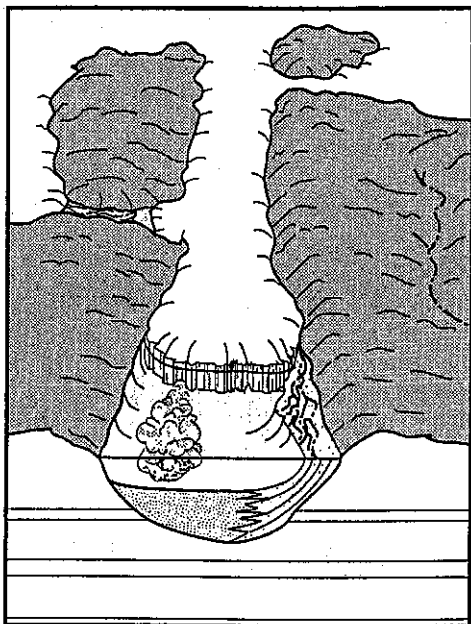
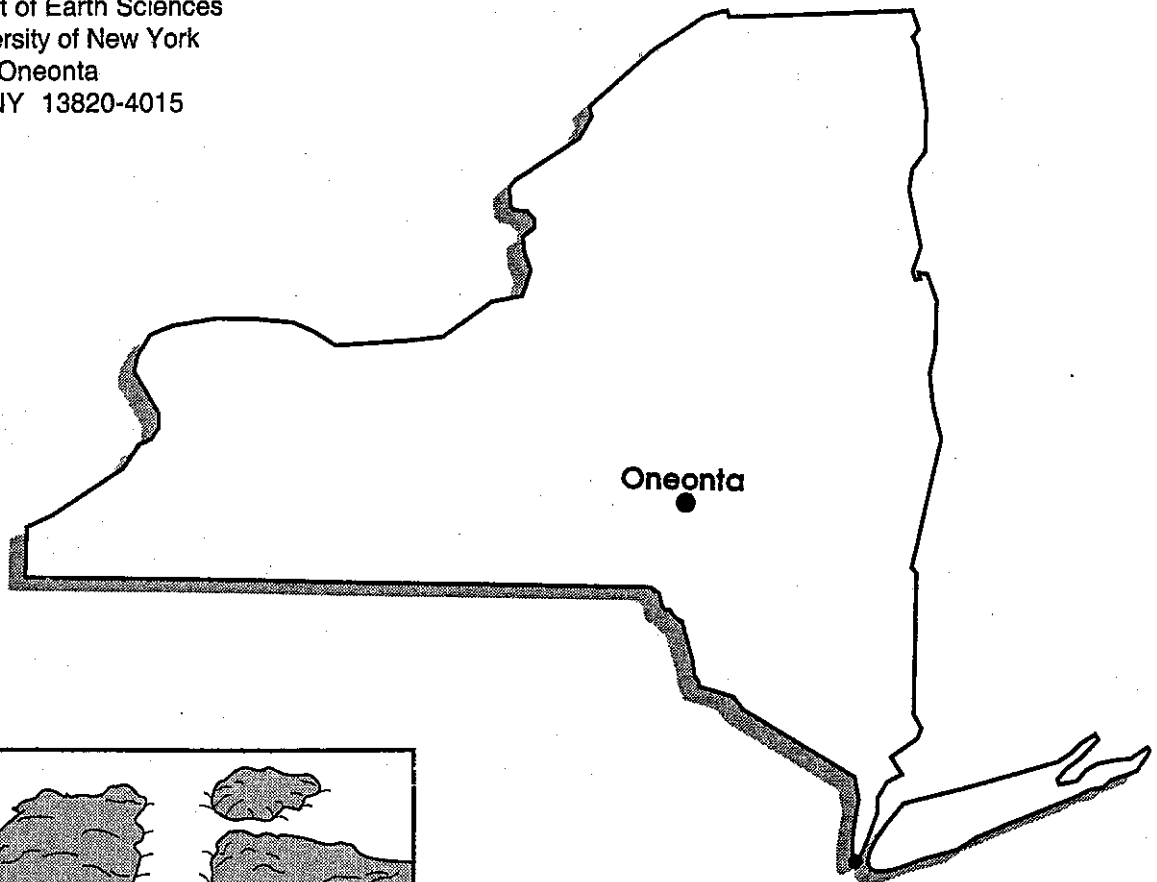


