



Near-Surface Geophysics Focus Group

Newsletter: July 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](#).

In this month's newsletter:

1. Upcoming Meetings at a Glance

2. Upcoming Events

- Fall Meeting abstract submissions
- Fall Meeting Student travel grant applications

3. AGU Updates

- Abstracts Opens for Fall 2017 Virtual Poster Showcase
- Fall Meeting Abstract Submissions Now Open
- Fall Meeting Near-Surface Geophysics sessions
- Fall Meeting Student Travel Grant Opportunities
- AGU Webinars channel
- AGU GSSI student research grant recipient - Wilhelm Fraundorfer

4. NSFG Updates

- New Student Representative - Matthew Sirianni

5. NSFG Student Spotlight: Matthew Sirianni, Florida Atlantic University

6. FYIs

- Call for Participation – Detection of Anomalies using Geophysical Methods
- SAGEEP updates
- Webinar 'Down to Earth with an Electric Hazard from Space
- Employment Opportunities
- Proposed Elimination of the USGS Geomagnetism Program

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) July 2017 Newsletter

Upcoming Meetings at a Glance

Meeting (click to go to website)	Location	Meeting Dates	Submission	Registration
<u>3rd AGU-SEG Hydrogeophysics Workshop</u>	Stanford, Calif.	24–27 July 2017	Closed	Registration opens: April 2017 Early registration ends: 31 May 2017
<u>IAPSO-IAMAS-IGA 2017 Joint Assembly</u>	Cape Town, South Africa	27 August to 1 September 2017	Closed	Early registration ends: 16 March 2017
<u>EAGE Near Surface Geoscience 2017</u>	Malmö, Sweden	3–7 September 2017	Closed	Early registration ends: 15 July 2017
<u>SEG 2017</u>	Houston, Texas	24-29 September 2017	Closed	Early registration ends: 20 July 2017
<u>4th ICEG</u>	Al Ain, United Arab Emirates	9–12 October 2017	Closed	Early registration ends: 9 August 2017
<u>GSA 2017</u>	Seattle, Washington	22-25 October 2017	1 August 2017	Early registration ends: 18 September 2017
<u>GELMON 2017</u>	Vienna, Austria	22-24 November 2017	18 September 2017	Early registration ends: 18 September 2017
<u>AGU 2017</u>	New Orleans, Louisiana	11-15 December 2017	Early Abstract Submissions: 26 July 2017 Abstract Submissions: 2 August 2017	TBD

Upcoming Events

- July 26: Fall Meeting early abstract submission deadline
- August 9: Fall Meeting Student Travel Grant application deadline

AGU Updates

- **Abstracts Open Soon for Fall 2017 Virtual Poster Showcase**
Abstract submissions open **4 July** for the fall Virtual Poster Showcase (VPS) for undergraduate and graduate students. Encourage your students to submit abstracts at virtualposter.agu.org. To learn more about the benefits of participating in VPS, [watch this video](#) where a student and a faculty member share their experiences about the program. **Abstract submission deadline:** 30 September.
- **Fall Meeting Abstract Submissions Now Open**

Showcase your research to an international audience, debate with your peers, and find new ways to create a positive impact on society—only at Fall Meeting. This is the largest and most influential event dedicated to advancing Earth and space science. Don't miss your opportunity to accelerate your career. And if you submit early you'll have a chance to win a US\$100 gift card! **Early Abstract Submission Deadline:** 26 July, 11:59 P.M. ET **Submit abstracts [here](#).**

Encourage your students to check the OSPA box on the special programs page indicating their interest in participating in the [Outstanding Student Paper Award](#) (OSPA). Last year, over 3,000 students chose to participate and received valuable feedback on their presentation and research skills. Not a student? OSPA needs member volunteers to help judge student posters. Last year there were over 9,000 judge slots needing to be filled. Give back to the student community by volunteering as an OSPA [judge](#). Non-student members can also check the OSPA box to indicate their interest in volunteering.

