Top Natural Hazards Donors:

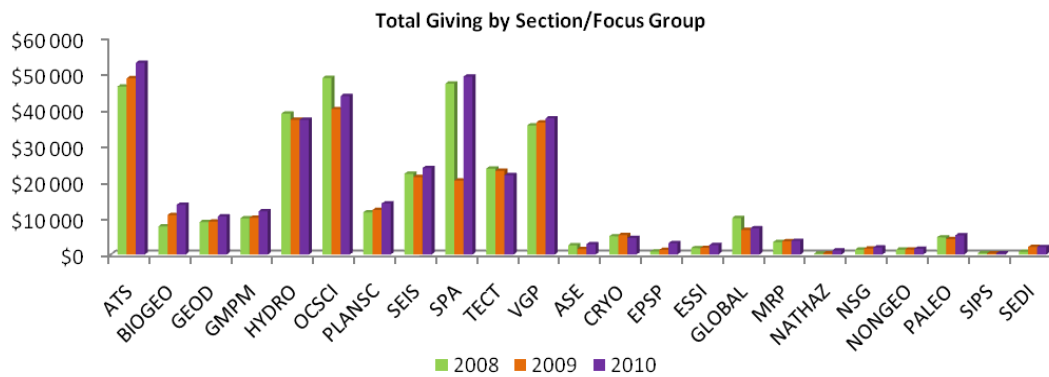
Lesley Ewing, Alan R. Nelson, Jeffrey R. Keaton, Thomas C. Pierson, Alberto Armigliato, Ralph D. Cantral, Dieter Issler, Felix Tongkul, Detlef Kurth, Kelvin S. Rodolfo, Mark Ruminski.

We thank the Donors for their contribution to the activity of the Focus Group!

In the 2010 Campaign, Natural Hazards members designated their gifts in the following ways:



The summary of AGU giving is illustrated below:



Voluntary contributions allowed AGU to provide travel grants to deserving students to present their research for the first time at an AGU meeting. These programs are essential for AGU's relevance and vitality. I know Natural Hazard members want AGU to do more. Please join me in supporting AGU's efforts to strengthen our scientific society by making a gift to the 2011 Voluntary Contribution Campaign.

You can make your gift when you renew your AGU membership, or you can give today at:

https://www.agu.org/givingtoagu/making_your_gift.php

5. Extreme Natural Hazards and Societal Implications (ENHANS) project

<http://www.enhans.org>

The AGU Natural Hazards Focus Group participates in the ENHANS Project. The principal goals of the ENHANS project are (i) to improve understanding of critical phenomena associated with extreme natural events and to analyze impacts of the natural hazards on sustainable development of society; (ii) to promote studies on prediction of extreme events reducing predictive uncertainty and on natural hazards mitigation; to bring the issues into the political and economical policies; (iii) to disseminate knowledge and data on natural hazards for the advancement of research and education in general and especially in developing countries; and (iv) to establish links and networks with the international organizations involved in research on extreme natural hazards and their societal implications setting up a consortium of experts of ICSU Unions and several major intergovernmental and multi-national organizations involved in the project.

The goals of ENHANS will be achieved via scientific meetings and open forums bringing together research experts, decision makers, and disaster management, insurance agency and mass media practitioners. The project will place a special emphasis on importance of research on extreme natural hazards and disaster risk mitigation in the most vulnerable regions of the world, particularly in Latin America and the Caribbean, in sub-Sahara Africa, and in Asia and the Pacific region. Further information: <http://www.enhans.org/>

5a. Focus on Latin America and the Caribbean

Most recent natural disasters in Latin America and the Caribbean (12 January 2010 M=7.0 Haiti earthquake and 27 February 2010 M8.8 Chile earthquakes and tsunami) attracted considerable attention of society to problems of natural hazards and risks. The first event in the framework of the ICSU project was held at the Meeting of the Americas, Foz do Iguassu, Brazil, 8-13 August 2010. The American Geophysical Union, International Union of Geodesy and Geophysics (<http://www.iugg.org>), and the Regional Office for Latin America and the Caribbean (<http://www.icsu-lac.org/>) of the International Council for Science (<http://www.icsu.org/>) were the principal co-organizers of the meeting.

