Bulletin
of the Eastern Section of the National Association of Geoscience Teachers
Volume 70, Issue 4: Fall 2020

Talking to the OWL:

Some Late Night Reflections and Ramblings On Teaching In The Epoch Of Covid-19

by Steve Lindberg
University of Pittsburgh at Johnstown

I've been teaching geoscience for 42 years; (yea, I'm that old) and I can say that over the years I've "been there, done that, seen that" many times over. Peneplains have come and gone; as have the miogeosynclines (they are gone, aren't they?). I can clearly recall that during my freshman year at Waynesburg College we had a guest speaker from the USGS in my introductory Physical Geology class. Our speaker informed us, in no uncertain terms, that by the year 2000 the world's supply and reserves of oil will have been depleted and we should well prepare ourselves for this new era that was soon to arrive. Looking back at my old notebook from that class I can find nothing about Plate Tectonics.

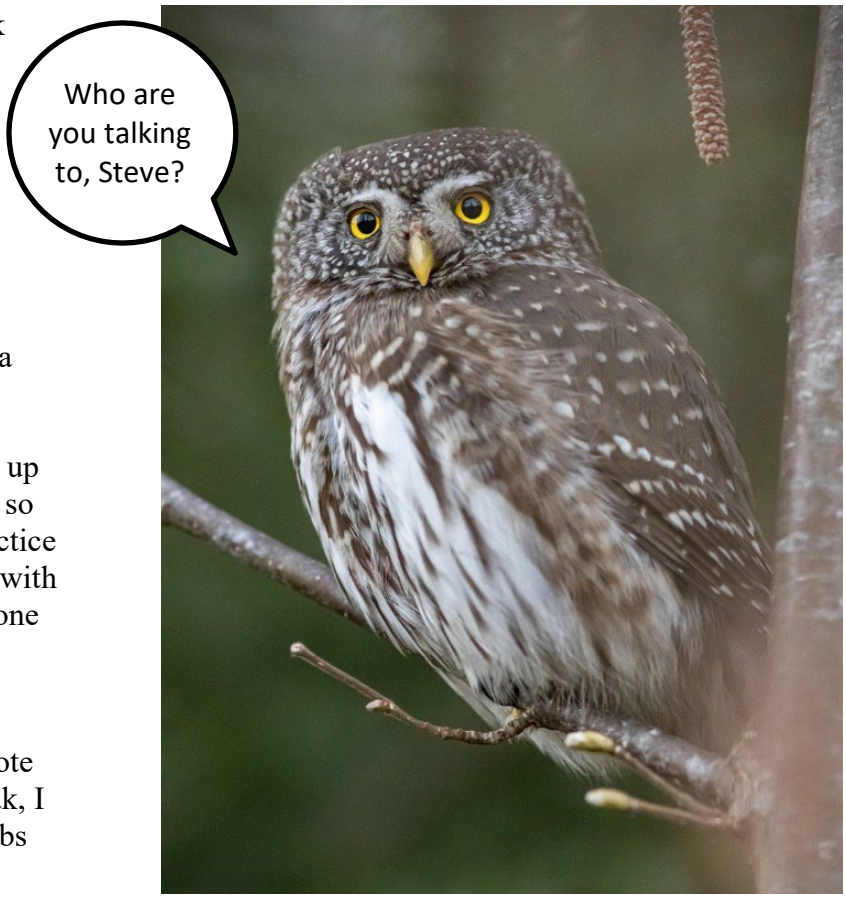
During my years in the public school system we transitioned from open classrooms, four-period day block schedules, 8 period-day traditional schedules, gradeless schools, outcome based education, the "new math" and common core. Looking back, it seems like we changed to a new system every year

Steve's classroom with student seating arranged to comply with Covid-19 social distancing requirements. The OWL camera system is mounted on the tripod in front of the computer work station.

along with the required rewriting of the course of study. Along with new educational concepts came the ever-changing teacher evaluation models: Danielson's Framework, Value-Added Assessment System and others. I retired from the public school system in 2012 as the Danielson Framework was being introduced to our district. The decision to retire that year was possibly one of the best life choices I have ever made.