Encourage your students to check the mentoring box on the special programs page indicating their interest in participating in AGU's Mentoring Programs. Fall Meeting offers opportunities for mentors and mentees alike in the [Undergraduate Mentoring Program](#) (UMP), [Career and Research Advice Mentorship](#) (CRAM), and [Sharing Science Mentoring Program](#).

- **Fall Meeting Near-Surface Geophysics sessions**

In addition to topics we host every year, we have innovative sessions on anthropogenic targets, time-lapse imaging, induced seismicity, landslides, and open-source software.

NS001. Advances in Exploration Geophysics

Kennedy O Doro, FUGRO Consult GmbH, Burgwedel, Germany, **Anandaroop Ray**, Chevron Corporation Houston, Geophysical R&D, Houston, TX, United States, **Georgios P Tsoflias**, University of Kansas, Lawrence, KS, United States and **Louise Pellerin**, Green Geophysics, Berkeley, CA, United States

NS002. Application of airborne geophysical methods to the near surface environment

Paul Bedrosian, USGS, Denver, CO, United States and **Lyndsay B Ball**, USGS Central Region Offices Denver, Denver, CO, United States

NS003. Earth Imaging from the Surface to the Upper Mantle

Richard Giles Chopping, Australian National University, Canberra, ACT, Australia, **Juerg R Hauser**, CSIRO, Mineral Resources Flagship, Perth, Australia, **Luk Peeters**, CSIRO Land and Water Canberra, Canberra, Australia and **Erdinc Saygin**, The University of Western Australia, Perth, Australia

NS004. Geophysical characterization of coupled cold regions hydrology and permafrost dynamics

Andy Parsekian, University of Wyoming, Department of Geology & Geophysics, Laramie, WY, United States, **Martin A Briggs**, USGS Office of Groundwater, Reston, VA, United States, **Burke J Minsley**, USGS, Denver, CO, United States and **Baptiste Dafflon**, Lawrence Berkeley National Laboratory, Berkeley, CA, United States

NS005. Geophysics for Anthropogenic Targets: Archeological, Forensic, Engineering, and UXO Applications (Possible Alternate Format)

Sajad Jazayeri¹, **Charly Bank**² and **Sarah Kruse**¹, (1)University of South Florida Tampa, Tampa, FL, United States(2)University of Toronto, Department of Earth Sciences, Toronto, ON, Canada

NS006. Hydrogeophysical Methods for Groundwater Evaluation, Management, and Modeling

John W Lane Jr, USGS Office of Groundwater, Reston, VA, United States and **Esben Auken**, Aarhus University, Department of Geoscience, Aarhus C, Denmark

NS007. Induced Seismicity in the USA and Canada: Novel Geophysical Methods and Mitigation

Georgios P Tsoflias, University of Kansas, Lawrence, KS, United States and **Tandis S. Bidgoli**, University of Kansas, Kansas Geological Survey, Lawrence, KS, United States

NS008. Landslide Geophysics: Advances in the Characterization and Monitoring of Unstable Slopes

Sebastian Uhlemann¹, **Jonathan Edward Chambers**¹ and **Angela Perrone**², (1)British Geological Survey Keyworth, Nottinghamshire, NG12, United Kingdom(2)CNR Institute of Methodologies for Environmental Analysis, Potenza, Italy

NS009. Near Surface Geophysics General Contributions

(Poster Only Session)

Matthew Sirianni¹, Xavier Comas¹, Bruce D Smith² and Andy Parsekian³, (1)Florida Atlantic University, Geosciences, Boca Raton, FL, United States(2)USGS Central Region Offices Denver, Denver, CO, United States(3)University of Wyoming, Department of Geology & Geophysics, Laramie, WY, United States

NS010. Open-Source Software in the Geosciences

(Panel Format)