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NEW YORK GLACIOGRAM

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EDITORIAL POLICY

The **GLACIOGRAM** is intended to be a collection of informal notes concentrating on Quaternary work that relates to New York State either directly or indirectly. The **GLACIOGRAM** is not a formal publication and is not circulated to libraries, nor to individuals not engaged or interested in Quaternary research. The information included is often of a preliminary and tentative nature, and as such, should not be quoted without direct communication with the appropriate authors. It is suggested that reference to information in the **GLACIOGRAM** be identified merely as informal communication.

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INVITATION FROM THE EDITOR

As you may know, the **Glaciogram** contains volunteered notes and project summaries. As the title implies, past issues have contained entries weighted toward Glacial Geology. Perhaps it's time to expand the coverage to also include topics that may be closely related to glacial geology, such as limnology, palynology, soil science, ground water geology, environmental geology, etc., but to date have not yet been included. Should your area of interest fall within this broader realm, please consider having your work included in the spring edition by forwarding a brief (300-500 words or less) summary at your convenience. Easily duplicated, simple, line diagrams and map figures (sorry, no photos) may also be submitted. Please pass this invitation on to friends and colleagues who may wish to share their work or be placed on the mailing list.

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Ice Sheet Geomorphology Past and present Processes and Landforms

**34th Annual Binghamton Geomorphology Symposium
October 17-19, 2003
Binghamton University, Binghamton, NY**

Organizers

P. Jay Fleisher, State University of New York at Oneonta
and Peter L. K. Knuepfer, Binghamton University

Announcement and Call for Papers

Continental ice sheets continue to be a focus of research in Quaternary geology and glacial geomorphology. Some of the most important recent work has included an increased understanding of the role of subglacial meltwater in landscape evolution in glaciated terrain; the role of surges, jokulhlaups, and ice streams in continental glaciers (both active ones, such as Antarctica, and Pleistocene ice sheets, such as Laurentide); and active processes at the base and margins of modern ice sheets in Greenland, Iceland, and Antarctica. Thus the 34th Binghamton symposium will convene on the topic of glacial geomorphology. The program will have two sections: studies of processes and landforms in sub-glacial environments, and studies of ice-contact (ice-marginal) environments. We expect that the topics presented will cover a diversity of Quaternary and modern landforms and processes in the ice-sheet environment. The meeting will be held over the weekend of October 17-19, 2003, in Binghamton, and consist of plenary sessions and one poster session. Proceedings will be published, with papers due at the end of March 2003 so that they are in press by the time of the meeting.

We are soliciting additional papers for the symposium to complement those to be presented by invited speakers. Please contact one of the conference organizers before the end of November, 2002, if you are interested in preparing and presenting a paper at the conference; please include the topic and a brief description of what you would present. A separate request for poster presentations will be sent at a later date.

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We recently hosted a group of international Antarctic scholars during two days in April. The workshop focused upon the climate variability of the Antarctic Peninsula, and was very well attended. Recent news about the continued collapse of the Larsen ice shelf brought folks together for some lively discussion. Our own field program this past year took us to the front of the Larsen B and we collected the first marine geologic data set from underneath the Larsen B Ice Shelf since its penultimate retreat in 1999. You can view the results of these studies as well as abstracts of the other posters and talks at:
<http://academics.hamilton.edu/antarctica/>

Jenny Cleary ('02) completed a fine senior thesis on the alluvial stratigraphy of lower Fish Creek. Her project was the third focused upon the Holocene development of the Eastern Oneida Lake shoreline. She obtained a new set of four radiocarbon dates from buried wood at three localities in the lower part of the alluvial system. The basic conclusion of her study is that the alluvial record is much more complex than we thought (surprise) and that abandoned meander channels in the Fish Creek valley are most likely younger than the exposed stratigraphy in the current cut banks of the system. The exception being an unusually large channel system that may date to the early Holocene. Our new dates are as follows:

