



Near-Surface Views



Newsletter of the NEAR-SURFACE GEOPHYSICS Section of The Society of Exploration Geophysicists
Fourth Quarter 2013, Vol. 20, No. 4

Letter from the President

Dear members of the NSGS,

It is with considerable excitement that I write you this letter, which is my first as the new President of the NSGS. New members in the executive committee are President-Elect John Lane, Associate Research Professor at the University of Connecticut, and Secretary Dylan Mikesell, Postdoctoral Fellow at the MIT Earth Resources Laboratory. The 2013-2014 executive committee is rounded out by Past-President John Bradford (Boise State University), Treasurer Seth Haines, and Newsletter Editor Andy Parsekian (Assistant Professor at the University of Wyoming). As this new committee is taking on its tasks, we say 'thank you' to outgoing Past-President James Irving and Secretary Esther Babcock for their great service to the NSGS.



As we start this year, the NSGS faces several possible changes but also many exciting opportunities and plans. Over the past two years, outgoing President John Bradford has worked tirelessly to promote a more unified home for Near-Surface geophysics in which a significant group of constituencies can make improvements to technical communication, public understanding, and the advancement of our exciting field. A key part of this effort (co-led by NSGS Task Force members Peter Annan and Rick Miller) has been a proposed merger with the Environmental and Engineering Geophysical Society (EEGS) in a new Near-Surface 'Subsidiary' under the SEG umbrella. Previous newsletters have addressed the reasoning for such a merger in considerable detail. As I write this letter, the details of a possible merger are still under discussion, but I am positive that a proposal can be brought to a membership vote in the near future.

In other news, over the past few months the executive committee has been discussing various proposals and ideas to improve the services that we provide to you.

- A new Publications Committee is in the process of formation. This committee will promote Near-Surface content in the various SEG outlets, including via regularly scheduled Special issues in GEOPHYSICS. A call for papers for the first Special Issue on Coastal Geophysics can be found elsewhere in this newsletter. In the next edition, I hope that we can give you some more details on the committee, including its members, goals, and a list of future topics and deadlines. If you would like to contribute to this committee, please get in contact with me.
- A long-standing core strategy of the NSGS has been to establish connections with related organizations such as in engineering, archeological prospecting, infrastructure, and forensics. It has been a goal to establish new cooperative activities on a regular basis. New plans for such collaborations have been formed, not in the least because of Laurie Whitesell's (Near Surface Geophysics Program Manager at SEG) efforts in this area.
- Currently, the newsletter comes to you in one of three different formats (email, pdf, or e-newsletter). We are discussing plans for a more streamlined production with a possible change in focus and content so as to use the newsletter not only for membership communication but also outreach. The addition of the "SEG Student Chapter Update" that has appeared in several of the previous newsletters is an example of such new content.
- In the coming months there are several events planned that will be relevant for Near Surface Geophysicists. These including the AGU Fall Meeting from December 9-13 in San Francisco, CA, with two SEG co-sponsored sessions, a talk by SEG Near-Surface Honorary Lecturer Valentina Socco at the NSFG luncheon, and many other relevant sessions and presentations; the SEG/DGS Near Surface Modeling and Imaging Workshop on March 8 and 9 in Manama, Bahrain; and the 6th International Conference on Environmental and Engineering Geophysics from June 20-23 in Xi'an, China.

In summary, there are many exciting developments and opportunities on the immediate and more distant horizons. As incoming President for 2013-2014, I look forward to serving the NS community in general and the NSGS membership in particular.

Best Regards,

Remke Van Dam

Michigan State University & Queensland University of Technology

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2013 SEG Annual Meeting Recap

By Dylan Mikesell

SEG 83rd Annual Meeting: 22-27 September 2013
George R. Brown Convention Center
Houston, Texas
USA

The NSGS organized a number of well-attended events. Below are a few highlights from those events.

Luncheon:

Tuesday was the Near-Surface Geophysics Luncheon sponsored by XRI Geophysics. The event sold out with 50 attendees and the SEG President Don Steeples delivered the keynote address.



Figure 1 SEG President Don Steeples during his NSGS Luncheon address.

