



## Near-Surface Geophysics Focus Group

Newsletter: June 2017

Dear Colleagues:

The latest Near-Surface Geophysics focus group (NSFG) newsletter is now available. Please follow this link to see the [full version online](#).

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Recent announcements of interest to the NSFG community (conferences, academic positions, graduate student opportunities, etc.) can be found on the [AGU Near-Surface Geophysics focus group website](#).

**Early-career scientists:** Check out the [NSFG early-career website](#).

Follow NSFG on [Facebook](#) and Twitter [@NS\\_AGU!](#)

Best regards,

Sarah Kruse

President, Near-Surface Geophysics Focus Group, AGU

## Near-Surface Geophysics Focus Group (NSFG) June 2017 Newsletter

### Upcoming Meetings at a Glance

Meeting (click to go to website)	Location	Meeting Dates	Submission	Registration
<a href="#">79<sup>th</sup> EAGE 2017</a>	Paris, France	12 – 15 June 2017	Closed	Pre-registration closed: 15 May 2017
<a href="#">IWAGPR2017</a>	Edinburgh, Scotland	28-30 June 2017	Closed	Closed
<a href="#">3rd AGU-SEG Hydrogeophysics Workshop</a>	Stanford, Calif.	24–27 July 2017	Closed	Registration opens: April 2017 Early registration ends: 31 May 2017
<a href="#">IAPSO-IAMAS-IAGA 2017 Joint Assembly</a>	Cape Town, South Africa	27 August to 1 September 2017	Closed	Early registration ends: 16 March 2017
<a href="#">EAGE Near Surface Geoscience 2017</a>	Malmö, Sweden	3–7 September 2017	Closed	Early registration ends: 15 July 2017
<a href="#">SEG 2017</a>	Houston, Texas	24-29 September 2017	Closed	Early registration ends: 20 July 2017
<a href="#">4th ICEG</a>	Al Ain, United Arab Emirates	9–12 October 2017	Closed	Early registration ends: 9 August 2017
<a href="#">GELMON 2017</a>	Vienna, Austria	22-24 November 2017	18 September 2017	Early registration ends: 18 September 2017

### Upcoming Events

- June 7: AGU webinar: [Introducing Virtual Showcase into your Curricula and Research Programs](#)
- June 15: Fall Meeting abstract submissions and Student travel grant applications website open
- June 15: AGU Council Meeting
- June 30: AGU Section and Focus Group Honor Recipients Announced

### AGU Updates

- **Honors Program Update**  
The AGU Honors Team is very pleased to provide you with the following updates on the Honors Program process timeline for each of the honors category:
  - Union Medals, Awards and Prizes (UMAP):*** UMAP selection committee review and deliberation is ongoing. The deadline for committees to submit their final recommendations to AGU is 15 June 2017. The Council Leadership Team (CLT) call to officially approve these recommendations is scheduled for 11 July. Official announcement of medals, awards and prizes recipients is scheduled in late July.
  - Union Fellows:*** Section and Focus Group Fellows Committees review of all Fellows nominations for their respective S/FG is completed. The Union Fellows Committee (UFC) is currently reviewing all nominations that made it in the second round of reviews. The UFC face to face meeting to select 61 new AGU fellows is scheduled for 6-7 July. Official announcement of this year's Class of AGU Fellows is scheduled in mid-July

**Section/Focus Group Awards/Lectures:** Section/Focus Group award selection committees are currently reviewing nominations for their respective section/focus group. The deadline to submit final recommendations for S/FG awards and lectures to AGU is 16 June 2017. Official announcement of this year's recipients is scheduled tentatively on 30 June.

If you have any questions regarding the above, please feel free to contact [Beth Paredes](#).

- The updated AGU Section and Focus Guidebooks are now available! These guidebooks provide detailed information on membership statistics, AGU staff and affiliate role responsibilities, committee information, calendars, various program policies and more. Be sure to visit the resources sidebar on the (section/focus group name) website to read more.
- AGU has published [Earth and Space Science is Essential to Society](#), a special collection of commentaries from AGU journals. This anthology explains the relevance of geoscientific research for the and the societal benefits of research through a compilation of collection, featuring 25 essays from notable scientists highlighting the important role Earth and space science research plays in society. They discuss the critical role of research, the growing importance of data and the increasing globalization of the scientific enterprise. Together, they highlight how Earth and space science research can help grow our economy and enable our society to thrive.
- The newly launched AGU Webinars channel is a great informational source for the Earth and space sciences. Each week will feature guest speakers from the Earth and space science community presenting topics important to you! Tune in Thursdays at 2 p.m. ET. and visit [webinars.agu.org](http://webinars.agu.org) for the schedule of upcoming webinars and to watch past webinars.

## NSFG Student Spotlights and Research Highlights

### Kirk Scanlan, University of Alberta, Canada

Prior to university, Kirk Scanlan had never been exposed to geophysics, yet his keen fascination in geography, applied math and physics steered him into the Earth Sciences program at Western University in Canada. This program offered a handful of geophysics courses capturing his curiosity as he explored different ways to understand the Earth and its changing processes. Kirk's interest in geophysics continued to build as he stepped through different numerical-based analyses used for imaging the subsurface environment. It quickly became clear to him that a degree in Earth Science would not only fulfill his desire to travel and work outdoors, but provided him an opportunity to combine his interests in applied sciences and geography to investigate Earth problems.

