Bulletin

of the Eastern Section of the National Association of Geoscience Teachers

Volume 69, Issue 4: Fall 2019

NAGT-ES Special Meeting 2021

by Jason Petula
Millersville University of Pennsylvania
NAGT-ES Past President

In a previous bulletin, I proposed an idea to hold a National Association of Geoscience Teachers – Eastern Section (NAGT-ES) special meeting. The 'special' means having our meeting abroad. Enough of our membership, responded to the NAGT-ES Special Section Meeting Survey, indicating a desire to move forward.

The results of the survey reveal most participants prefer to hold the special meeting during a two-week cruise in August 2021. It is impossible to predict what cruise offerings will be available in 2021. The cruise itinerary we will strive for is shown on the map, including stops in Nova Scotia, Greenland, and Iceland before finishing in Ireland. Views along the way include Newfoundland, the Faroes, and Scotland. And plenty of icebergs!

The next step is to identify members willing to service on a steering committee to help organize the special meeting. The committee will work to share additional details in our next bulletin: estimated costs, tentative itinerary, programming, etc. Interested members may contact me no later than October 15, 2019 at: jpetula@millersville.edu.

The premise of the special meeting is to hold thematic talks and field trips at each port and/or while at sea. The special meeting will be a collaboration between Millersville University of Pennsylvania and NAGT-ES. The university's Office of International Programs and Services (IPS) will provide logistical support, whereas NAGT-ES may provide programming. Once the steering committee has the special meeting set, we may market the program to a national audience. It is important to share a few cruise details with members unfamiliar with cruises. First, the cost of cabins will likely be the most expensive part of the program. Most cruises lines insist on 2-passengers per cabin. Hence, if you travel solo you must pay a single supplement. In contrast, 50% discounts are common for the 3rd or 4th guest staying in the same cabin.

Montgomery College names geology lab after Janet Crampton

by Alan Cutler
Montgomery College

Janet Crampton, known to many as a longtime NAGT member, geologist, educator, editor, writer, friend, and all-around inspiration has been honored by Montgomery College in Montgomery County, Maryland. The college has named its 24-seat lecture/lab classroom and adjoining geology collections room the "Janet Wert Crampton Geology Lab". Located on the college's Rockville campus, the lab houses extensive mineral, rock, and fossil collections, plus microscopes and the college's seismograph.

Janet has been very generous to the college over the years, recently donating most of the art collection that she and her husband amassed over nearly 60 years of marriage. But what prompted the new honor was a gift of a lifetime: an unrestricted bequest commitment to the Montgomery College Foundation that will serve the needs of hundreds of students long into the future.

At the naming ceremony in September 2018, she was joined by friends, colleagues, and faculty for refreshments and a tour of the facility, including new public displays of choice specimens from the collections. She delighted the faculty by mincing no words in urging the college administrators who were present to give the Earth sciences more prominence at the college. And as a decades-long member of the American Association of University Women (and former president of AAUW Maryland), Janet, along with some of her AAUW colleagues at the ceremony, shared with students her experiences as women in science.

"Thanks to pioneers like Janet, women across the world have more opportunities in scientific fields; mathematics, technical, and engineering fields," said Margaret Latimer, vice president and provost of the Germantown Campus and College-wide STEM Unit. "We still have work to do, but we have come a long way because of the courage, passion, and the unquenchable curiosity of women like Janet Crampton."

Janet received the outpouring of praise with her customary grace. As for her gift, she said, "I have had such a fortunate life. Just seems to make good sense to me."

Janet Crampton (right) poses in front of her namesake geology lab with Montgomery College Provost Margaret Latimer.

Photo credit: Pete Vidal, Montgomery College

***You* can contribute to the *Bulletin*!**
Consider writing up your recent teaching triumphs, field trip locations, geoscience-themed travels, or essays. This issue offers a wealth of examples you might emulate for future editions of ***our*** newsletter.

Donegal Castle, Donegal, Ireland

A Teachable Moment in Ireland

by Michael O'Donnell
Blue Ridge Community & Technical College
NAGT Eastern Section President

