

# Bulletin

of the Eastern Section of the National Association of Geoscience Teachers

**VACCINATION  
EDITION**

Volume 71, Issue 2: Spring 2021

## President's letter

by **Michael O'Donnell**

*Blue Ridge Community & Technical College*

Again, I find myself on unfamiliar ground (virtually I should say!). Thanks to Chris Roemmele for switching gears and hosting a virtual annual meeting, complete with presentations, networking, and a virtual happy hour! And, since we are conducting our meeting virtually, I thought I would try to learn how we can collect our registration fee virtually. Hence the unfamiliar ground.

This year, for all of us that wish to go completely virtual, we have set up a PayPal site for you to send in your registration fee. Unlike past years, there is only one fee (you must supply the hors d'oeuvres and your favorite adult beverage for the happy hour!).

To send payment via PayPal, go to [paypal.com](https://paypal.com) and if you already have an account, log in to that account. If you do not have a PayPal account, click the "sign up" button and go through the process of establishing an account. Once your account is ready, click "send money" and on the next screen type in [minerlight@atlanticbb.net](mailto:minerlight@atlanticbb.net). On the next screen, type in the amount to send. If you choose, you can add a message to Steve. Hit the "continue"



button and on the next screen choose "sending to a friend" or "paying for a service" (the differences are explained on that screen). The following screen asks you to select your bank or credit card for payment. You would have already added these as part of the account set-up. The final screen shows all of your information for the payment with the "send payment now" button at the bottom. Click that button and you are good to go!

Of course, you can still send a check with your registration fee of \$15.00 made out to NAGT Eastern Section. Mail it to the address below and Renee will deposit in our account.

Renee Aubry  
1179 Glen Rd.  
Shrub Oak, NY 10588

Whichever method you decide to send the fee, I encourage all the membership to join us in June for this meeting.



# Karakorum rocks

by **Martin Schmidt, Jr.**  
*The McDonogh School*

Thinking of getting back out in the field? Here are some geology bits from the Karakoram Range of the Himalayas - some familiar and some less so.



*A mountainside of sills above the Indus River. It's not a very sharp picture, but I think quick pictures out of moving vehicles are better than nothing. You can get the whole view looking uphill and/or upriver in Google Earth at 35.785, 74.622. Just downriver, there's a hill of intersecting dikes at 35.755951, 74.610545. This is about 36 miles north of Nanga Parbat, ninth highest peak in the world, and the westernmost of the 8000 m peaks.*

**[Editor's note:** Check out this awesome half-hour video on the structural geology of this region by the University of Aberdeen's Rob Butler – it involves this same granite sills: [http://media-podcast.open.ac.uk/feeds/3131\\_s309/34426\\_the\\_buiding\\_of\\_nanga\\_parbat-480.m4v](http://media-podcast.open.ac.uk/feeds/3131_s309/34426_the_buiding_of_nanga_parbat-480.m4v) -CB]

Here are another three from near the Baltoro Glacier on the way to K2:



*What we find when continents collide (only scale here is plants in foreground).*



*Could be just another Triassic conglomerate from the Appalachians; shows similar processes go on around the world.*



*A different conglomerate: Matrix and clasts are limestone. Note that many of the clasts have a black "rind" on them of varying thicknesses - I guess they went through an extra cycle of deposition before being included in this conglomerate. Perhaps readers know of similar examples or other methods of formation?*





# Virtual labs via Google forms!

Hello,


My name is **Lisa White**, I am the education and outreach director at the University of California Museum of Paleontology. Our team has been working to develop accessible online paleobiology-themed labs that instructors can use during this period of remote teaching and beyond. The positive response to the labs from Bay Area instructors and students has spurred us to make them more widely accessible. We are excited to offer six paleobiology-themed digital labs for instructors at 2-yr and 4-yr colleges:

- All labs are free to use and accessible online via Google Forms. Students do not need a Google account to access the labs.
- Each of the six labs focuses on a broad theme in paleobiology and geology: Paleobiology, Paleobotany, Understanding Science, The Earth System, History of Life, and Evolution of Vertebrates. The chart attached to this email summarizes the topics and skills covered in each lab.
- Labs are modular and able to be customized to suit the needs of your classroom by either removing modules from a lab or adding in modules from other labs.
- All labs can be run in either a synchronous or asynchronous format.
- Using Google Forms, we are able to incorporate a range of photos, videos, and 3D models from various resources into a single cohesive format.