Lab Number	delta 13 C	Corrected Age (for del 13 C only)	Sample type
GX-28624	-27.9 per mil	2280 +/- 40	wood
GX-28621	-26.3 per mil	2970 +/- 40	wood
GX-28623	-28.4 per mil	5510 +/- 50	wood
GX-28622	-27.2 per mil	6000 +/- 40	wood

And a few words from one of the two founding fathers of the Glaciogram, Don Coates (the other being Ernie Muller)

Jay,

Thanks for keeping me on mailing list. Although I am no longer active in NY, I do try to keep up with the "goings on". Marilyn and I are preparing for our annual trek to our Blue Ridge Mtn. condo for Thanksgiving festivities. We continue to be very comfy in Florida. If ever in SW Florida you are more than welcome for a visit. Continued good luck and congrats for all you have done to keep Glaciogram perking.

Don (Coates)

Rhodes W. Fairbridge, Professor Emeritus, Columbia University, Armstrong Hall, 2880 Broadway, New York, NY 10025

NEW HOLOCENE ASTROCHRONOLOGY

Friends of the Holocene may be interested that after a quarter century I have just finished a new chronology, based on the dendro C-14 wiggles of Stuiver and Co. (he has now retired and his lab given up), a revision of the 184 Hudson Bay beach ridges by Claude Hillaire-Marcel (who is now with Hydroquebec in Montreal), and an astrochronology based on the NASA-JPL formulas. Contrary to our joint paper in *Nature* of 1977 the Hudson Bay beach ridges line up best, NOT with the double sunspot cycle at 44.48 yr, but with a planetary period of 45.3927 yr. which at seven-cycle increments makes 317.7 and 953.2 years.

Beach #184 was when the Laurentian ice sheet over the Hudson suddenly broke up into a "Calving Bay," dated 6319 BC (8269 BP, sidereal yr). There are lots of C-14 dates around this time (calibrated). Beach #1 was AD 1987, the year that my 70th birthday (3 yr late, of course) was celebrated with a book "*Climate*" edited by Mike Rampino (now at NYU).

For fun, I have labeled particularly important dates with French eustatic stages of Madame Ters (now deceased, alas) with the Scandinavian pollen divisions and selected cultural dates from history and Egyptology.

Anyone who has C-14 dates that are reasonably calibrated can use this Holocene template. If you want a copy, send me a postcard. We use imaginary year AD 2033 (which is one cycle beyond 1987), with a simple formula (with n for the basic cycle of 45-3927), thus beach #120 works out like this: $n \times 120(-2033) = \text{date in AD/BC years}$. The whole thing is a wee-bit approximate because the astronomic data have a +/- of 4 yr and we wink the eye at the absence of a zero year in the religious calendar (our years -2=1BC). However, over long periods of time all the pluses and minuses cancel out and there is a grand fundamental tone of 1,101,000.0 yr. Heaven knows what it all means.

Bob Titus, Hartwick College, Oneonta, NY 13820

I have been working on the glacial spillways of the North/South Lakes State Park vicinity. There are four of them, one at Rip's Rock Ledge, two near Newman's Ledge and one at South Mountain. Studies also continue on local glaciers along the Catskill Front. I have also been working in the Hudson Valley studying the relationship between the distribution of Livingston family mansions and glacial Lake Albany. These studies will lead to articles in Kaatskill Life magazine. The second edition of my book "The Catskills in the Ice Age" will soon be published. A thousand copies of the first edition have circulated in the Catskills region, bringing knowledge about ice age geology to the general reading public.

Robert Gilbert, Department of Geography, Queen's University, Kingston ON K7L 3N6, Canada, 613 533 6034 (voice), 613 533 6122 (Fax), <http://geog.queensu.ca/gilbert>

The summer of 2002 was a mixed bag of accomplishments. A list that grew to 19 tasks resulted in only about one third getting done. Instead of intended Algonquin-Nipissing shoreline surveys in the Bruce Peninsula, I spent two weeks in the usual spring interval between snowmelt and leaves at Sudbury adding more post-Algonquin shoreline data to that collected a decade ago by ANDY HEATH for his M.Sc. thesis. In the interim, more detailed and extensive Quaternary geology mapping by ANDY BAJC and PETER BARNETT (both my former M.Sc./Ph.D. students) of the Ontario Geological Survey had enhanced the general data and highlighted the desirability of more surveys. The new data will combine with Heath's in a paper in preparation on raised shorelines (mainly deltas on the north rim) of the Sudbury basin. A cold spring with late flurries kept the leaves at bay in May while we surveyed (and shivered!).

