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Recent announcements of interest to the NS community (conferences, academic positions, graduate student opportunities etc.) can be found at the AGU [NS-Focus Group Web Page](#).

AGU NS Membership as of September 2012:

Primary affiliation: 793 members; Secondary: 2881 members

1. AGU Fall Meeting 2012 News:

1.1. *Near Surface Geophysics sessions*

NS001: Near Surface Geophysics General Contributions

Conveners: [Chester J Weiss](#)

Description: This session provides the opportunity for contributions that fall within the broad spectrum of Near Surface Geophysics, but are not directly appropriate to any of the other sessions proposed for the focus group.

NS002: Advances in Airborne Electromagnetics

Conveners: [Bruce D Smith](#), U.S. Geological Survey; [Jared D Abraham](#), U.S. Geological Survey; [Paul A Bedrosian](#), U.S. Geological Survey; [Esben Auken](#), Aarhus University

Description: Applications of airborne electromagnetic (AEM) methods have broadened from mineral exploration to mapping geologic and hydrologic frameworks, evaluation of natural hazards, land use planning in agricultural development and assessment of relationships between the earth's subsurface and surface ecosystems from arctic to tropical settings. We invite presentations that describe advances in AEM which have extended applications resulting from improvements in measurement systems, data processing, and data inversion or modeling. This session is a collaboration between the Near Surface Focus Group and the

Environmental and Engineering Geophysical Society.

NS003: Applied Geophysics in the Global Marketplace

Conveners: [Louise Pellerin](#), Green Engineering, Inc; [Jerry McJunkin](#), Heritage Group Inc

Description: We seek papers devoted to the extension of our understanding of who has needs for applied geophysics, what levels of education are required, what geophysical techniques are being used, what novel approaches are being applied, and what new technologies are around the corner or on the leading edge. In addition to the science and technology is the human story; what can be done, and is done, is dependent on the local infrastructure, politics, and ambitions of those applying these skills under conditions likely unknown to many. Students and professors can gain new understandings regarding what is the market demand for applied geophysics globally, where they fit in, what applications are of interest, what skills are needed, and where.

NS004: Developments and Practical Applications of the Multichannel Seismic-Data Surface-Wave Analysis Method

Conveners: [Richard D Miller](#), University of Kansas; [Georgios P Tsoflias](#), University of Kansas; [Julian Ivanov](#), University of Kansas

Description: This session will focus on recent developments and practical applications of the multichannel analysis of surface waves using both active and passive seismic sources for the purposes of 1-D, 2-D, and 3-D shear-wave velocity (V_s) profile estimations. Possible topics can include numerical developments in optimal field-parameter estimations, dispersion-curve imaging and modeling techniques, multi-mode interpretation and inversion, sensitivity analysis. Case studies with practical applications of the surface wave method alone or in joint inversion/analysis with other geophysical methods are welcome. This session is a collaboration with the near surface section of SEG.

NS005: Exploring the High-Resolution Record of Surface Processes in Near- and Inshore Water Bodies

Conveners: [Nicolas Waldmann](#), University of Haifa; [Mark E Vardy](#), University of Southampton, National Oceanography Centre

Description: Marine and continental archives often present an excellent high-resolution record of recent (Holocene and Last Glacial) regional changes in climate, tectonic and surface processes. Litho- and biostratigraphies from cores and in situ geotechnical data from cone-penetrometer profiles, complemented by structural mapping using swath bathymetry, side-scan sonar and subsurface high-resolution seismic reflection imaging, are key techniques to explore these settings. In this session, we seek to showcase case studies using these and similar methods to the sedimentary succession of near-/inshore water bodies. In particular, we encourage contributions from authors who have taken a multi-disciplinary approach.

NS006: Geophysical Imaging of Fractures and Fluid Flow: Advancing from Detection to Measurement

Conveners: [Georgios P Tsoflias](#), University of Kansas; [Matthew W Becker](#), Cal State Long Beach

Description: While significant advances have been made in the geophysical detection of fractures, quantitative measurement of fracture properties that control the flow of fluids, as well as monitoring of flow and transport, remains elusive. This session will present the latest developments in the remote characterization of fracture properties. We encourage theoretical and experimental contributions at laboratory and field scales using surface and borehole geophysical methods. We seek contributions from varied backgrounds, e.g. groundwater, geothermal, CO₂ sequestration, and hydrocarbon resources that highlight recent advances and future directions in fracture characterization and monitoring of flow and transport.