My present position as a college instructor of geoscience has been a very rewarding and fulfilling experience. Don't get me wrong, I loved teaching science in the public school system; but the college level experience for me has hit the bull's-eye. It is wonderful to have students that truly understand the meaning of igneous rock texture and not continually attempt to rub the sample against their face to determine this property. My courses have included Physical Geology, Prehistoric Life, Earthquakes and Volcanoes, Meteorology, Astronomy and Geologic

Field Methods. Each and every semester I look forward to teaching from this list of classes.



And then came the spring 2020 and fall 2020 semesters. Don't worry, this is not going to become negative. On the contrary, these past two semesters have helped me understand so much better the "digital immigrant" that I am.

"A digital immigrant is a term used to refer to a person who was raised prior to the digital age. These individuals, often in the Generation-X/Xennial generations and older, did not grow up with ubiquitous computing or the internet, and so have had to adapt to the new language and practice of digital technologies. This can be contrasted with digital natives who know no other world than one defined by the internet and smart devices (Investopedia, 2020).

When our university decided to go totally remote learning following the March 2020 spring break, I found myself rushing to prepare lessons and labs that would allow my students to successfully complete the semester. We were allowed to access our classrooms and office space several times to retrieve materials before the campus was placed on lockdown. Then it was teaching from here at home on my trusty MAC desktop. Posting assignments online, Facetime chats, Google docs, email discussions and other methods that I simply cannot recall at this time. For the remaining few weeks of the semester I thought it went very well; and the student evaluations of the course reflected the same.

The start of the recently concluded (my last class session was November 19) fall 2020 semester ushered in a new experience in classroom teaching; for I have met the "OWL" and he is mine. What is the OWL? Simply put it is "A very smart camera system that broadcasts video and a 360-degree view of your classroom along with audio for engaging your students in distance learning (Lindberg, 2020). The OWL cam-era system within my classroom provided students a remote view of the classroom, along with a separate view of me as I walked around and lectured to an empty classroom. Coupled with the computer station, Zoom and a document camera it enabled the viewing of videos, power-points, charts, graphs, rock samples and anything else that could be projected or placed under the desktop document camera. The OWL camera system had voice/sound tracking and followed my movement around the classroom as long as I continued to speak.

My university installed approximately 170 of the OWL systems within the classrooms and lecture halls of our campus and them up and ready to go on day one of the fall semester. Our information technology department people are great wizards that possess supernatural powers. Students were given the option to attend classes in person, or online through the OWL system. I had two courses this semester, with 30 and 38 students. For each class session I averaged 2 students in real-person attendance. When our campus was raised to "elevated status" over Covid-19 I decided to mandate that all instruction would be remote only and students would attend class via Zoom.

So I found myself within an empty classroom, walking around and talking to the OWL. I'm not sure why we call it OWL, but it does chime out a "hoot-hoot" when booted up for each class session. I have to admit it became second nature to teach to an empty classroom. Holding up rocks to the OWL camera, demonstrating how to complete a graph or

interpret a seismogram while labeling it under the document camera seemed to go off without a hitch. Our semester is now finished, and we return to spring semester classes on January 19 with a continued virtual format. I made a promise to not use the phrase "the new normal" in this narrative, but here we are. I have a nice lengthy semester break to prepare my materials for spring 2021 semester classes. The OWL sits in my classroom enjoying a well-deserved period of hibernation. I might go up to campus over the break just to enter the classroom and turn on the OWL so I can hear it hoot-hoot, I miss that.

Someone informed me that peneplains are making a geological comeback. I would like to continue teaching until they do.

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.

Seeking help with the NAGT Eastern Section _Bulletin_

Hi everyone! I've been editing this newsletter for some years now, and I'd be keen to see what someone else might do with it. If you're potentially interested in helping the section out and have skills or interest in learning skills related to desktop publishing, please get in touch. I would be pleased to pass the torch sometime in the next year, if there is a willing member of the section ready to take the Bulletin forward into the future. – Callan Bentley

OEST for the EAST

by Christopher Roemmele
West Chester University of Pennsylvania

I am certain that we all remember a teacher who made a difference in our lives – one who served as a wonderful mentor, who motivated us, encouraged us, pushed us to be our best – the teacher who went above and beyond, creative and innovative, truly passionate about teaching and teaching science.