If you would like to use one of these labs, email Joshua Zimmt at [access.paleo.ucmp@gmail.com](mailto:access.paleo.ucmp@gmail.com). He will set you up with your own version of the lab that you can edit and modify, and can introduce you to using the Google Forms format if you would like a demonstration.

We are hoping to make these labs as widely available as possible, so if you know someone who might want to run one of these labs, please forward this email to them!

Thank you very much,

Lisa White 

*A Very Special Announcement.....*

## The Spring 2021 Eastern Section “Geo-Auction”

The annual Eastern Section Geo-Auction, a world famous NAGT spring meeting tradition known across the Milky Way Galaxy will be held this year!

In conjunction with the virtual eastern section meeting scheduled for Friday, June 4, 2021 we will offer a virtual, silent-auction of 10 geological items that will be listed online at the eastern section Facebook page found at:

<https://www.facebook.com/groups/1727394404251855>

Bidders can view the items along with a detailed description of each. Bids can be placed directly in the comments section below each separate item post.

The Geo-Auction will begin on Friday, May 28 and end on Friday, June 4 at 5pm.

In addition to the final bid price, the winning bidder will agree to pay a flat rate ship-ping fee of \$10 for USPS shipping. Payment for each item, plus \$10 shipping, will be made to Steve Lindberg by check, PayPal or other method. All proceeds from the geo-auction will then be sent to section treasurer Renee Aubrey.