NS007: Geophysical Methods for Groundwater Evaluation and Management

Conveners: [Rosemary J Knight](#), Stanford Univ; [John W Lane](#), United States Geological Survey

Description: Effective, sustainable management of groundwater resources requires accurate knowledge of groundwater recharge, storage, and withdrawal. In this session we focus on the application of geophysical methods using subsurface, surface, airborne, or satellite sensors to quantify subsurface properties and processes. Of interest are examples related to all aspects of groundwater management including, but not limited to, development of hydrostratigraphic models, assessment of aquifer properties, evaluation of groundwater quantity and quality, monitoring of natural/managed processes. All approaches are of interest including laboratory and field experiments, theoretical and numerical modeling.

NS008: Joint Inversions and Other Strategies to Integrate Multi-Disciplinary Geophysical Data

Conveners: [Max Moorkamp](#), University of Leicester; [Peter G Lelievre](#), Memorial University; [Bjvrn Heincke](#), GEOMAR

Description: Combination of complimentary data sets typically reduces the ambiguity of inversion results and facilitates interpretation. Hence, integration of multi-disciplinary data has become popular in many disciplines like hydrogeophysics, mineral exploration, sub-basalt/sub-salt problems and studies of the deep crust and mantle. Still, many questions remain: Which types of data should be inverted together? How to balance their influence in the inversion? How can we assess the differences between joint inversion, cooperative inversion and other integrated interpretation strategies? This session welcomes any research using joint inversion or other approaches to combine different types of geophysical data.

NS009: Shallow Seismology of the Vadose-Saturated Zone

Conveners: [Juan Manuel Lorenzo](#), Louisiana State Univ; [John W. Lane](#), United States Geological Survey

Description: Unsaturated soils can be highly heterogeneous, non-elastic, dispersive and anisotropic so that usable predictive models are heuristic, and only narrowly suited to specific field sites. Under field conditions low seismic bandwidth may deter model testing. However, observable attenuation, V_p/V_s ratios, are often used to determine the influence of fluids on soil conditions. We welcome submissions to this session that provide new theoretical and computational frameworks for granular unsaturated media from the broad community, novel approaches in the laboratory and/or experimental results that exploit both passive and controlled source seismic methods to yield better predictive models for seismic velocity from fluids in the shallow subsurface.

1.2. Hydrogeophysics sessions

H029: A Vision for the Future: Exploring the Value of Geophysics in Hydrology

Conveners: Kamini Singha, Stephen M Moysey, Niklas Linde; Penn State University, Clemson University, University of Lausanne

Description: Important theoretical, computational, and technological advances have occurred in hydrogeophysics over the past two decades; however, hydrologic prediction remains a difficult problem due to spatial heterogeneity, temporal variability, and feedbacks between physical, chemical and biological processes occurring over multiple scales. We invite visionary perspectives, insightful retrospectives, or broadly applicable discussions that illuminate outstanding hydrologic problems and promising geophysical methodologies. All areas of research are welcomed, including watershed hydrology, subsurface hydrology, and biogeochemistry.

H030: Hydrogeophysics: Lab to Field Scale Characterization

Conveners: Steven Meyerhoff, Joseph Doetsch, Andrew Parsekian; Colorado School of Mines; Berkeley Labs; Stanford University.

Description: Subsurface characterization of hydrological parameters is traditionally based on core analysis and well test data gathered from subsurface locations. Without complementary data, traditional hydrologic measurement techniques are often inadequate for characterizing heterogeneity. Additional information to adequately characterize subsurface heterogeneity can potentially be gained through geophysics. In view of this, we encourage contributions that cover all hydrogeophysical investigations. Topics might include: characterization of hydraulic properties and processes, contaminant migration, geomechanical nature of aquifer materials, relevant biological and geochemical properties and processes, and uncertainty assessment.