In mid-June ROLAND HALL (UW Biology) and I joined the Paleontological Research Institution Mastodon Project group at the Hyde Park mastodon site north of Poughkeepsie NY for on-site discussions of progress by various specialists. We reported on our work on diatoms and molluscs. Some readers may have seen the excavation report on the Discovery Channel -- a video can be purchased at PRI. We then moved to Ithaca for a tour of PRI and acquired additional samples for mollusc study from Hyde Park and the Java NY mastodon.

I visited the Hiscock site in early August, sampled the subjacent till, and collected 6 comparative samples from the surrounding drumlin field. Five papers for review and comment arrived in September pertaining to Smith Symposium II held in Buffalo a year ago.

RICHARD MEYRICK (1999 PDF from Cambridge, England, now mollusc curator at Weimar, Germany) visited in June and took back samples I collected in 1999 and 2000 from a second alluvial fan at the glacial Lake Iroquois shorebluff at Scarborough Bluffs. We now have an array of 4 ^{14}C dates from the two alluvial fans ranging from 5,000 to 10,000 years. A paper on the terrestrial molluscs in the two fans and a spring tufa deposit in the Grand Valley near Cambridge, Ontario, is in preparation this fall. A ^{14}C date at the tufa site of about 9000 years indicates valley incision to the present level, now restrained by bedrock at Paris, was early.

Fossil picking from samples at Leamington, Ontario (^{14}C 13.1-13.4) continues to yield interesting things. I pursued the molluscs mentioned in the 1993 CJES paper, found abundant ostracodes, being identified by ALLISON SMITH, Kent U., then found abundant Chironomid head capsules of a dozen species identified by IAN WALKER, Okanagan University College, Kelowna, BC. Other unknowns are being examined by NORTON MILLER at the NY State Museum in Albany.

Among intended work not done this summer was excavation at the Don Brickyard for more vertebrates (permission took four months, then the time was gone), redrilling to recover buried organics at the Waterloo interstadial (?) site, and a visit to the Shelton mastodon site in Michigan (excavation plans aborted?). Maybe next year for these.

Publications have appeared as follows: Woodstock quarry stratigraphy in *Geographie physique et Quaternaire*, a review of Canadian urban geology with OWEN WHITE in IAEG conference proceedings, and a review of Ontario neotectonics work in *Tectonophysics*, also with Owen White. I will participate in the GSA Denver session honoring Ernie Muller later this month.

I am continuing work on the Quaternary evolution of small lakes in eastern Ontario, especially related to the retreat of the ice dam that formed glacial Lake Iroquois and its subsequent lower water phases. A subbottom acoustic survey was conducted of Upper Rideau Lake and a report on the earlier acoustic survey of Devil Lake has been presented (Gilbert, in press). Both lakes are about 40 km north of Kingston at the eastern end of Lake Ontario. The Devil Lake survey revealed three acoustic facies: (I) a moderately acoustically transparent, laminated sequence interpreted as a glacial lacustrine deposit in glacial Lake Iroquois or a subsequent phase in water depths up to 200 m greater than at present, (II) a transitional more transparent, less layered facies interpreted as being deposited in a more distal glacial lake from erosion of sediment in the watershed exposed by the failure of the ice dam and lowering of the glacial lake before stabilization by the development of forests, and (III) an acoustically transparent facies with similar transmissivity to the water column, interpreted as Holocene gyttja. Each is spatially variable in extent and thickness in response to those processes. There is only a very weak relation between sediment thickness and the water depth in which it was deposited. Wave processes prevent deposition in water depths less than about 6 m and evidence of erosion to the greatest depths of the lake (>40 m) is pervasive. The data demonstrate the value of acoustic survey in assessing lacustrine processes and the history of lakes, and the significance of such documentation in planning a coring program and in interpreting the results.

