

Quaternary Geologist & Geomorphologist

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<http://rock.geosociety.org/qgg>

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The Hickory Run Boulder Field, considered to be the largest boulder field in the Appalachian Mountains, lies at the headwaters of Hickory Run in the western foothills of the Pocono Mountains. The Hickory Run Boulder Field is a National Natural Landmark located 1.5 km southwest of the Wisconsin (~20,000 yrs BP) terminal moraine. The unvegetated part of the unconsolidated boulder field is ~120 m × 550 m in aerial extent, and some of the boulders are as much as 8 m in length (long axis). The depth of the boulder field extends at least several meters. The source of the boulders is two ridges of Devonian Catskill Formation sandstone and conglomerate immediately north and south of the boulder field. The boulder field is dotted with patterned ground features, most noteworthy of which are polygonal pits with raised rims and low centers, which must postdate down-slope movement of the boulders from their ridge source areas. A periglacial relict of full-glacial climatic conditions, the boulder field is intriguing because it demonstrates that relatively large amounts of rock can be weathered and eroded from a low-relief landscape given the right climatic conditions and geologic setting. (Dorothy Merritts photo)

Quaternary Geology & Geomorphology Division Officers and Panel Members -- 2006

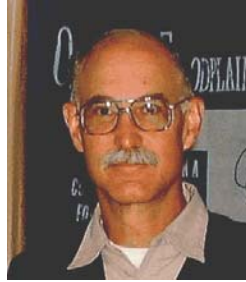
Officers – 6 Members, three of whom serve one-year terms: Chair, First Vice-Chair, and Second Vice-Chair; and three of whom serve two-year terms: Secretary, Treasurer, and Newsletter Editor/Webmaster.

Management Board – 8 Members: Division officers and the Chair of the preceding year; also includes the Historian as an *ex officio* member.

Chair:

John E. Costa

U.S. Geological Survey
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Panel Members

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GSA Councilor/Division Liaison

Representative: (Appointed by the GSA President)

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USGS-NRCS

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carolyn.olson@ns.nr.usda.gov

ELECTION RESULTS

(122 of 1334 members voted – 9%)

Chair: John F. (Jack) Shroder

First Vice-Chair: Lisa L. Ely

Second Vice-Chair: Marith C. Reheis

Secretary: Jon J. Major

Panel Members for 2006-2008:

Steven L. Forman

Scott C. Lundstrom

Kenneth D. Adams

CALL FOR NOMINATIONS

We need six candidates for the QG&G Panel and two candidates for Second Vice-Chair to appear on the next ballot.

Three Panel Members are elected each year for two-year terms beginning at the next GSA meeting.

One Second Vice-Chair is elected each year and becomes Chair two years later.

Message from the Chair

Friends of Quaternary Geology and Geomorphology,

It's been a hectic summer for the Division Management Board. There are numerous awards to complete, the annual meeting to organize, a dozen sessions for which abstracts needed approval and organization, and a little bit for field time to pay the

bills. The most significant news for the Division is the *inaugural Kirk Bryan Field Trip* at the Philadelphia Annual Meeting. The origins of this event are important for us to document. Following the Division gathering in Salt Lake City in 2005, I received two significant and meaty emails—voicing the same concerns—from *Frank Pazzaglia* and *Jaakko Putkonen*. Their messages are attached at the bottom of this message.

Frank and Jaakko both voice concern over what I refer to as "AGU envy"—the fear that all of quantitative geomorphology is being captured by AGU and being presented at AGU meetings. I cannot say with any certainty that this situation is real or perceived. I do know that a decade ago the GSA Hydrogeology Division shifted into high gear, and at the last GSA Meeting in 2005 in Salt Lake City, they had 45 sessions! And I ran into George Hornberger in the hallway. Now Hydrology is one of the largest sections in AGU, yet we had a blitzkrieg of sessions in Hydrogeology and some of the world's top hydrogeologists in Salt Lake City. And this was not an aberration—the Hydrogeology Division has a large, diverse, and high-quality set of technical sessions at every GSA Meeting. I think competition between GSA and AGU is a healthy thing—it leads to reinvention, reanalysis, and introspective thought. The science at GSA is a product of the effort people take to prepare and organize. There is no good reason why there cannot be outstanding quantitative geomorphology at GSA; but someone has to make the effort to organize it.

And this leads us to the *first Kirk Bryan Field Trip*. Both Frank and Jaakko offer specific recommendations on how to energize geomorphology and Quaternary geology at GSA. One suggestion was to host an all-day field trip at the Annual Meeting that focused on some important aspect of quantitative science. This year *Frank Pazzaglia* organized the *inaugural Kirk Bryan Field Trip*. He will take us to the Hickory Run Boulder Field at the western foothills of the Pocono Mountains in Carbon County, Penn. I visited this site as an undergraduate many years ago, and it is certainly one of the most remarkable collections of boulders I have ever seen. Like the Carolina Bays, earth scientists have been arguing about the boulder field for over half a century. Check out the image at <http://www.geosociety.org/meetings/2006/t-P1photo.htm>. The session on Erosion: Process, Rates, and New Measurement Techniques of which the *Kirk Bryan Field Trip* is part, was chosen as a *Pardee Keynote Symposia*. This designation brings \$2,000 of financial support from the bequest of Joseph Pardee to GSA (and those of you who are alert and know the literature will recognize Pardee's name as one that had a major role in resolving one of the most fascinating

detective stories in Quaternary geology—the origins of all the water that carved the channeled scabland in eastern Washington).

Our hope is that this will become an annual event at GSA Meetings. It is the ability and tradition of field trips that makes us different from AGU, and this gives the Division a chance to build on the strengths of that difference. But to be successful, we need to begin thinking about the next few years—Denver in 2007, and Houston in 2008. Houston in 2008 presents a unique situation—it will be a joint meeting with the Soil Science Society and associated societies. This presents a great opportunity for joint sessions in soils geomorphology, low-temperature geochemistry, soil genesis, and many other possibilities. If you have ideas or want to join with colleagues in the Soil Science Society to plan sessions, field trips, or anything around the GSA annual meeting in Houston, please let us know.

Philadelphia looks like a wonderful meeting. I have several colleagues who are die-hard westerners who have never seen a peneplain. This is an opportunity that should not be missed. Decades from now you will enjoy thinking and reflecting about the time when you attended the first **QGG Kirk Bryan Field Trip**. Please feel free to offer any other thoughts or ideas you may have to strengthen the QGG Division.