The major event was a ***Union symposium "Natural Hazards and Disaster Risk in Latin America and the Caribbean"***. The symposium contributed to better understanding of physical phenomena behind natural hazards and to disaster risk analysis in Latin America and the Caribbean region and promoted further research in an interdisciplinary framework focused on natural hazards, risk assessment and reduction. The symposium's topics included geohazard processes associated with risk and disasters in the region; analysis of disaster risk causes, drivers and impacts; understanding the factors and processes that contribute to the social construction of risk; and climate change adaptation and disaster risk reduction.

Symposium organizers: *Omar Cardona*, National University of Colombia, Manizales, COLOMBIA; *Jaime Fucugauchi*, National Autonomous University of Mexico, Mexico City, MEXICO; *Alik Ismail-Zadeh*, Karlsruhe Institute of Technology, Karlsruhe, GERMANY; and *Ilya Zaliapin*, University of Nevada at Reno, USA.

Invited Speakers:

- Irasema Alcántara-Ayala, Institute of Geography, National Autonomous University of Mexico, Mexico (risk of landslides in Latin America)
- Juan Carlos Bertoni, Cordoba National University, Argentina (hydrological hazards in Latin America)
- Susan Cutter, University of South Caroline, USA (regionalization of hazards and disasters)

- Servando De la Cruz-Reyna, Institute of Geophysics, National Autonomous University of Mexico, Mexico (volcanic hazards in Latin America)
- Tony Gibbs, Consulting Engineers Partnership Ltd, Barbados (*hurricane loss reduction and safety in the Caribbean*)
- Allan Lavell, Programme for the Social Study of Risk and Disaster, FLACSO, Costa Rica (risk patterns in Latin America)
- Omar Perez, Universidad Simon Bolivar, Caracas, Venezuela (seismic potential, hazard and risk in the Latin America and the Caribbean)
- Carlos Tucci, Federal University of Rio Grande do Sul, Brazil (hydrological hazards and urban water management in Latin America)

Other scientific events related to the project topics held at the meeting:

- Union symposium: The 2010 Haiti Earthquake, Lessons for Seismic Hazard and Societal Impacts in the Caribbean
- Union symposium: The 2010 Chile earthquake and several scientific sessions related to natural hazards in and around the region:
 - Advances in volcano monitoring in Latin America
 - Drought in the intra-Americas seas
 - Land-ocean-atmospheric processes over Americas: Implication to natural hazards and global carbon cycle
 - Landslides under extreme weather conditions in Latin America and Caribbean
 - Natural hazards of the Americas in focus of geosciences
 - Societal impacts of monsoon variability in the Americas
 - Volcanic ash and aerosols: Monitoring, modeling, forecasting and hazards
 - Extreme weather events in the Americas: observations, forecasts and projections
 - Satellite applications on extreme weather monitoring in the Americas
 - Seismic microzoning and risk management in Latin America
 - Standardization of seismic hazard methods in South America

The Union symposium "Natural Hazards and Disaster Risk in Latin America and the Caribbean" attracted the considerable attention of scientists to problem of natural hazards and disaster risk. A Town Hall meeting (http://www.enhans.org/showcasing/Flyer_THmeeting_Iguassu.pdf) was held on 10 August 2010 bringing together experts in natural hazards and disaster risks and leaders of learning societies to discuss the problem of hazards and disasters in the region.

5b. Focus on North America and Europe

The *Union Symposium "Extreme Natural Events: Modeling, Prediction and Mitigation"* will be held at the AGU Fall meeting in San Francisco, 12-17 December 2010.

Co-organizers:

Alik Ismail-Zadeh, Karlsruhe Institute of Technology, Karlsruhe, Germany

Ilya Zaliapin, University of Nevada, Reno, USA

Surjalal Sharma, University of Maryland, College Park, Maryland, USA

Scope: This symposium will discuss theories and methodologies for understanding, modeling, and predicting extreme events in complex natural and socio-economic systems. We welcome contributions that develop methodologies for probabilistic assessments and forecasting extreme events, evaluation of their socio-economic impact, design of corresponding mitigation strategies, as well as case studies that report successes or failures of the proposed methods. The goal is to develop tools that can be used by disaster management authorities. The Union session will feature only invited speakers; it will be

also complemented by a Natural Hazards session with the same title that will consist of contributed papers. This is a joint activity of the AGU Natural Hazards and Nonlinear Geophysics Focus Groups.