Reference: Gilbert, R., in press. Spatially irregular sedimentation in a small, morphologically complex lake: implications for paleoenvironmental studies. *Journal of Paleolimnology*

Richard A. Young, Department of Geological Sciences, SUNY at Geneseo, 1 College Circle, Geneseo NY 14454

During summer fieldwork we found another thick, organic-rich, glacial section in the Genesee Valley approximately 5 miles south of the Elam (formerly Regional) Sand and Gravel site described in the 1994 NYSGA Guidebook and the May 1999 Glaciogram. The well preserved organic horizon is similarly sandwiched between two glacial lacustrine sequences. The deformed organics are associated with two thin till and gravel units and are relatively unoxidized, due to their stratigraphic position between clay-rich units. The organic peat horizon is nearly 2 feet thick within a 10-foot-thick exposure. The exposure is located at an elevation estimated to be 80 to 90 feet below the original postglacial surface. Several small logs were recovered, in addition to peat and small pelecypods. The wood has a yellow-white appearance when excavated, but rapidly oxidizes to gray or black on exposure to the air or when oven dried. Material similar in appearance to sphagnum moss with a greenish tint still preserved was also noted within the peat section. Wood samples have been submitted to the Arizona AMS laboratory for age determinations. It is assumed that the new site may correlate with the Middle Wisconsin ice advance documented a short distance to the north at the time of Heinrich event H4 (circa 35,000 BP). However, should the site turn out to be of Late Wisconsin age, it would be the first such organic-rich horizon associated with the extensive Late Wisconsin moraine complex south of Routes 5 and 20. In either case, the results should provide an improved chronology for Wisconsin events in the poorly dated Genesee Valley section.

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Hello New York! The following summarizes some of the student-centered research in glacial, periglacial and karst geomorphology that I have been doing since joining the department of Environmental Earth Science at Eastern Connecticut State University (ECSU) three years ago. Some of this work is based on sites in New England, while other components examine glacial, periglacial and karst geomorphology further afoot.

ECSU is a typical undergraduate state university where emphasis (and contact load) is placed on teaching. As such, some of my more recent work reflects an attempt to integrate research by myself and others with classroom teaching by way of video-based technology (CD and video-streaming). In collaboration with S. Clebnik (ECSU), J. Motyka (Lyman Memorial HS), Randolph Steinen (UCONN) and Robert Thorson (UCONN), I have prepared a series of video-based virtual field trips (VFT's) entitled "Accessing Connecticut Landscapes on CD & On-Line." This includes seven VFT's to sites in Connecticut, Georgia, and Greenland that examine: (1) kettle topography & stratified drift in CT, (2) the external and (3) internal characteristics of eskers in CT, (4) the sand and gravel industry in CT, (5) glacial boulders and plucking in CT, (6) sediment cores from sinkhole lakes in Georgia, and (7) glacio-fluvial erosion in Greenland. The CD targets an introductory audience and has been well received by students and by reviewers from several states (including Stephen Robinson, St. Lawrence University in NY). At present VFT's only stream at high bandwidth locally. However, interested parties can contact me (hyattj@easternct.edu <<mailto:hyattj@easternct.edu>>) for a complementary CD (until they run out!).

My primary research background reflects graduate training in modern periglacial processes and environments on Baffin Island, Canada. To this end I have a paper in press that is coauthored with Fred Michel (Carleton University, Ottawa, Ontario) and Robert Gilbert (Queen's University, Kingston, Ontario) entitled "Recognition of subglacial regelation ice near Pangnirtung, Baffin Island, Canada." This will appear in the forthcoming Proceedings of the Eighth International Conference on Permafrost.

I also have ongoing research interests in sinkhole development in south Georgia. This work makes use of two approaches. First, with others I have used GIS to examine the development and spatial attributes of suffosion sinkholes in the southeast coastal plane. Recent papers on this work appear in the last two international sinkhole conference proceedings and in *Geomorphology* (17: 305-316). Also, in collaboration with R. Gilbert (cited above) I am nearing completion of a manuscript that utilizes sedimentary and acoustic profiling records from sinkhole lakes in south Georgia to infer a history of surface water - ground water exchange. This builds on our previous studies of lake sediments in south Georgia (*J. of Paleolimnology* 23: 421-438).

I am also examining lake sediments in a small a dammed lake in CT in order to assess the spatial variability of physical and geochemical characteristics of sediments in relation to changing depositional environments that followed flooding of the lake in 1927. This work is largely an effort to involve undergraduates in field-based research that has a service-learning component.

