



**American Geophysical Union  
Near-Surface Geophysics Focus Group (NSFG)  
Newsletter: November 2016**

**In Brief:**

**1. AGU Updates**

- 1.1 NSFG Luncheon at Fall Meeting—40 Complementary Student Tickets Available
- 1.2 2016 AGU Election Results
- 1.3 Help NSFG Benefit from the AGU Section and Focus Group Incentive Program!
- 1.4 Student Spotlights and Research Highlights

**2. Journal Information and Special Issue Call for Papers**

- 2.1 Induced Polarization—Narrowing the Gap Between Theory and Observations
- 2.2 Special Monograph on Levees and Dams: Advances in Geophysical Monitoring and Characterization

**3. Upcoming Conferences and Workshops**

- 3.1 Meetings Overview
- 3.2 SAGEEP 2017 to Be Colocated with the National Ground Water Association Hydrogeophysics and Deep Groundwater Conference—Abstracts due 14 November 2016
- 3.3 NovCare Conference 2017
- 3.4 Save the Date—The 3rd AGU-SEG Hydrogeophysics Workshop: Imaging the Critical Zone

**4. Position Announcements**

- 4.1 Faculty Opening in Geophysics, Massachusetts Institute of Technology
- 4.2 Faculty Position: Seismology for Mineral Exploration, Laurentian University

**5. Student Spotlight: Folarin Kolawole, Oklahoma State University**

Recent announcements of interest to the near-surface 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!](#)

## 1. AGU Updates

### 1.1 NSFG Luncheon at Fall Meeting—40 Complementary Student Tickets Available

The NSFG will provide 40 complimentary student tickets to the focus group luncheon, Tuesday, 13 December, 12:30–1:30 p.m. The first 40 students to register for the luncheon will receive the free tickets. Please register for the meeting and luncheon soon!

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### 1.2 2016 AGU Election Results

Congratulations to NSFG president-elect Xavier Comas and secretary Chi Zhang! Newly elected leaders begin their 2-year term on 1 January 2017. Complete election results can be found [here](#).

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### 1.3 Help NSFG Benefit from the AGU Section and Focus Group Incentive Program!

Please consider giving to AGU so that NSFG can take advantage of the 2016 Donor Incentive Program. This tax-deductible gift will not only assist AGU but will support our focus group's initiatives. If only 5% of our members (i.e., about 20 people) give \$50 or more in 2016, AGU will provide NSFG with \$1000. If 10% of our members give \$50 or more, AGU will provide \$3000! Given that we are a small focus group, these extra funds would make a real impact on our efforts in support of students and early career scientists. Any donations to AGU qualify, regardless of which program you are supporting! To learn more, please visit the [incentive program website](#) or contact AGU's Development Department via [email](#) or at 202-777-7434.

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### 1.4 Student Spotlights and Research Highlights

Interested in being highlighted, or know a student who should be? Please email [Sarah Morton](#) for more information about the Student Spotlight. Take a look at this month's Student Spotlight on Folarin Kolawole at the end of the newsletter.

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 [Burke Minsley](#).

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## 2. Journal Information and Special Issue Call for Papers

### 2.1 Induced Polarization—Narrowing the Gap Between Theory and Observations

**Short abstract deadline:** 15 November 2016

**Full-paper submission deadline:** 15 February 2017

**NSG special issue publication:** December 2017

**Early online publication:** Accepted papers appear early online after galley proof

#### Call for papers

Following the 2016 [International Workshop on Induced Polarization](#), we are soliciting manuscripts for a special issue of *Near Surface Geophysics* (NSG) dedicated to induced polarization with application to the near-surface. The focus will be on new developments toward narrowing the gap between theory, laboratory findings, and field experiments.

Induced polarization (IP) is a nonintrusive geophysical method used to image the subsurface. While historically developed to detect ore bodies, the IP method has emerged more recently as an exciting technology for environmental applications. Promising applications of the IP method are particularly seen in hydrogeophysics, biogeophysics, and the characterization of contaminated sites.

Today, the IP method has developed significantly in theoretical understanding, laboratory characterization, and field methodologies. However, there is a growing need for a better understanding of the links between these levels. The aim of this special issue of *Near Surface Geophysics* is to narrow the gap between theory, laboratory findings in controlled environments, and field experiments.

With this aim, we encourage the submission of papers that present new insights on the IP mechanism, novel applications and case studies of IP, technical advances in the instrumentation, new data interpretation, advancements in data acquisition and signal processing, new forward modeling, and inversion approaches.

#### Submit your paper

Please inform one of the following guest editors about your intention to contribute to the special issue of NSG by sending a short (one-page) abstract by 15 November 2016. Successful authors will be required to submit their full papers by 15 February 2017.

Final manuscripts need to be submitted through the [Near Surface Geophysics online submission system](#). Please indicate that the manuscript is intended for the IP special issue in the online submission system and in a cover letter to the editor. Please also check the *Near Surface Geophysics* website for instructions on manuscript preparation. Manuscripts that are submitted to this special issue will undergo the standard *Near Surface Geophysics* review process; authors may also be asked to contribute to the review process.