During the luncheon Lee Slater (Rutgers University) received the 2013 Harold B. Mooney Award. Congratulations Lee! See the previous newsletter (http://nsgs.seg.org/e-newsletter/2013_3/index.html) for the award citation. Lee joins a distinguished group of people who have made many great contributions to the near-surface community over the years: Klaus Holliger (2012), Jonathan Nyquist (2011), John Bradford (2010), Louise Pellerin (2009), Jianghai Xia (2008), Deborah Underwood (2007), Bill Doll (2006), Phillip Romig, Jr. (2005), Ken Stokoe (2004), Jim Hunter (2003), Mats Lagmanson (2002), Charles Stoyer (2001), Gary Olhoeft (1999), Doug Crice (1998), Duncan MacNeill (1997), Peter Annan (1996), Rick Miller (1995).



Figure 2 NSGS Luncheon left to right - Lee Slater (2013 Harold Mooney Award winner), Don Steeples (SEG President), John Bradford (NSGS Past President and 2010 H. B. M. Award winner).

NSGS Business Meeting:

Prior to the dinner and reception, we held the NSGS Business Meeting. There were approximately 15 people in attendance and the major issues discussed were

- NSGS election results
- Update of the SEG/EEGS merger negotiations
- The NSGS tax status
- Possibility of new and focused near-surface books and journal special editions
- Suggestion of near-surface session topics for the SEG 2014 annual meeting.



Figure 3 NSGS and EEGS group members working on merger (left to right) - (front) Laurie Whitesell, Chris Liner, Lee Slater, Don Steeples and Jim Lococo; (back) Tom Smith, Terry Todd, Remke van Dam, John Bradford, Peter Annan and Steven Davis

Dinner/Reception:

Tuesday evening was the annual Near-Surface Geophysics Section dinner and reception at the Sambuca Restaurant in the Rice Hotel. We had approximately 70 guests, one third of which were students. Check out SEG's coverage of the 'Near Surface Evening Social.' [please link <http://www.seg.org/web/annual-meeting-2013/press/news/near-surface-reception>]

During the reception we awarded the NSGS Travel Grants. This year four students received \$500 to help defray their travel costs to present their research at the annual meeting. Congratulations to the following awardees for all of their hard work and enthusiasm to share their research with the community.

Edan Gofer, Tel Aviv University, "Surface wave anisotropy in granular media: Comparison between numerical tests and field data"

Brett Judy, University of Kansas, "Geoforensic analysis of high-resolution seismic reflection data to unravel the complex past of natural salt dissolution features in the upper 250 m"

Jordan Nolan, University of Kansas, "Near-surface salt dissolution void identification using passive MASW"

Jide Ogunbo, University of Science and Technology of China, "TEM search engine for fast near surface imaging"



Figure 4 Student travel grant winners left to right - Remke van Dam (NSGS President), Jide Ogunbo (University of Science and Technology of China), Jordan Nolan (University of Kansas) and Edan Gofer (Tel Aviv University of Israel)

We thank the student travel grant sponsors Bartington Instruments, Ltd. and Geometrics for their generous contributions. We also thank our Gold level sponsors AGI (Advanced Geosciences Inc.), Geonics Limited, Interpex Limited and Sensors and Software, Inc., as well as our Silver level sponsors Exploration Instruments LLC, IRIS Instruments, Park Seismic LLC and Vista Clara, Inc. for making this event possible.

Here are a few more photos of members enjoying the relaxed atmosphere.



Figure 5 Dinner guests left to right - Koya Suto (ASEG President), John Lane (NSGS President-elect), John Bradford (NSGS Past President), Remke van Dam (NSGS President) and Mrs. Koya Suto



Figure 6 Even more guests left to right - Jeff Henan, Andy Parsekian, Lee Slater and Baptiste Dafflon

Highlights from the 2013 Technical Program:

This year the NSGS helped organize one special session, six oral sessions, one poster session, one e-poster session and one post-meeting workshop. We thank the volunteer session chairs that helped make these a success!

Special session:

SS 1: AGU-SEG hydrogeophysics (Andrew Parsekian & Alireza Malehmir)

Oral sessions:

NS 1: Seismic reflection and tomography (John Bradford & Steve Sloan)

NS 2: Surface waves (George Tsoflias & Koya Suto)

HA/NS 1: Addressing risks and resources in humanitarian applications (John Bradford & Stephen Moysey)

NS 3: Statics (Rick Miller & Huub Douma)

NS 4: Seismoelectric, electromagnetic, and electrical methods (Louise Pellerin & Andrei Swidinsky)

Poster session:

NS P1: Seismic general contributions (Robert Ley & Ralph Bridle)

E-poster session:

NS/HA E-P1: Multidisciplinary studies and applications (Stephen Moysey & Remke Van Dam)

Post-meeting workshop:

W-20: Near surface geophysics in the dynamic coastal environment: cross the land/sea interface (John Goff and Jeff Paine)

We thank the workshop co-sponsors EEGS and the AGU Near Surface Focus Group.

