

AGU Natural Hazards Focus Group

Progress Activity Report
1 June 2009 – 31 May 2010

INTRODUCTION

AGU Focus Group on Natural Hazards

- established in 2008 by the decision of the AGU Council and started its activity on 1 June 2009;
- fosters geophysical hazard studies - droughts, earthquakes, fires, floods, heat waves, landslides, space weather, storms, tsunamis, volcano eruptions, impact by near-Earth objects, and related events,
- establishes links between extreme natural hazards and dynamic processes on Earth and in space;
- focuses on real-time and long-term monitoring of Earth and Space active processes; quantitative natural-hazard modeling; studying predictability of natural extreme events;
- concentrates on the development of solid links between geophysical sciences and mathematical, engineering, and social sciences communities and users of knowledge concerning natural hazards;
- works in cooperation with and provides a bridge to similar efforts by the global programs of the International Union of Geodesy and Geophysics (IUGG), International Council for Science (ICSU), U.N. International Strategy for Disaster Reduction (UN-ISR), and other national, regional and international bodies.

Officers

Alik Ismail-Zadeh, Chair (Karlsruhe Institute of Technology, Germany)
Susan Cutter, Vice Chair (University of South Carolina, Columbia SC, USA)
Ilya Zaliapin, Secretary (University of Nevada, Reno, USA)

Executive Committee

Harsh Gupta (National Geophysical Research Institute, Hyderabad, India)
Yev Kontar (University of Illinois at Urbana-Champaign, USA)
Bruce D. Malamud (King's College London, UK)
Richard J. Murnane (Bermuda Institute of Ocean Sciences)
Roger A. Pielke Sr. (CIRES and University of Colorado, Boulder, USA)
Vasily Titov (NOAA Center for Tsunami Research, Seattle, WA, USA)
Gezahegn Yirgu (Addis Ababa University, Ethiopia), 2010-2012
Kelly Klima (Graduate Student at Carnegie Mellon University), 2010-2012

AGU Program Committee Members

Allan James (University of South Carolina, Columbia SC, USA) 2009
Yev Kontar (University of Illinois at Urbana-Champaign, USA) 2010
Corné Kreemer (University of Nevada, Reno, USA), 2009-2010

BUSINESS MEETINGS

1. Monday, May 25, 2009, Toronto Convention Center, Toronto, Ontario, CA

The Minutes of the meeting can be downloaded from

http://www.agu.org/focus_group/NH/events/meetings/Minutes_May25_09.pdf



Participants of the first business meeting (left to right):

A. Broadhurst (AGU Staff), Y. Kontar, T. Grove (AGU President),
A. Ismail-Zadeh, I. Zaliapin, R. van Hook (AGU Interim Executive Director)

2. Friday, 18 December 2009, Moscone South, San Francisco, California, USA

The Minutes of the meeting can be downloaded from

http://www.agu.org/focus_group/NH/events/meetings/Minutes_Dec18_09.pdf



Participants of the second business meeting (left to right):

Y. Kontar, S. Cutter, T. Grove, C. Fynn (AGU Secretary General),
B. Paredes (AGU staff), H. Gupta, I. Zaliapin, B. Malamud, R. Murnane

NATURAL HAZARDS RESEARCH AT 2009 AGU FALL MEETING IN SAN FRANCISCO

The 2009 Fall AGU meeting featured, for the very first time, a range of special sessions on natural hazards (NH). The NH Scientific Program ran from Monday, 14 December, till Friday, 18 December, with a break for scientific sessions on Tuesday, 15 December. 413 oral talks and posters were presented at the 17 oral and 16 poster sessions, which covered various aspects of NH, including hazard assessment techniques and mitigation strategies, data collection approaches, interaction with government, policy and decision makers, as well as numerous case studies.

AWARD FOR GRADUATE RESEARCH

The AGU Natural Hazards Focus Group established a new award to young scientists engaged in studies of natural hazards and risks. This award recognizes one or more promising young scientists for outstanding contributions achieved during their Ph.D. research. Accordingly, eligibility is restricted to current Ph.D. students and those who have completed the requirements for a Ph.D. degree up to 12 months prior to the nomination deadline. Nominees should be AGU members. The major criterion in the evaluation of candidates nominated to this award is the impact (or potential impact) of the research on the field of natural hazards. The award consists of \$500 for support of travel to the AGU Fall meeting, a certificate, and recognition at the Natural Hazards Reception. The awardee(s) will have the opportunity to deliver an invited paper in an appropriate Natural Hazards session at the AGU Fall meeting. The awardee(s) will also be announced in EOS.

The Graduate Research Award Committee consists of three distinguished experts in natural hazards: *Michael Ghil*, Chair (UCLA & Ecole Normale Supérieure, Paris, France), *Efi Foufoula-Georgiou* (University of Minnesota, Minneapolis, USA), and *Friedemann Wenzel* (Karlsruhe Institute of Technology).