Lindsey Justine Heagy¹, Luz Angélica Caudillo Mata¹, Anna Kelbert² and Jared Peacock³, (1)University of British Columbia, Vancouver, BC, Canada(2)USGS Central Region Offices Denver, Denver, CO, United States(3)U.S. Geological Survey, Menlo Park, CA, United States

NS011. Time-lapse and Baseline Geophysical Studies in Coastal Zones

Juan M Lorenzo¹, Juan M Lorenzo¹ and John Goff², (1)Louisiana State University, Baton Rouge, LA, United States(2)University of Texas at Austin, Austin, TX, United States

NS012. Time-lapse monitoring of Earth's interior

Vladimir Kazei, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia and **Dmitry Borisov**, Princeton University, Princeton, NJ, United States

H013. Advances in petrophysics for hydrogeophysics and near surface geophysics

Damien Jougnot, University Pierre and Marie Curie Paris VI, UMR METIS, Paris, France, **Yuxin Wu**, Lawrence Berkeley National Laboratory, Berkeley, CA, United States and **Kristina Keating**, Rutgers University Newark, Earth and Environmental Sciences, Newark, NJ, United States

S010. Frontiers of uncertainty quantification in geoscientific inversion

Jan Dettmer, University of Calgary, Department of Geoscience, Calgary, AB, Canada, **Vedran Lekic**, University of Maryland College Park, College Park, MD, United States, **Burke J Minsley**, USGS, Denver, CO, United States and **Anandaroop Ray**, Chevron Corporation Houston, Geophysical R&D, Houston, TX, United States

S013. Fiber-Optic Distributed Acoustic Sensor (DAS) for Geophysical and Industrial Applications

Yingping Li, Shell Houston, Houston, TX, United States, **Biondo C. Biondi**, Stanford University, Stanford, CA, United States, **Martin Horst Karrenbach**, Organization Not Listed, Washington, DC, United States and **Mahmoud Farhadiroushan**, Silixa Ltd., Hertfordshire, United Kingdom

S029. Understanding the influence of near-surface materials on seismic wave amplitudes: Methods for measuring, modeling and using site response

Thomas L Pratt, USGS Headquarters, Reston, VA, United States, **William J Stephenson**, USGS Central Region Offices Denver, Denver, CO, United States and **Chris H Cramer**, University of Memphis, CERI, Memphis, TN, United States

- **Fall Meeting Student Travel Grant Opportunities**

Applications are being accepted for [Fall Meeting Student Travel Grants](#). Encourage students in your Section/Focus Group to apply. Opportunities include:

- Fall Meeting [General Student Travel Grant](#)
- Fall Meeting [Berkner Travel Fellowship](#)
- [David E. Lumley Young Scientist Scholarship](#)
- [David S. Miller Young Scientist Scholarship](#)
- [Data Visualization and Storytelling Competition](#)
-

- **AGU Webinars Launch**

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 for the schedule of upcoming webinars and to watch past webinars.

The AGU Webinars team is always on the lookout for great topics and speakers. Feel free to send your ideas and feedback to webinars@agu.org.

- **AGU GSSI student research grant recipient**

[Wilhelm Fraundorfer](#) has been selected to receive the 2017 AGU GSSI student research grant! Congratulations, Will!

NSFG Updates

- The AGU Near Surface Focus Group is happy to present [Mr. Matthew Sirianni](#) as our new Student Representative. Matt is currently a PhD student in the Geosciences program at Florida Atlantic University. He graduated from Bucknell University in 2014 where he worked in several research projects with Dr. Rob Jacob involving the use of near surface geophysics. Matt is currently exploring the applicability of near surface geophysical methods to better understand biogenic gas accumulation and release in peat soils and how sea level rise may alter gas dynamics in the Florida Everglades. On behalf of the entire AGU Near Surface Focus Group executive committee, we welcome Matt as our new Student Representative and look forward to start working with him.

