

MEETINGS

Evolving Plans for the USA National Phenology Network

National Phenology Network 2nd Implementation Workshop, Milwaukee, Wisconsin, 10–12 October 2006

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Phenology is the study of periodic plant and animal life cycle events, how these are influenced by seasonal and interannual variations in climate, and how they modulate the abundance, diversity, and interactions of organisms. The USA National Phenology Network (USA-NPN) is currently being organized to engage federal agencies, environmental networks and field stations, educational institutions, and citizen scientists. The first USA-NPN planning workshop was held August 2005, in Tucson, Ariz. (Betancourt *et al.* [2005]; <http://www.uwm.edu/Dept/Geography/npn/>; by 1 June 2007, also see <http://www.usanpn.org>). With sponsorship from the U.S. National Science Foundation, the U.S. Geological Survey (USGS), the U.S. Fish and Wildlife Service, and NASA, the second USA-NPN planning workshop was held at the University of Wisconsin-Milwaukee on 10–12 October 2006 to (1) develop lists of target species and observation protocols; (2) identify existing networks that could comprise the backbone of nationwide observations by 2008; (3) develop opportunities for education, citizen science, and outreach beginning in spring 2007; (4) design strategies for implementing the remote sensing component of USA-NPN; and (5) draft a data management and cyberinfrastructure plan.

A next step in the process will be selecting species with which to establish a baseline

of phenological patterns for plants across the United States to help monitor and detect phenological responses to climate change. Time commitments for network participants at a single observation site could average <1 hour a day, 3 days a week during the growing season. Another focus in 2007 is to establish phenological observations across both spatially extensive and locally intensive networks that already have weather or biological monitoring as part of their mission or operational activities. For example, existing weather networks offer the best opportunity to colocate daily weather and phenological observations at thousands of sites distributed evenly across the country and along seasonal gradients for observers interested in traveling along with the 'green wave.' USA-NPN also will initiate specific programs to start enlisting the general public in phenological monitoring. For example, Project Budburst will invite 5,000–10,000 public observers to validate protocols for leafing and flowering of plant species with the intent of soliciting a wider audience in future data collection (http://www.windows.ucar.edu/citizen_science/budburst/). Short- and medium-term strategies were identified for implementing the remote sensing component of USA-NPN, based on the need for supplementing species-level observations with community-level observations better linked to the scale of remote sensing pixels (tens to thousands of meters). The intensive

experiment will collect weekly measurements of community greenness at fixed transect sites that can be directly compared with fractional greenness estimated by Landsat and the Moderate Resolution Imaging Spectroradiometer. The workshop generated a strategic overview of the requirements, design, and implementation schedule to guide the systematic development of the USA-NPN cyberinfrastructure. Full implementation will include tools for data input, an underlying database structure, reporting tools that provide raw data, visualization tools, and more advanced functions that permit linkages to remote data and both automated and streamlined processing. Finally, the U.S. Geological Survey and University of Arizona are collaborating to establish a national coordinating office for USA-NPN in Tucson, which will be staffed and operational by August 2007. The NPN office will be overseen by Executive Director Jake Weltzin, USGS, and Mark Losleben, University of Arizona.

References

Betancourt, J. L., M. D. Schwartz, D. D. Breshears, D. R. Cayan, M. D. Dettinger, D. W. Inouye, E. Post, and B. C. Reed (2005), Implementing a U.S. national phenology network, *Eos Trans. AGU*, 86(51), 539.

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■ 3–8 June 2007 **First North American Landslide Conference**, Vail, Colo., U.S.A. Sponsors: Association of Environmental & Engineering Geologists; GEO Institute; Canadian Geotechnical Society; others. (K. Turner; E-mail: kturner@mines.edu; Web Site: <http://www.mines.edu/academic/geology/landslidevail2007>)

The conference seeks to provide a stimulating forum for geoscientists, engineers, planners, economists, program managers, and other decision makers concerned with landslide hazards and their impact on North American society. Topics covered under the themes "Monitoring & Management of Slopes & Landslides," and "Evaluation & Control of Landslides" are advances in landslide mapping and modeling, appraisal of instability and risk, and loss reduction strategies.

■ 12–15 June 2007 **Virtual Observatories in Geosciences**, Denver, Colo., U.S.A. Sponsors: Electronic Geophysical Year (eGY); U.S. Geological Survey; NASA. (P. Fox, P.O. Box 3000, Boulder, Colo., U.S.A. 80308; E-mail: voig@egy.org; Web Site: <http://www.egy.org/VOiG>)

This event is motivated by the eGY and recognizes the 50th anniversary of the International Geophysical Year of 1957. Topics include history and background of virtual observatories (VOs), science requirements of VOs, vocabularies and semantics, and interoperability and standards. Abstract deadline is 1 June.

■ 26–28 June 2007 **Frontier in Mineral Sciences 2007**, Cambridge, United Kingdom. Sponsors: Science AAAS; European Science Foundation; Crystal Maker Software; others. (Conference Secretariat, 12 Baylis Mews, Amyand Road, Twickenham, Middlesex, United Kingdom TW1 3HQ; Tel.: +44-

0-20-8891-6600; Fax: +44-0-20-8891-6599; E-mail: Adrian@minersoc.org; Web Site: <http://www.minersoc.org/pages/meetings/frontiers/index.html>)

Under the theme of "Frontiers in Mineral Sciences", the scientific focus of the meeting will be on recent advances in research into the properties and behavior of minerals, together with their geological contexts in rocks and biosystems. Topics include minerals in biological systems, simulations of earth and planetary materials, and dynamics and chemical evolution of the Earth's mantle and core-mantle boundary.

■ 9–13 July 2007 **11th Congress of the International Society of Rock Mechanics**, Lisbon, Portugal. Sponsor: International Society of Rock Mechanics; Portuguese Geotechnical Society; Spanish Society for Rock Mechanics. (Conference Secretariat, 11th ISRM Congress, Sociedade Portuguesa de Geotecnia, LNEC-Av. do Brasil, 101, Lisbon, Portugal 1700-066; Tel.: +351-21-844-3419; Fax: +351-21-844-3021; E-mail: ismr2007@lnecc.pt; Web Site: <http://www.ismr2007.org>)

The goal of this congress is to review the evolution of rock mechanics, and to define new perspectives and developments in rock engineering. Topics