Dr. Meththika Vithanage received the 2009 Graduate Research Award Winner. She is a Leader of the Chemical and Environmental Systems Modeling Research Group at the Institute of Fundamental Studies in Kandy, Sri Lanka. Dr. Vithanage got her PhD on “Effect of Tsunami on Coastal Aquifers: Field Studies and Tank Experiments” under the supervision of Professors Karsten Jensen and Peter Engesgaard in the Department of Geology and Geography at the University of Copenhagen, Denmark in February 2009. She has been nominated by Dr. Jayantha Obeysekera from South Florida Water Management District.

FOCUS GROUP GILBERT F. WHITE DISTINGUISHED LECTURE AWARD PROPOSAL

The Executive Committee of the Natural Hazards (NH) Focus Group decided that outstanding scholarship in the field of NH and risk assessment based on a sustained record of contributions and accomplishments should be recognized. Dr. Gilbert F. White was one of the leading XXth century scholars in the field of natural hazards, and the NH Focus Group would be pleased if AGU decides to name the lecture as “Gilbert F. White Distinguished Lecture”. A proposal prepared by S. Cutter was considered by the Executive Committee of the AGU Natural Hazards Focus Group at its business meeting on 18 December 2009 in San Francisco and was approved unanimously. The proposal was submitted to the AGU Honors and Recognition Committee for review and to AGU Council for consideration.

2009 OUTSTANDING STUDENT PAPER AWARD

The NH Focus Group executives appointed a committee to search for the outstanding student papers to be presented at the 2009 AGU Fall Meeting. The Committee evaluated 92 student presentations at the Fall Meeting and short-listed 10 papers, excellent candidates for the OSP award. The final decision was made on the basis of the score information and comments submitted by the judges. There paper were selected to be awarded:

- 1) Tina Swierczynski (NH43a-1281);
- 2) Kate Brodie (NH11A-1111); and
- 3) Larsen, I. J. (NH43D-05).

FOCUS GROUP RECEPTION IN SAN FRANCISCO

The first reception of the AGU Natural Hazards Focus Group was held on Tuesday, 15 December 2009, at the InterContinental San Francisco Hotel. The formal part of the Reception consisted of the presentation of the 2009 Award for Graduate Research to Dr. Meththika Vithanage (Sri Lanka) and the lecture “Risk Management of Natural Perils in Munich Re: from 1972 Managua earthquake to the Global Earthquake Model” by Dr. A. Smolka (Head of GeoRisks, Munich Reinsurance Company). The Reception was sponsored by Munich Re.

AGU NATURAL HAZARDS INDEX TERMS

The Executive Committee of the Focus Group developed the Natural Hazards Index Terms submitted to the AGU Staff to be placed in the AGU Index Terms to assist AGU members in choosing proper terms to refer in abstract of their papers (See *Appendix 1* for the Index Terms)

FOCUS GROUP ADVISORY BOARD

The Executive Committee of the Focus Group established the Advisory Board. The purpose of the Advisory Board is to evaluate the activity of the Focus Group and elaborate the vision of the group for future activities. Chair of the Advisory Board is S. Cutter, Vice Chair of the Group. Terms of Reference and Membership of the Advisory Board are presented in *Appendix 2*.

EXTREME NATURAL HAZARDS AND SOCIETAL IMPACT (ENHANS) PROJECT

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/>

NATURAL HAZARDS AND DISASTER RISK RESEARCH AT 2010 MEETING OF AMERICAS IN IGUASSU, BRAZIL: 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 considerably attention of society to problems of natural hazards and risks. The first event in the framework of the ICSU project will be 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/>), as the principal co-organizers of the meeting.

The major event will be a *symposium "Natural Hazards and Disaster Risk in Latin America and the Caribbean"*. The symposium will contribute to better understanding of physical phenomena behind natural hazards and to disaster risk analysis in Latin America and the Caribbean region and will promote further research in an interdisciplinary framework focused on natural hazards, risk assessment and reduction. The symposium's topics includes 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. The Union symposium "Natural Hazards and Disaster Risk in Latin America and the Caribbean" is considered to attract the major attention of scientists, regional policy makers, and society to problem of natural hazards and disaster risk. A Town Hall meeting will bring together experts, leaders of societies and policy makers to discuss again the problem of hazards and disasters.

26 sessions related to natural hazards will run at the joint Meeting of Americas.

FOCUS GROUP'S WEB PAGE

The Focus Group Web page moved to its permanent site at http://www.agu.org/focus_group/NH/. The page contains the information on the latest news related to natural hazards and disasters, on the activities of the Focus Group, FG executives, meetings, conferences, links to relevant organizations dealing with natural hazards. The group e-mail is: nathazards@gmail.com.