– John Costa

Thu, 27 Oct 2005

From *Frank Pazzaglia* –

I feel passionate about the role that GSA and QG&G can be and must be playing in terms of moving our science forward. I honestly do not feel any animosity towards the AGU Hydrology division or the AGU crowd; in fact, many of us regularly or irregularly attend both AGU and GSA meetings. My sense is that the geomorphology community is large enough such that some geomorphologists feel more at home with GSA and others feel more at home with AGU. At the same time, that should not mean that only AGU is viewed as the society that offers an outlet for so-called "quantitative geomorphology." Note that this choice of words describing the AGU crowd is not my choosing, but rather the wording that was used at the meeting by others. I have had time to think about this, and I feel that there a few, simple things I can do and the QG&G community can do in general that will help illustrate to the broader geomorphology community that GSA offers a lot scientifically and is positioned to help lead the science forward. Here are my suggestions, including a timetable for when these ideas might be implemented:

(1) QG&G offers a division within the GSA that caters directly to geomorphology. This is great and the AGU Hydrology division cannot currently offer the

same broad home to geomorphologists. On the other hand, the particular type of geomorphology that lives within QG&G is decidedly geological, glacial, paleoclimatological, and paleoecological. Our committees and panels are dominated by decidedly geological geomorphologists, something also reflected in our awards and recognitions. For example, QG&G is the home of desert geomorphology. Why? In large part because those geomorphologists that worked in deserts came out of geology AND we have the Farouk El-Baz Award for desert geomorphology. We need an equivalent recognition for what we should call "Process Geomorphology." We should institute it, solicit money from QG&G members, and name it after Dusty Ritter. I realize that we already have a lot of awards and recognitions, but I can think of at least one we can award without citations or speeches making room for the Dusty Ritter award.

(2) QG&G needs to sponsor a list of the SAME sessions for every GSA. This way, the community knows what to expect and instead of trying to find an appropriate Pardee or Technical session to present our work, the geomorphology community can be assured that at every GSA meeting, there will be at least one session dedicated to the following topics: Active Tectonics, Quantitative Process Geomorphology, Fluvial Geomorphology, Hillslopes and Hydrology, Glacial Geomorphology, Quaternary Paleoclimatology, Quaternary Ecology and Limnology, and Quaternary Geochronology. Of course, anyone can volunteer any other sessions of their choice, but at a minimum, QG&G should be offering up these sessions at every GSA. QG&G members can participate directly in the division by agreeing to chair and actively solicit good papers for each one of these sessions. We can announce them and keep them high profile at the division meeting.

(3) QG&G, or the geological geomorphology community needs an answer to the Gilbert Club. Gilbert Club is great and the community benefits from its presence every year in concert with the AGU meeting. I propose a new "club" that tracks with GSA. It would be great if we could resurrect the Binghamton Symposium for this purpose, but I fear that could be problematic. This new club can be independent or sponsored by QG&G. I propose that we name it the **Kirk Bryan Field Seminar** and that we hold it immediately preceding or following the GSA meeting. It would distinguish itself from Gilbert Club in two ways: (a) the venue would change with the location of the GSA meeting, and (b) it would involve a field trip to ONE outstanding outcrop or landscape that would focus a discussion that follows afterwards at a hotel, someone's home, a university, etc. As an example as to how the **Kirk Bryan Field Symposium** would work, I here propose its inaugural session for the

Philadelphia GSA meeting. I propose to lead a one-day field trip to the Hickory Run Boulder Field (2-hr drive north of Philly) which will stand as the focal point for a discussion on EROSION AND HOW DO WE MEASURE IT? Following the field trip, the group could travel to Lehigh University where we would have a catered buffet and continue to talk about erosion, including a session where participants are allowed to show 1 slide and offer one aggravating observation that should keep the discussion lively and moving forward.

Well, those are my thoughts. Give me some feedback and advice on how I should proceed. – FJP

Open letter to

Division of Quaternary Geology and Geomorphology,
Geological Society of America

Bring Back the Geomorphology to the Annual Meeting

October 26, 2005

Jaakko Putkonen, Assistant Professor
Department of Earth and Space Sciences, and
Quaternary Research Center, MS 351310
University of Washington, Seattle, WA 98199
email: putkonen@u.washington.edu
tel.: 206-543-0689

BACKGROUND:

It became obvious at the recent Geological Society of America (GSA) Annual Meeting in Salt Lake City that most of the leading quantitative process geomorphology was not present. American Geophysical Union (AGU) is increasingly attracting the most advanced geomorphology.

The journal *Geology* by GSA is still an important venue for many high-impact geomorphological articles, although AGU is also gaining on that arena with the newly established *Surface Processes* edition of *Journal of Geophysical Research*.

ADVANTAGES/DISADVANTAGES: AGU/GSA

AGU offers some noted benefits: (1) the meeting is easy to attend because it is always in the same city and venue; (2) the meeting is close to some noted surface-processes powerhouses (Berkeley, Boulder, Seattle); (3) the meeting is large and vibrant; (4) AGU meetings cover related disciplines that are important to geomorphological research and which are absent from GSA (snow processes, glaciology, atmospheric science); (5) international attendance in AGU far surpasses the GSA; and (6) informal Gilbert Club gathering is convened following every fall AGU meeting.

The disadvantages of AGU are: (1) AGU may be too large for convenience; (2) geomorphology is a small fraction of Hydrology section which results in small representation and autonomy of geomorphologists; and (3) many closely related fields of geology are missing from AGU (Quaternary Geology, Paleoclimatology, Sedimentology).

Advantages of GSA meeting are: (1) QG&G is one of the primary divisions of GSA and therefore we have a large influence and autonomy; (2) GSA covers all disciplines of geology; (3) GSA offers flexibility which is missing in AGU; (4) GSA offers workshops and field trips; and (5) some find the smaller size of GSA easier to navigate.

Disadvantages of GSA meeting are: (1) decline of geomorphology and almost total absence of fluvial geomorphology; (2) perceived absence of quantitative research in GSA (mathematical modeling); and (3) annually changing venues make it more difficult to attend.

THE SUGGESTED COURSE OF ACTION

The option of not responding to this loss of a viable part of GSA research from the Annual Meeting will inevitably lead to the complete shift of geomorphological research into San Francisco (it appears that fluvial geomorphology has abandoned the GSA already).

Contentment and stagnation are the worst enemies of great science. The following suggestions are especially planned to excite the audience and give rapid direct feedback to speakers.

Action points:

(1) Biannual special surface-processes emphasis in GSA

The special array of sessions that is listed below is organized only every two years, unless/until GSA becomes the preferred venue for geomorphologists.

Purpose:

This allows geomorphologists to attend AGU and GSA in alternating years. Many of us would benefit from interaction with both groups.