#### Publication date

The special issue will be published in December 2017, but all the accepted papers will be published as Early Online articles as soon as the galley proofs are corrected.

#### Guest editors

Gianluca Fiandaca, Aarhus University, Denmark; [gianluca.fiandaca@geo.au.dk](mailto:gianluca.fiandaca@geo.au.dk)

Andreas Hördt, Technical University of Braunschweig, Germany; [a.hoerdt@tu-bs.de](mailto:a.hoerdt@tu-bs.de)

Adrian Flores Orozco, Technical University of Vienna, Austria; [adrian.flores-orozco@geo.tuwien.ac.at](mailto:adrian.flores-orozco@geo.tuwien.ac.at)

## 2.2 Special Monograph on Levees and Dams: Advances in Geophysical Monitoring and Characterization

**Note:** In order to accommodate recent requests from authors, we have *extended* the deadline for manuscripts until **1 December 2016**.

This peer-reviewed volume will inform policy makers, engineers, and Earth scientists about the current and emerging role of geophysics in addressing environmental processes, assessments, and policy directions related to new and existing dams and levees.

Until recently, much of the focus of geophysicists has been confined to characterization and remediation, without consideration of the complex relationship between natural processes (e.g., floods) and human activities associated with the design and ongoing dependence on these structures. It is important to enhance communications between geoscientists, engineers, and policy makers to improve the way in which these structures are managed.

Over time, unexpected changes in the physical properties of these man-made structures may or may not compromise their integrity, and such questions require creative (and preferably noninvasive) assessment approaches. Monitoring and remediation of existing structures can be challenging because, often, failures are at a smaller scale and recertification procedures are at a larger scale than envisaged during construction or planning. New, efficient risk management approaches may benefit greatly from geophysical methods that can address these scaling issues.

We encourage innovative and substantiated geophysics-related ideas. Potential topics include, but are not limited to, placement of geophysical tools within the management policies of levees and dams; small and mid-sized laboratory experimental approaches; field characterization studies using electromagnetic, seismic, potential field, and integrated methods; inverse modeling; regional overviews as conditioned by climatic zones; statistical analyses and tools for improved management processes such as age strengthening or weakening of structures; and monitoring of important processes such as piping and fluid flow.

We expect the monograph to include 10–20 book chapters, each about 8–20 printed pages in length, containing color and/or black-and-white figures and tables.

**Timetable: Extended** submission deadline: 1 December 2016; Reviews and final manuscript: 1 June 2017; Expected publication: December 2017.

For suggestions on manuscript preparation, please see the [Springer submission guidelines](#). Upon submission of manuscript (email), please include the contact information for four potential reviewers.

Juan M. Lorenzo and William E. Doll, Editors. For all correspondence, please email [gllore@lsu.edu](mailto:gllore@lsu.edu), Subject: DAL

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### 3. Upcoming Conferences and Workshops

#### 3.1 Meetings Overview

Meeting (click to go to website)	Location	Meeting Dates	Submission	Registration
<a href="#">AGU Fall Meeting</a>	San Francisco, California	12–16 December 2016	Closed	Open
<a href="#">SAGEEP 2017</a>	Denver, Colorado	19–23 March 2017	14 November 2016	TBA
<a href="#">European Geosciences Union General Assembly</a>	Vienna, Austria	23–28 April 2017	11 January 2017	Early registration ends: 16 March 2017
<a href="#">NovCare 2017</a>	Dresden, Germany	6–9 June 2017	27 February 2017	Early registration ends: 1 April 2017
<a href="#">3rd AGU-SEG Hydrogeophysics Workshop</a>	Stanford, California	24–27 July 2017	TBA	TBA
<a href="#">EAGE Near Surface Geoscience 2017</a>	Malmö, Sweden	3–7 September 2017	15 April 2017	Early registration ends: 15 July 2017

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#### 3.2 SAGEEP 2017 to Be Colocated with the National Ground Water Association Hydrogeophysics and Deep Groundwater Conference—Abstracts due 14 November 2016

The deadline for the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP) 2017 abstract submissions has been extended to 14 November to allow for synchronization with the National Ground Water Association's revised submission schedule.

The [30th Anniversary SAGEEP geophysics symposium](#) (19–23 March 2017) will be held concurrently with a National Ground Water Association meeting (20–21 March 2017). The joint meeting promises a rich technical program and an unprecedented opportunity to exchange ideas across a diverse scientific and professional network. The event will host an international audience of hydrogeologists, geophysicists, and engineers from a wide range of industry sectors, as well as academic and government institutions.

Read more about sessions and abstracts [here](#), or [submit your abstract online](#).

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#### 3.3 NovCare Conference 2017

The 2017 NovCare conference, Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice, which is the fifth conference of this type in a series, will take place from 6 to 9 June 2017 in Dresden, Germany. The conference is jointly organized by the Institute for Groundwater Management, Technische Universität Dresden, Germany; the Helmholtz Centre for Environmental Research—UFZ, Germany; and the Kansas Geological Survey, University of Kansas, United States.