Who are these teachers today, who is making a difference especially this past year in the transition to virtual classrooms, how did they maintain interest and excitement? What have they done this year and in the past that deserves recognition from our Eastern Section? The Outstanding Earth Science Teacher Award exists for that purpose.

The deadline for submitting nominees for all our Eastern Section awards is March 31, 2021.

If you work with or know someone whom you feel deserves this recognition, then please take the time to nominate this person for one of our Eastern Section awards, or one of the National NAGT awards. Or you can urge your colleague to self-nominate.

Information about all our Eastern Section awards can be found on our section website. You must place your nomination via the online forms found on the National NAGT web site at http://nagt.org/nagt/programs/oest.html, and they will ultimately be forwarded to me as section awards chair. We would like all states that are part of the Eastern Section to have nominees and a state winner.

There are other awards for post-secondary educators and educators who don't work in a K-12 classroom, as well as field work scholarships for undergraduate students.

Here is a list of our awards.

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.

Fall 2020 "Outcrops"

by Steve Lindberg
University of Pittsburgh at Johnstown

The J.V. Thompson Quarry located along Pa. Route 40 in Fayette County, southwestern Pennsylvania, offers an exceptional exposure of the Wymps Gap Limestone member of the Mississippian period Mauch Chunk (*Mmc*) formation.

In southwestern Pennsylvania the Wymps Gap Limestone is one of the most fossiliferous units in the entire region; and contains abundant brachiopods, bryozoans, crinoids, blastoids and the trilobites *Kaskia* and *Paladin*. The Wymps Gap Limestone has been interpreted to represent a marine transgression event during the Mississippian.

Named for Uniontown, Pa. businessman Josiah Van Kirk "J.V." Thompson (1854-1933), the quarry was used to supply aggregate for local building projects and road construction.

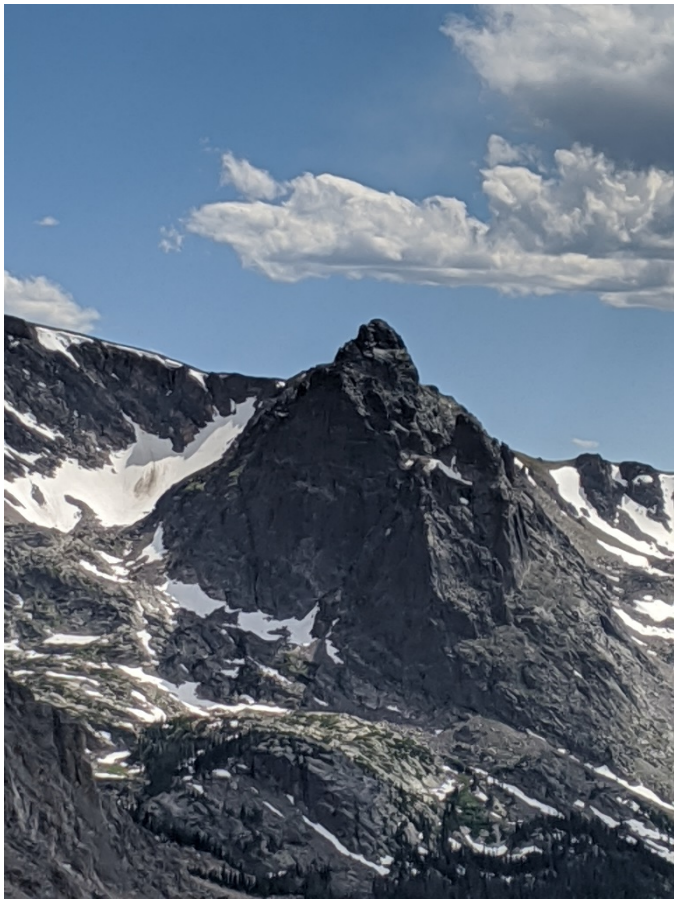
The now abandoned quarry is currently being used a PennDOT maintenance site and entrance is restricted.