(2) Reviewed Advanced Geomorphology session

This is a new type of general geomorphology session to highlight the best geomorphological research and to generate competitive atmosphere. To be accepted in this session the author has to make the case for quality, impact, innovativeness, and/or use of new

methods or concepts. Submissions are reviewed/selected by committee.

Purpose:

To generate a clear two-tiered system that should encourage the presentation of innovative science.

(3) Accelerated Science session

This is a new session format where speakers are chosen by committee (solicited or proposed ideas) to present controversial science and showcase both sides of a current debate (examples of prior controversial topics include: hypotheses of rock-glacier origin, degradation rate of moraines). The speakers would be allowed 15 minutes each and 10 minutes for questioning of each other followed by moderated discussion including the audience.

Purpose:

To bring exciting and interesting controversial topics to open forum, where everyone can participate. To show students how science operates at the forefront.

(4) Crazy Ideas session

This is a new session type that solicits completely untested, whacky, crazy ideas that do not need to be backed up by more than back of the envelope calculations or maybe no calculations at all. However, such play and speculation often brings up great ideas and provokes the established thinking. The talks are limited at the maximum to 5 minutes followed by an adequate period for comments/discussion.

Purpose:

The purpose of the session is a serious advancement of the science by flushing out ideas that the inventor may never want to pursue, but that could be pivotal for someone else. This session should also have a high entertainment value (not a bad thing by itself).

(5) “Got Balls” session (named by Ed Evenson)

This is a new session format where speakers are chosen by committee (based on solicited or proposed ideas) to bring together modelers and field geologists. The session name asks if the presenter has courage to expose his/her model (or field data) to field geologists (or modelers).

Purpose:

This session would lead to direct discussion between modelers and field scientists, potentially helping both. Again this session would potentially bring up controversies and that is exactly where many of the discoveries are made.

(6) Increase the participation of foreign scientists
Bring leading international scientists to GSA by invitation, advertisement and encouragement. The best international speakers could be invited to participate in above-mentioned sessions.

Purpose:

To bring in new ideas and concepts.

CONCLUSIONS

These are all suggestions that are not accommodated in AGU. However, GSA is our association and we can make it as flexible as we want. An array of such improvements as the ones listed above could seriously vitalize our community. This could lead to scientists naturally coming to the gathering that gives them the most advanced ideas, best feedback to their research, and scientific entertainment!

Motto: the GSA meeting is not a pursuit of happiness but a pursuit of excellence. For most scientists the happiness comes through excellence.

FOLLOW UP

I suggest setting up an ad hoc committee to start implementing the above mentioned items. I would like to see a new lean and mean GSA revealed with a splash in the GSA Annual Meeting in 2006. At this point small gradual changes will not anymore make much difference. We have to make GSA the most exciting meeting to be, the meeting where the participant gets the most scientific bang for the invested time. – JP

QG&G DIVISION AWARDS – 2006

The following awards will be given by the QG&G Division of GSA at the Philadelphia Convention Center on Tuesday, October 24, 2006.

— **Kirk Bryan Award** —

David Montgomery (University of Washington) and **Mark Brandon** (Yale University) for: Montgomery, D.R., and Brandon, M.T., 2002, Topographic controls on erosion rates in tectonically active mountain ranges: *Earth & Planetary Science Letters*, v. 201, p. 481-489.

— **Distinguished Career Award** —

John W. Hawley. Hawley Geomatters and New Mexico Bureau of Geology & Mineral Resources (emeritus), Albuquerque, NM

Donald J. Easterbrook

— Distinguished Scientist Award —

James C. Knox, University of Wisconsin -
Madison

Farouk El-Baz Award

— For Desert Research —

Gerald Nanson, University of Wollongong,
Wollongong, New South Wales, Australia

— Gladys W. Cole Memorial Award —

Elizabeth Safran, Lewis and Clark College for her
research proposal entitled, "Impact of Extrafluvial
Events on River Valley Evolution"

Student Research Awards

— Arthur D. Howard Research Award —

Beth Caissie, M.S. student at University of
Massachusetts, "Modern Day Diatom Sediment
Assemblages in the Bering Sea and their
Relationship with Mean Annual Sea-Ice Duration,"
Supervisor: Julie Brigham-Grette

Howard (MS) Student Award Committee:

Matthew Kirby, Cal State Fullerton

mkirby@fullerton.edu

Joan Ramage, Lehigh Univ. ramage@lehigh.edu

Ken Lepper, North Dakota State University

ken.lepper@ndsu.nodak.edu

Nicholas Pinter, Southern Illinois University

npinter@geo.siu.edu

Jon Major, USGS jjmajor@usgs.gov

— J. Hoover Mackin Award —

Amanda Henck, Ph.D. student at University of
Washington, "Is the Three Rivers Region in
Steady State?" Supervisor: David Montgomery

— Farouk El-Baz Student Award —

Emily Winer, M.S. student at Miami University
(Ohio) "Micro-faunal Analysis of Quaternary Paleo-
wetland Deposits in Wadi Hasa, Jordan,"
Supervisor: Jason Rech.

*Mackin (PhD) and El-Baz (MS and PhD) Student
Awards Committee:*

Lisa Ely, QGG 2nd Vice Chair ely@cwu.edu

Diana Anderson, Northern Arizona University

diana.anderson@nau.edu

Doug Clark, Western Washington University

doug.clark@wwu.edu

Joel Pederson, Utah State University bolo@cc.usu.edu

Jason Briner, SUNY Buffalo jbriner@buffalo.edu

GSA ANNUAL MEETING

October 22-25, 2006

Philadelphia, PA

Awards Ceremony & Reception

Tues, Oct 24, 7-11 PM

Philadelphia Convention Ctr, Rm 204A

Management Board Meeting

Sun, Oct 22, 7-9 PM

Loews Hotel – Commonwealth Hall B

Inaugural Kirk Bryan Field Symposium

Field Trip #22 -- Erosion and the Hickory Run

Boulder Field—1st Annual Kirk Bryan Field Seminar

A one-day field trip and linked seminar to explore
recent advances in the quantification of the rates and
processes of erosion. The Hickory Run Boulder Field
will stand as a thought-provoking backdrop, stimulating
conversation on modern and relict processes and
landscapes. The trip is designed to complement the
Pardee symposium on erosion. (*Frank Pazzaglia; Paul
Bierman; Milan Pavich; Dorothy Merritts*)

Join us for this "meeting within a meeting" activity
designed especially for members of QG&G, but open
to all at the GSA Meeting. The ***Kirk Bryan Field
Symposium*** is being organized as a venue for
discussing a hot topic in Quaternary Geology and
Geomorphology with a single, outstanding field location
acting to inspire and motivate discussion and exchange
of ideas. For the Philadelphia meeting, the *inaugural
Kirk Bryan Field Symposium* will be held as a during-
the-meeting field trip to Hickory Run State Park, a two-
hour drive from the Convention Center, which
showcases one of the world's finest examples of a
periglacial(?) boulder field. Participants must register
for the ***Kirk Bryan Field Symposium Field Trip*** when
they register for the GSA meeting. The cost is \$59.
Transportation, breakfast, and lunch will be provided
for the trip. The field symposium is designed to
complement the Pardee and Technical sessions on
erosion so poster presenters are encouraged to bring
along their posters for further discussion while in the

field. This symposium will occur on Tuesday, October 24th. Following the field trip, participants will return in time for the QG&G Awards Ceremony and Reception. The hope is that this event will grow into yearly activity proposed and hosted by a different QG&G member.