Last but not least, we want to thank all of the volunteers who reviewed technical abstracts. We couldn't do this without them. Ted Asch, Michael Asten, Esther Babcock, Les Beard, Larry Bentley, Pat Berge, Steve Billings, John Bradford, Ralph Bridle, Carlos Calderon, Christina Chan-Park, Doug Crice, Les Davis, Tom Dobecki, Mine Dogan, Ray Farrell, Hancheng Ge, Tatiana Gilstrap, Erwan Gloaguen, Elliot Grunewald, Seth Haines, Kevin Hayley, Emily Hinz, Klaus Holliger, James Irving, Rob Jacob, Dush Jayawickreme, Yih Jeng, Mason Kass, John Lane, Robert Ley, Tim Long, Adam Mangel, Edgar Manukyan, Pierpaolo Marchesini, Stefano Marelli, Darcy McPhee, Giovanni Meles, Dylan Mikesell, Rick Miller, Mike Morrison, Stephen Moysey, Vanessa Nenna, Erasmus Oware, Andy Parsekian, Louise Pellerin, Dale Rucker, Jacob Sheehan, Laura Sherrod, Steve Sloan, Ben Sternberg, Koya Suto, Ryan Swanson, Robert Szerbiak, Sandra Takata, John Triantafilis, George Tsoflias, Daryl Tweeton, Deb Underwood, Jan van der Kruk, Diego Vazquez Anzola, Zhouhong (John) Wei, and Chong Zeng.

NSGS would like to thank James Schuelke for his role as the 2013 Technical Program Chair.

Next year:

We look forward to seeing NSGS members at the meeting next year in Denver, Colorado, USA. Mark you calendars for 26-31 October 2014.

Thank you to our sponsors!



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SEG Honorary Lecturer and Distinguished Lecturer Nominations

Nominations are now open through 8 January for the 2015 Spring DL and the 2015 Spring HLs: Near Surface, Europe, Pacific South, and South & East Asia. The Near Surface tour has been moved to a spring rotation due to some changes in the business office.

The nomination forms are available from Karline Threadgill (kthreadgill@seg.org); completed forms should be send to Karline. Regional HLs should be chosen preferably from the region of their tour. You should discreetly approach your nominees to inquire about availability and topic. Other than that all proceedings should remain strictly confidential.

If you have any questions, please do not hesitate to ask. Thank you for helping to strengthen this important, high-profile program

SEG/AGU Sessions at the AGU Fall meeting

Tuesday:

NS21A. NS21A. Developments and Practical Applications of the Multichannel Seismic-Data Surface-Wave Analysis Method I Posters
Convener(s): Georgios Tsoflias (University of Kansas), Richard Miller (Univ Kansas) and Julian Ivanov (University of Kansas)
8:00 AM - 12:20 PM; Hall A-C (Moscone South)

Wednesday:

NS32A. NS32A. Developments and Practical Applications of the Multichannel Seismic-Data Surface-Wave Analysis Method II
Convener(s): Georgios Tsoflias (University of Kansas), Richard Miller (Univ Kansas) and Julian Ivanov (University of Kansas)
10:20 AM - 12:20 PM; 2000 (Moscone West)

V32B. V32B. Geology, Geophysics, and Flow Modeling of Hydrothermal Alteration in Geothermal and Volcanic Systems I
Convener(s): Ludmila Adam (University of Auckland), Robert Podgorney (Idaho National Laboratory) and Thomas Driesner (ETH Zurich)
10:20 AM - 12:20 PM; 310 (Moscone South)

V33C. V33C. Geology, Geophysics, and Flow Modeling of Hydrothermal Alteration in Geothermal and Volcanic Systems II Posters
Convener(s): Ludmila Adam (University of Auckland), Robert Podgorney (Idaho National Laboratory) and Thomas Driesner (ETH Zurich)
1:40 PM - 6:00 PM; Hall A-C (Moscone South).