Lastly, I am currently involved in collaborative research with R. Gilbert (Queen's) (and perhaps John Shaw from the University of Alberta) that examines spectacular glacio-fluvial erosional forms near Kangerlussuaq, Greenland. Our efforts thus far have resulted in the development of several very detailed photomaps of complex erosional surfaces. We are in the process of merging and registering these image maps using detailed 1 meter-grid total station survey data. Once registered we plan to quantify forms and develop a form index that we hope will help to distinguish between small erosional forms produced fluvial, glacio-fluvial, and glacial processes. Additional details on all of these projects is available at <http://www.easternct.edu/personal/faculty/hyattj/>.

Aleksis Dreimanis, Department of Earth Sciences, University of Western Ontario, London ON N6A 5B7, Canada

Presently working on two papers co-authored with Paul F. Karrow (Humber Till in the Brampton-Toronto area) and Philip Gibbard (Catfish Creek Drift type section along the North shore bluffs of Lake Erie). We distinguish nine members of the catfish Creek Drift along a 2 km bluff section.

Another co-authored paper was published recently in the September issue of the Canadian Journal of Earth Sciences, vol. 39: "Analysis and reinterpretation of deformation features in the Roge River valley, Scarborough, Ontario" by L. Godin, R. L. Brown, A. Dreimanis, G. M. Atkinson and D. Armstrong.

I was also co-author of two papers presented (in Latvian) by V. Zelcs at the Scientific Conference of the University of Latvia in Riga, dealing with glaciotectonic structures in a megadrumlin and in ribbed moraines.

David Barclay; Assistant Professor, Department of Geology, SUNY, Cortland, Cortland, NY 13045; barclayd@cortland.edu; <http://facultyweb.cortland.edu/~barclayd/index.htm>

This summer saw a lot of work on my Alaska projects. I started in June with a week at the International Glaciological Society conference on Fast Glacier Flow in Yakutat, where I co-lead a fieldtrip and presented a poster on my recent work at Nellie Juan Glacier. A paper based on the Nellie Juan work will hopefully be forthcoming in Annals of Glaciology with Greg Wiles (The College of Wooster) and Parker Calkin (INSTAAR) as co-authors. After the conference I moved up the coast for two weeks of work at Sherman, Sheridan and Scott glaciers near Cordova. Accompanying me were undergraduate students Michael Kloczko (SUNY Cortland) and Suzanne Lucas (The College of Wooster). We found plenty of subfossil wood to sample and the preliminary cross-dating results show that many of the trees we recovered were killed around 1810 to 1830 AD. This makes these the first find in southern Alaska of trees killed by late Little Ice Age glacier advances. Together with some of our previous work, these new data were presented at the theme session in honor of Ernie Muller at the Geological Society of America Annual Meeting in Denver in October. Jay Fleisher and Dave Franzi should be congratulated on putting together and running an excellent session that spanned the northeastern U.S.A. to Alaska, and which successfully highlighted Ernie's many contributions to glacial geology over the decades.

Duane Braun, Geosciences, Bloomsburg University, <dbraun@husky.bloomu.edu>

We have finished mapping the glacial deposits in northeastern Pennsylvania near to the New York State line and are now heading back down towards the late Wisconsinan terminus where it crosses from the Ridge & Valley to the Plateau.

I helped lead the 2002 Field Conference of Pennsylvania Geologists in the Great Bend region on Oct. 3 - 5, 2002. There is an introductory section in the guidebook on the glaciation of northeastern Pennsylvania and 5 of the Stops talk about the glacial geology.

Copies of the guidebook are available from: The Field Conference of Pennsylvania Geologists, Inc., 3240 Schoolhouse Road, Middletown, PA 17057-3534.