For more information, phone or email Frank J. Pazzaglia at (610) 758-3667; fjp3@lehigh.edu

Field Trips of Interest to QG&G Members

Pre-meeting

<http://www.geosociety.org/meetings/2006/ftPre.htm>

3. Buried Holocene Streams and Legacy Sediment: Late Pleistocene to Historical Changes in Stream Form and Process and Implications for Stream Restoration, Mid-Atlantic Piedmont Region [403]

Sat., 21 Oct.

Dorothy Merritts, Franklin and Marshall College, +1-717-291-4398, fax +1-717-291-4186, dorothy.merritts@fandm.edu; Robert Walter; Ward Oberholtzer.

A one-day trip centered in beautiful Lancaster County to observe examples of the depositional and erosion record of Piedmont stream channel changes over the past 300 years revealed in natural and artificial exposures. The historic record of channel form and process will be used to showcase examples of successful stream restoration techniques. Includes one stop in Valley Forge National Park to observe an in-progress restoration project.

Max.: 35; min.: 10. Cost: US\$89 (L, R, bus).

4. Coastal Hydrology and Processes of Atlantic Barrier Islands [404]

Sat., 21 Oct.

Rip Kirby, Coastal Research Lab, University of South Florida, +1-850-217-1616, jkirby@mail.usf.edu.

Roundtrip travel to Cape May, New Jersey, and the Atlantic barrier islands on the New Jersey shore with presentations and discovery in the field. The field trip is arranged to explore by boat during the morning high tide the estuarine hydrologic and tidal processes surrounding Cape May that affect the flux of sediment seaward to the barrier island coastlines.

Max.: 24; min.: 10. Cost: US\$89 (B, R, vans).

8. Late Pleistocene to Modern Lacustrine Processes and Paleoclimatic History in the Finger Lakes, New York [408]

Fri.-Sat., 20-21 Oct. *Cosponsored by GSA Sedimentary Geology Division; GSA Limnogeology Division.*

John Halfman, Hobart and William Smith College, +1-315-781-3918, fax +1-315-781-3860, halfman@hws.edu; Tara Curtin; Neil Laird; Pete Knuepfer.

The Finger Lakes of central and western New York State provide an excellent natural laboratory to investigate modern limnological, hydrogeochemical, and sedimentological processes, to decipher records of paleoclimatic change through the Holocene, and to investigate the deglacial history of the region and its influence on the rapidly growing winery industry. This field trip will explore modern sediments and modern meteorological events that influence sedimentation patterns, look at the record of climate change preserved in the Holocene sediments, and examine evidence of the deglacial and proglacial lake history preserved within the watershed. We anticipate two excursions, one on Seneca Lake using our 65-ft research vessel to investigate modern processes with our seismic and coring equipment and the second within the watershed to investigate the record of deglaciation and

its influence on the winery industry. A gathering during the evening will provide an opportunity to discuss modern limnological, hydrogeochemical, and meteorological events and the paleoclimatic history preserved in the lake sediments.

Max.: 40; min.: 21. Cost: US\$299 (2L, D, 2R, ON, bus).

11. Prehistoric and Urban Landscapes of the Middle Atlantic Region: Geoarchaeological Perspectives [411]

Sat., 21 Oct. *Cosponsored by GSA Archaeological Division.*

Joseph Schuldenrein, Geoarchaeology Research Associates, +1-718-601-3861, fax +1-718-601-3864, geoarch@aol.com.

Contemporary and buried landscapes of the urban Northeast preserve evidence of complex land use and sedimentation patterns in conjunction with Holocene and historic human occupation. While industrialization and development has destroyed much of the pristine surfaces and landscapes, geoarchaeological investigations over the past 20 years have produced reconstructions of the landscape history that are tied to changing settlement and land utilization. This trip will sample a variety of the geoarchaeological environments that have been investigated as a result of historic preservation projects. The trip will begin in Philadelphia and extend northward up and across the Delaware Valley, spanning the margins of the Woodfordian glacial boundary, and it may extend as far north as northern New Jersey or even New York City.

Max.: 50; min.: 30. Cost: US\$85 (L, R, bus).

13. Rivers, Glaciers, Landscape Evolution, and Active Tectonics of the Central Appalachians, Pennsylvania and Maryland [413]

Wed.-Sat., 18-21 Oct. *Cosponsored by GSA Quaternary Geology and Geomorphology Division.*

Frank Pazzaglia, Lehigh University, +1-610-758-3667, fax +1-610-838-2344, fjp3@lehigh.edu; Duane Braun; Noel Potter; Dru Germanoski; Milan Pavich; Paul Bierman; Dorothy Merritts; Allen Gellis.

This trip will travel from the Great Falls of the Potomac to the head of Chesapeake Bay and up the Susquehanna River to the glacial boundary in north-central Pennsylvania, exploring the geologic and geomorphic record of late Cenozoic landscape evolution. The trip will emphasize what new research tells us about erosion, river incision, rock-uplift, and the pace of landscape change for the Appalachians over both geologic and human time scales.

Max.: 30; min.: 15. Cost: US\$375 (3B, 3L, 2D, 3ON, vans).

Begins in Washington, D.C. Participants will be advised on arrival options.

19. The Great Centralia Mine Fire: A Natural Laboratory for the Study of Coal Fires [419]

Sat., 21 Oct.

Glenn Stracher, East Georgia College, +1-478-289-2073, fax +1-478-289-2050, stracher@ega.edu; Melissa Nolter; Daniel H. Vice; Janet L. Stracher.