GEOPHYSICS Special Issue: Costal Near-Surface Geophysics

CALL FOR PAPERS, Geophysics Special Issue

Near Surface Geophysics in the Dynamic Coastal Environment:
Crossing the Land/Sea Interface

Deadline: February 28, 2014

The Near Surface Geophysics Section of SEG is soliciting contributions for a Geophysics special issue on near surface geophysics in the coastal environment. The coastal zone is a dynamic setting, undergoing significant change at many time scales driven by factors such as large storms, rising sea level, and human activity. Both land- and marine-based near-surface geophysical methods can play a significant role in understanding the many processes that impact the coastal zone. This special issue will highlight the latest developments, instruments and techniques in applying near-surface geophysical methods to the coastal zone. It will emphasize as well connections between these methods and both the sedimentary geology of the coastal zone and numerical modeling of the impacting processes.

Guest Associate Editors:

John Goff, Institute for Geophysics, Jackson School of Geosciences, University of Texas at Austin.

Jeff Paine, Bureau of Economic Geology, Jackson School of Geosciences, University of Texas at Austin.



CHIRP deployment offshore Port Aransas, Texas (photo by J. Goff)

Calendar of Upcoming Events

Dates	Title	Location
Dec 8 - 12, 2013	American Geophysical Union Fall Meeting	San Francisco, CA, USA
Mar 8 - 9, 2014	SEG/DGS Near-Surface Modeling and Imaging Workshop	Manama, Kingdom of Bahrain
Mar 16-20 2014	27th Annual Symposium on the Application of Geophysics for Engineering and Environmental Problems (SAGEEP)	Boston, MA, USA
Jun 20 - 23, 2014	6th International Conference on Environmental and Engineering Geophysics (ICEEG)	Xi'an, Shaanxi, China
Sep 15 - 17, 2014	20th European Meeting of Environmental and Engineering Geophysics	Athens, Greece

NSGS Membership

Please encourage your colleagues to join the NSGS. Membership for students is free! All NSGS members must, however, also be members of our mother society SEG.

NSGS membership exists in three classes based on the corresponding membership status with SEG:

- Active: active member of SEG (15\$ / year)
- Affiliate: associate member of SEG (15\$ / year)
- Student: student member of SEG (free!!!)

Membership applications can be found at: <http://nsgs.seg.org/member-become.php>

Job Postings

USGS Menlo Park,CA - Geophysicist

As a Geophysicist within the Geology, Minerals, Energy & Geophysics Science Center, some of your specific duties will include:

- Plan and conduct the collection and processing of geophysical data, primarily gravity, magnetic, paleomagnetic, and electrical data.
- Prepare informational data, professional reports, abstracts and presentations related to geophysical studies.
- Initiate the design and development of new geophysical field equipment.
- Perform maintenance and repairs of various field and lab equipment.

Work ENVIRONMENT:

Will be required to hike and backpack in rough terrain and lifting objects weighing up to 60 pounds.

May be exposed to inclement weather.

Must be capable of driving four-wheel-drive vehicles in off-road situations, changing tires in remote areas, and traveling in helicopters.

Fieldwork may be in areas where emergency first aid services may be difficult to obtain and may require hiking and camping for periods from several days to several weeks.

Applications are due by Thursday, January 02, 2014. More information can be found at:

<https://www.usajobs.gov/GetJob/ViewDetails/356590100>

Boise State University - Assistant Professor of Geophysics

Boise State University invites applications for a tenure track faculty position in geophysics to be filled at the level of Assistant Professor. Boise State has an internationally recognized program in near-surface geophysics with active research programs in the fields of hydrogeophysics, inverse theory, seismic/acoustic/electromagnetic wave propagation, engineering geophysics, volcanology and cryospheric science. The Boise Hydrogeophysical Research Site, Dry Creek Experimental Watershed, excellent computational facilities, an extensive pool of field equipment, and our newly completed Environmental Research Building provide state-of-the-art field and interior lab facilities to support research in our dynamic academic community.

We seek a dynamic, recent PhD who will develop an internationally recognized program that complements and supports our programs in near-surface geophysics, via external funding. Active and continued growth and development of the geophysics program, through research and teaching, is required. The successful candidate will demonstrate the potential for collaborative research efforts, providing research opportunities for students, and effective teaching of both undergraduate and graduate level geophysics courses.

