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# Northeastern

*Plan your 2009 GSA Section Meeting attendance!*

44th Annual Meeting, Portland, Maine, USA  
22–24 March 2009





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## *Welcome*

The 44th Annual Meeting of GSA's Northeastern Section will be hosted by the College of Arts and Sciences at the University of New England, the Maine Geological Survey, the Dept. of Geosciences at the University of Southern Maine, the Dept. of Geology at Bates College, the University of Maine, and the Geological Society of Maine. Also meeting in conjunction with NEGSA are the Maine Water Conference, the Eastern Section SEPM (Society for Sedimentary Geology), the Northeast Section of the Paleontological Society, the Eastern and New England Sections of the Association for Women Geoscientists, the Council on Undergraduate Research–Geology Division, and the Eastern and New England Sections of the National Association of Geology Teachers.

Our venue is the Holiday Inn By the Bay, 88 Spring Street, Portland, Maine 04101, USA. The Holiday Inn is within walking distance of the Old Port and the Arts District and numerous restaurants serving New England and ethnic fare.

We look forward to seeing you!

**Arthur Goldstein**, *General Chair*, and **Robert G. Marvinney**, *Technical Program Chair*

## CONTACT INFORMATION

For up-to-the-minute information, go to [www.geosociety.org/meetings/](http://www.geosociety.org/meetings/). If you have questions or special requirements, please contact the meeting general chair, Arthur Goldstein, [agoldstein@une.edu](mailto:agoldstein@une.edu), or technical program chair, Robert G. Marvinney, [robert.g.marvinney@maine.gov](mailto:robert.g.marvinney@maine.gov). Requests for special accommodations should be made by **23 February 2009**.

## REGISTRATION

**Early Registration Deadline:** 17 February 2009

**Cancellation Deadline:** 23 February 2009

Please register online via [www.geosociety.org/meetings/](http://www.geosociety.org/meetings/). On-site registration will be available during the meeting at the Holiday Inn By the Bay beginning in the afternoon on Saturday, 21 March.

## REGISTRATION FEES (ALL FEES ARE IN U.S. DOLLARS)

	Early		Standard	
	Full Meeting	One-Day	Full Meeting	One-Day
Professional Member	\$140	\$90	\$170	\$110
Professional Member 70+	\$70	\$50	\$100	\$70
Professional Nonmember	\$160	\$110	\$190	\$140
Student Member	\$45	\$35	\$65	\$55
Student Nonmember	\$55	\$45	\$75	\$65
K–12 Professional	\$45	\$30	\$55	\$40
Tuesday Water Conference Only	n/a	\$55	n/a	\$65
Guest or Spouse	\$30	\$15	\$40	\$25
Field Trip Only	n/a	\$30	n/a	\$30



Cover and above: Casco Bay, Maine, USA. Photo courtesy Convention and Visitors Bureau of Greater Portland.

## ACCOMMODATIONS

**Hotel Registration Deadline:** 21 February 2009

A block of rooms has been reserved at the Holiday Inn By the Bay, 88 Spring Street, Portland, Maine 04101, USA, for US\$125 + tax per night for up to four occupants. Please call the Holiday Inn reservation line, +1-800-345-5050, and request a reservation under “**NEGSA 2009.**” For directions and other information, please call the Holiday Inn directly at +1-800-345-5050, or go to [www.innbythebay.com](http://www.innbythebay.com).

## TECHNICAL SESSIONS

### Symposia

1. **Sea Level and Salt Marsh Ecogeomorphology.** *Cosponsored by Eastern Section SEPM.* Beverly Johnson, Bates College, [bjohnso3@bates.edu](mailto:bjohnso3@bates.edu); Julia Daly, Univ. of Maine at Farmington, [dalyj@maine.edu](mailto:dalyj@maine.edu).

Salt marshes provide a host of important ecosystem services, such as organic matter production and nutrient cycling, coastline protection, and carbon sequestration. Yet, they are highly vulnerable to sea-level rise and climate change. This session will present a variety of techniques for exploring interactions between sea-level rise and the physical, geological, and ecological processes within salt marshes on a variety of time scales.

2. **Orogenesis and Arc Collisions: From Models to Observations of Modern and Ancient Orogens.** Tim Byrne, Univ. of Connecticut, [tim.byrne@uconn.edu](mailto:tim.byrne@uconn.edu); Cees van Staal, Geological Survey of Canada, [cvanstaa@nrcan.gc.ca](mailto:cvanstaa@nrcan.gc.ca); Peter Koons, Univ. of Maine, [peter.koons@maine.edu](mailto:peter.koons@maine.edu).

