NAGT Teacher Education Division

June 2017 Newsletter Volume 3 Number 2

In this issue:

Educating during Extraordinary Events by Suzanne Metlay, TED President

Thank you – if you helped neighbors or strangers during wildfires or floods, if you sheltered someone during hurricanes or storm surges, if you packed food supplies or sand bags, if you took in someone else's pet, sent money or clothes, or gave blood, or did anything else (no matter how small) to help even one other person – sincerely, thank you. If you are a volunteer first responder or do emergency rescue – truly, thank you. If you have not yet done anything community-minded, there's plenty still to do; many opportunities exist to give what you can, including your voice as a geoscience educator.

Many of us experienced the August 21, 2017, solar eclipse as geoscientists and as ordinary Americans sharing an extraordinary national event. In the weeks afterward, we stepped up again – ordinary people educating about extraordinary weather events, perhaps in the context of climate, land use, or resource management. As we look ahead to November, there are local elections to be held and Thanksgiving plans to be made. Most of us have a lot to be thankful for – how best can we share with those in need?

Our communities need us as Earth & space sciences teachers, especially in places considering how, where, or when to (re)build with public funds. Should devastated areas rebuild at all? If yes, then how to rebuild more effectively, with greater resilience and less ecological risk?

What should we teach our students? How do we empower them to help themselves, their families, their communities through learning about local environments, regional risks, or national commitments? And how do we encourage them to look beyond themselves? To look ahead, to avoid putting other families in hazardous places, to protect public lands for future needs?

Not everyone needs to be a leader but each person should appreciate their civic responsibilities – just casting a vote can have huge consequences. As geoscience educators, do your best to help others make informed decisions based on real data rather than fake news. Help your students distinguish between false claims and arguments rooted in reliable evidence.

I'm so pleased to work with an excellent leadership team at NAGT-TED. New and returning officers for Fiscal Year 2018 are:

Vice-President Eric Pyle
Secretary-Treasurer Peggy McNeal
Newsletter Editor Steve Mattox

Many thanks to:

Former Secretary-Treasurer Mark Abolins
Past-President Jeff Thomas
Past Past-President Heather Petcovic
Ex Officio Officer: NAGT Executive Committee Liaison – Anne Egger
Ex Officio Officer: NSTA Liaison – Eric Pyle

Regardless where we live, we can work together to best achieve our goals for 2018: professional and personal, individual and communal. Let's recall our common values and professional ethics. As we gather with those we love and those we meet for the first time, notice that inclusion joins diversity. Americans may indulge in the melting pot and a multicultural salad, with apple pie for dessert. There's enough to share so we should be mindful if some in our midst still feel hungry. Let's feed them with our community engagement, expertise, and perspectives as geoscience educators.

Looking forward to a great year with you!

Suzanne T. Metlay
President, Teacher Education Division, National Association of Geoscience Teachers

2. Upcoming Webinar: STEM Teaching Tools: Resources for equitable science teaching and learning, by Aida Awda, To The Cloud Edu

Please consider registering for this webinar and/or please share with your colleagues. The Next Generation Science Standards pose opportunities for climate and energy education in the U.S.

STEM Teaching Tools: Resources for equitable science teaching and learning.

Thursday, October 12, 2017: 4 p.m. Eastern / 3 p.m. Central / 2 p.m. Mountain / 1 p.m. Pacific

Registration Deadline: October 10, 2017

Educators implementing the vision of 3D equitable science instruction described in the Framework for k-12 Science Education face many problems of practice. The STEM Teaching Tools collection of resources - a pool is researcher and practitioner designed materials that continues to grow - are available freely to support educators in addressing such implementation challenges. We will explore the collection, engage

in some example uses of these resources, and discuss other options for supporting educators in this critical moment of shifting instructional goals and norms.

Presenter bio: Dr. Morrison collaborates with those involved in K-12 education to design effective learning experiences for students and teachers which attend to equity within science education. Her research specifically focuses on the ways in which those involved within systems of education navigate new identities and narratives of the way in which we engage in equitable educational practices and how we can use these new and evolving narratives to further expand equitable opportunities for students to gain meaningful and relevant science learning experiences.