We will travel to the famous Centralia Mine Fire in the central Appalachian Mountains of eastern Pennsylvania, where we will discuss the coal stratigraphy and structural geology of the Western Middle coalfield as well as the origin, history, and socio-political-economic impact of the mine fire. Trip participants will see spectacular subsidence features, anthracite smokers (gas vents), and ground fissures associated with underground burning in abandoned coal-mine tunnels. Field techniques for collecting the mineral by-products of coal combustion and for collecting microarthropods from vegetation adjacent to gas vents and fissures will be demonstrated. Gas collection techniques using stainless steel gas canisters, a hand-operated sampler, and Tedlar gas bags will also be demonstrated as will in situ field analysis of select coal gas components using Dräger tubes. An interview with one of the few remaining residents of Centralia is planned. Participants should

be prepared for light hiking and possible inclement weather. People interested in coal stratigraphy, coal mining, and coal fires will enjoy this trip.

Max.: 45; min.: 12. Cost: US\$95 (L, D, R, bus).

Concurrent

<http://www.geosociety.org/meetings/2006/ftDur.htm>

20. 135 Million Years of History in Southwestern Philadelphia [420]

Sun., 22 Oct.

Raymond A. Scheinfeld., Weston Solutions Inc., +1-215-841-2019, ray.scheinfeld@westonsolutions.com.

This field trip will showcase the geologic history of the area adjacent to the Philadelphia International Airport. A thick sequence (150+ ft) of Cretaceous age Potomac Group and sediments, unconformably overlain by Quaternary Trenton Gravel and Alluvial silts and clays were investigated as part of the construction planning for a new 5000-ft-long runway (Runway 8-26) over a deleted but deed-restricted U.S. Environmental Protection Agency Superfund site. Trip participants will be able to examine extensive core samples taken during the investigation that illustrate the stratigraphic and hydrogeologic framework of the area. These data were used to overcome numerous engineering design, environmental, and construction challenges during runway development. The trip will visit the groundwater mitigation system installed to address a newly identified contamination plume at the site as well as examine the construction features of the runway. The field trip will also participate in a guided tour of historic Fort Mifflin, the oldest fortification continually used in the United States.

Max.: 30; min.: 10. Cost: US\$59 (R, vans).

22. Erosion and the Hickory Run Boulder Field-1st Annual Kirk Bryan Field Seminar [422]

Tues., 24 Oct. *Cosponsored by GSA Quaternary Geology and Geomorphology Division.*

Frank Pazzaglia, Lehigh University, +1-610-758-3667, fax +1-610-838-2344, fip3@lehigh.edu; Paul Bierman; Milan Pavich; Dorothy Merritts.

This is a one-day linked field trip and seminar to explore recent advances in the quantification of the rates and processes of erosion. The Hickory Run Boulder Field will stand as a thought-provoking backdrop, stimulating conversation on modern and relict processes and landscapes. The trip is designed to complement the Pardee symposium on erosion (P1).

Max.: 60; min.: 20. Cost: US\$59 (B, L, vans).

Post-meeting

<http://www.geosociety.org/meetings/2006/ftPost.htm>

29. From the K-T to the Coast: Paleontology, Stratigraphy, and Coastal Sedimentation from the Late Cretaceous through the Quaternary, Southern New Jersey [429]

Thurs., 26 Oct.

William Gallagher, New Jersey State Museum, +1-609-292-6330, william.gallagher@sos.state.nj.us; Ken Lacovara.

This trip will make a stop at the Inversand Pit in the New Jersey Coastal Plain where the K-T boundary and Late Cretaceous, Tertiary, and Quaternary deposits are exposed. The trip will then work its way out to the New Jersey shore, visiting several Pleistocene and Holocene strand lines along the way.

Max.: 45; min.: 25. Cost: US\$69 (L, bus).

31. History and Geology of Gettysburg National Battlefield [431]

Thurs., 26 Oct.

Roger Cuffey, Pennsylvania State University, +1-814-865-1293, fax +1-814-863-8724, cuffey@ems.psu.edu; Jon Inners.

Enjoy a full-day tour of America's Most Hallowed Ground lead by geologists who are also historians of the Civil War. The tour begins at the railroad cut on McPherson's Ridge, moves to Cemetery Ridge, then concludes on the Roundtops and Seminary Ridge. Visits to the observation tower and visitor's center (under construction) and town are also planned.

Max.: 42; min.: 15. Cost: US\$95 (R, bus).

32. Karst and Environmental Hydrology in Central Pennsylvania [432]

Wed.–Fri., 25–27 Oct.

Richard Parizek, Pennsylvania State University, +1-814-865-3012, fax +1-814-238-5261, parizek@ems.psu.edu.

This trip begins and ends in Philadelphia, with a wide loop through central Pennsylvania visiting outstanding examples of the region's Quaternary geology, karst hydrology, environmental geology, and hydro-engineering solutions to the problems presented by a growing population.

Max.: 45; min.: 10. Cost: US\$295 (3B, 3L, 3D, 2ON, vans).

34. Prehistoric Quarries and Early Mines in the New York–New Jersey–Pennsylvania Tri-State Metropolitan Area [434]

Thurs.–Sat., 26–28 Oct. *Cosponsored by GSA Archaeological Geology Division.*

Philip C. LaPorta, City University of New York and LaPorta Associates, +1-845-986-7733, fax +1-845-988-9988, plaporta@laportageol.com; Margaret Brewer; Scott Minchak.

This field trip is a first-ever visit for the archaeological and geological research community of prehistoric quarries in the metropolitan tri-state area. Prehistoric quarries and prehistoric mining technology in the Central Appalachians will be introduced to researchers. The field trip will visit Late Proterozoic–Early Cambrian jasper, Cambrian, Ordovician, and Devonian nodular chert, Ordovician quartz vein and steatite, Middle Ordovician bedded radiolarian, and Triassic argillite quarries. The focus of the trip will be on geological variables that promote the development of prehistoric Native American quarries and mines. Special attention will be paid to the ingenuity of mining extraction technology in quarries ranging in age from the Paleoindian Period to the Late Woodland. The terrain is moderate; hiking boots are recommended. The weather in October is cool (30 to 50 °F) and possibly rainy; therefore, layered, warm clothing and rain gear are needed.

Max.: 12; min.: 6. Cost: US\$299 (3L, 3R, 2ON, vans).

GSA-Sponsored Short Courses

3. Digital Terrain Mapping [503]

Sat., 21 Oct., 8 a.m.–5 p.m. *Cosponsored by GSA Engineering Geology Division; GSA Quaternary Geology and Geomorphology Division* **Canceled.**

Pardee Keynote Symposia

P1. Erosion: Processes, Rates, and New Measuring Techniques

Sponsored by GSA Quaternary Geology and Geomorphology Division
Mon., 23 Oct., 8 a.m.-noon

Frank Pazzaglia, Lehigh University, Bethlehem, Pennsylvania

Paul Bierman, University of Vermont, Burlington, Vermont

Milan Pavich, U.S. Geological Survey, Reston, Virginia

Dorothy Merritts, Franklin and Marshall College, Lancaster, Pennsylvania



Hickory Run Boulder Field, western foothills of the Pocono Mountains.