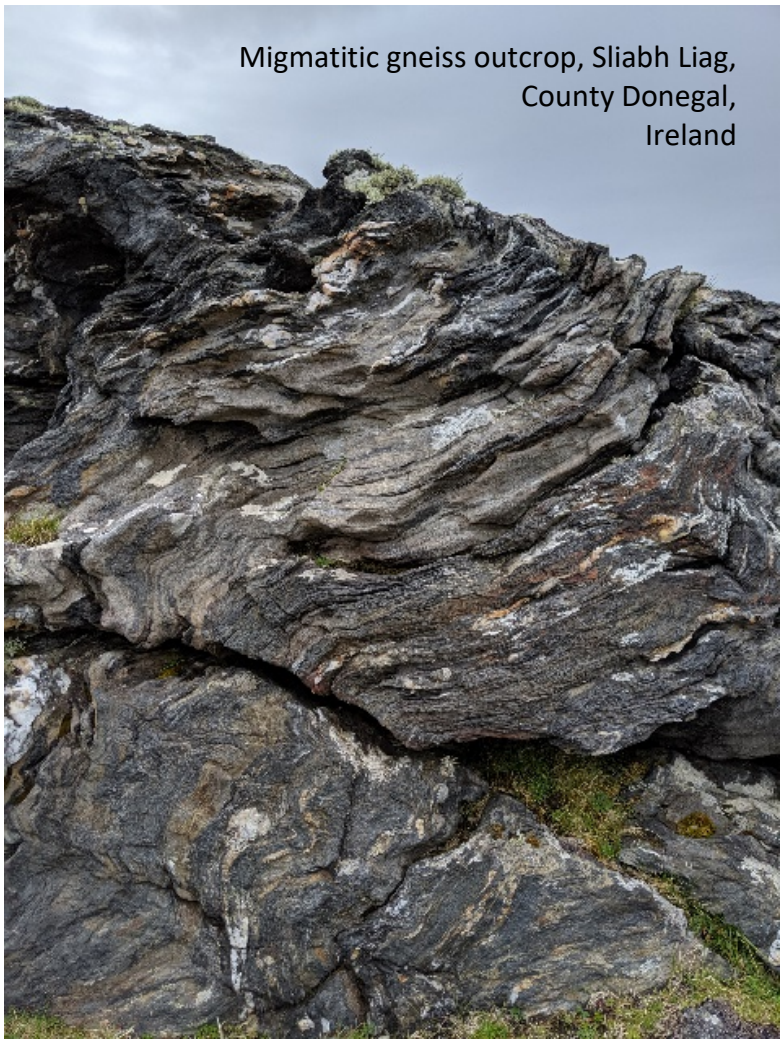
As an educator I am often fascinated by the teachable moments that spring up at the oddest times. Those with young children have experienced this on family vacations. (My three kids stopped asking questions at a young age as they grew weary of the lecture that would ensue when driving by a roadcut at 70 mph and we caught a brief glimpse of something interesting! "Don't push the geology button!") I was pleasantly surprised this past July when a teachable moment arose while traveling the wilds of northwest county Donegal in Ireland.

My brother, niece, and I made a trek to Ireland this summer hoping to flesh out some of our ancestry. We spent a few days with cousins in Limerick listening to stories of when my mother, as a 5-year-old, spent a year in Ireland with her family when her father went back to care for his mother. Then, we packed up our stuff, climbed in a car and headed up the west coast. Unfortunately, the day we headed out was foggy and rainy, so we drove right by the Cliffs of Moher (I will have to go back there at some point in time.) and continued up to Donegal by way of Galway. Alas, I was the one driving that day, so my brother would caution me to pay attention to the road instead of the rock outcrop I spied out the window!

Galway and Donegal were nice towns to visit (especially our ancestral castle) but it was several days later that we experienced that moment when we had the time to talk about the geology of an area. We spent a night in Carrick in the west of County Donegal and the next morning decided to drive further west to a place called Sliabh Liag (pronounced *sleeve league*, love the language).

While hiking about on a mild summer's morning, I noticed the rock pictured here and perhaps got a little excited. My brother then asked what I was drooling over and also noticed the rock. A discussion ensued with general explanations of what may have happened geologically to cause the formations we saw. I hope he appreciated our talk there (though later he posted some quip on Facebook about his brother mumbling excitedly over a rock) as I was certainly enjoying passing on the little knowledge I have.

All of us have similar experiences. Cherish them and embrace them. Informal education is as important as formal. Until next time!



Migmatitic gneiss outcrop, Sliabh Liag, County Donegal, Ireland

New edition of *Pennsylvania Geology* available

by Gale Blackmer
State Geologist of Pennsylvania

The newest version of ***Pennsylvania Geology*** can be found at the following link:

http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/v49no2.pdf

Please forward this link to anyone who you might think would be interested in the geology of Pennsylvania and ask them to contact us at RA-pageology@state.pa.us to subscribe.

For previous versions of Pennsylvania Geology, please visit http://docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20033210.pdf

New archived copy of an NAGT-Eastern Section field guide placed online

by Randy Newcomer
Randy's Books

I think the last one I uploaded was 1983.

It is at http://bit.ly/NAGTES1983

Award nominations update

by Christopher Roemmele
West Chester University

Hello geoscientists and geoscience educators!

It's time to send in your nominations for all the awards our section offers. Maybe you work with a dedicated, diligent, and passionate teacher, or know someone whom you feel deserves this recognition. I strongly urge you to nominate this educator for one of our Eastern Section awards, or one of the National NAGT awards. Winners will be invited to the Eastern Section meeting next June, which is a wonderful time to praise those teachers who have excelled and are perfecting their craft, and promote and inspire students to learn, understand, and appreciate geoscience.

