



# GEOLOGICAL ASSOCIATION OF NEW JERSEY

FALL NEWSLETTER  
2019

GANJ XXXVI

## GEOLOGY AND PALEONTOLOGY OF MONMOUTH COUNTY, NJ ANNUAL CONFERENCE AND FIELD TRIP

October 18<sup>th</sup> and 19<sup>th</sup>, 2019

Warner Student Life Center

Brookdale Community College, Lincroft, Monmouth County, NJ  
765 Newman Springs Road (Route 520 West)

As noted in the Spring newsletter, the 2019 Annual Meeting of the Geological Association of New Jersey (GANJ) will discuss and view the geology and paleontology of Monmouth County.

In addition to the Friday presentations and Saturday field trip, there will be a teacher's workshop and a student poster session. The teacher's workshop will discuss access to fossil collecting sites in Monmouth County. Student posters will be on display throughout the day.

Our speakers, from New Jersey academic institutions, government agencies, research organizations, and museums, have done extensive work on the geology and paleontology of Monmouth County. There will be talks on area aquifers, surficial geology and geomorphology, fossils types in the area, and titanium mineral ores. The keynote speaker is Dana Ehret, Ph.D., Assistant Curator, Natural History Collection, New Jersey State Museum. Dr. Ehret's presentation, "You're Going to Need a Bigger Screen: The Fossil Sharks of Monmouth County," is sure to be interesting.

Saturday's field trip will include visits to rare surface exposures of the Campanian-Maastrichtian stratigraphic boundary found at Monmouth County's Big Brook and Holmdel (Ramanessin Section) Parks. These sites are popular publicly accessible fossil collecting localities; collecting will be permitted at two (2) locations during the field trip. Participants should bring a hand trowel and ¼ inch mesh screen to sieve fossil-bearing gravels, although surface collection is also an option. Please be aware of the following safety notes:

- 1. Anticipate walking about 1.5 miles along "deer trail" type woodland paths with occasional fallen trees. In order to easily fossil hunt and to see a few of the exposures along the stream banks, it will be necessary to get your feet wet by walking through approximately a foot of water.*
- 2. In addition to "trip and fall" hazards in a wooded area, please be cognitive of ticks, poison ivy, and vegetation that result in eye hazards.*
- 3. Be cognitive of undermined trees that can fall or slump, especially along the stream banks.*
- 4. Wear proper footwear and clothing, especially in the streams to avoid cuts from rocks and broken glass in the stream as well as hypothermia. Extra pairs of shoes and socks may be useful, although our bus travel time will not be great, and this may be done on return to Brookdale Community College).*

Information on the meeting and field trip is also available on the web at [www.ganj.org](http://www.ganj.org). Please note that you may register for the meeting online at <http://shop.ganj.org>.

## **PROFESSIONAL DEVELOPMENT/CONTINUING EDUCATION CREDITS**

If attendance at the GANJ annual meeting is considered by your organization as an acceptable professional development activity, GANJ will provide annual meeting certificates of attendance. Four (4) hours will be credited for the Friday presentations and four (4) hours for Saturday's field trip. If you will need a certificate of attendance, note this with your registration form. Note that professional development credits will only be issued for professional registrations.

## **LODGING**

Each conference attendee is responsible for their own hotel/motel accommodations. Due to the large number of facilities in the area, special arrangements/group discounts have not been established.

## **MEETING SPONSORSHIP**

GANJ invites support of the annual meeting through sponsorship (\$250.00 to \$500.00). Sponsors receive recognition in the proceedings volume (1/2 page, \$250.00; full page, \$500.00) and on the GANJ web site for a year. More important is the opportunity to support geologic education in New Jersey. If interested, please contact a board member. Thank you to this past year's sponsors, Groundwater & Environmental Services, Inc.; TRC Environmental Solutions; PennJersey Environmental Consulting; and Princeton Geoscience, Inc.

## **DIRECTIONS**

From North or South Jersey, use the Garden State Parkway. If you are driving from North Jersey, be sure to choose "Local Exits" after the Raritan Bridge, not the "Express" lanes.

Southbound – To avoid the congestion of Exit 109-Red Bank, the standard exit, you may use Exit 114. Keep right, and after paying the toll, make a right onto Red Hill Road. Then make a left at the next traffic light onto Crawford Everett Road (at St. Catherine's Church). Follow to the end. At the T-intersection, make a left onto Route 520 (Newman Springs Road). Head east on Route 520 past Christian Brothers Academy (on the left) and Thompson Park (on the right). Brookdale will be on your right – look for the red sign at the roundabout.