Arc collisions have contributed to orogenic processes since the early history of plate tectonics, and geologists have appreciated their importance in the construction of continental crust for several decades. Yet, the complexities associated with arc collisions have only recently been recognized as numerical and analytical models are integrated with detailed studies of the temporal and spatial evolution of specific orogens. As well, the relation between surface-lithosphere dynamics in collisions is a developing field of research.

3. **Aspects of Transatlantic Research on Magma Systems.** David Gibson, Univ. of Maine at Farmington, [dgibson@maine.edu](mailto:dgibson@maine.edu); Dan Lux, Univ. of Maine, [dlux@maine.edu](mailto:dlux@maine.edu); Martin Feely, National Univ. of Ireland, [martin.feely@nuigalway.ie](mailto:martin.feely@nuigalway.ie).

This session aims to bring together geologists from both sides of the Atlantic to exchange current ideas on integrated research on magma systems. Aspects of research include, but are not limited to, timing of igneous activity, pluton emplacement and assembly, magma sources in differing tectonic settings, crystallization history in magma chambers, post-crystallization mineralization studies, and the role of magmatism in crustal growth.

4. **Climatic Change: Perspectives and Insights from Hothouse and Icehouse Climates in Deep Time.** *Cosponsored by the Paleontological Society.* David Sunderlin, Lafayette College, [sunderld@lafayette.edu](mailto:sunderld@lafayette.edu); Kira Lawrence, Lafayette College, [lawrenck@lafayette.edu](mailto:lawrenck@lafayette.edu).

Because the instrument-produced record of climatic variations is short relative to the time scales on which many climate system processes operate, understanding the dynamics and effects of recent and future climate change requires a deep-time perspective. Paleobiological and biogeochemical information in the terrestrial and marine stratigraphic record provide data for examining pre-Quaternary climate conditions and their variability at both local and global scales. We seek to convene a diverse session encompassing studies of climate signatures preserved in the ancient biosphere and geologic record as well as the context those signatures provide for recent climate change.

5. **Modern Glacial Processes and the Glacial Sedimentary Record: In Honor of Joe Hartshorn.** *Cosponsored by Eastern Section SEPM.* Carl Kottéff, U.S. Geological Survey, [ckotteff@cox.net](mailto:ckotteff@cox.net); Tom Weddle, Maine Geological Survey, [thomas.k.weddle@maine.gov](mailto:thomas.k.weddle@maine.gov); Michael J. Retelle, Bates College, [mretelle@bates.edu](mailto:mretelle@bates.edu).

This symposium focuses on studies of modern glacial processes and implications for the glacial stratigraphic record, and is in honor of Joseph H. Hartshorn, friend, colleague, and mentor, who passed away on 5 May 2008. Joe was a decorated World War II Lancaster bomber pilot and earned his Ph.D. in geology at Harvard, specializing in geomorphology. His keen perception of landforms was put to use by the USGS for mapping glacial and Quaternary deposits in New England. When Joe changed careers and brought his deep experience of modern environments, field mapping, and stratigraphy to the Univ. of



Cover inset and above: Covered bridge in Maine, USA. Photo courtesy Convention and Visitors Bureau of Greater Portland.

### PLENARY ADDRESS

**Climate Change: Realities, Surprises, and Opportunities.** Paul Mayewski, Director, Climate Change Institute, University of Maine. Sun., 22 March, 5:30 p.m., New Hampshire–Vermont Rooms.

### BANQUET ADDRESS

**Charles Darwin, Geologist, and the Origin of Darwin's Boulders.** Edward B. Evenson, Dept. of Earth and Environmental Sciences, Lehigh University. Mon., 23 March, 8 p.m., New Hampshire–Vermont Rooms. Open to all.



Mount Katahdin, the highest mountain in Maine, USA. Photo courtesy Convention and Visitors Bureau of Greater Portland.

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Massachusetts, his teaching reached many, from introductory students to post-docs. We rest assured that his students still ponder some of the questions Joe posed in his lectures and at the outcrop.

6. **Lakes and Environmental Change.** Brad Hubeny, Salem State College, bhubeny@salemstate.edu; Lisa Doner, Plymouth State Univ., donerl@mac.com.