The AGU Near Surface Focus Group is grateful to the dedicated service of [Ms. Sarah Morton](#) as our group's Student Representative. Sarah is a PhD candidate in the Department of Civil, Environmental, and Architectural Engineering at the University of Kansas, investigating the use of seismic surface waves for near-surface imaging. Sarah has served NSFG tirelessly for over three years as the group's liaison to student members, coordinating fall AGU meeting student activities, serving the NSFG executive committee and communicating NSFG initiatives to student members through social media. Sarah has been an advocate of near-surface geophysics across societies, also serving as Student Program Lead of the Society of Exploration Geophysicists (SEG) Near Surface Technical Section. We thank Sarah for her contributions to near surface geophysics and to the AGU.

NSFG Student Spotlights and Research Highlights

Matthew Sirianni, Florida Atlantic University

This month, the Focus Group welcomes third year Ph.D. student Matt Sirianni as the new Student Representative of the Near-Surface Geophysics Executive Committee. Matt has been an active member of AGU and NSFG for over four years presenting various projects in [2013](#), [2015](#), and [2016](#). One of his primary goals is to not only be an effective voice for students, but specifically help mentor near-surface undergraduate student members by providing them with a clear pathway through the often overwhelming AGU community. This task is in part motivated by his tenure as an event supervisor for the Florida Science Olympiad. Given the great breadth of research within the geosciences, Matt understands the allure each sub-discipline can create, which subsequently makes specializing that much more difficult. Much to his delight, he has managed to combine his three favorite aspects of geoscience into one collaborative dissertation project in geophysics, hydrogeology, and geochemistry.

Prior to choosing geophysics, Matt originally considered pursuing hydrogeology or geomorphology during his undergraduate degree in Environmental Geology at Bucknell University. At this point during his undergrad, he had not yet taken a geophysics course in school, but while searching for his honors thesis topic, he was presented with the opportunity to join a microgravity survey project with Dr. Rob Jacob. For this project, Matt used a gravimeter in the field to investigate alluvium thicknesses along the West Branch of the Susquehanna River in central Pennsylvania. From these measurements, he found that heterogeneities in alluvium thickness did not correspond to the current location of the West Branch of the Susquehanna River, but instead may be evidence of the river's Pleistocene location and potential glacial ice dam scour. This project provided Matt with a hands-on learning experience, and he credits his passion for geophysics to the



excellent teaching and guidance he received while at Bucknell University. This honors project, which he presented at the 2013 AGU Annual Meeting, set the stage for Matt's future career in geophysics and motivated Matt to attend Florida Atlantic University (FAU) in 2014 for a joint Master's and Ph.D. program in Geosciences.

Upon entering graduate school, Matt shifted his focus to using ground penetrating radar (GPR) as a mechanism for investigating how biogenic (CH₄/CO₂) gas fluxes within wetland soils vary spatially and temporally across different vegetation communities, and how these processes are affected by sea level rise. Recently he has been using GPR, time-lapse photography, gas chromatography, constant head permeameter tests and other ecological techniques to observe how changes in salinity affect the hydraulic conductivity and biogenic gas production/release rates of freshwater peat soils in the greater Everglades region of South Florida. Matt also has been working with the United States Geological Survey in Big Cypress National Park to understand how spatial and temporal scales affect gas flux observations as well as estimate the small-scale contributions of organic and calcitic soils to gas exchanges measured by eddy covariance towers using a combination of geophysical, hydrological, and ecological techniques.

Matt has received financial support for these projects from the FAU Graduate Research and Inquiry Program and the Walter and Lalita Janke Foundation Innovations in Sustainability Science Research Fund. For more information about geophysics for wetland soils and climate change applications, please contact [Matthew Sirianni](#).