1.3. Other sessions

H050: Geophysics for the Critical Zone

Conveners: Peter Dietrich, Barry Jay Allred, Ulrike Werban, Steffen Zacharias; Helmholtz Centre for Environmental Research - UFZ, USDA/ARS Soil Drainage Research Unit, Helmholtz Centre for Environmental Research -UFZ, Helmholtz Centre for Environmental Research - UFZ

Description: We will address the state of the art of geophysical techniques applied for mapping and monitoring of the pedosphere and unsaturated vadose zone. There is particular interest in the use of proximal sensing technologies for prediction of soil properties and observation of dynamic processes within the unsaturated zone. Geophysical techniques are widely used in Digital Soil Mapping. Furthermore, in the context of environmental modelling, there is a growing demand to provide multi-scale information. However, results are often limited to qualitative information and results are ambiguous. Reliable quantification is a major challenge. A promising approach is multi sensor mapping combining, e.g EMI, ERT, GPR, passive gamma radiometry,

TDR, cosmic ray probes etc.

H023: Remote Sensing, Modeling, and Ground-based Monitoring of Groundwater Resources

Conveners: Bridget Scanlon, Univ Texas Austin; Richard Taylor; Laurent Longuevergne, CNRS - Geosciences Rennes; Jessica Reeves, Stanford University.

Description: Increasing reliance on groundwater underscores the importance of monitoring changes in fluxes to and from aquifers and storage in aquifers. This session seeks papers on studies using satellite and airborne approaches for monitoring storage changes (GRACE) and fluxes (ET, recharge, discharge e.g. using MODIS and Landsat) and land subsidence (e.g. using InSAR), mostly in response to climate extremes (floods and droughts) and water use (e.g. irrigation). Studies that ground reference satellite and airborne data with in situ monitoring are strongly encouraged. Studies using multiple satellites and monitoring data for model calibration/assimilation to better solve mass balance and aquifer behavior are welcome.

Co-sponsors: Geodesy (G); Global Environmental Change (GC); Near Surface Geophysics (NS); Societal Impacts and Policy Sciences (SI).

A complete list of NS co-sponsored sessions can be found on the [AGU Fall Meeting Web site](#) by selecting Near Surface Geophysics as a co-sponsor under the general search tab.

2. Reminder: AGU Elections open 4 September: Your vote is important (from George Tsoflias)

Dear colleagues: AGU elections for the 2013-2014 term are coming soon. This election is especially important for the Near Surface Focus Group since it is the first time we will be electing officers for the positions of NS President-Elect and Secretary. Electing officers gives the focus group representation in the AGU Council and the ability to serve the NS community and AGU better. By voting you also have direct input in the selection of AGU's leadership (board members, student and early career reps). Candidate bios can be viewed online on the [AGU Web site](#). You will see an impressive list of NS members involved throughout AGU's leadership, starting from the top with the 2013-14 AGU Union president, Carol Finn.

The election polls will be open 4 Sept. through 4 Oct. 2012. All regular and student members who joined or renewed their membership by 1 July 2012 are eligible to vote. Login credentials will be sent to eligible voters on 4-5 September from the election vendor (@directvote.net).

3. Announcement: AGU Meeting of the Americas, 14–17 May, 2013, Cancun, Mexico

The 2013 Meeting of the Americas will be held 14–17 May in Cancun, Mexico. Read more about the Joint Assembly and submit your session proposal today!

Session Proposal Deadline: 17 October, 2359h EST.

4. Reminder: SEG-AGU Joint Workshop, 6–8 January 2013, Boise State University: abstract deadline September 20 (from John Bradford)

The earth's cold regions present perhaps the most diverse set of geophysical problems of any earth system. We must understand the influence of water in all its phases on the dynamics and thermodynamics of snow, ice and frozen soil masses whose geophysical properties can change dramatically on time scales from hours to millennia. This workshop will exchange concepts and ideas on the development and application of geophysical exploration methods to problems in the changing Cryosphere relating to snow, sea ice, permafrost, glaciers and ice sheets. We will focus mainly on how various methods of subsurface imaging can help monitor changes in the Cryosphere and thus elucidate the consequences of a changing climate. These changes may include the

mass balance of ice sheets and glaciers, active layer depth and extent, the state and depth of terrestrial and offshore permafrost, and the mass budget and state of sea ice and the seasonal snow cover. The workshop will also highlight advances in geophysical methods, especially as may be relevant to resource development, environmental hazard monitoring and assessment, and bridging the gap between development and practical application of geophysical technology.