If you do use Exit 109-Red Bank: At the bottom of the exit ramp, turn right onto Route 520 West (Newman Springs Road). Go west on Route 520 about two (2) miles. Just after the town of Lincroft, Brookdale will be on your left – look for the red sign at the roundabout.

Northbound – Use Exit 109-Red Bank and merge to the FAR left at the bottom of the exit ramp. Make a left onto Route 520 West (Newman Springs Road). Go west on Route 520 about two (2) miles through the town of Lincroft. The college entrance will be on the left.

From Western New Jersey – Take Route 33 towards the Hall Mills Road – North exit. This becomes Kozloski Road; follow north until the intersection with Route 537. Turn right onto Route 537 and continue east until it intersects with Route 34. Turn left onto Route 34 North. At the next traffic light, turn right onto Phalanx Road; stay on Phalanx Road about three (3) miles. The entrance to Brookdale will be on the left after crossing the Swimming River Reservoir bridge.

From Route 18 Northbound – Exit at 15A-Wayside Road. Follow to Route 537 to Laird Road to Phalanx Road, where you will see the college entrance of the left after the reservoir.

From Route 18 Southbound – Use the Route 520 East exist and follow to the college.

## **GEOLOGY AND PALEONTOLOGY OF MONMOUTH COUNTY, NEW JERSEY**

**Friday, October 18<sup>th</sup>, 2019 – Brookdale Community College, Lincroft, Monmouth County  
Warner Student Life Center**

- 10:00-4:15     **Registration**
- 10:30-11:30    **Teachers Workshop:** Amazing Discoveries and Fossil Hunting in Monmouth County, New Jersey – Dr. Paul Kovalski, Research Associate, NJ State Museum
- 11:30-12:00    **Lunch Break**
- 12:00-3:55     **Oral Presentations**
- 12:00-12:15    Opening Remarks – James O. Brown, Retired, GANJ President
- 12:15-12:40    Correlation of Aquifers and Bedrock Geology in Monmouth County, NJ – Peter Sugarman, Ph.D., New Jersey Geological and Water Survey
- 12:40-1:05     Surficial Geology and Geomorphology of Monmouth County – Scott Stanford, Ph.D., New Jersey Geological and Water Survey
- 1:05-1:30      Investigating the Geomorphic and Hydrologic Characteristics of the Big Brook and Willow Brook Watersheds, Monmouth County, New Jersey – Josh Galster, Ph.D., Montclair State University
- 1:30-1:55      Paleontology of the Campanian-Maastrichtian Boundary at Marlboro, Monmouth County, New Jersey – Taphonomy, Biostratigraphy, and Depositional Environments – William B. Gallagher, Ph.D., Rider University
- 1:55-2:15      Break
- 2:15-2:40      Late Cretaceous (Campanian/Maastrichtian) Vertebrate Fossils from the Holmdel Park Site, Monmouth County, New Jersey – Wayne R. Callahan, NJ State Museum and Monmouth Amateur Paleontologists' Society
- 2:40-3:05      Exogyra Xenomorphs of the Atlantic Coastal Plain and the Environmental Influences of this Anomaly – Justin Andell, Monmouth Amateur Paleontologists' Society and Raritan Valley Community College
- 3:05-3:30      The Provenance of Sand and Lakehurst Titanium Ores Using Ilmenite Mg, Mn, and Nb Contents: Monmouth and Ocean Counties, NJ – John H. Puffer, Ph.D., Professor Emeritus, Rutgers University
- 3:30-3:55      Overview of Field Stops – James O. Brown, Ph.D., Retired, and GANJ President
- 3:55-4:15      Break
- 4:15-4:45      **GANJ Business Meeting**
- 4:45-5:45      **Keynote Presentation:** You're Going to Need a Bigger Screen: The Fossil Sharks of Monmouth County – Dana Ehret, Ph.D., Assistant Curator, Natural History Collection, New Jersey State Museum
- 6:00-?::??     **Dinner and Conversation** - Attendees are invited to gather at MJ's at 1213 Sycamore Street in Tinton Falls. Order diner and drinks on your own.  
*Please RSVP when you register so we know the number attending.*

**Saturday, October 20<sup>th</sup>, 2019 - Field Trip - Meet in Parking Lot 1-Brookdale Community College  
8:00-4:00 pm.**

## 2019 GANJ ANNUAL MEETING AND 2019-2020 GANJ MEMBERSHIP

*Register online at <http://shop.ganj.org> or complete and mail this form to the address listed below.*