The number and importance of erosion rate studies is growing rapidly as new and established techniques are applied to the study of tectonics, climate change, sedimentary budgets, and human impacts on the landscape. Geological studies of landscape evolution are becoming increasingly diverse, generating a growing need for members of diverse disciplines to speak directly to one another about how rocks raised above sea level erode, and at what rates. Approaches ranging from investigations of the role of microbial activity in mineral dissolution to the influence of glaciation on erosion rates and sediment budgets will be encompassed in this Pardee Keynote Symposium that combines an oral session with invited speakers, a poster session of contributed papers, and a one-day field trip during the meeting to the nearby Hickory Run boulder field.

P3. Geosciences and the Media: How Can We Better Communicate the Imperatives of Sustainability?

GSA Geology and Society Division; Critical Issues Caucus, Geology and Public Policy Committee; GSA Quaternary Geology and Geomorphology Division; GSA Engineering Geology Division; Association of Earth Science Editors
Mon., 23 Oct., 1:30–5:30 p.m.

Paul H. Reitan, University at Buffalo, Buffalo, N.Y.; Susan W. Kieffer, University of Illinois, Urbana, Ill.; E-an Zen, University of Maryland, College Park, Md.; Allison R. Palmer, Institute for Cambrian Studies, Boulder, Colo.

Sudden onset and creeping mega-crises threaten the well-being of human societies. Only recently has one creeping mega-crisis, global warming, begun to get significant media attention. This symposium will examine how geoscientists and the media may succeed in effectively informing the public and their leaders in order to stimulate to action, both preventive and adaptive, to



These two photos are taken from the same site in Alaska — the Muir Glacier — 60 years apart (left = 1941; right = 2004). Photos by Bruce Molnia, USGS.

deal with these threats. Speakers include geoscientists who understand the threats, experts who regularly inform the media — e.g. the Acting Director of the U.S. Geological Survey — and members of the media.

Geoscience Information/Communication; Public Policy; Environmental Geoscience

P4. Holocene Sea Level Change in North America: A Post-Katrina Assessment

GSA Quaternary Geology and Geomorphology Division; IGCP 495 (Quaternary Land-Ocean Interactions: Driving Mechanisms and Coastal Responses)

Sun., 22 Oct., 1:30–5:30 p.m.

Torbjörn E. Törnqvist, Tulane University, New Orleans, La.;

Benjamin P. Horton, University of Pennsylvania, Philadelphia, Pa.

The concerns about sea-level rise and coastal responses are larger than ever in the post-Katrina world. This session, a contribution to IGCP 495, will address Holocene sea-level change in North America from a multidisciplinary perspective.

Quaternary Geology; Marine/Coastal Science; Neotectonics/Paleoseismology

P7. Using Historical Photographs and Maps to Document Landscape Evolution and the Impacts of Changing Climate: A Celebration of the 96th Birthday of Bradford Washburn

Wed., 25 Oct., 8 a.m.–noon

Bruce Franklin Molnia, U.S. Geological Survey, Reston, Va.;

Mike Sfraga, University of Alaska, Fairbanks, Alaska

This session in celebration of the 96th birthday of Bradford Washburn focuses on the use of historic photographs and maps to document landscape dynamics and evolution and to document Earth's response to human and natural forces.

Quaternary Geology; Geomorphology; Environmental Geoscience

Topical Sessions

T1. High Resolution Quaternary Records from Cave Environments

GSA Archaeological Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division; GSA Sedimentary Geology Division; Society for Vertebrate Paleontology; Paleontological Society; Geochemical Society; Karst Waters Institute

Bonnie A.B. Blackwell, Donald McFarlane

Caves are geological time-capsules. When dated, they reveal detailed patterns of climatic, sedimentological, and hydrological changes, and botanical, faunal, and archaeological turnover.

Contributions from all disciplines working in caves, rock shelters, or karst fissures welcomed. Oral and Posters.

Archaeological Geology; Geochemistry Other; Quaternary Geology

T2. Alluvial Geoarchaeology of Large River Valleys

GSA Archaeological Geology Division

David L. Cremeens

This session encourages contributions from scientists that have investigated archaeology sites in large river valley settings. Discussions of soil stratigraphy, correlation, paleoenvironmental reconstruction, post-occupation burial and alteration, and newer techniques and analyses are particularly encouraged. Oral.

Archaeological Geology; Geomorphology; Quaternary Geology

T3. Reconstructing Landscape Contexts of Human Occupation Surrounding Wetlands

GSA Archaeological Geology Division; GSA Limnogeology Division; GSA Geology and Society Division

Catherine H. Yansa, Andrea K.L. Freeman

This session will provide examples of how valuable information about human activities in wetland and surrounding upland landscapes is obtained from the analysis of soils, sediments and fossils from wetlands (lake, bog, marsh and riparian). Oral.

Archaeological Geology; Limnogeology; Quaternary Geology/Geomorphology

T4. Marine Geoarchaeology: New Exploration of Sites from Coast to Shelf (Posters)

GSA Archaeological Geology Division

Jean-Daniel Stanley, Eduard G. Reinhardt

Marine geoarchaeology aims to understand human and environmental interactions during the Holocene in now-submerged settings. New techniques and applications in this new interdisciplinary field will present latest research in reconstruction of coastal and shelf settings. Posters.

Archaeological Geology; Marine/Coastal Science; Quaternary Geology/Geomorphology

T5. Archaeological and Geoarchaeological Records of Natural and Human—Induced Disasters

GSA Archaeological Geology Division

Tina M. Niemi, Suzanne Leroy, L. Mark Raab

This session explores geologic and archaeological data, as well as historical records of catastrophic events and disasters in human history including earthquakes, volcanic eruptions, climate and environmental change, droughts, floods, and crises of cultural origin. Oral and Posters.

Archaeological Geology; Quaternary Geology/Geomorphology

T6. Geoarchaeology of Prehistoric Earthworks

GSA Archaeological Geology Division

Rolfe D. Mandel

This session encourages contributions from researchers who have applied geoscientific methods, such as geophysics, remote sensing, soil stratigraphy, sedimentology, and micromorphological analyses, to the study of prehistoric earthworks, including mounds, mound-ridge complexes, canals, and moats. Oral.

Archaeological Geology; Quaternary Geology/Geomorphology

T10. Geotechnical Investigations: The Phase 1 Investigation in Karst Terrain

GSA Engineering Geology Division

Richard F. Dalton, William E. Kochanov

The role of geologists during the initial phases of construction and resource development requires a multidisciplinary approach in karst areas. Papers discussing current karst research, field techniques,

and geotechnical engineering through case studies are encouraged. Oral and Posters.