We invite papers that investigate all aspects of cold regions subsurface imaging and extraction of in situ petrophysical properties. Contributions may include:

Case histories of the use of seismic, electrical and electromagnetic, gravity, and magnetic methods in the Cryosphere.

Applications of remote sensing methods to aid interpretation of subsurface images, such as airborne and satellite observations.

Advances in established methods and new approaches for subsurface imaging.

Advances in established methods and new approaches for estimation of material properties from subsurface images as well as from in situ and ground truth petrophysical data sets.

Operational advances in extreme environments and over more challenging temporal and spatial resolutions and scales.

The 2012 SEG-AGU Cryosphere Workshop committee would like to invite you to participate in this winter workshop. To participate, please fill out and return an application and associated abstract by 20 September 2012.

5. Reminder: SAGEEP 2013: session proposals due 10 September 2012 (from Bruce Smith)

Session proposals are now being accepted for SAGEEP 2013 to be held in Denver, Colorado, USA, March 17-21. The deadline for all session proposals is Monday, 10 September 2012. A current list of accepted sessions will be maintained at the [SAGEEP 2013 webpage](#).

Members of the AGU NS-FG are invited to submit proposals for joint NSFG/EEGS sessions. [Juan Lorenzo](#) has joined the technical session committee and will assist in organization and development of NSFG oriented sessions. Joint sessions at SAGEEP 2012 last year on Nuclear Magnetic Resonance (submitted again for 2013) and Characterization of Fractured Rock Aquifers were well attended. NSFG/AGU members submitting session proposals for 2013 are asked to identify the submission as a joint session. Session proposals can be submitted on the [SAGEEP 2013 webpage](#). Volunteers are also being accepted for co-chair positions (contact Juan) or to [chair sessions](#) which do not currently have conveners.

6. Announcement: 2013 Tyler Prize Call for Nominations - Submission Deadline Extended to 21 Sept. 2012

The Tyler Prize for Environmental Achievement is considered the premier international award honoring achievements and contributions in the fields of environmental science, protection, energy and medicine. Next year (2013) marks our 40th Anniversary! During its thirty-nine year history the Prize has honored sixty-four individuals and four corporations. Through their work, Tyler Laureates have focused worldwide attention on environmental problems by their discoveries and the solutions that resulted from these discoveries. The award consists of a gold medallion and a US\$200,000 cash award.

The 2012 Tyler Prize was awarded to Kirk R. Smith, MPH, PhD, of the University of California at Berkeley and John H. Seinfeld, PhD, of the California Institute of Technology. Drs. Smith and Seinfeld were recognized for their work to advance the scientific understanding of air pollution and develop solutions to reduce the danger to human health and the impact on climate change. A Copy of this year's commemorative book is attached. I hope you enjoy this memento recognizing Dr. Smith and Dr. Seinfeld for their remarkable success and record

of accomplishments. The Tyler Prize Executive Committee would like to extend an invitation to you to submit a nomination for the 2013 Tyler Prize.

The requirements for nominations can be found on our [website](#). The deadline for this year's nomination process has been extended to 21 September 2012. The recipients of the 2013 Tyler Prize for Environmental Achievement will be announced in March 2013.

For more information on the Tyler Prize please visit the Tyler Prize Web site www.tylerprize.usc.edu/about.html. In the meantime, if you would like to receive nomination materials, have any questions or suggest a potential candidate, please contact the Tyler Prize office by telephone (213) 740-9760 or via [e-mail](#).

7. Open positions:

7.1. Postdoctoral Research Associate in Hydrogeophysics at Lancaster University, UK

Postdoctoral Research Associate (Hydrogeophysics for root phenotyping) at Lancaster Environment Centre, Lancaster University, UK

This post is to provide hydrogeophysics research support in Andrew Binley's research group at Lancaster, for a period of 24 months. The post focuses on field-based experiments using resistivity and electromagnetic conductivity, aimed at assessing high resolution spatio-temporal variability in soil moisture. Such information will allow us to improve our understanding of water use by crops and ultimately help in improving plant breeding lines. The project is funded through the UK Biotechnology and Biological Sciences Research Council (BBSRC) grant "Phenotyping root function in wheat" awarded to Lancaster University and Rothamsted Research.