The cost is \$12.00 and \$3.95 shipping. To ship 2 books - \$5.20 or go to <http://www.paonline.com/gfleeger/fcogp/>

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Since the spring issue, 2002, I've been busy on several fronts related to Quaternary geology. The Bering Glacier Research Group (BERG) launched our 15th consecutive field season on the eastern ice front of the Bering piedmont lobe, Alaska. With Ernie Muller and Palmer Bailey, special attention was given to Holocene stratigraphy, including several newly-exposed, buried forest beds containing 15 cm diameter fossil trees deformed in a manner that strongly suggests deformation by overriding ice. Trees are bent and sheared within a horizontal silt/clay layer 2.4 to 9.8 m beneath the overridden surface. This sheds new light on the "dimensions of the deforming layer". Eric Natel gathered hundreds of GPS data points in the mapping of new land uncovered by retreat from the 1995 surge limit. The interesting aspect of this is that overridden terrain that primarily consists of easily modified foreland outwash was only slightly effected by glacial erosion. Indeed, the most effective agent of erosion was subglacial water flowing within conduits that channeled pressurized water to ice-marginal vents. This holds potential significance for the analysis of terrain elsewhere, especially where "tunnel valleys" are suspected. Still another aspect of emphasis was a student project conducted by Richard Dworak, senior meteorology major at SUNY-Oneonta. Richard gathered glacier ablation data to investigate the influence of daily weather on loss of ice mass and the generation of meltwater entering the ice-contact drainage system. And, lastly, we mapped and monitored the latest sedimentologic modifications of the ice-contact lake system that has in recent years been rapidly filling due to high meltwater sediment load and delta aggradation at rates faster than ice retreat.

Back on the home front, SUNY-Oneonta will team-up with Hartwick College to host the 2003 NYSGA meeting next fall. I plan to conduct a local field trip to apply the Bering paradigm to Quaternary landforms and sediments in the upper Susquehanna region.

The Finger Lakes Institute at Hobart and William Smith Colleges.

John D. Halfman

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I'd like to take this opportunity to write about the Finger Lakes Institute and end with a short piece on my current research activities. As you may know, on September 30th I joined State Senator Mike Nozzolio (R-Fayette) at a press conference in Geneva to announce that the Senator had secured \$1 million in funding to establish a new Finger Lakes Institute at Hobart and William Smith Colleges. I am writing to tell you about some recent developments, and bring you up to date on our plans.

As we envision it, the Finger Lakes Institute will be dedicated to environmental research and education about the Finger Lakes region. It will serve as a clearinghouse for environmental information. Hobart and William Smith Faculty members associated with the Institute will create, disseminate, and coordinate educational resources, and undertake research related to watershed ecology, water quality, environmental and climatic change, energy utilization, and exotic species. Critical for this audience is our commitment within the Geoscience faculty to investigating records of environmental and climatic change encoded in the sediments of the Finger Lakes.

In order to further these objectives, the Colleges plan to utilize the grant announced by Senator Nozzolio to renovate a campus building that will serve as the headquarters of the new Institute. During the next several months we will be refining a strategic plan, now that we have this important launch of capital monies. I expect that early in 2003 we will be in touch with you to outline our thinking and solicit your input on our plans.

Announcements of upcoming events will be available on the Colleges' new Finger Lakes Institute website: <http://www.hws.edu/fli>. Some of the topics under consideration at this time include establishing a regional lecture series, mounting an annual symposium, expanding teacher professional development, and securing funding for Summer Science student fellowships. I welcome any and all inquiries into the future possibilities. Lets hope that the Bill placed on the floor of the Senate a few weeks ago by Senator Hillary Clinton (D-New York) makes its way through Congress and allows the \$50 million dollars directed for research, education and other initiatives for the Finger Lakes region.

Lastly, I've spent most of last summer working within the Seneca Lake watershed investigating watershed/lake hydrogeochemical interactions. These Seneca Lake investigations will continue through the years to come. I'm also writing a manuscript with Dawn Dittman, USGS Biology Field Lab, Cortland, that details the *Diporeia* decline, *Dreissina* (zebra and quagga mussels) increase and their link to sediment characteristics in Lake Ontario. Highlights include the rapid decline of the *Diporeia* species, an equally rapid increase in quagga mussels, and perhaps a potential refuge for *Dreissina* species in the deepest (> 130 m) but bottom-current swept portions of the lake. The decline in *Diporeia* abundance is critical to the ecology of the lake as *Diporeia* is the major food source for whitefish, sculpins, and ultimately lake trout and other salmon species. The abstracts referenced below highlight these research directions.

References (*undergraduate co-authors):