**Mailed and online registrations are due by Oct 11th. No refunds after Oct. 11th.**

*You may register on-site the day of the meeting if space is available.*

**Register early: Field trip space is limited to two buses. No private vehicles.**

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_ Title: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ e-mail: \_\_\_\_\_

\_\_\_\_\_ Affiliation: \_\_\_\_\_

**Note:** I wish to receive GANJ newsletters  by email only  by mail only  by email and mail

<b>I will be attending the annual meeting</b> (includes 2019-2020 membership, proceedings volume, and field trip)		
Professional Registration:	<input type="checkbox"/> \$60.00	<input type="checkbox"/> \$70.00 (after Oct. 11)
Student Registration*:	<input type="checkbox"/> \$30.00	<input type="checkbox"/> \$40.00 (after Oct. 11)
Additional GANJ XXXV Guidebooks (\$20 each)	Quantity: _____	<b>SUBTOTAL:</b>
\$ _____		

<input type="checkbox"/> <b>I will be attending the field trip on Saturday</b> <input type="checkbox"/> Yes <input type="checkbox"/> No
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<b>Saturday Field Trip Lunch (optional).</b> Saturday field trip box lunch (\$15.00) orders are due to the vendor by October 11 <sup>th</sup> . For lunches, please make sure your registration is received by this date. There will be no opportunity to buy lunch on the trip, so make your lunch arrangements ahead of time, either through GANJ or by bringing your own. The box lunches include a drink and a snack.		
<input type="checkbox"/> Roast Beef	<input type="checkbox"/> Smoked Ham/Swiss	<input type="checkbox"/> Smoked Turkey Breast
<input type="checkbox"/> Tuna Salad	<input type="checkbox"/> Mediterranean Veggie	<b>SUBTOTAL:</b>
\$ _____		

<b>I plan to attend the Friday gathering at MJ's:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No
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I request a CE certificate of attendance for 2019 for <input type="checkbox"/> Friday <input type="checkbox"/> Saturday (check both if applicable).
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<b>I will not attend the meeting, but I want to be a member:</b>		
Membership only (10/18/2019 to the day before GANJ 2020)	<input type="checkbox"/> Professional \$25	<input type="checkbox"/> Student* \$7.50
<input type="checkbox"/> GANJ XXXVI (2019) Field Guide and Proceedings Volume only - \$20	<b>SUBTOTAL:</b>	
\$ _____		

<b>(Check/money order payable to GANJ)</b>	<b>GRAND TOTAL:</b>
\$ _____	

\*Students (full or part-time) **MUST** submit a completed verification form (next page). All field trip participants **MUST** sign a release form (next page). If registering online, the form(s) may be mailed or

brought to the meeting. Register online or mail this form, the release form, student verification form (if applicable), and check or money order, payable to GANJ, to:

**Suzanne Macaoay Ferguson, PennJersey Environmental Consulting, 744 Milford Warren Glen Road, Milford, NJ 08848-1647 Attn: GANJ XXXVI Annual Meeting Registration**

**THE GEOLOGICAL ASSOCIATION OF NEW JERSEY  
RELEASE AND HOLD HARMLESS WAIVER**

I, the undersigned, having been fully advised as to the nature and possible dangers of the conference and field trip, "Geology and Paleontology of Monmouth County, New Jersey," on October 18<sup>th</sup> and 19<sup>th</sup>, 2019, which is sponsored by THE GEOLOGICAL ASSOCIATION OF NEW JERSEY, do hereby assume any and all risks involved in connection with the trip, and do hereby save and hold harmless BROOKDALE COMMUNITY COLLEGE; THE GEOLOGICAL ASSOCIATION OF NEW JERSEY, ITS OFFICERS, REPRESENTATIVES, AGENTS, OR MEMBERS; and the OWNERS of the properties and their AGENTS; from all claims, losses and damages (including attorney's fees and any costs involved because of said claim), on account of injury, death, property damage, inconvenience or loss of money due to delays that arise, by reason of my participation in the field trip. I understand that my use of alcohol or drugs would impair my judgment and coordination and will hold the above stated organizations and individuals harmless from claims arising from the use of either. I understand that I am solely responsible for carrying my own life and health insurance. I grant THE GEOLOGICAL ASSOCIATION OF NEW JERSEY permission to use my image (photo) in their publications, web page, and other promotional materials.

SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

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**STUDENT VERIFICATION FORM**

The student registration rate is for full **or part-time** students at any level. The following form must be signed by an appropriate faculty, teacher, or administrator from the school you are attending.