The successful candidate will be based at Lancaster but will carry out extensive field trials at Woburn, working closely with colleagues at Rothamsted Research. You should have a PhD, with research experience of using geophysical techniques for soil science and/or hydrological applications. A good understanding of soil water processes is essential; experience of working in agricultural environments would be an advantage. Experience of using geophysical inversion tools is necessary. You should also have good organizational skills, ability to coordinate field campaigns, work independently but also interact effectively in a team. Excellent communication skills (report and paper writing; oral presentations) are also necessary.

Closing Date: 16 September 2012
Interview Date: 24 September 2012
Expected start date for post: 1 October 2012.

For further information and to apply online, please visit the [Lancaster University Web site](#).

Further details are available from Prof. [Andrew Binley](#).

7.2. Postdoctoral position available in near-surface geophysics at the University of Wyoming

The Department of Geology and Geophysics at the University of Wyoming invites applications for a Postdoctoral Research Associate in geophysics, to begin as early as September 2012. The successful candidate will participate in analysis of either near-surface geophysical data for Critical Zone studies, and/or marine seismic

reflection and refraction data, with special emphasis on seismic oceanography.

We seek candidates with knowledge of, and research experience in, processing, modeling, and interpretation of any of the following data types: multichannel seismic reflection, seismic refraction, electrical resistivity, electromagnetic, and ground-penetrating radar. An earned Ph.D. in geophysics or a closely related field is required at the time of appointment. Applicants should possess a demonstrated record of publication in the peer-reviewed literature, a willingness to participate in field programs, both at sea and on land, and familiarity with advanced imaging techniques. The successful candidate will join a vibrant research group possessing up-to-date computational and data analysis facilities.

The term of the position is two years, with potential reappointment for a third year. Applications, including a curriculum vitae, list of publications, statement of research interests, and names, addresses, phone numbers, and e-mail addresses of three references, should be sent to Dr. [W. Steven Holbrook](#) by email. The position number on the University of Wyoming website is #4022. Review of applications will begin on 1 August 2012, and continue until the position is filled. The University of Wyoming is committed to diversity and endorses principles of affirmative action. We acknowledge that diversity enriches and sustains our scholarship and promotes equal access to our educational mission. We seek and welcome applications from individuals of all backgrounds, experiences, and perspectives

7.3. Postdoctoral researcher in electrical geophysics, Rutgers University, Newark

The Near Surface Geophysics group at Rutgers University (Newark, NJ) seeks a postdoctoral scientist to work on both laboratory and field -based projects directed towards improving understanding of the electrical geophysical signatures associated with hydrogeological and biogeochemical processes in the subsurface. Our work is interdisciplinary so applicants that have experience in geophysics, geochemistry and/or microbiology are preferred. We seek a motivated individual to take the lead on 2-3 existing projects in our group that best match the applicant's interests and skillsets. Opportunities exist to work on a variety of projects including (1) biogeophysical signatures of crude oil degradation in the subsurface, (2) geophysical characterization/monitoring in fractured rock environments, and (3) development of laboratory and borehole geophysical instrumentation for near surface hydrogeophysical and biogeophysical applications. The initial appointment is for 1 year but extendable subject to availability of funds. Statements of interest should be sent to [Lee Slater](#) and [Dimitrios Ntarlagiannis](#).

7.4. Student opportunities at University of Western Australia

Airborne exploration is using new advanced technology to improve sensitivity, reduce vibration and detect deeper minerals. We are looking for hands-on undergrads and PhD students who are interested in exploration technology, finite element modelling, and low noise electronic designs to participate in a University-Industry collaboration project.

We offer two new projects:

- 1) Developing patented prototype vibration isolators for airborne electromagnetic mineral exploration to create working models, undertake field trials, and interpret data.
- 2) Modelling of signals from deep earth minerals and aquifers to better understand the advantages of the newly improved electromagnetic sensors.