Information about all our Eastern Section awards can be found on our section website. Please note **the deadline is being/has been changed to September 30!** So start thinking and get those forms filled out **now!** Completed nomination forms should be sent to me at croemmele@wcupa.edu. However, you must place your nomination via the online forms found on the National NAGT web site at http://nagt.org/nagt/programs/oest.html

Here is a list of our awards. Perhaps there is one with your (or a colleague's) name on it!

OUTSTANDING EARTH SCIENCE TEACHER

The OEST Awards program was adopted by NAGT in 1971. Its purpose to honor pre-college teachers of earth science, their excellence and commitment to teaching and teaching earth science

DIGMAN AWARD FOR EXCELLENCE IN GEOSCIENCE EDUCATION

The Digman Award is designed to recognize an individual who works to bring geoscience to the general public. We look for individuals who are not teachers, but work in a capacity that educates the general public in areas of the geosciences. Museum directors, curators and assistants, state survey employees, mine and quarry public relations people would all qualify for this award. The nomination information for this award is also on our section website.

JAMES O'CONNOR MEMORIAL FIELD CAMP SCHOLARSHIP

The James O'Connor scholarship is given to a college geology or earth science major who is attending a geologic field camp course (typically over the summer) as part of their college degree program. The $500 scholarship assists the student in covering the expenses of their field camp. Nominate a student currently enrolled in your geology program. Nomination information appears on the section website.

DISTINGUISHED SERVICE AWARD FOR THE EASTERN SECTION

The Distinguished Service Award is given to a member of the Eastern Section (still actively teaching or retired) who has, over the years, contributed to the growth and activities of the

Eastern Section. This person should have a history of continued service to the Eastern Section. Nomination information appears on our website.

JOHN MOSS AWARD FOR OUTSTANDING COLLEGE TEACHING

The John Moss award is reserved for instructors and professors who, at the college level, model and promote outstanding teaching in the geosciences. Nomination information appears on section website.

The **Bulletin** is edited by Callan Bentley, Northern Virginia Community College. Please get in touch with your ideas & feedback: cbentley@nvcc.edu

From the Archives: Fall 2019

by Steve Lindberg
University of Pittsburgh at Johnstown
NAGT Eastern Section Archivist

The 1991 annual meeting was held on April 26-28 at Greenfield Community College in Greenfield, Massachusetts and was a joint meeting between the Eastern and New England Sections of NAGT. The field trips focused on the *Geology Of Western New England* with the guide book edited by Lawrence R. Matson. One of the featured field trips on Saturday was *Overview of Connecticut Valley Geology Along Route 2.* The field trip was led by Don Wise, UMass. and Ed Belt, Amherst College. Here is the guidebook summary of the Geologic Evolution Of The Connecticut Valley.

I have also included (from the same 1991 guidebook) the summary of awardees for the Eastern Section *John E. Moss Award "Outstanding Earth Science Teacher"* for college and university instructors; not to be confused with the current NAGT "OEST" award. Hopefully the names of these past awardees will bring back fond memories of fellow geoscience educators.

DEVONIAN: **1** COMPLEX OVERFOLDING FROM THE EAST AND UPDOMING OF THESE OVERFOLDS. INTRUSIONS AND METAMORPHISM TO CREATE A CRYSTALLINE BASEMENT. ADDITIONAL DEFORMATION AND METAMORPHISM OF A LESSER EXTENT IN LATER PALEOZOIC.

LATE PALEOZOIC AND EARLY TRIASSIC: **2** EROSION TO A WIDESPREAD SURFACE OF LOW RELIEF. POSSIBLY A "PENEPLAIN."

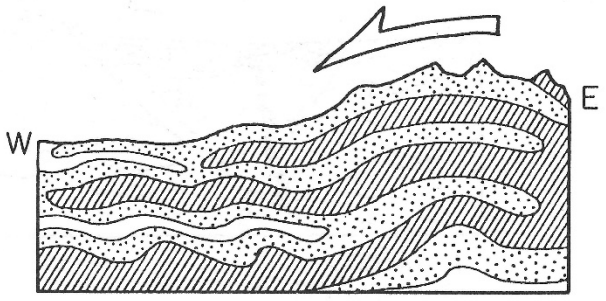
TRIASSIC: **3** CRUSTAL STRETCHING ASSOCIATED WITH EARLY STAGES OF THE OPENING ATLANTIC CAUSE SAGGING AND LOCAL FAULTING. HIGHER MOUNTAINS TO THE EAST KEEP THE DEEPENING TROUGH FILLED WITH SEDIMENTS WHICH MOVE ACROSS IT FROM EAST TO WEST. COARSER SEDIMENTS AS CONGLOMERATES IN THE EAST. SUGARLOAF OR NEW HAVEN ARKOSE DEPOSITED UNCONFORMABLY ACROSS OLDER BASEMENT.