Please apply online at <https://cgiss.boisestate.edu/~pm/FacultySearch/> where you will upload a cover letter, curriculum vitae, statement of research and teaching interests, and contact information for at least three references. Please reference Search Number AS-0008-13. Review of applicants will begin October 15 and will continue until the position is filled. Applications received after that point may be considered if the position is not filled from the finalist pool. For additional information contact: Geophysics Search Committee, Department of Geosciences, Boise State University, 1910 University Drive, Boise, ID 83725, geopsearch@boisestate.edu.

Boise State University is an EEO/AA Institution, Veterans preference.

Northeastern University STEM Future Faculty Fellowship Program

Northeastern University invites nominations and applications from candidates in the STEM (science, technology, engineering and mathematics) fields for the Northeastern University STEM Future Faculty Fellowship (Postdoctoral) Program.

Northeastern University's mission emphasizes translational research that addresses global challenges and enhances social wellbeing. Northeastern University strives to create a vibrant and diverse community, characterized by collaboration, creativity, and unwavering commitment to excellence and an equally unwavering commitment to exhibiting respect for one another. Northeastern celebrates diversity in all its forms and fosters a culture of respect that affirms inter-group relations and builds community.

Consistent with Northeastern's mission, vision and core values, the objectives of the STEM Future Faculty fellowship program are:

1. to encourage and promote excellence and diversity in the pool of future faculty candidates in the STEM fields at Northeastern;
2. to introduce to Northeastern's academic community qualified postdoctoral researchers in the STEM fields who are considering faculty careers;
3. to enhance opportunities for academic careers in the STEM fields for persons from diverse backgrounds who have demonstrated a commitment to an inclusive faculty and an inclusive academic experience for all students;
4. to prepare Future Faculty Fellows for possible tenure-track appointments at Northeastern;
5. to enhance the academic environment of Northeastern's STEM fields by providing opportunities for students and faculty to gain experience in multi-cultural, broadly diverse and inclusive work settings and research collaborations that improve the capacity of all their members.

More information can be found online at: <http://www.northeastern.edu/advance/recruitment/northeastern-university-stem-future-faculty-fellowship-program/>

The Department of Geology at the University at Buffalo - tenure-track faculty position.

Assistant or Associate Professor of Near Surface Geophysics or Hydrogeophysics. We seek a scholar who applies geophysical techniques to solve hydrogeologic problems. Researchers interested in developing novel approaches to characterize hydrogeologic processes and/or properties over a range of spatial scales and/or by combining data from multiple tools are of particular interest.

The successful candidate will join the Department's growing environmental group that maintains interdisciplinary collaborations within UB and internationally, and will have opportunities to participate in activities of the UB Center for Geohazards Studies. The successful candidates will be expected to develop and maintain innovative, extramurally funded research programs that build on our current research and education strengths in hydrogeology, volcanology, climate change, and ecology. The successful candidate will have a demonstrated commitment to teaching; teaching duties will involve undergraduate and graduate level courses in the candidates' specialties. Service to the discipline, department and/or university is expected. Successful candidates must have a Ph.D. degree at the time of appointment. The Department is committed to the importance of a diverse faculty. Women and minorities are particularly encouraged to apply.

Applications must be submitted through the UB Jobs website:

Near Surface Geophysics (posting #1300569)

<https://www.ubjobs.buffalo.edu/applicants/Central?quickFind=56486>

We will begin to review candidates on Oct. 1, 2013 and continue until the position is filled. Inquiries concerning these positions should be made to geology@buffalo.edu. The University at Buffalo is an Affirmative Action/Equal Opportunity Employer (AA/EOE).

Internal Number: 1300569 & 1300570

University of Wyoming - PhD Graduate Assistantship in Hydrology

A PhD assistantship in Hydrology is available at the University of Wyoming in Laramie. The successful candidate will develop and test novel methodologies for integrating hydrological and geophysical observations into numerical models to quantify sub-surface water flow and solute transport in mountainous regions. Students interested in snow hydrology, numerical modeling, and geophysical methods are encouraged to apply. The student will be enrolled in the PhD program in Water Resources / Environmental Science & Engineering (www.uwyo.edu/wrese). Research work will be conducted within the framework of the NSF funded Wyoming Center for Environmental Hydrology and Geophysics (www.uwyo.edu/wycehg). To apply, email a statement of interest, resume, GPA and GRE scores, and contact information for three references to tkellene@uwyo.edu. For more information, contact Thijs Kelleners, Associate Professor in Soil Physics, Department of Ecosystem Science & Management at 307-766-4279.