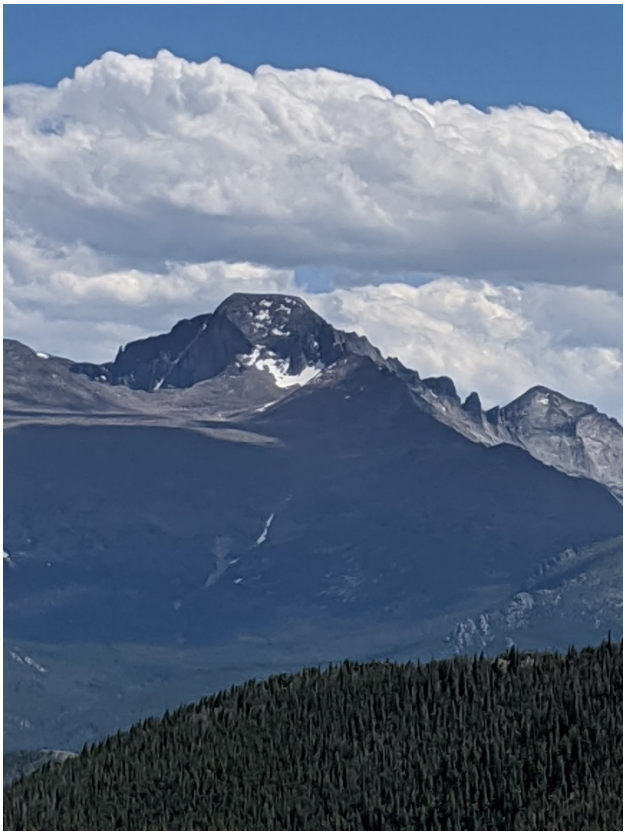
The photo (courtesy of the DCNR, PA. Geologic Survey) shows the quarry as it appeared in 1928. I took the second photo from approximately the same position during a visit to the quarry in October 2020.

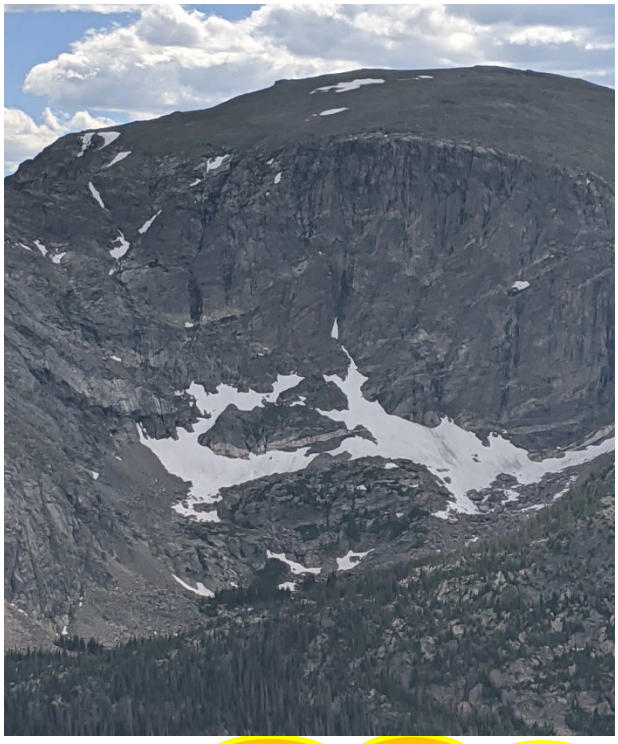
A few photos from Colorado

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

I have struggled to write down anything worthy of our newsletter this go round. So, instead I offer you a few pictures from around Sprague Mountain and Terra Tomah Mountain I took this summer while visiting a friend in the Colorado Rockies. Enjoy!







NAGT eastern's June meeting will be a virtual conference. Contact Christopher Roemmele with any ideas for virtual sessions or if anyone has a virtual field trip of substantial length that they could share. It will be one day, up to four or five sessions, with meeting and happy hour-networking at end. Minimal registration charge.