3. Major events, activities, and deadlines of interest to all NAGT members, by Lara Palmquist, SERC and NAGT's Executive Office

- This past July, NAGT and partners held a very successful **Earth Educators' Rendezvous** in Albuquerque, NM. Plans for Rendezvous 2018 are already in the works. Please promote a "Save the Date" for the event: July 16-20, 2018 at the University of Kansas in Lawrence, KS. We're currently collecting ideas and input for the 2018 Rendezvous program: https://serc.carleton.edu/dev/earth_rendezvous/2017/index.html

- We are also running a very successful **Fall InTeGrate webinar series**. Free and open to the public, this series incorporates InTeGrate pedagogies into teaching practices, provides resources available for adoption, and creates a forum for participants to learn and share teaching strategies. Check out the website for upcoming topics and dates: http://serc.carleton.edu/integrate/workshops/index.html

- **The Traveling Workshops Program (TWP)** brings national leaders in geoscience education to your campus or regional event. Designed for departments, institutions, or groups of institutions with shared interests, TWP offers themes on strengthening cross-campus environmental and sustainability programs as well as supporting the success of all students. The TWP is part of NAGT's integrated Workshop Program.
    - Application Deadlines: **October 15** (for Spring 2018 Workshops) and **March 15** (for Fall 2018 Workshops). More information is available at: http://nagt.org/nagt/profdev/twp/index.html

- **Attending 2017 GSA and/or AGU**. NAGT will be there!
    - Check out NAGT's events at GSA: https://nagt.org/nagt/profdev/GSA/2017GSA/index.html
    - Check out NAGT's events at AGU: https://nagt.org/nagt/profdev/AGU/2017AGU/index.html
    - Stop by booth #641 at GSA or booth #1527 at AGU to learn more about our events and programming, pick up great swag, and meet other NAGT members and staff. We are always looking for volunteers to help staff the booth—email either myself at lpalmquist@carleton.edu or Krista Herbstrith at kherbstr@carleton.edu if you are interested.

Our organization is only as strong and healthy as our membership. Please remember to renew their memberships: http://nagt.org/nagt/membership/index.html

4. Authentic Research Experiences for Earth Science Education Majors by James Ebert, SUNY Oneonta

James Ebert, Principal Investigator (SUNY Oneonta, Earth & Atmospheric Sciences Department), with co-PIs Dr. Paul Bischoff (SUNY Oneonta, Secondary Education) and Glenn Dolphin (Tamaratt Teaching Professor, University of Calgary) are the recipients of an NSF IUSE GEOPATHS Extra grant from National Science Foundation. The project is entitled ***Authentic Research Experiences for Earth Science Education Majors***. Todd Ellis (Mallinson Institute for Science Education, Western Michigan University) is the external evaluator for the project.

This three-year project engages Earth Science Education (ESE) majors in research and design of physical models for Earth processes during four-week summer institutes that focus on model-based learning. The summer institutes provide ESE majors with concrete experiences in engineering design and the nature of science, important threads in the Next Generation Science Standards. Follow up activities during each academic year include evaluation of the developed models by New York State Master STEM Teachers and pilot testing of models in K-12 and introductory geoscience college classes.

5. Sherry D. Oaks, Ph.D. was awarded the NAGT Outstanding Adjunct Faculty Award in 2017.

Sherry is adjunct faculty at 2YC, and at 4YC, institutions on ground and online. She also is sub-contracted to help develop NGSS standards for schools. Sherry continues to do Science and Technology education and outreach as she has her entire career, from her time at the USGS, as well as during her full time university postdoctoral research and teaching professorships in science and engineering. In the past 2 years she also has participated in onsite K-12 Science in many Colorado schools, including nascent STEM programs in minority institutions.

Sherry also mentors university students in science and engineering. Sherry is a CU Advocate for the University of Colorado, which includes science and engineering education and policy.

Her extensive publications include peer reviewed science and engineering journals, as well as multidisciplinary social science and historical professional publications. Her professional work continues to address interdisciplinary science, engineering, and historical environments in specialty areas of natural and technical hazard and risk in geosciences and atmospheric sciences, esp. earthquake hazard and risk, weather and climate Earth System Sciences, and the human dimension/physical scientific aspects of these environment and societal issues.

6. Fancy a trip to Ireland? by Eric Pyle, James Madison University

The Departments of Geology & Environmental Science and Biology at James Madison University are jointly offering a unique experience to study Earth & Environmental Science in Ireland. This course takes preservice and inservice teachers of science on a two-week trip to the wilds of western Ireland, examining the bedrock geology and geomorphology, the veneer of flora and fauna, and the impact of humans since the Mesolithic era. Each day has a different environment in which we apply this template in understanding the complex interactions of geology, biology, and humans, and how the content

expressed in each can best be represented to K-12 students. More information can be found at https://www.jmu.edu/global/abroad/programs/jmu-ireland-earth.shtml, on Facebook at https://www.facebook.com/JMUEESIReland/, or emailing Eric Pyle at pyleej@jmu.edu.