Then during a geophysics field course, he experimented with several near-surface field methods to non-invasively collect subsurface information in order to map geologic and man-made structures. Of all the methods, ground penetrating radar (GPR) caught his attention the most with its ability to adapt to a large range of environments for multiple imaging purposes. This inspired Kirk to pursue a research project on the suitability of using GPR to image paleoseismic indicators in areas with low earthquake recurrence intervals for his undergraduate thesis. His demonstrated aptitude for geophysics earned him the Geophysics Scholarship for Excellence, Gold Medal in Geophysics, and the Charles Carmichael Prize in Earth Science from Western University. Kirk later earned his Master of Science in Applied Geophysics in 2013 from the IDEA League program (<http://idealeague.org/>), a focused group of European universities specializing in science and



technology including Delft University of Technology, ETH Zurich, and RWTH Aachen University. Here, he took an engineering geophysics course which revealed to him the natural marriage between near-surface geophysics and geotechnical engineering investigations. These emphasized benefits that geophysical methods offer for such practical applications motivated Kirk to pursue a Ph.D. in geotechnical engineering at the University of Alberta. Now completing his fourth year within the [Canadian Rail Research Laboratory](#), he has been using his work as an opportunity to strengthen the bridge between these disciplines while broadening his own research expertise as an applied geophysicist.

Kirk recently presented his current Ph.D. work at the 2016 AGU Fall Meeting, where he received an Outstanding Student Presentation Award for his poster titled, “Difficulties in Interpreting Ballast Degradation Level Estimates from Synthetic Ground-Penetrating Radar Data” ([NS33B-1967](#)). The upper layer of railway track foundations are comprised of crushed rock aggregate called ballast. The quality of these ballast layers degrades over time as fine-grained particles accumulate between the aggregates. This degradation can lead to deformation of the ballast layer which alters the alignment of the rails and increases the risk of train derailments. In an effort to tackle this problem while minimizing cost and time, Kirk has been using GPR to observe where these fines exist along railways in Alberta based on changes in the dielectric permittivity within the ballast. His synthetic data analysis revealed that several environmental factors play a large role in the success of identifying these fine-grained materials within the track foundation. With a simulation-based approach, he was able to estimate bulk permittivity using a four-phase volumetric mixing law to simulate 400 MHz GPR measurements allowing him to analyze attribute variability within the foundation.

For more information about GPR as related to railway investigations, please contact [Kirk Scanlan](#).

*\*Interested in being highlighted, or know a student who should be? Please email [Chi Zhang](#) for more information about the Student Spotlight. We are also seeking research highlights that showcase use of near-surface geophysics in other [AGU sections and focus groups](#). If you are interested in writing a short, one-page highlight, please contact [Chi Zhang](#).*

## FYIs

### 8<sup>th</sup> International Conference on Environmental and Engineering Geophysics

- The Chinese Central Government put forward the goal of the construction of urbanization in China—“Three 100 Million People”. In the next 10 years, China's urbanization process will run at the highest speed in its history of China. Near surface is the most complex, sensitive, and fragile part of the Earth. The near surface furnishes the vast majority of necessary materials for human living. As a result, China's urbanization relies on a “healthy” and sustainable near surface. Due to broad applications of geophysical techniques in the environmental and engineering fields, they are of great significance for the sustainable development of the human society. To promote the communication of environmental and engineering geophysical problems, and provide a world-class forum for new technical advances, developments, and applications in environmental and engineering geophysics, the 8th International Conference on Environmental and Engineering Geophysics (ICEEG2018) will be held at the campus of Zhejiang University in Hangzhou, the most beautiful city in China, from June 10 to 13, 2018. We sincerely welcome the leading experts, international media, young professionals, and students to contribute and attend the meeting. This conference will offer an opportunity to all geophysicists and engineers to present recent achievements including case studies and theoretical studies in related techniques, software, and instruments. Expanded abstracts should not exceed 6 pages (including figures), and in the abstract format of the SEG annual meeting. The deadline for submission of abstracts is December 31, 2017. Please send abstracts and papers to [Email box](#).

## SAGEEP Updates

- SAGEEP 2018 will be held in Nashville Tennessee, a region of North America with numerous attributes of interest to near surface geophysicists. Karst features, including Mammoth Cave, are abundant within a short distance of

Nashville; a few hundred miles west lies the New Madrid fault zone, site of two of the largest earthquakes in the continental US (1811-1812), and east Tennessee has issues related to coal mining as well as chemical and nuclear wastes. The Tennessee river flows east to west across most of the state with numerous dams and levees. These features, along with topics of national and international interest (infrastructure, renewable and unconventional energy, water, geohazards, unexploded ordnance, etc.) will form the core of a timely and relevant technical program.

Technical Co-Chairs [Andrew Parsekian](#) and [Oliver Kuras](#) are currently soliciting recommendations for topics for Special Sessions and persons willing to help develop those sessions (July 31 deadline). If you would like to help coordinate a session please contact the technical co-chairs. Questions or recommendations related to the conference can be sent to General Chair [William Doll](#).

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**To contribute material to the NSFG newsletter, send an email to [Chi Zhang](#).**

**Deadline:** Material must be received 5 full business days before the first of the month.

**Guidelines for submissions:** All members are welcome to submit content of interest to the near-surface community. Please keep messages brief and provide contact information and (if available) a web address for additional information.

**Get your message out to NSFG members faster.**

You no longer need to wait until the end of the month to share an important or time-sensitive contribution via the newsletter. Appropriate contributions to the newsletter will also be shared ASAP via Twitter. Please note that only NSFG members who follow [@NS\\_AGU](#) will receive Twitter announcements, so make sure that you sign up!