United Nations celebrations kicking off in 2021

by Laura Guertin
Penn State Brandywine

The United Nations has established themed celebrations to bring international awareness and actions on themes ranging from human rights to health and education. There are some UN observations for the year 2021 and the next decade that can be connected to instruction in earth and environmental courses. Below I highlight a few, with a full listing of all United Nations observances available at: https://www.un.org/en/sections/observances/united-nations-observances/

International Year of Fruits and Vegetables (2021) – For those teaching about food systems, sustainability, and our changing climate, this effort calls attention to the need for increased sustainable production and consumption of fruits and vegetables. For additional information, including links to the United Nations Sustainable Development Goals (SDGs), visit: http://www.fao.org/fruits-vegetables-2021

United Nations Decade on Ecosystem Restoration (2021-2030) – This observance seeks to address "the importance of the ecosystem approach for the integrated management of land, water and living resources and the need to step up efforts to tackle desertification, land degradation, erosion and drought, biodiversity loss and water scarcity, which are seen as major environmental, economic and social challenges for global sustainable development." Explore the resources supporting the decade: https://www.decadeonrestoration.org/

United Nations Decade of Ocean Science for Sustainable Development (2021-2030) – Marketed as "the science we need for the ocean we want," this observance seeks to encourage participation from scientists, policy makers, managers, and all global citizens for transformative actions that lead to a sustainable and healthy ocean. Explore the resources supporting the decade: https://oceandecade.org/

Note that it is not too late to share with students the global efforts towards the United Nations Decade of Sustainable Energy for All (2014-2024) and International Decade for Action "Water for Sustainable Development" (2018-2028).

A Resource for Exploring the Power of Connections for the UN Ocean Decade with ArcGIS StoryMaps

by Laura Guertin *(Penn State Brandywine*) and **Isabella Briseño** (*Penn State – University Park*)

Having just completed her first year of college and her first introduction to oceanography course, co-author Briseño planned to spend the summer of 2020 conducting research relating to the ocean. The social/physical distancing requirements altered her original summer plans and instead provided a unique opportunity for her to participate in several virtual seminars and conferences to learn about topics not covered in her traditional oceanography course, such as the Ocean Literacy Principles, ocean policy, marine protected areas, and indigenous coastal communities.

Through the virtual mentorship of co-author Guertin, the two logged in and took collaborative notes while attending sessions during meetings such as Capitol Hill Ocean Week (CHOW 2020) and the Virtual Ocean Literacy Summit. What Briseño quickly realized is that the "science" of ocean science is just one part of the equation when it comes to understanding the ocean system. She started visualizing the connections within and between ocean topics across three main themes: disciplines, cultures, and generations. She decided to use the ArcGIS StoryMap tool to generate multimedia modules to help other undergraduate students like herself who are not aware of looking at the ocean challenges and solutions with a broader, wider lens.

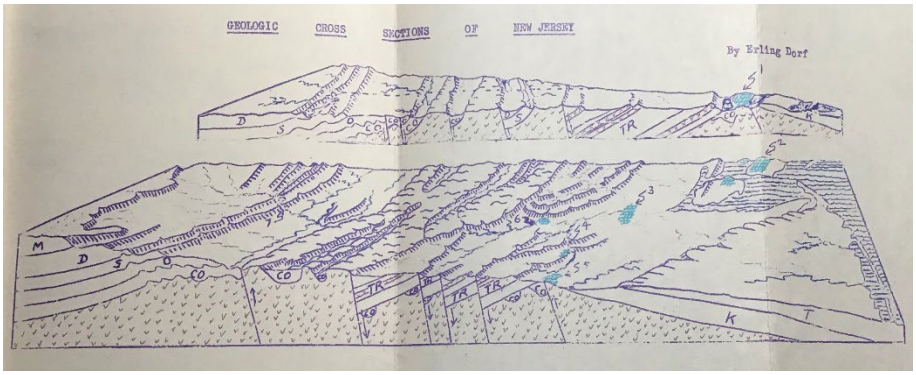
Briseño created six StoryMaps that highlight connections necessary for a healthy and sustainable future for the ocean. The first two StoryMaps are an introduction to the Ocean Literacy Principles, UN Sustainable Development Goals, and UN Decade of Ocean Science for Sustainable Development. The next three StoryMaps are themed on disciplines, cultures, and generations, highlighting individuals, communities, and organizations across the globe and across ages and career stages working towards learning and taking action to protect the ocean. The final StoryMap is a set of questions written along Bloom's Taxomonic framework that connects back to the content of each StoryMap and presents expansion questions and exercises with data sets, news articles, and more. All six StoryMaps have been translated into Spanish for further reach and dissemination. Accessibility was a focus of the materials developed, with all audio files including a transcript and the majority of videos having closed captions.