EARLY JURASSIC: **4** MORE RAPID STRETCHING. BASIN DEEPENS FASTER THAN IT CAN BE FILLED WITH SEDIMENTS. BASALTIC FLOWS AND LAVA LAKES FILL CENTRAL PARTS OF TROUGH. LOCAL CLOSED BASINS HAVE FRESH WATER LAKES IN THEM. ONE OF BORDER FAULTS ACTIVE.
DEERFIELD BASIN = DEERFIELD BASALT.
HARTFORD BASIN = HOLYOKE BASALT, NEW BERLIN FM, HAMPDEN BASALT AND GRANBY TUFF.

JURASSIC (SLIGHTLY LATER): **5** BORDER FAULT STEPS EASTWARD TO ENLARGE THE TROUGH. JURASSIC SEDIMENTS FROM THE EAST BURY THE VOLCANICS AND OLDER BORDER FAULT. CONGLOMERATES ALONG THE EASTERN EDGE OF BASIN. CONTINUED SINKING AND STRONG TILTING OF THE BASIN AND ITS CONTENTS. SOME MINOR FAULTING ALONG WESTERN SIDE OF BASIN.
DEERFIELD BASIN = TURNERS FALLS SANDSTONE, MT. TOBY CONG.
HARTFORD BASIN = PORTLAND SANDSTONE

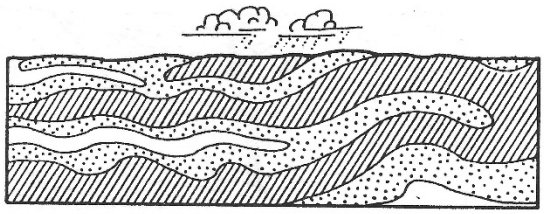
LATE JURASSIC TO MIDDLE CENOZOIC: **6** EROSION TO A LOW RELIEF SURFACE, POSSIBLY A PENEPLAIN. THIS SURFACE WAS PROBABLY CLOSE TO SEA LEVEL. SEDIMENTS WHICH WERE REMOVED BY THIS EROSION WERE CARRIED DOWN TO THE SEA TO BECOME PART OF THE CONTINENTAL SHELF DEPOSITS.

LATE CENOZOIC: **7** UPLIFT AND A NEW CYCLE OF EROSION. SOFTER SANDSTONES OF THE BASIN FILL WERE CARRIED AWAY MORE EASILY TO LEAVE THE MORE RESISTANT ROCKS STANDING WITH ACCORDANT SUMMITS. SMOOTH TOP OF THE BERKSHIRES AND PELHAM HILLS AS WELL AS THE TOP OF THE HOLYOKE, MT. TOM RANGE ARE STILL APPROXIMATELY AT THIS OLD LEVEL.
EROSION ALONG THE SHATTERED ROCKS OF THE BORDER FAULT LEAVES MT. TOBY STANDING AS AN ISOLATED MOUNTAIN.