This is to certify that: \_\_\_\_\_

Is a student at: \_\_\_\_\_

Certifier's Name: \_\_\_\_\_

Position: \_\_\_\_\_

Institution: \_\_\_\_\_

## **NOMINATIONS FOR THE GANJ 2019-2020 EXECUTIVE BOARD**

Nominees for the GANJ Executive Board were solicited from the GANJ membership in the Spring Newsletter. Nominees are individuals who had been contacted by the person nominating them and have agreed to serve. The Executive Board presents the following list of candidates and will seek election of the entire slate by voice vote at the Annual Meeting. If anyone would like to make a nomination for future service, including a self-nomination, please contact any existing Board member. Board members can also answer questions regarding specific duties of the various positions. Please consider volunteering your time and energy to serve. We meet about once every four (4) to six (6) weeks. Members are also invited to suggest future meeting themes, locations, and presenters. The Executive Board would like to thank Timothy Macaluso as he completes his three (3) year term as President.

### **PRESIDENT-ELECT: OPEN POSITION**

*Responsibilities: A three (3) year position (as President-Elect, President and Past-President) where during the first year one learns the responsibilities of the President, the second year is responsible for organizing the annual meeting and field trip, and the third year assists the President by sharing past experiences.*

### **TREASURER: ALEX FIORE, U.S. GEOLOGICAL SURVEY**

*Responsibilities: A one (1) year position (with the understanding of serving multiple years) keeping track of the organization's finances.*

### **MEMBERSHIP SECRETARY: SUZANNE MACAOAY FERGUSON, PENNJERSEY ENVIRONMENTAL CONSULTING**

*Responsibilities: A one (1) year position (with the understanding of serving multiple years) maintaining the membership database.*

### **RECORDING SECRETARY: JENNIFER CALLANAN, WILLIAM PATERSON UNIVERSITY**

*Responsibilities: A one (1) year position recording minutes at the executive board and annual meetings, preparing the bi-annual newsletters, and tracking correspondence.*

### **COUNCILORS AT LARGE (THREE (3) POSITIONS):**

**EMMA L. WITT, STOCKTON UNIVERSITY**

**ZACK LUBOW, BROCKERHOFF ENVIRONMENTAL SERVICES, LLC**

**MICHAEL P. GAGLIANO, NEW JERSEY GEOLOGICAL AND WATER SURVEY**

*Responsibilities: A one (1) year position assisting other members of the board as needed and learning the organization's operations in order to possibly serve in another position of the executive board.*

### **CURRENTLY ELECTED OFFICERS:**

**PRESIDENT: MICHAEL J. HOZIK, EMERITUS PROFESSOR, STOCKTON UNIVERSITY**

**PAST PRESIDENT: JAMES O. BROWN, RETIRED RPG (AR# 183)**

### **CONFERENCE COMMITTEE (APPOINTED POSITIONS):**

**ALAN UMINSKI, ENVIRONMENTAL RESTORATION, LLC**

**PIERRE LACOMBE, U.S. GEOLOGICAL SURVEY (RET.)**

**WILLIAM MONTGOMERY, NEW JERSEY CITY UNIVERSITY**

**JANE ALEXANDER, COLLEGE OF STATEN ISLAND/CUNY**

**ALAN I. BENIMOFF, COLLEGE OF STATEN ISLAND/CUNY**

**KIM VOGEL, PENNJERSEY ENVIRONMENTAL CONSULTING**

### **OTHER APPOINTED POSITIONS:**

**WEBMASTER: HOWELL BOSBYSELL, WEST CHESTER UNIVERSITY**

**SPONSORSHIP COORDINATOR: WILLIAM GOTTOBRIO, GOLDER ASSOCIATES**

## FIELD GUIDES & PROCEEDINGS OF PRIOR ANNUAL MEETINGS

Most of the following documents are available as free pdf downloads at [www.ganj.org](http://www.ganj.org).