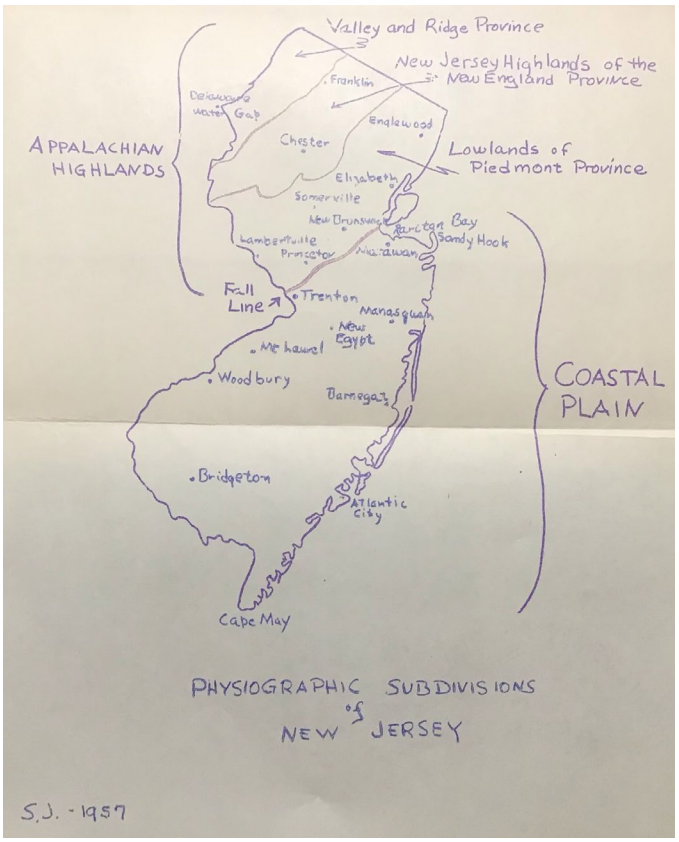
Briseño hopes that teachers in grades 7-12 and university faculty will share her StoryMap collection with their students so they may also receive an introduction to the ocean beyond the science and consider ideas for how to become involved in the United Nations Decade of Ocean Science for Sustainable Development as it kicks off in 2021. The collection can be accessed at: https://bit.ly/thepowerofconnections