Applicants should have excellent academic records and preferably at least one internationally peer reviewed paper. Students without Australian residency are required to pay international student fees unless they can win a highly competitive IPRS scholarship.

Contact [David Blair](#).

7.5. Postdoctoral Position in Petrophysics, Geological Survey of Canada

The Geological Survey of Canada (GSC) invites applications for a postdoctoral position in a new research activity entitled "Optimization of Rock Physical Properties Measurements for Mineral Exploration". The goal is to develop successful methods to integrate geological and geophysical data and to enhance the incorporation of rock physical properties (density, magnetic and electric properties) into geophysical inversion for mineral exploration. The position will be based in the GSC Paleomagnetism and Petrophysics Laboratory in Sidney, near Victoria, British Columbia. It will operate under the GSC Targeted Geoscience Initiative 4 Methodologies Project. The position will be administered by the Natural Sciences and Engineering Research Council of Canada (NSERC) Visiting Fellowships in Canadian Government Laboratories (VF) Program. The initial appointment is for one year with funding earmarked for continuation to a second year. The salary range, negotiable commensurate with experience, starts at \$47,234. The VF is intended to collaborate with the upcoming NSERC Footprints Project led by a consortium of Canadian Universities in partnership with the Canadian Mining Innovation Council. Their goal is to develop state-of-the-art integrated exploration strategies that are applicable over a range of deposit types. The first phase of the research project will involve building a matrix of geological, litho-geochemical, mineralogical, surficial, petrophysical, and geophysical data of the "footprints" of ore-systems and establish exploration vectors for three of Canada's important mineral deposit types. The VF will help develop new measurement, analysis and data integration techniques, and will supervise the measurement of rock samples collected for the Footprints project. The VF will work directly with geophysical inversion companies in the Footprints consortium to optimize the incorporation of petrophysical data into their analysis. The VF is expected to prepare research results for publication in peer-reviewed scientific journals, make presentations at national and international scientific meetings, and attend project-related workshops.

Applicants must have recently graduated with a Ph.D. (last 5 years) in geology or geophysics with an interest in mineral exploration. Skills in lithology and alteration identification would be an asset. Preference will be given to candidates with experience in quantitative analytical laboratory work, computer programming, excellent written and verbal communication skills, and an established publication record. The expression of interest is to include a curriculum vita with publication list, undergraduate and graduate school transcripts, a summary of Ph.D. dissertation research, and the names and addresses of three referees willing to write confidential letters of recommendation. E-mail the expression of interest to [Randy Enkin](#), head of the GSC Paleomagnetism and Petrophysics Laboratory. Consideration of applicants will begin on 31 August 2012 and will continue until the position is filled.

7.6. Permanent Positions available for Geophysicists at Observatório Nacional (ON), Brazil

Six Permanent Positions for Geophysicists at Observatório Nacional (ON), Brazil
Registrations extended: New deadline 10 September 2012.

Observatorio Nacional -MCTI is a 185 years old premier research institute in Brazil developing both research and teaching at graduate levels in many areas of geophysics. It houses a newly established National Equipment Pool whose vast instrument collection includes 60 broadband seismometers, 340 high-frequency single-component seismometers, 12 broadband magnetotelluric systems, 40 long period magnetotelluric systems, 3 absolute gravity stations, 12 differential GPS systems, 6 Scintrex CG5 gravity systems, and 6 Overhauser magnetometers. The Pool is supported by a well-equipped workshop and advanced parallel computing facilities.

The available positions include electromagnetic induction, seismology, seismics, potential fields, scientific instrumentation and petrophysics. For all the details related to the positions and online registration, please visit the [homepage](#) and forward to the English version

To contribute material to the NS-letter send an e-mail to:
[Xavier Comas](#)

DEADLINE: Material must be received 2 full business days prior to the first of each month.
GUIDELINES FOR SUBMISSIONS: All members are welcome to submit content of interest to the NS community. Please keep messages brief and provide contact information and (if available) a web address for additional information. AGU requests formatting of e-mail messages to be as simple as possible (no bold characters (use ALL CAPS instead), no color font, or other special formatting of text and paragraphs). E-mail attachments cannot be distributed

American Geophysical Union | 2000 Florida Avenue, NW | Washington, DC 20009 | +1 202.462.6900

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