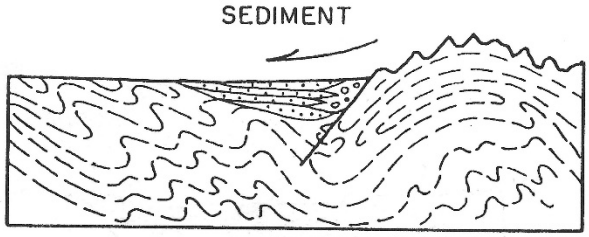
DEVONIAN

1



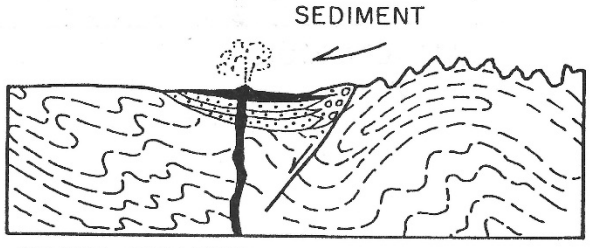
LATER PALEOZOIC/
EARLY TRIASSIC

2



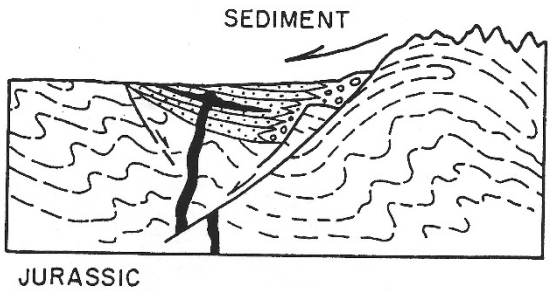
TRIASSIC

3



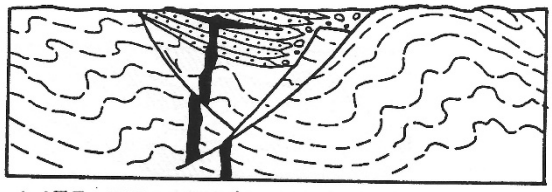
EARLY JURASSIC

4



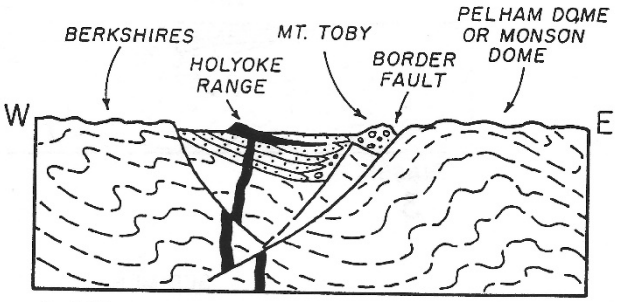
JURASSIC
(SLIGHTLY LATER)