**Interested in being highlighted, or know a student who should be? Please email [Matthew Sirianni](#) 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

Call for Participation – Detection of Anomalies using Geophysical Methods

- The Center for Geotechnical Practice and Research at Virginia Tech (CGPR) in collaboration with the Virginia Department of Transportation (VDOT) seeks interested volunteers to participate in a unique research opportunity to advance the state of practice in subsurface characterization. The purpose of this project is to assess the capability of currently available non-invasive geophysical methods to identify the sizes and locations of subsurface anomalies.

VDOT has developed a geophysical field test site located in Lexington, Virginia in which subsurface anomalies of various sizes are present within engineered fill soil. Anomalies are located within 5 to 30 feet below grade and within an area of approximately 0.5 acre. The surveyed locations of the anomalies will not be released until the end of the project. The site is available for field work from August 15, 2017 to January 1, 2018 (tentative). Participants are responsible for their own costs.

Each participant will perform geophysical studies at the site using one or more methods believed to be appropriate. Then each participant will provide a report containing their interpretations for the locations and sizes of the anomalies for each method or combinations of methods used. Participants are asked to provide their reduced data for each method in digital form for possible later post-processing.

A CGPR report will be issued at the conclusion of the project that provides a synthesis of the results. All participants will be acknowledged in this report but will not be associated with their data sets or interpretations.

Those wishing to participate should send an email message to this [email](#) containing a brief statement of interest, contact information, and a preliminary list of the non-invasive geophysical methods proposed. An information package will be sent within two weeks of responding to this invitation but no sooner than mid-July 2017. The

information package will include details on the site, site access procedures, and a description of the information requested for the reports.

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](#).
- EEGS Student Chapters are looking for speakers to visit their institutions and speak to the groups. The EEGS website will host a page of names and contact information of willing speakers in the Members Only section. If you are willing to support our student chapters in this manner, let us know. Submit the following to staff@eegs.org: your name, contact information, a brief summary of your area of expertise, and the regions in which you might be able to present. Your name will become part of the list, giving our student members the opportunity to tap your experience.

Webinar 'Down to Earth with an Electric Hazard from Space

- The USGS webinar from Jeffrey Love on "Down to Earth with an Electric Hazard from Space" has been rescheduled for July 26th at 2 PM EDT (18:00 GMT). If you wish to view it please register at this [link](#).

Employment Opportunities

- Senior EM Geophysicist position at GroundMetrics
Do you want to advance the future of electromagnetic technologies? Are you itching to be a part of a cutting-edge technology company and a leader in electromagnetics?

GroundMetrics has a reputation of taking on tough challenges and is growing through rethinking standard approaches and breaking through walls to get the job done!

In this role, you'll serve as the senior technical lead on innovation and core geoscience technology to help ensure our game-changing ideas are leading the industry. You'll conceive, structure, and communicate ideas that advance electromagnetic technologies in the energy industry to win commercial R&D contracts and government grants. You'll take charge of conceptualizing and preparing proposals for new solutions appealing to the energy industry. You'll manage the R&D road map, ensuring technical and practical objectives are met, while delivering on-time and on-budget projects. Because you're versatile, you'll have no problem authoring technical papers, providing technical sales and marketing support, or presenting at technical conferences. Years from now, we'll look back and you'll be a key star who helped transform the business!

What experience will help get you there?

You are innovative and RESOURCEFUL. You have a BIAS TO ACTION and break through walls to get things done. You OWN your desk and embrace responsibility to deliver results. You continuously CREATE VALUE through quality, on-time delivery.

You are a creative and pragmatic problem solver and you have skills to be an effective principle investigator (PI). You've used your advanced degree in geophysics and experience with electromagnetics to master either modeling and inversion processes, instrumentation and field work, or data processing and noise cancellation techniques. You understand the technical atmosphere of the energy industry.

You have a keen ability to hold the big picture while minding the details. You are known for communicating clearly and effectively on the potential, progress, and hurdles of your projects and are a champion of changing priorities. You are comfortable with uncertainty because you know it's a catalyst for true innovation. You thrive on moving and failing fast and aren't afraid of mistakes because you know they are fuel for fast innovation. You have history of being able to manage time, prioritize, and work independently with little direction. You also excel working in and leading dedicated, intelligent, and driven teams.