**-Steve Lindberg**

*Eastern Section Geo Auctioneer*

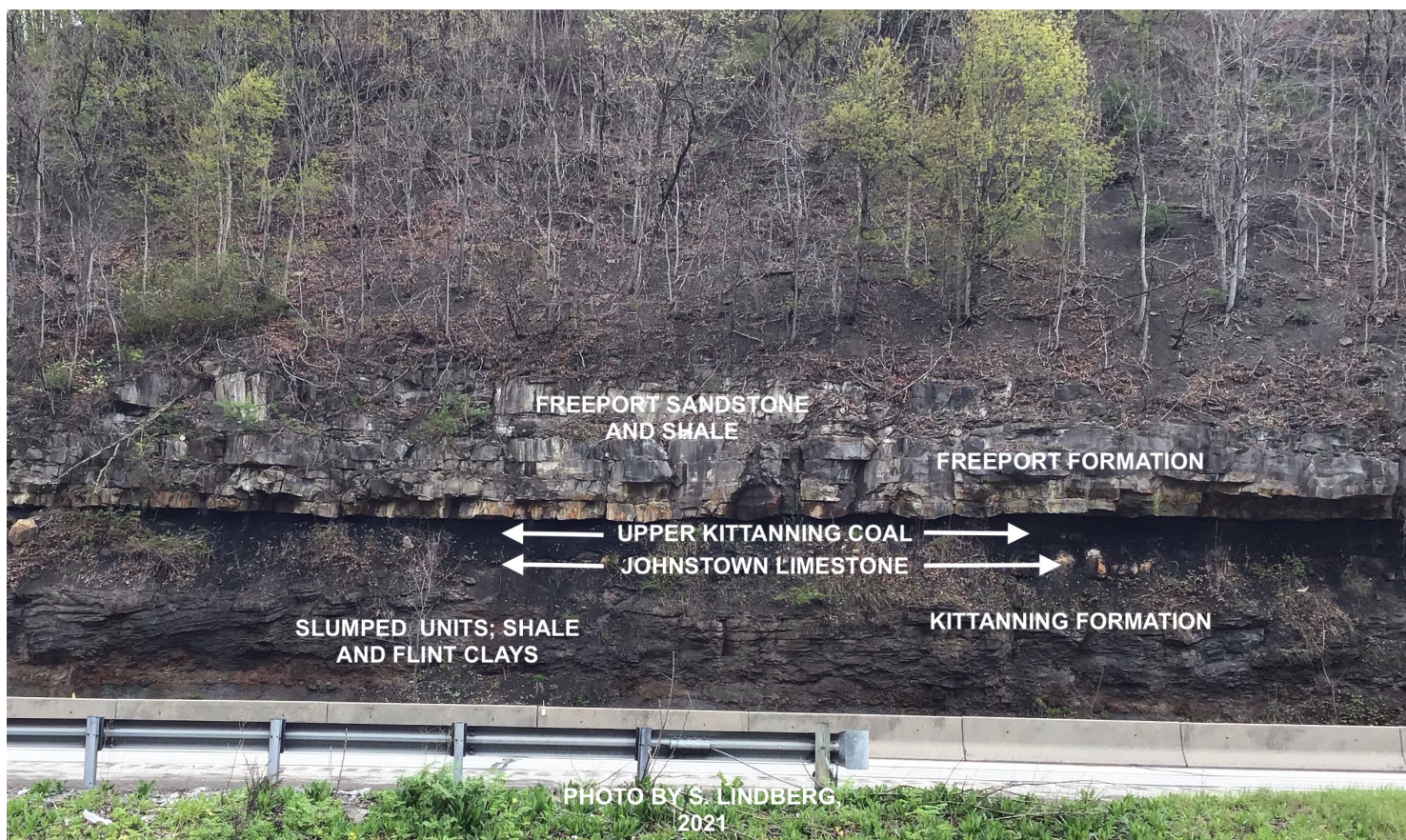


*Reproduction of an actual adolescent T. rex discovered in South Dakota in 1997. Custom made skeleton available for starting bid of \$30,000. Shipping, delivery and optional setup available at extra cost.*

*And yes, this really is available.*

*Custom made, so allow approx. 4 months fabrication time.*





# “Outcrops,” Spring 2021

by **Steve Lindberg**

*University of Pittsburgh at Johnstown*

Known as the “Widman Street Exit Outcrop”; this exposure along Pennsylvania Route 56, just east of Johnstown is a well known stop for regional college field trips, The Field Conference Of Pennsylvania Geologists and other geoscience groups. The cut is approximately .5 mile in length and provides an outstanding view of the Pennsylvanian Period Allegheny Group, Kittanning and Freeport formations. Visible in this view is the Upper Kittanning coal seam which serves as the boundary between the Kittanning Formation below and Freeport Formation above.

The Upper Kittanning coal seam was extensively mined during the early to mid 1900’s and visible in the exposure are multiple collapsed mine tunnels. At several locations along the cut old mine timbers and coal car rails were still visible sticking out of collapsed mine tunnels.

The Johnstown Limestone is an important marker bed across the region and is interpreted as being a lacustrine, fresh water limestone. At several locations along the cut the lower shale and flint clay units appear tilted and mimic an angular unconformity. These have been interpreted to be the result of soft sediment slumping within a small delta or *crevasse splay* deposit.





# Quilt Your Science 2021

## *a call for submissions*




by Laura Guertin  
*Penn State Brandywine*

As scientists and educators, we are always challenged with finding new ways to share content, discoveries and data in earth and space science. Innovative approaches to our science communication and engagement allows us to broaden the audience and to add new voices to the conversations. The crossover of science and art have resulted in projects improving awareness and action for our planet – one example is the Tempestry Project (<https://www.tempestryproject.com/>) that asks individuals to knit/crochet temperature records from different geographic locations. But a virtual Braindate held at the 2020 AGU Fall Meeting brought Laura Guertin (Penn State Brandywine) and Betsy Wilkening (Arizona Project WET) together for the creation of a new science and art project, **Quilt Your Science 2021**.