5



LATE JURASSIC/
MIDDLE CENOZOIC

6



LATE CENOZOIC

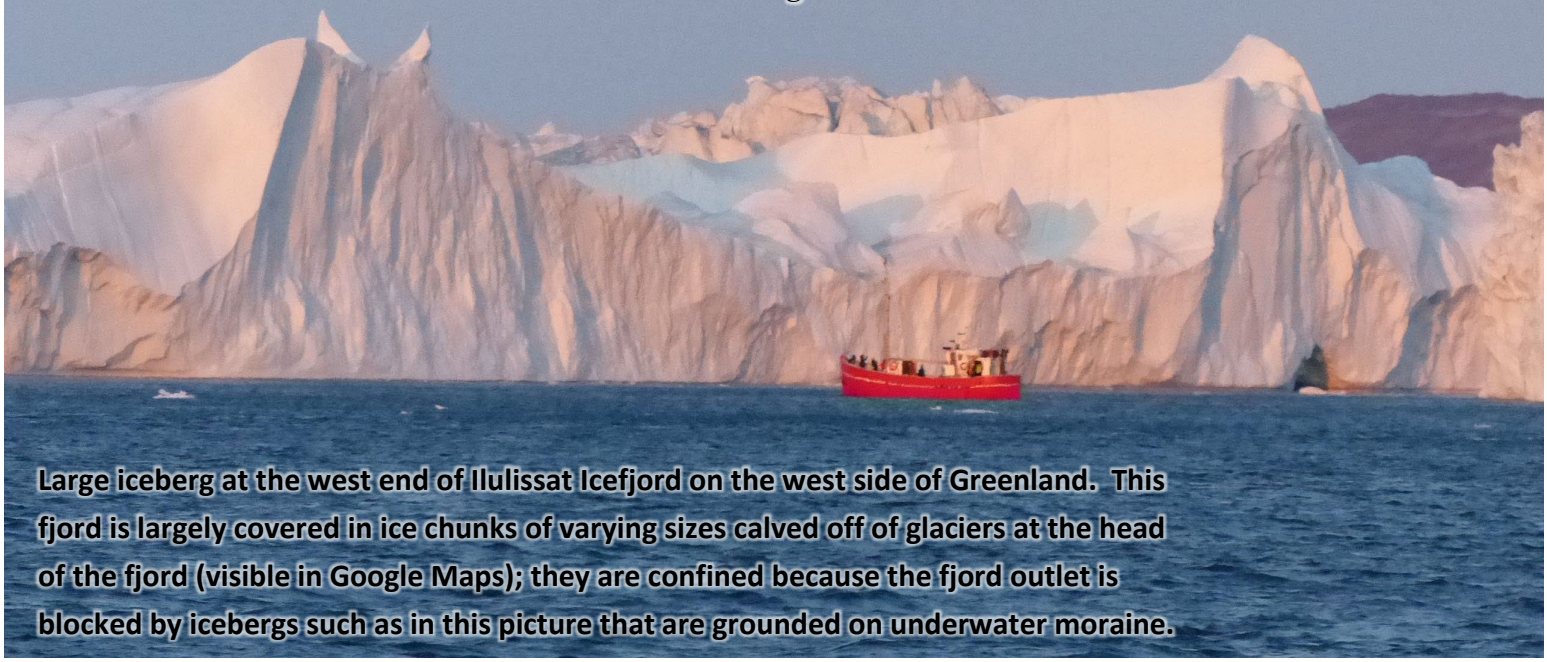
7

YEAR	AWARDEE	AFFILIATION
1981	James V. O'Connor	Dept Of Environ Sci University of D.C. Washington, D.C. 20008
1982	Bruce F. Rowell	Dept of Phys Sci Kutztown State College Kutztown, PA 19530
1983	Sy Greenberg	Dept. of Geology West Chester State West Chester, PA 19383
1984	Walter Tovell	Univ of Toronto Royal Ontario Museum Toronto, ON M5S 2C6
1985	H. Gray Multer	Dept of Gel Sci Fairleigh-Dickinson Madison, NJ 07940
1986	Fredric Goldstein	Interdis ESC Faculty Trenton State College Trenton, NJ 08625
1987	no awardee	
1988	Heinrich Toots	Dept of Gel & Geog Long Island Univ Greenvale, NY 11545
1989	Howard Feldman	Sarah Lawrence College Bronxville, NY 10708
1990	Mike Schneider	Dept of Geology Edinboro State College Edinboro, PA 16412

FROM THE ARCHIVES OF NAGT EASTERN SECTION

Some photos from Norway & Greenland

by Martin Schmidt
The McDonough School



Large iceberg at the west end of Ilulissat Icefjord on the west side of Greenland. This fjord is largely covered in ice chunks of varying sizes calved off of glaciers at the head of the fjord (visible in Google Maps); they are confined because the fjord outlet is blocked by icebergs such as in this picture that are grounded on underwater moraine.

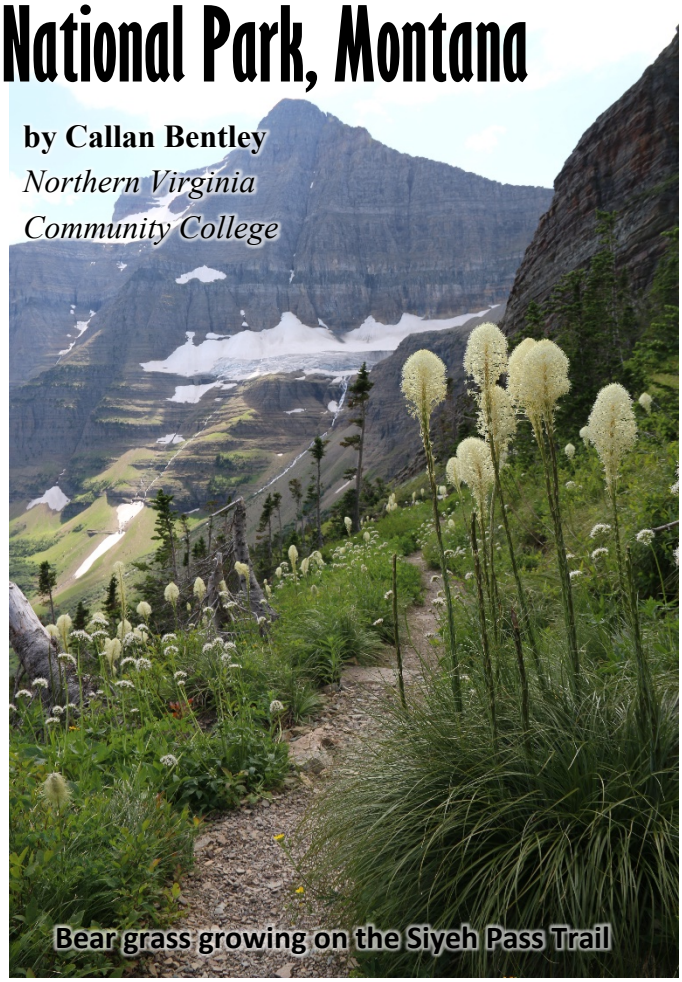
View SE from Husfjellet summit, Senja Island, Norway. Nice spot for lunch at about 2100 ft elevation after a hike from sea level at Skaland, about 200 miles north of the Arctic Circle. Same age rocks as at Reine, Norway.

Mountains shaped by glaciers and exfoliation, from Reine, Norway, near the southern end of the Lofoten Islands. These rocks are 2500-1750 Mya basement rocks and were uplifted after being overidden by the Caledonian nappes to the east on mainland Norway.

The Greenland icecap edge, with dirty ice and lighter-color ice that goes through more daily freeze-thaw in the foreground, and the main ice cap in the distance. This is at the end of the longest continuous road in Greenland - 26 miles from Kangerlussuaq on the west side of Greenland.

Some photos from Glacier National Park, Montana

by Callan Bentley
Northern Virginia Community College


Bear grass growing on the Siyeh Pass Trail


Stromatolite fossil


Sexton Glacier


Thrust fault repeated unit, near Two Medicine


Graded beds in Helena Fm.