Invited speakers:

- Daniel Baker (Colorado University at Boulder, USA) *"Predicting and mitigating impacts of extreme space weather"*
- Rowan Douglas (Willis Research Network) *"Connecting Capital and Catastrophe in a Modeled World - How re/insurance and public science interact to manage risk for societal benefit"*
- Fausto Guzzetti (CNR, Italy) *"Landslide hazard, vulnerability and risk assessment: methods, limits and challenges"*
- Greg Holland (NCAR, Boulder, USA) *"Application of Extreme Value Theory to Diagnosing High Impact Weather from Climate Models"*
- Tom Jordan (University of South California, USA) *"From M8 to CyberShake: Using Large-Scale Numerical Simulations to Forecast Earthquake Ground Motions"*
- Upmanu Lall (Columbia University, USA) *"2010: Why is it flooding everywhere this year? Coincidence or a predictable climate phenomenon, and how can we respond?"*
- Ning Lin (Massachusetts Institute of Technology, USA) *"Hurricane Risk Assessment: Wind Damage and Storm Surge"*
- Kenji Satake (University of Tokyo, Japan) *"Tsunami Modeling, Forecast and Warning"*
- Steve Sparks (University of Bristol, UK) *"Extreme Volcanic Eruptions: return periods, impact and implications"*
- Hans von Storch (University of Hamburg, Germany) *"Storm surges - a globally distributed risk, and the case of Hamburg"*

5c. Focus on Africa

The African leg of the ENHANS project will take place from 17 to 20 January 2011 in Pretoria, South Africa. The workshop will provide an opportunity to the research community of the African countries and international experts to discuss and analyse major topics related to extreme natural events and disaster risk. The workshop will also serve as a platform to establish links and networks between African experts with the relevant international organizations.

More details can be found at: <http://www.technoscene.co.za/hazardsws/>

6. News from AGU

6.1 AGU Council Meeting

AGU held the Council Meeting at June 7th at the AGU Headquarters, Washington, DC. Among other items, the council members discussed and approved the AGU Strategic Plan and Governance Work Group Report. The Council has considered the Proposal from the Natural Hazards Focus Group for the Gilbert F. White Distinguished Lecture Award; the proposal was sent to the AGU Committee for Honors and Recognition for a review.

6.2 AGU Leadership Meeting

AGU held a Leadership Meeting during June 7-10, 2010 at the AGU Headquarters, Washington, DC. 50 representatives from the AGU sections and focus groups attended the Meeting. Our group was represented by Secretary Ilya Zaliapin. The main goals of the meetings were to discuss (i) the organization and roles of the new AGU Board and Council, (ii) the science and policy trends that will affect and will be affected by AGU in the future, and (iii) organization and role of the AGU Future Science Task Force (FSTS). An illustrated (and quite detailed) report on the meeting can be found at

<http://www.agu.org/blog/sp/>

6.3 AGU new Executive Director

The new AGU Executive Director is Christine W. McEntee. Chris joined AGU in September 2010. To learn more about Christine, visit <http://www.agu.org/about/ed/>

6.4 AGU Board of Directors Meeting

The AGU Board of Directors held its first board meeting on 20–21 September 2010 in Washington, D. C. The meeting, chaired by President Michael McPhaden, marked another step forward in implementing AGU's new governance structure and strategic direction. The agenda included ongoing organizational business, high-level strategic discussions, and opportunities for Board development. In the new governance structure, the Board is responsible for governing the business aspects of AGU, while the Council is responsible for governing scientific affairs. The strategic plan guides governing groups, staff, and other membership groups by providing clear goals and objectives. Of the 28 objectives in the AGU strategic plan, the volunteer and staff leadership identified eight as priorities. The priority objectives are listed at the AGU web-page:

http://www.agu.org/about/pdf/AGU_BOD-Key-Outcomes-and-Msgs_2010-08.pdf

Note: Contributions to AGU Natural Hazards Focus Group Newsletters are welcome from AGU members. Please send your contributions to Ilya Zaliapin by e-mail nathazards@gmail.com or via the "Contact" page at the group Website (<http://nh.agu.org/contact/>) inserting the Subject line: "Contribution to AGU NHFG Newsletters". The contributions will be reviewed and may be shortened.

Editors: A. Ismail-Zadeh and I. Zaliapin