Quilters of all ages and skill levels are encouraged to create a mini quilt that relates to earth and space

science. It can be a quilt that captures your journey into science or across the ocean. The quilt can be a data visualization from the atmosphere or hydrosphere. Think of the science story you want to tell through a quilt - the choice is yours! The completed quilt should be square or rectangular, measuring between 12 and 24 inches on each side.


Images and descriptions of completed quilts will be showcased in a virtual quilt display during the 2021 AGU Fall Meeting in December (there will be an opportunity to connect virtually for those not in attendance in New Orleans). Curious to see what a virtual quilt display will look like? Here is an example of how we envision the virtual exhibition: <https://tinyurl.com/quiltyoursciencepreview>

The deadline to submit your quilt photo and description is November 15. Quilters do not need to be geoscientists or AGU members to participate. For more information, please visit the Quilt Your Science 2021 website: <http://tinyurl.com/sciquilt21> or contact Laura Guertin ([guertin@psu.edu](mailto:guertin@psu.edu)). 

## NAGT Eastern Section Spring 2022 Meeting *Early Bird Announcement*

The spring 2022 section meeting is tentatively scheduled to be held in Hancock, Washington County, Maryland. There are numerous exceptional geologic sites within half hour drive that include the U.S. Silica plant and mines in nearby Berkeley Springs, West Virginia, the big cut at Sideling Hill and the “Round Top Hill” cut along the C&O Canal in Hancock. The Round Top Hill exposure features what has been described as the most spectacular folding within the Appalachians and includes the famous “Devils Eyebrow” anticline and ruins of the Round Top Cement Mill.



More information to follow in our fall 2021 newsletter. 

# Schedule for NAGT-ES annual meeting

by **Christopher Roemmele**

*West Chester University of Pennsylvania*

**Friday, June 4**

9:00 – 9:15 Welcome, Presentation of OESTA Award Winners and other business

**Michael O'Donnell**, NAGTES President,  
**Christopher Roemmele**, NAGTES Vice President

9:15 – 10:15

**Dr. Martin Helmke**, Professor, West Chester University

“Drones, Geophysics, and Robotics to Support Geoscience Education and Research in a Pandemic”

Drones solicit excitement and curiosity in our students because they are motivated to position themselves for successful careers as scientists and researchers. As a form of remote sensing, drones also provide an opportunity for collaborative yet socially-distanced learning and research that transcend the isolation students have experienced during the 2019/2020/2021 SARS-CoV-2 pandemic. During the 2020/2021 academic year, WCU Earth and Space Sciences students learned to fly and construct drones, earned their FAA commercial UAS licenses, used drones for community-engaged research, and interacted with scientists, engineers, policy makers, and community partners world-wide. Despite (or perhaps because of) the pandemic, the combination of global interest in drone technology and the across-the-board tele-remote work environment opened new opportunities for student engagement. During this short presentation we will share example case studies, outline required elements for establishing an academic drone program, and discuss future possibilities and challenges for integrating drone technology into the geoscience curriculum.

11:00 – 12:00

**Dr. Tim Lutz**, Professor, and **Dr. LeeAnn Srogi**  
Professor *Emerita*, West Chester University

“From Topography to Climate Change: how to use your locale to make invisible landscapes accessible for your student”

Climate change is altering rainfall patterns, raising sea levels, causing coastal and sunny-day flooding, and increasing the ferocity of weather events from storms to hurricanes to wildfires. Beyond “doom-and-gloom” scenarios, how can we help students construct knowledge and self-efficacy to face their futures? At the nexus of human lives and climate change are the landscapes we live on. This interactive session highlights activities that use kinesthetic, experiential, and quantitative strategies to reveal the power of landscapes to students. Starting with the humble contour lines – the alphabet of topography – activities develop from understandings of water runoff patterns to judgments and predictions, enabling students to create stormwater management plans, interpret flood inundation and risk maps, and evaluate patterns of environmental racism. We will discuss how activities can incorporate science standards and be adapted for any landscape setting, for students of all abilities at secondary/college levels, and for other geoscience topics.