Glacial landforms: horn & U-shaped valley

Tentative schedule for NAGT eastern section June meeting

by Christopher Roemmele
West Chester University
NAGT Eastern Section Vice President

Thursday June 4

5:00 – 7:00 pm Registration and very light refreshments (soft drinks/cookies)
7:00 pm Welcome and Keynote speaker
Dr. Dorothy Merritts (F&M)

Friday June 5

8:00 – 9:00 am Registration plus coffee and light breakfast items available all morning
9:00 – 11:30 Breakout sessions
Tentatively so far -
1) Drones with Dr. Martin Helmke (WCU)
2) Geometrics/big data and data mining with Dr. Tim Lutz (WCU)
3) Pedagogy/NGSS with Dr. Missy Holzer (Chatham NJ HS) and Dr. Christopher Roemmele (WCU)

11:45 – 12:45 Lunch & section business meeting

1:00 – 5:30 Field trip(s) TBD – but in discussion –
Local quarry
Soils of Chester Co/SE Pa

5:30 – 7:30 Student and faculty poster session (light refreshments)

Saturday June 6

Field trips (still tentative):
Potholes and the Piedmont
Bells Mill Rd/Wissahickon/Wilmington outcrops

6:00 – 9:00 pm Dinner/Awards
Keynote (Drs. Daria Nikitina and Heather Wholey, WCU): "Impact of Sea Level Rise on Heritage Resources in the Delaware Bay; Geoarcheological Applications"

Reminder!

Survey of NAGT Eastern Section membership

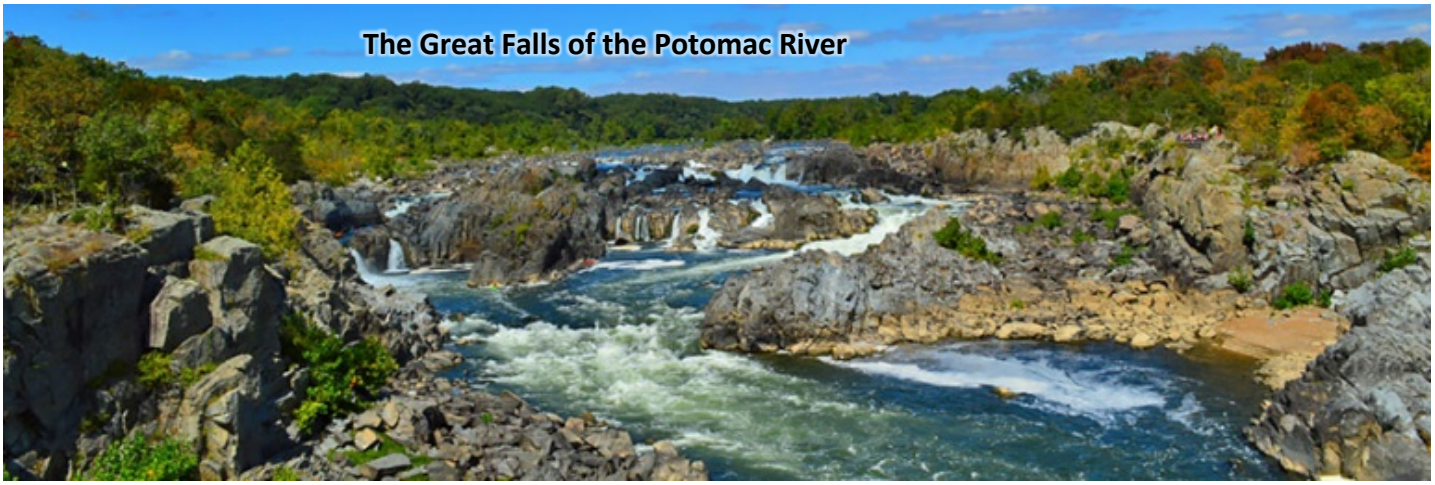
by Michael O'Donnell
Blue Ridge Community & Technical College
NAGT Eastern Section President

For the survey I e-mailed around last month, I have had 56 responses from the membership and would like to see at least 100 to make it statistically significant. (We have about 350 members in the section). The questions cover a series of proposed suggestions regarding our annual meeting, seeking to understand whether, if implemented, they would make it more or less likely for each member to attend. I would like to encourage those members who have not participated to follow this link and take the survey:
https://www.surveymonkey.com/r/WG952Z2

Please share your perspective, so we can craft the details of the annual meeting (including when we hold it) to serve our members' needs.

Thanks!

At the GSA annual meeting in Phoenix in September, geoscience educators from the two-year college community across the nation gathered to pay tribute to the career of Heather Macdonald of the College of William & Mary.



Relevant sessions at the March 2020 GSA NE/SE joint section meeting in Reston, VA

In March, the northeastern and southeastern sections of the Geological Society of America will hold a joint meeting in Reston, Virginia (home of the USGS headquarters).

Here are two sessions you might be keen on contributing to and learning from:

Reimagining Earth-Science Teacher Education: Reworking Veteran Approaches for Innovations in Preparing Geoscience Teachers
A session for earth-science teacher educators and geoscience teachers K–16 to share practices and insights in preparing new science teachers by revisiting, reminding, or emphasizing tried-and-true methods underlying aspiring new ideas in lesson planning and delivery, pedagogical content knowledge, NGSS and 3-dimensional learning, and earth-science literacy.