Engineering Geology; Environmental Geoscience; Geomorphology

T21. Holocene Sequences of Environmental Disasters: The Terrestrial and Marine Palynological Records

AASP American Association of Stratigraphic Palynologists

Owen K. Davis

Natural disasters have occurred throughout recorded time and before. The geologic record of fires, droughts, earthquakes, tsunami and hurricanes has improved in the last decade through improved dating techniques and close-interval sampling. Oral.

Environmental Geoscience; Paleoclimatology/Paleoceanography; Quaternary Geology/Geomorphology

T22. Sigma Gamma Epsilon Student Research (Posters) Sigma Gamma Epsilon

Richard L. Ford, Charles Mankin, Donald Neal

This poster session, sponsored by Sigma Gamma Epsilon, will showcase undergraduate and graduate student research in all areas of geoscience. Posters.

Environmental Geoscience; Paleontology/Paleobotany; Quaternary Geology/Geomorphology

T30. Quaternary Micropaleontology: Quantifying Environmental Change

Cushman Foundation; GSA Geobiology and Geomicrobiology Division

Benjamin P. Horton, Robin J. Edwards

Microfossil assemblages provide a means of reconstructing and quantifying high profile issues such as climate and sea-level change, the frequency of hurricanes and tsunami and environmental acidification. Oral and Posters.

Geomicrobiology; Quaternary Geology/Geomorphology; Environmental Geoscience

T31. Geomorphology and Hydrology of Montane Tropical Streams

GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division

Fred N. Scatena, Fred L. Ogden

Streams draining tropical montane catchments are important sources of water and hydropower, and play major roles in global sediment and biogeochemical budgets. This session focuses on geomorphology, ecohydrology, sediments dynamics, and management of these systems. Oral and Posters.

Geomorphology; Hydrogeology; Environmental Geoscience

T32. Linking Sediment Dynamics and Geomorphology in Tidal Marshes and Estuaries

GSA Sedimentary Geology Division

Christopher Sommerfield, Raymond Torres

This session focuses on sediment dynamics, the evolution of estuarine landscapes and seascapes, and the linkages between process and morphology. Spatial and temporal scales of interest range from bedform to drainage network development. Oral and Posters.

Geomorphology; Marine/Coastal Science; Sediments, Clastic

T33. The Impact of Climate Change on Hydrologic and Geomorphic Processes in the Arctic and Subarctic GSA Quaternary Geology and Geomorphology Division

Joan Ramage, Rose McKenney

High latitude rapid temperature increases may lead to irreversible shifts in hydrogeomorphic regime resulting in significant environmental and human impacts. We seek observations or

predictions of climatic impacts on processes and responses in high latitudes. Oral and Posters.

[Geomorphology](#); [Paleoclimatology/Paleoceanography](#)

T34. Erosion: Processes, Rates, and New Measuring Techniques (Posters)

[GSA Quaternary Geology and Geomorphology Division](#)

Frank Pazzaglia, Paul Bierman, Milan Pavich, Dorothy Merritts
Synthetic view of the fundamental processes and rates of landscape erosion across wide temporal and spatial scales. Review of emerging techniques in measuring erosion and implications for landscape evolution, global sedimentary budgets, and human impacts. Posters.

[Geomorphology](#); [Quaternary Geology/Geomorphology](#)

T35. Watershed-based Approaches to River Restoration

[GSA Quaternary Geology and Geomorphology Division](#); [GSA Engineering Geology Division](#)

Sara L. Rathburn, Karin Boyd

This session emphasizes river restoration through manipulation of watershed-scale processes at broad temporal and spatial scales. Restoration approaches that accommodate natural variability of rivers to enhance ecological integrity will be highlighted. Oral.

[Geomorphology](#); [Quaternary Geology/Geomorphology](#); [Engineering Geology](#)

T36. Surficial Processes at the Hyperarid Limit: Current Research in the Atacama Desert, Chile

[GSA Geobiology and Geomicrobiology Division](#)

Jason A. Rech, Ronald G. Amundson, Gregory D. Hoke

This session focuses on the quantification of surficial processes and landforms in the Atacama Desert, and the use of these features to interpret environmental change on Earth and Mars. Oral and Posters.

[Geomorphology](#); [Sediments, Clastic](#); [Geomicrobiology](#)

T47. Learning from Disaster: Using Natural Disasters to Teach Geoscience Concepts, Spatial Understanding, and Temporal Scale

[GSA Geoscience Education Division](#); [GSA Engineering Geology Division](#); [National Association of Geoscience Teachers](#)

James H. Kirby

Using recent disasters as a starting point to discuss natural causes of catastrophic events, their spatial relationships with the planet, and temporal context of occurrence creates a unique learning environment for students in grades 5-12. Oral.

[Geoscience Education](#); [Quaternary Geology/Geomorphology](#); [Sediments, Clastic](#)

T61. Geology and America's Early Wars

[GSA History of Geology Division](#); [National Park Service](#); [GSA Engineering Geology Division](#); [History of the Earth Sciences Society \(HESS\)](#); [GSA Archaeological Geology Division](#), [GSA Quaternary and Geomorphology Division](#); [GSA Geology and Society Division](#)

Bob Higgins, William R. Brice, Judy Ehlen

Geology plays a critical role in every military venture. This session will examine how the American geologic setting, including geomorphology, hydrology, and resources influenced the course of the Revolutionary and Civil wars, and other conflicts. Oral.

[History of Geology](#); [Engineering Geology](#); [Archaeological Geology](#)

T62. Transcendental Geology: Henry David Thoreau and Nineteenth-Century Science

[GSA History of Geology Division](#); [History of the Earth Sciences Society \(HESS\)](#)

Jon D. Inners, Kristen Hand

This session focuses on the scientific interests and geological observations of the American "poet-naturalist" Henry David Thoreau. We welcome submissions on the landscape of Concord, Thoreau's excursions, and his family's connection to the graphite trade. Oral.

[History of Geology](#); [Geomorphology](#); [Marine/Coastal Science](#)

T80. Impact of Past Glaciations on Present-day Subsurface Water Resources: Geochemical, Hydrogeological and Modeling Studies

[GSA Hydrogeology Division](#)

Jennifer C. McIntosh, Victor Bense

Continental glaciations altered regional-scale fluid flow and solute transport in underlying aquifer systems. This session focuses on geochemical and hydrologic evidence for ice sheet-permafrost-aquifer interactions, and residence times of meltwaters. Field and modeling studies encouraged. Oral and Posters.