1:00 – 2:00

**Dr. Margaret Holzer**, Great Minds PBC and Rutgers University, **Dr. Insook Han**, Professor, Temple University

“Thinking scientifically in a changing world: Evaluating competing models within socio-scientific issues”

A Framework for K-12 Science Education identifies critiquing, arguing, and analyzing as evaluative processes that are foundational to science and science learning. However, it can be challenging for students to think critically and scientifically about many Earth and environmental science topics. Therefore, we have developed instructional scaffolds that help students to purposefully evaluate connections between lines of evidence and alternative explanations of phenomena. These

scaffolds cover complex socio-scientific issues including climate change, freshwater resources, fracking, universe origins, and fossil dating. In this session teachers will learn how to use these instructional scaffolds that promote critique, evaluation, and geoscience learning.

3:00 – 4:00

**Dr. Daria Nikitina**, Professor, West Chester University

“Delaware Bay: Sea Level Rise History, Future Projections and Strategies to Protect Its Coastal Resources”

Sea level rise is a significant consequence of climate change. For the past 4000 years world has experience modest global sea level changes. Since the end of the 19<sup>th</sup> century, however, global sea level that has been rising at an alarming rate generating hazards for coastal populations, economies, ecosystem, and resulting in loss of coastal environments and historical heritage. To make informed mitigation and adaptation decisions to protect valuable coastal resources monitoring of current trend and accurate projections of future sea levels are required. The projection relies on understanding of mechanisms driving coastal evolution which must be founded on an understanding of its history. Reconstructed history of relative sea level (RSL) along the USA Atlantic coast documents temporal and special variability of its rates over the geologic time scale. The highest rates of RSL rise are documented in the Mid-Atlantic region, and Delaware Bay in particular.

The Delaware Bay is the second largest estuary along the U.S. Atlantic coast that has been occupied by humans since Paleoindian period (22,000 B.P). The region includes high concentration of population, critical natural ecosystem, and rich historical resources. Most of the estuarine shoreline is fringed by salt marshes that are now being lost at a rate of up to an acre per day due to erosion and inundation. In addition to global mean sea-level rise, regional processes such as land subsidence due to the glacial isostatic adjustment of Earth crust from the ice sheet during the last Ice Age, and changing of nearby ocean circulation patterns contribute to accelerated rates of RSL rise along the Delaware Bay coast. In addition, the region is extremely flat with very low mean elevation and

experiences frequent flooding from tropical and extra-tropical (nor’easters) storm systems. Recognizing this urgent situation, state authorities and agencies commissioned technical studies that provided recommendations for planning and adaptation strategies to increase the resilience of the coastal communities and protect natural and historical resources under different future SLR scenarios.

Over 2000 coastal archaeological sites were identified within the coastal zone, many of which are under immediate threat of inundation, storm erosion and tidal flooding. Apply probabilistic approach using the Representative Concentration Pathway (RCP) climate scenarios consistent with IPCC AR5 and we identified cultural resources that will likely face threats from sea-level rise in the next decade.

5:00-8:00

**Snap talks:** Theme – “Growing a beard”

If you would like to share a teaching strategy or activity that you used and benefitted your instruction and student learning, and met the needs of students or faculty – please contact Christopher Roemmele [croemmele@wcupa.edu](mailto:croemmele@wcupa.edu) to indicate your interest in participating in this mini share-a-thon. Presentations should be no more than 5 minutes.

Networking and virtual happy hour and announcement of geo-silent auction winners.



**This newsletter is edited by Callan Bentley,  
Piedmont Virginia Community College.  
If you have feedback or ideas, or want to  
help out, please get in touch via email:  
[cbentley@pvcc.edu](mailto:cbentley@pvcc.edu)**



# *Spring 2021 "From The Archives"*

by **Steve Lindberg**

*University of Pittsburgh at Johnstown*

I have been spending some time going through the volumes of folders, notebooks and envelopes which contain thousands of documents from our NAGT eastern section. Newsletters and conference field trip guidebooks, along with a vast array of financial memos paint a very complete picture of the history of the section. Many of the items are quite unique and must be preserved; a receipt from 1958 in the amount of \$3.35 for paper, pens and stamps, well, maybe not

so much. The field trip guidebooks provide a wealth of information about regional geology and the members responsible for coordinating the meeting and running the business of the section.