We are looking for a talented Senior EM Geophysicist who wants to work in a fast-paced, high-tech setting where you can truly make a difference in the company and in the industry. Location of this role is flexible. **If you are the person that will conquer this role, [email](#) your resume and references.**

Proposed Elimination of the USGS Geomagnetism Program

- The President's fiscal year 2018 budget request, released May 23, 2017, proposes a cut in the budget of the Department of Interior, U.S. Geological Survey (USGS) that would, effective Oct 1, 2017, eliminate the USGS Geomagnetism Program (a \$1.9 million/year program with 12 full-time equivalent employee positions and which supports the operation of 14 magnetic observatories in the United States and Territories).

Background:

The USGS Geomagnetism Program is an integral part of the multiagency Space Weather Operations, Response, and Mitigation (SWORM) Subcommittee within the United States National Science and Technology Council. The role of the Geomagnetism Program in SWORM is highlighted in the bipartisan Space Weather Research and Forecasting Act (S. 141) that was passed by unanimous consent, in the United States Senate on May 2, 2017.

The USGS Geomagnetism Program operates magnetic observatories that provide real-time, long-term data streams that are used by government, academic, and the commercial sectors for a wide variety of scientific and operational purposes. The Program's observatory data are used for: (1) geomagnetic storm alerts that are widely used, including for protecting the Nation's electric power grid, satellite systems, and other critical infrastructure; (2) products and services that support multiple Department of Defense and National Intelligence Community activities; (3) directional drilling for oil and gas; (4) geophysical surveys and geomagnetic field mapping.

The USGS Geomagnetism Program conducts targeted research of importance to modern society. In recent years, Program research has been focused on the evaluation and monitoring of magnetic-storm geoelectric hazards that can interfere with the operation of electric-power grids. Projects include: (1) statistical maps of extreme-magnetic-storm geoelectric hazards; (2) real-time maps of geomagnetic variation across North America; (3) real-time maps of geoelectric fields across the continental United States; and (4) contributing to completion of the U.S. EarthScope magnetotelluric (MT) survey needed to evaluate geoelectric hazards.

Impact:

If the United States Congress accepts the President's proposed elimination of the USGS Geomagnetism Program and if another source of funding cannot be found, Program research will cease, and the operation of all USGS magnetic observatories will be terminated.

This means that there would be almost no reliable, real-time, open-access source for geomagnetic monitoring data for the United States and its territories. Long time series of geomagnetic activity, some exceeding a century in duration, would be interrupted. This would, in turn, cripple the following data-derived products: (1) standard geomagnetic activity indices (Dst, Kp, AE) that are needed to issue geomagnetic storm alerts and model

geospace; and (2) the International Geomagnetic Reference Field (IGRF) model that is widely used for navigation and research.

The following would be adversely affected: (1) the USGS-led project within SWORM for evaluating geoelectric hazards of importance to the North American Electric Reliability Corporation (NERC) and the Federal Energy Regulatory Commission (FERC); (2) operations of the 557th Weather Wing of the U.S. Air Force (USAF); (3) operations of the Joint Space Operations Center (JSpOC) of the North American Aerospace Defense Command (NORAD); (4) operations of the Space Weather Prediction Center (SWPC) of the National Oceanic and Atmospheric Administration (NOAA); (5) numerous research projects sponsored by the National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA); (6) foreign-national geomagnetic projects, such as those of the Kyoto World Data Center (Japan) and the GeoForschungsZentrum (Germany); (7) commercial sector services such as those provided by Space Environment Technologies, PingThings, Inc., and Computational Physics, Inc.; and (8) collaboration between the USGS and Schlumberger that supports directional drilling for oil and gas in Alaska.

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!