[Hydrogeology](#); [Geochemistry Aqueous](#); [Quaternary Geology](#)

T85. New Approaches to Understanding the Cycling of Water in Urban Landscapes

[GSA Hydrogeology Division](#); [GSA Quaternary Geology and Geomorphology Division](#); [GSA Geology and Society Division](#)

Claire Welty, Andrew J. Miller

This session explores the impact of urban development on hydrologic response, sediment yield, and landform evolution. Contributions are encouraged on new tools for quantifying the urban water cycle at high-resolution space and time scales. Oral and Posters.

[Hydrogeology](#); [Geomorphology](#)

T86. Peatland Patterns and Hydrological Processes: From the Subarctic to the Subtropics

[GSA Hydrogeology Division](#)

Judson W. Harvey, Andrew Reeve

The goal is to bring together hydrologists from disparate research areas to encourage comparisons and new insights about evolution, function, and future changes in peatland ecosystems. Oral and Posters.

[Hydrogeology](#); [Geomorphology](#); [Limnogeology](#)

T87. Stream-hyporheic Interactions: Hydrology, Geochemistry, and Biology

[GSA Hydrogeology Division](#); [GSA Quaternary Geology and Geomorphology Division](#); [GSA Geobiology and Geomicrobiology Division](#)

Eric W. Peterson, Meinhard Bayani Cardenas

An interdisciplinary session designed to expose and synthesize our understanding of the hyporheic zone, focusing on geomorphologic, hydrologic, and biogeochemical studies exploring linkages across scale and process. Oral and Posters.

[Hydrogeology](#); [Geomorphology](#); [Geochemistry Aqueous](#)

T90. Three-Dimensional Geological Mapping for Groundwater Applications

[GSA Hydrogeology Division](#); [GSA Geology and Society Division](#); [GSA Quaternary Geology and Geomorphology Division](#); [GSA Engineering Geology Division](#)

Hazen A.J. Russell, Richard C. Berg, L. Harvey Thorleifson

This session will highlight case studies or techniques of data collection, management, and integration leading to the construction and visualization of 3-D geological models with particular emphasis on hydrogeological applications. Oral.

[Hydrogeology](#); [Quaternary Geology/Geomorphology](#); [Engineering Geology](#)

T95. Dating and Environmental Interpretation of Lake, Loess and Marine Sediment Sequences using Paleomagnetism and Rock Magnetism

GSA Limnogeology Division

John A. Peck, John W. King

This session combines rock magnetic studies of environmental change from lake, loess, and marine sediments with paleomagnetic studies that provide robust chronologies for these sediment sequences on time scales from secular variation to reversals. Oral and Posters.

Limnogeology; Paleoclimatology/Paleoceanography; Quaternary Geology

T96. Neogene and Quaternary Biological Paleolimnology: In Memory of J. Platt Bradbury

GSA Limnogeology Division

Scott W. Starratt

During his career, Platt Bradbury pioneered techniques in biochronology and paleoenvironmental analysis of late Cenozoic lake sediments from around the world. Papers on all aspects of lacustrine analysis, particularly those using biological proxies are welcomed. Oral and Posters.

Limnogeology; Paleoclimatology/Paleoceanography; Quaternary Geology

T98. Identifying Our Most Vulnerable Shorelines: Science and Policy

GSA Geology and Society Division

Robert S. Young, David M. Bush

This session will focus on how scientists can objectively determine which of this nation's shorelines are the most vulnerable, and how a long-term retreat from these shorelines might be initiated. Oral and Posters.

Marine/Coastal Science; Public Policy; Quaternary Geology/Geomorphology

T127. Scales of Instability in Tropical Environments

American Association of Stratigraphic Palynologists

Christopher O. Hunt

This session deals with the geological evidence for the changeability and dynamism of tropical environments, over a variety of timescales, from catastrophic individual storms lasting a few hours to slow changes over millions of years. Oral.

Quaternary Geology; Environmental Geoscience; Paleontology, Paleoecology/Taphonomy

T128. Sources, Transport, Storage, and Delivery of Sediment in the Chesapeake Bay Watershed

GSA Quaternary Geology and Geomorphology Division

Allen C. Gellis, Dorothy Merritts

Understanding the sources, storage, and transport of sediment in the Chesapeake Bay watershed is critical to improving habitat. This session encourages presentations on studies that have examined sediment processes in Chesapeake Bay watersheds. Oral and Posters.

Quaternary Geology/Geomorphology; Geomorphology

T129. Geologic Mapping: Innovations and Interoperability (Posters)

GSA Geology and Society Division; GSA Quaternary Geology and Geomorphology Division; GSA Hydrogeology Division; GSA Structural Geology and Tectonics Division

Richard C. Berg, David R. Soller, Peter T. Lyttle, Thomas Berg

This session will highlight innovations in geological mapping by showing new mapping, strategies for managing data, new methods for map publishing and web accessibility, and how digital procedures have advanced the effectiveness of geological mapping. Posters.

Quaternary Geology/Geomorphology; Hydrogeology; Geoscience Information/Communication

T135. Forensic Geology

GSA Geology and Health Division; GSA Geology and Society Division

Nehru E. Cherukupalli

Application of Geology to criminal and other investigations of fossil and modern evidence based on minerals, rocks, soils, dust, disturbed stratigraphy, sedimentology etc., using field methods, polarized light microscopy and other investigative laboratory techniques. Oral and Posters.

Sediments, Clastic; Geomorphology; Geochemistry Other

Discipline Sessions

Geomorphology (Posters)

Session No. 22 Sunday, 22 October 2006 8:00 AM-12:00 PM

Geomorphology I

Session No. 180 Wednesday, 25 October 2006 8:00 AM-12:00 PM

Geomorphology II

Session No. 209 Wednesday, 25 October 2006 1:30 PM-5:30 PM

Quaternary Geology

Session No. 91 Monday, 23 October 2006 1:30 PM-5:30 PM

Quaternary Geology (Posters)

Session No. 24 Sunday, 22 October 2006 8:00 AM-12:00 PM

The 37th International Binghamton Geomorphology Symposium (BGS) *The Human Role in Changing Fluvial Systems* October 20-22, 2006 Columbia, South Carolina

The BGS will commemorate the bicentennial of *Man's Role in Changing the Face of the Earth*, an influential volume of papers that emanated from a conference held in Princeton in 1955. The focus within that context is on anthropogenic changes to river systems interpreted broadly to include related hydrologic and ecologic changes. Details about the 2006 BGS are available on the BGS web page along with registration materials:

<http://geography.uoregon.edu/amarcus/Binghamton2006/>

GSA Quaternary Geology and Geomorphology Division Newsletter

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