- GANJ I:** Puffer, John H., ed., 1984, *Igneous Rocks of the Newark Basin: Petrology, Mineralogy, and Ore Deposits, and Guide to Field Trip*.
- GANJ II:** Talkington, Raymond W., and Epstein, Claude M., eds., 1985, *Geological Investigations of the Coastal Plain of Southern New Jersey: Part 1 - Field Guide; Part 2A - Hydrology and Coastal Plain; Part 2B - Paleontologic Investigations (The set, Parts 1, 2A, 2B, priced as one volume)*.
- GANJ III:** Husch, Jonathan, M., and Goldstein, Fredric R., eds., 1986, *Geology of the New Jersey Highlands and Radon in New Jersey*.
- GANJ IV:** Gallagher, William B., ed., 1987, *Paleontology and Stratigraphy of the Lower Paleozoic Deposits of the Delaware Water Gap Area*.
- GANJ V:** Husch, Jonathan, M., and Hozik, Michael J., eds., 1988, *Geology of the Central Newark Basin*.
- GANJ VI:** Grossman, I. G., ed., 1989, *Paleozoic Geology of the Kittatinny Valley and Southwest Highlands N. J.*
- GANJ VII:** Brown, James O., and Kroll, Richard L., eds., 1990, *Aspects of Groundwater in New Jersey*.
- GANJ VIII:** Crawford, Maria L., and Crawford, William A., eds., 1991, *Evolution and Assembly of the Pennsylvania - Delaware Piedmont*.
- GANJ IX:** Ashley, Gail M., and Halsey, Susan D., eds., 1992, *Environmental Geology of the Raritan River Basin*.
- GANJ X:** Puffer, John H., ed., 1993, *Geologic Traverse Across the Precambrian Rocks of the New Jersey Highlands*.
- GANJ XI:** Benimoff, Alan I., ed., 1994, *Geology of Staten Island, New York*.
- GANJ XII:** Baker, John E. B., ed., 1995, *Contributions of the Paleontology of New Jersey*.
- GANJ XIII:** Dalton, Richard F., and Brown, James O., eds., 1996, *Karst Geology of New Jersey and Vicinity*.
- GANJ XIV:** Benimoff, Alan I., and Puffer, John H., 1997, *The Economic Geology of Northern New Jersey*.
- GANJ XV:** Puffer, John H., ed., 1998, *The Economic Geology of Central New Jersey*.
- GANJ XVI:** Puffer, John H., ed., 1999, *New Jersey Beaches and Coastal Processes from a Geologic and Environmental Perspective*.
- GANJ XVII:** Harper, David P. and, Goldstein, Fredric L., eds., 2000, *Glacial Geology of New Jersey*.
- GANJ XVIII:** Lacombe, Pierre, and Herman, Gregory, eds., 2001, *Geology in Service to Public Health*.
- GANJ XIX:** D'Amato, Dana, ed., 2002, *Geology of the Delaware Water Gap Area*.
- GANJ XX:** Hozik, Michael J., and Mihalasky, Mark J., eds., 2003, *Periglacial Features of Southern New Jersey*.
- GANJ XXI:** Puffer, John H., and Volkert, Richard A, eds., 2004, *Neoproterozoic, Paleozoic, and Mesozoic Intrusive Rocks of Northern New Jersey and Southeastern New York*.
- GANJ XXII:** Gates, Alexander E., ed., 2005, *Geology of the Central Newark Basin - The View From the 21st Century*.
- GANJ XXIII:** Macaoay, Suzanne and Montgomery, William, eds., *Environmental Geology of the Highlands*.
- GANJ XXIV:** Rainforth, Emma C., ed., 2007, *Contributions to the Paleontology of New Jersey (II)*.
- GANJ XXV:** Gorrington, Matthew L., ed., 2008, *Environmental and Engineering Geology of Northeastern New Jersey*.
- GANJ XXVI:** Freile, Deborah, ed., 2009, *New Jersey Coastal Plain Stratigraphy and Coastal Processes*.
- GANJ XXVII:** Lacombe, Pierre, ed., 2010, *Geology of the Greater Trenton Area and Its Impact on the Capitol City*.
- GANJ XXVIII:** Rainforth, Emma C., and Uminski, Alan, eds., 2011, *Environmental Geology of Central New Jersey*.
- GANJ XXIX:** Alexander, Jane, ed., 2012, *Geology and Public Lands*.
- GANJ XXX:** Benimoff, Alan I., ed., 2013, *Igneous Processes During the Assembly and Breakup of Pangaea: Northern New Jersey and New York City*.
- GANJ XXXI:** Duzgoren-Aydin, Nurdan S., ed. 2014, *Global Environmental Issues and Local Consequences: Earth Surface Processes and Urban Environmental Quality*.
- GANJ XXXII:** Herman, Gregory C., and Macaoay Ferguson, Suzanne, eds., 2015, *Neotectonics of the New York Recess*.
- GANJ XXXIII:** Gagliano, Michael P., and Macaoay Ferguson, Suzanne, eds., 2016, *Shallow Subsurface Geophysical Applications in Environmental Geology*.
- GANJ XXXIV:** Bosbyshell, Howell, ed., 2017, *The Piedmont: Old Rocks, New Understandings*.
- GANJ XXXV:** Macaluso, Timothy, ed., 2018, *Water Supply, Hydrology and Hydrodynamics in New Jersey and the Delaware River Basin*.



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