NATURAL HAZARDS GROUP NEWSLETTERS

The Focus Group newsletters were published electronically and broadcast to the AGU members twice for the reported period. The Newsletters are available at web: http://www.agu.org/focus_group/NH/about/newsletters/

Alik Ismail-Zadeh, Chair, AGU Natural Hazards Focus Group

Appendix 1: INDEX TERMS

4300 NATURAL HAZARDS

- 4301 Atmospheric
- 4302 Geological
- 4303 Hydrological
- 4304 Oceanic
- 4305 Space weather
- 4306 Multihazards
- 4307 Other

- 4311 Analogue modeling
- 4312 Catastrophe and catastrophe theory
- 4313 Extreme event
- 4314 Mathematical and computer modeling
- 4315 Monitoring, forecasting, prediction
- 4316 Physical modeling
- 4317 Precursors
- 4318 Statistical analysis
- 4319 Spatial modeling

- 4321 Climate impact
- 4322 Health impact
- 4323 Human impact
- 4324 Spatial decision support systems
- 4325 Megacities and urban environment
- 4326 Exposure
- 4327 Resilience
- 4328 Risk
- 4329 Sustainable development
- 4330 Vulnerability

- 4331 Disaster relief
- 4332 Disaster resilience
- 4333 Disaster risk analysis and assessment
- 4334 Disaster risk communication
- 4335 Disaster management
- 4336 Economic impacts of disasters
- 4337 Remote sensing and disasters
- 4338 Disaster policy

- 4341 Early warning systems
- 4342 Emergency management
- 4343 Preparedness and planning
- 4344 Microzonation and macrozonation
- 4345 Community management
- 4346 Emergency response and evacuations
- 4347 Recovery and reconstruction after disaster
- 4348 Contingency planning

- 4351 International organizations and natural disasters
- 4352 Interaction between science and disaster management authorities
- 4353 Sociology of disasters
- 4354 Psychology of disasters
- 4355 Miscellaneous

Appendix 2:
Advisory Board for the AGU Natural Hazards Focus Group

Terms of Reference

- The Advisory Board is established by the decision of the Executive Committee of the AGU Natural Hazards Focus Group on 18 December 2009.
- The purpose of the Advisory Board is to evaluate the activity of the Focus Group and elaborate the vision of the group for future activities.
- The Advisory Board shall:
 1. advise on strategy in natural hazards research development and prepare a biennial report on the strategic plans for the Focus Group;
 2. provide guidance and constructive criticism to help chartering the Group's activities;
 3. provide guidance and facilitate communication with other AGU sections and focus groups;
 4. advise on cooperation between AGU and other bodies dealing with natural hazards; and
 5. advise on new awards and honors in recognition of natural hazards research and mitigation of disaster risks.
- The Advisory Board will be appointed by the Focus Group Chair and should be composed of AGU Sections representatives (up to 2 representatives). The Vice-Chair of the AGU Natural Hazards Focus Group should serve as Chair of the Advisory Board. Representatives of external institutions with expertise in natural hazards (not more than 3 representatives) can be invited to join the Advisory Board by the Chair of the Board.
- Decisions of the Board shall be taken by a simple absolute majority. If a tie should occur in a Board vote, the decision shall rest with the Chair. A simple majority is determined by the proportion of affirmative votes to the sum of votes (affirmative, negative, abstention), provided that the total number of members voting (affirmative, negative, abstention) is not less than one third of the total membership of the Board.
- Term of office of the Advisory Board members shall be 2 years, but may be extended for a further period of not more than 2 years. Replacement of members shall be in a staggered manner in order to ensure efficient and continuous functioning of the Board.
- The Board shall submit a report to the focus group's Secretary by 1 December annually.

The Advisory Board Membership (1 June 2010 – 31 May 2012)

Susan Cutter, Chair, University of South Carolina, Columbia SC, USA (social aspect of natural hazards)

Victor R. Baker, University of Arizona, Tucson (expert in flooding)

Yehuda Bock, University of California, San Diego (applications of geodetic techniques to studying and mitigating natural hazards)

Timothy Cohn, US Geological Survey and Johns Hopkins University (floods)

Andy Freed, Purdue University, West Lafayette (earthquakes and volcanoes)

Greg Holland, National Center for Atmospheric Research (NCAR), Boulder Colorado (hurricanes)

Erkan Istanbuluoglu, University of Nebraska-Lincoln (landslides, wildfires)
Upmanu Lall, Columbia University, New York (overall sense of issues in natural hazards)
Jian Lin, Woods Hole Oceanographic Institution, Woods Hole, MA (tsunami)
James K. Mitchell, Rutgers University (strategies and designs for hazard mitigation and disaster management worldwide)
Andrew V. Newman, Georgia Institute of Technology (applications of geodetic techniques to studying and mitigating natural hazards)
Roger S. Pulwarty, National Oceanic and Atmospheric Administration, Boulder Colorado (droughts)
Howard Singer, National Oceanic and Atmospheric Administration, Boulder Colorado (space weather)
Amber J. Soja, NASA Langley Research Center, Hampton, VA (fires)
Mary Lou Zoback (earthquakes), Risk Management Solutions, Newark, California