And this one - anyone willing to share a lab or activity at K-16 level:
NAGT and NESTA Share-a-Thon: I've Got an Activity (Lab or Demo) for That!
Join NAGT and NESTA members as they share their favorite geoscience classroom activities — lessons, labs, demos, and more. Promote scientific inquiry, active and hands-on learning, and critical thinking—with lots of free resources!

Cool field trips at the March 2020 GSA NE/SE joint section meeting in Reston, VA

As you may have heard elsewhere (*like the left half of this page?*), in March, the NE & SE sections of GSA will hold a joint meeting in Reston, Virginia. There will be field trips! Two worth noting are:

Monday 16 March to Thursday 19 March: **The Central Appalachian Orogen: From Ancient Tectonics to Modern Seismicity.** This trip will traverse the central Appalachian orogen and examine the Paleozoic foreland basin sequence in the Valley & Ridge, the Proterozoic basement and cover exposed in the Blue Ridge, and Mesozoic rift basins and polydeformed metamorphic rocks in the Piedmont. Discussion will focus on both paleotectonics and recent geologic processes. Christopher M. Bailey, College of William & Mary; Callan Bentley, Northern Virginia Community College; Frank J. Pazzaglia, Lehigh University; Alan Pitts, University of Camerino.

Sunday 22 March: **The Bedrock Geology of Washington, DC** *specifically for teachers*. This trip will focus on the land upon which the capital city is built. The trip includes discussion of oceanic sediments, Snowball Earth glaciation, the Rock Creek shear zone, igneous rocks emplaced during Appalachian mountain-building, Cenozoic river gravels, and recent reverse faulting. Note: This trip involves moderately strenuous hiking on forest trails and gravel pathways. Callan Bentley, Northern Virginia Community College; Christopher Roemmele, West Chester University.

EASTERN SECTION NAGT

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Publicity Chairperson: Vacant; volunteers welcome.

NAGT Geo2YC Division Representative: Rich Gottfried; Dept. of Science, Frederick Community College, 7932 Opossumtown Pike, Frederick, MD 21702; 301-846-2581(W), 540-822-5561(H); email RGottfried@frederick.edu

Award Chairperson

All awards currently handled by Christopher Roemmele; 610-436-2108; email CROEMMELE@wcupa.edu

Awards listing:

- Distinguished Service Award
- John Moss Award
- Outstanding Earth Science Teacher Award
- Ralph Digman Award
- James O'Connor Memorial Geology Field Course Scholarship

Eastern Section NAGT web site addresses: <http://sites.google.com/site/nagtes> or just <**www.nagtes.org**>.

State Councilors' years of office are in brackets; terms begin and end at the spring section meeting.

State Councilors

Delaware

Lawrence Matson, Dept of Natural Resources & Environmental Control, 88 Kings Highway, Dover, DE 19901; 302-739-9403; email Lawrence.Matson@state.de.us [14-17].

Maryland

Martin F. Schmidt, Jr., 2718 Appleseed Rd., Finksburg, MD 21048; (H) 410-526-6685, (W) 443-544-7483; Fax: 410-581-7038; email mschmidtjr@verizon.net [15-18].

Rich Gottfried; contact info in Geo2YC Representative listing above [13-16].

New Jersey

Margaret (Missy) Holzer, Chatham High School, 255 Lafayette Ave., Chatham, NJ 07928; (W) 973-635-9075; (H) 732-868-0901; email mholzer@monmouth.com [15-18].

Michael Passow, 296 Central Ave., Englewood NJ 07631-1658; 201-871-0846 (H), 201-519-1071 (C); email michael@earth2class.org [14-17].

New York

Renee Aubry, Port Chester HS, Port Chester, NY 10573; 914-934-7952(W), 914-245-9661(H) email raubry@portchesterschools.org or raubry@otunet.com [15-18].

Don Haas, Paleontological Research Institution, 1259 Trumansburg Rd., Ithaca, NY 14850; 607-821-0910; email haas@priweb.org [15-16].

Ontario

No Councilors at present; volunteers welcome.

Pennsylvania

Randy Newcomer, Randy's Books, PO Box 214, Akron, PA 17501; 717-823-0572 (C); email randy@randysbooks.com www.pageology.info [13-16].

Jason Petula, Millersville University, 221 Stayer Hall, 51 Lyte Street, Millersville, PA 17551; (717) 872-3422; jpetula@millersville.edu [14-17].

Virginia

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ALL THESE NEED TO BE UPDATED: CONTACT PRESIDENT MIKE O'DONNELL WITH YOUR WILLINGNESS TO SERVE.