Various topics on exploration and monitoring technologies, data assessment of natural and anthropogenic environmental impacts, and data integration into numerical models to improve process

understanding will be presented to a broad audience of scientists, consultants, and decision makers at [NovCare 2017](#).

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### **3.4 Save the Date—The 3rd AGU-SEG Hydrogeophysics Workshop: Imaging the Critical Zone**

Join us at Stanford University on 24–27 July 2017.

In this [workshop](#), we will bring together hydrogeophysicists and other critical zone scientists to explore new ways to work together, using recent advances in hydrogeophysics to address key scientific questions about the critical zone.

Organizing Committee: Rosemary Knight and Kristina Keating (cochairs), Anja Klotzsche, Kate Maher, Daniella Rempe, Kamini Singha

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## **4. Position Announcements**

### **4.1 Faculty Opening in Geophysics, Massachusetts Institute of Technology**

The Department of Earth, Atmospheric, and Planetary Sciences at the Massachusetts Institute of Technology invites applications for a tenure-track position in the broad area of geophysics, including theory, observation, and experimentation. We seek an outstanding scientist with the potential to conduct innovative research and excel in teaching at the undergraduate and graduate levels. Applicants must hold a Ph.D. in geophysics or a related field by the start of employment. A complete application must include a curriculum vitae, one- to two-page descriptions of research and teaching plans, and three letters of recommendation.

Applications are being accepted at [Academic Jobs Online](#). To receive full consideration, complete applications must be received by 15 December 2016. Search contact: [Ms. Karen Fosher](#), HR Administrator, EAPS, 54-924, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139-4307.

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### **4.2 Faculty Position: Seismology for Mineral Exploration, Laurentian University**

As part of the recently announced [Harquail School of Earth Sciences](#) and [Metal Earth initiatives](#), Laurentian University in Sudbury, Canada, is advertising to fill four positions in exploration targeting, Precambrian geology, Earth systems modeling, and **seismology applied to mineral exploration**. As a major part of the research program, the seismologist is expected to work on approximately 10 seismic reflection lines that are being planned to investigate the lithospheric structure in the Superior province of the Canadian Shield.

A link to descriptions of the positions and more details can be found [here](#).

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## 5. Student Spotlight: Folarin Kolawole, Oklahoma State University

While growing up in Nigeria, Folarin Kolawole spent his teenage days hiking the granitic terrain within Africa's passive margin. He often questioned how Earth processes influenced his surroundings and if he could make a career out of his desire for adventure while feeding his curiosity about the Nigerian environment. This led Folarin to geophysics and applied geology at the Federal University of Technology Akure (FUTA), where he pursued a remote sensing research project to identify emplacement tectonic signatures related to the Precambrian Idanre Batholith. These signatures, which support the success of mineral exploration, were derived from fracture characteristics such as the distribution of fracture frequency



and length with respect to their orientation within different lithologies. His immense efforts earned him Best Research Thesis of the Year at FUTA and a [publication](#) in the journal *Comunicações Geológicas*.

Folarin has been determined to use his geophysical education and work experience to promote the local geoscience community while encouraging the younger generation to gain an improved appreciation for the environment. Before heading to graduate school at Oklahoma State University (OSU), Folarin worked for several years at the China National Petroleum Corporation as an on-site quality-control geoscientist. This opportunity helped him further develop his research toolbox and enhance his capabilities as a scientist, leader, and communicator. After 3 years in the industry, Folarin began his graduate study at OSU, where he was awarded the Skinner Fellowship and Decker Dawson Graduate Fellowship in Geophysics. Recipients of these awards are perceived to be high-achieving academic scholars who demonstrate outstanding leadership. These traits have been derived not only from Folarin's early career work but largely from his Nigerian tourism company, [Naijatreks Adventure Company](#). He started this company in 2003 with the determination to help others "explore the hidden wealth in the wilds of Nigeria, by encouraging adventure travel within Nigeria." When Folarin is not working on his master's thesis research, he is outdoors backpacking and climbing rocks around Oklahoma, Arkansas, and Colorado.

Now in his second year, he has been using electrical resistivity tomography and aeromagnetic methods to image earthquake deformational zones within the Malawi Rift. This area is within the youngest segment of the East African Rift System and consists of some of the most complex tectonic systems in the world. Folarin has been using dipole-dipole and Wenner-Schlumberger arrays for combined processing to improve his ability to understand and resolve his target zone at varying depths. Since these zones can be characterized by changes or anomalies in the electrical field, he has been investigating the local petrophysical properties and their relation to variations in the rupture zone's stress field. Folarin will be presenting his initial findings at the upcoming AGU Fall Meeting, focusing on the origin and deformation along the fault that ruptured during the 2009 Karonga earthquake (T51C-2933) as well as a side research project on the September 2016 Oklahoma earthquake.

For more information about near-surface applications to earthquake deformation zones or the Nigerian outdoors, please [contact Folarin](#).

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

**Deadline:** Material must be received five 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!