The June 1-3, 2012 conference was hosted by the Lamont-Doherty Earth Observatory Of Columbia University, Palisades, New York. The conference coordinators were long time NAGT member and past section president Michael Passow, along with sections members Renee Aubrey (our current eastern section treasurer) and Rosemarie Sanders.

I was reviewing the field trip guidebook for this meeting and found this written history of NAGT included within the pages. It is reproduced here exactly as it appears in the 2012 meeting guidebook.

## **NAGT History**

Kurt E. Lowe, Professor Emeritus, City College of New York, termed the story of NAGT "the spread of a great idea." This idea was the conviction that persons closely identified with geological education would benefit greatly through association and exchange of ideas and discussion of mutual problems. The idea germinated quite spontaneously on October 3, 1937, when five geology teachers chanced to meet for a few minutes at the close of the Fifth Tri-State Geological Field Conference at Wauwatosa, Wisconsin. These teachers had worked largely alone at their respective colleges and they agreed unanimously that they needed to get better acquainted and compare notes on their teaching and other common problems.

This small group met again on May 13, 1938, at Augustana College, Rock Island, Illinois. They and other colleagues endorsed the suggestion that a permanent association be formed. As a result, an "Association of College Geology Teachers" was created. Officers were elected and a committee was instructed to prepare a statement of purposes and constitution. At the 1939 meeting held at Cornell College, Mount Vernon, Iowa, these were adopted.

Meetings during the years 1938-1942 followed a general pattern involving two days in April or May. No annual meetings were possible during World War II. The Association resumed its annual meetings at the 1946 meeting at Knox College, Galesburg, Illinois.

The 1946 meeting was an important one. The Association decided to encourage membership on the part of all concerned in any way with geological education and adopted the name, "Association of Geology Teachers." It was also decided to undertake publication of a Journal of Geological Education as soon as practicable, to replace the mimeographed proceedings, transactions, and news and letters.

At the Chicago meeting in 1949, members recognized that the Association could function effectively on a national basis only through the establishment of sections in different parts of the country. A plan was prepared whereby the country might eventually be subdivided into ten regions, each with a section of the Association having its own officers and holding sectional meetings to supplement the annual national meeting.

On November 18, 1950, an Eastern Section was organized at Washington, D.C., during sessions of the Geological Society of America. In 1951, the parent organization met jointly with the newly-formed Eastern Section at Detroit, again concurrently with GSA. Reorganization took place and the constitution was modified to provide for a national body, comprising two regional subdivisions, a Central Section and an Eastern Section and providing for future addition of other sections. Since the 1951 meeting at

**FROM  
THE  
ARCHIVES**



Detroit, the national meetings of the Association have been held concurrently with GSA. In April 1951, the first issue of the Journal of Geological Education appeared.

In view of a healthy and accelerating growth, and the formation of sections, at the 1958 national meeting another name change was made. The society became the "National Association of Geology Teachers."

In October 1991, the position of Executive Director was established and Robert Christman was appointed to this position. Then, in November 1995, by vote of the members, the society changed its name to National Association of Geoscience Teachers and the publication became the Journal of Geoscience Education.

Except for the last paragraph, this account was published in the 1988 NAGT Membership Directory, which had been modified from an article By F. M. Fryxell, Geotimes, Vol. VI, No. 1 (July-August, 1961).

<http://www.nagt.org/nagt/organization/history.html>

The Eastern Section includes professionals involved in all levels of geoscience education who enjoy association as colleagues and friends. Our best opportunity to work and play together is during our annual spring conference where we welcome educators in all stages of their career to renew enthusiasm for geoscience teaching.



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