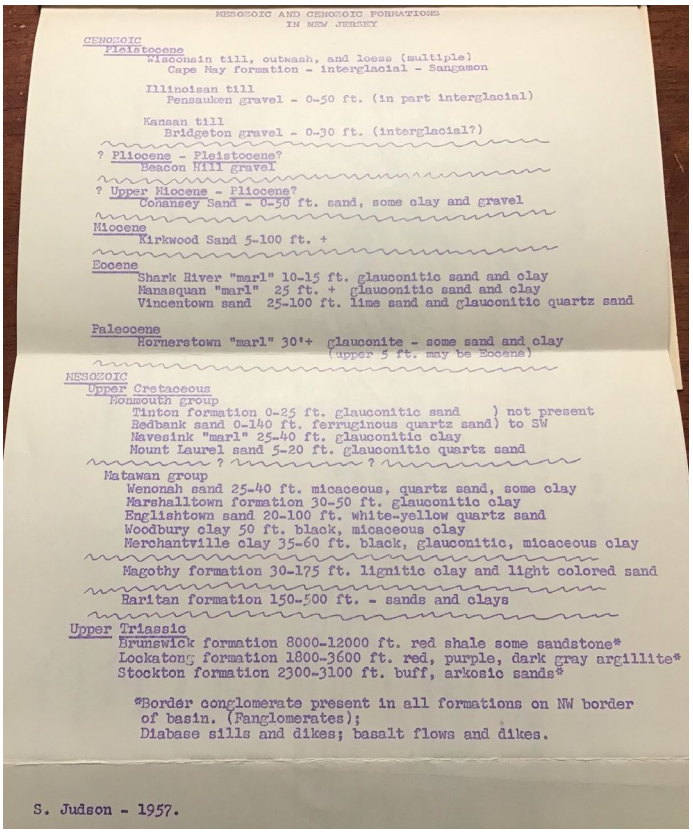
From the Archives

by Steve Lindberg
University of Pittsburgh at Johnstown

The fall 2020 edition of "From The Archives" included the secretary-treasurer report from the 1956-1957 year. As promised, here for our fall 2020 edition of "Archives" is what I believe to be the field trip guide from that meeting. The guidebook is made from a file folder, cut to a 6" X 9" size and stapled to include hand drawn maps and cross sections of New Jersey geology reproduced on a spirit duplicator "ditto machine".
There is no road log or written description of any type included in the guide. The entire field trip guide is reproduced for you here. The trivia question for this issue is…Who is the author of the New Jersey map and stratigraphic column?







MESOZOIC AND CENOZOIC FORMATIONS IN NEW JERSEY

CENOZOIC

Pleistocene
Wisconsin till, outwash, and loess (multiple)
Cape May formation - interglacial - Sangamon
Illinoisan till
Pensauken gravel - 0-50 ft. (in part interglacial)
Kansan till
Bridgeton gravel - 0-30 ft. (interglacial?)

? Pliocene - Pleistocene?
Beacon Hill gravel

? Upper Miocene - Pliocene?
Cohansey Sand - 0-50 ft. sand, some clay and gravel

Miocene
Kirkwood Sand 5-100 ft. +

Eocene
Shark River "marl" 10-15 ft. glauconitic sand and clay
Manasquan "marl" 25 ft. + glauconitic sand and clay
Vincentown sand 25-100 ft. lime sand and glauconitic quartz sand

Paleocene
Hornerstown "marl" 30'+ glauconite - some sand and clay
(upper 5 ft. may be Eocene)

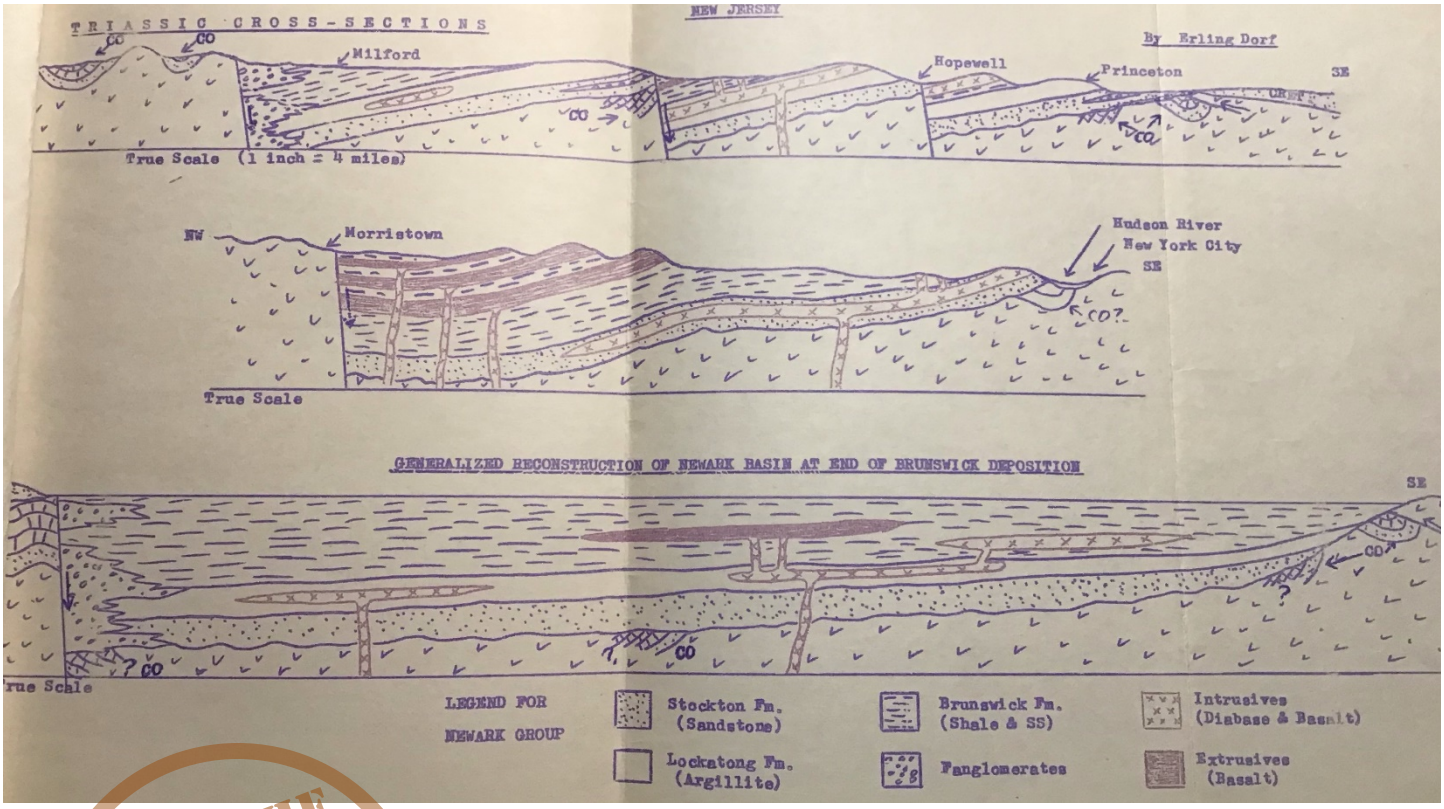
MESOZOIC

Upper Cretaceous
Monmouth group
Tinton formation 0-25 ft. glauconitic sand } not present
Redbank sand 0-140 ft. ferruginous quartz sand) to SW
Navesink "marl" 25-40 ft. glauconitic clay
Mount Laurel sand 5-20 ft. glauconitic quartz sand
?
Matawan group
Wenonah sand 25-40 ft. micaceous, quartz sand, some clay
Marshalltown formation 30-50 ft. glauconitic clay
Englishtown sand 20-100 ft. white-yellow quartz sand
Woodbury clay 50 ft. black, micaceous clay
Merchantville clay 35-60 ft. black, glauconitic, micaceous clay
Magothy formation 30-175 ft. lignitic clay and light colored sand
Raritan formation 150-500 ft. - sands and clays

Upper Triassic
Brunswick formation 8000-12000 ft. red shale some sandstone*
Lockatong formation 1800-3600 ft. red, purple, dark gray argillite*
Stockton formation 2300-3100 ft. buff, arkosic sands*

*Border conglomerate present in all formations on NW border of basin. (Fanglomerates);
Diabase sills and dikes; basalt flows and dikes.

S. Judson - 1957.



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Arctic REU Greenland:

New Undergraduate Research Opportunity!

by Joe Allen
Concord University

Arctic REU Greenland is a new NSF Research Experiences for Undergraduates (REU) site led by Concord University (West Virginia) and Montana State University. The REU is focused on field research in Precambrian metamorphic rocks integrating geologic mapping, structural geology, and earthquake geodynamics. Students will spend five weeks at a field site on the west coast of Greenland studying the distribution of earthquake-generated faults preserved as frictional melts (pseudotachylytes).

Travel expenses to the program and full logistical support for fieldwork in Greenland will be provided. Students will receive stipends of up to $5000 to support their work. Funding for travel to a geologic conference in the fall or spring to present research results is also included.

Field work in Greenland is scheduled for July 12 to August 13, 2021. Students will participate in online seminars and research activities before field work in April and early May, and again in September and October after our return.

Applicants should be undergraduates with a planned date of graduation no earlier than December, 2021. Ideally, applicants should have completed or be enrolled in a course in mineralogy, petrology, or Earth materials, although exceptions are possible. Coursework in structural geology and/or field geology or field methods is useful. NSF requires REU participants to be US citizens or permanent residents. Because of the late start time in July, students completing a geology field camp early in the summer may be able to attend this REU.

We especially encourage applications from first-generation college students and members of under-represented groups.

REU website: https://www.arcticreu.earth
Application deadline: February 7, 2021
Contact information: Joe Allen, REU Director, Concord University, allenj@concord.edu