Lakes are sensitive to changing environmental conditions, and accumulated sediments can preserve high-resolution records of this variability. This session will include studies of lake responses to and sedimentary records of environmental change at all time scales, with research on developing or refining proxies especially encouraged.

7. **Provenance and Orogenic History of Ganderia: Key Element in the Mid-Paleozoic Accretionary History of the Appalachian Orogen.** Sandra Barr, Acadia Univ., sandra.barr@acadiau.ca; Cees van Staal, Geological Survey of Canada, cvanstaa@nrcan.gc.ca.

Provenance and orogenic history of Ganderia are key elements in the mid-Paleozoic accretionary history of the Appalachian orogen. Ganderia, a composite peri-Gondwanan domain, forms a large part of at the least the northern Appalachian orogen. This session will focus on Ganderia's provenance, its defining characteristics, the nature of its basement, and how it interacted with other Appalachian elements during construction of the orogen.

8. **The Boston Basin and Beyond: In Honor of Margaret D. Thompson.** Jean Crespi, Univ. of Connecticut, jean.crespi@uconn.edu; Cathy Summa, Winona State Univ., csumma@winona.edu.

This session honors Margaret D. Thompson's career as a mentor and scientist who has advanced the understanding of the tectonics of southeastern New England through careful combination of stratigraphic, paleomagnetic, and geochronologic analyses. Talks that incorporate (1) the Neoproterozoic and Paleozoic history of the Boston Basin and broadly related aspects of Appalachian paleogeography and Acadian/neo-Acadian orogenesis; (2) topics of general scientific interest by Thompson's former students; (3) the importance of undergraduate research and mentoring in motivating students to pursue careers in geoscience; and (4) multidisciplinary and collaborative approaches to scientific research are especially welcome.

9. **Maine Groundwater: Sustainable Aquifer Use through Monitoring and Regulation.** Robert Marvinney, Maine Geological Survey, robert.g.marvinney@maine.gov; Carol White, C.A. White & Associates, cawhite@smemaine.com.

This session will cover (1) the characteristics of Maine water resources; (2) site-specific examples of detailed hydrogeologic analyses used in permitting and monitoring; (3) an overview of Maine's regulations that protect groundwater and dependent resources while allowing sustainable withdrawals; and (4) the value of groundwater to Maine's economy.

10. **Natural Hazards: Supporting Mitigation to Avoid Future Costs.** Laurence Becker, Vermont Geological Survey, laurence.becker@state.vt.us.

Many natural hazards affecting northeastern North America have a foundation in geology: landslides, earthquakes, coastal erosion, fluvial erosion, and flooding. This session will cover a broad spectrum of hazards and address the contributions geologic mapping and research make to understanding and avoiding the impacts of these hazards.

11. **Mineral Resources of the Northeastern United States and Eastern Canada.** William Kelly, New York State Museum–New York State Geological Survey, wkelly@mail.nysed.gov; Marian Lupulescu, New York State Museum–New York State Geological Survey, mlupules@mail.nysed.gov.

### Theme Sessions

1. **Geologic Maps as Tools for Resource and Environmental Issues (Posters).**

Robert G. Marvinney, Maine Geological Survey, robert.g.marvinney@maine.gov.

Geologic maps are essential to land-use and management decisions of all kinds, from the analysis of water resources to mineral resources and geologic hazards. This poster session will highlight the role of basic and specialized geologic maps in addressing important societal issues.

2. **From Road Salt to Arsenic and Other Environmental Contaminants in Hydrologic Systems.** Rudi Hon, Boston College, hon@bc.edu; Bill Brandon, U.S. EPA, brandon.bill@epa.gov; Joseph Ayotte, USGS, jayotte@usgs.gov.

Environmental contaminants in both groundwaters and surface waters are a concern to researchers, regulatory agencies, health organizations, public policy groups, and the general public. This session includes a spectrum of presentations focusing either on a single aspect of environmental contamination or involving several subdisciplines of interest to a wider group of professions.

3. **GIS Applications in Geoscience Teaching, Research, and Map Production.** Dykstra Eusden, Bates College, deusden@bates.edu; Mark Swanson, Univ. of Southern Maine, mswanson@usm.maine.edu.

The explosion of new GIS methods courses in the geoscience curriculum and the dramatic increase in the use of GIS by researchers have led to a wealth of new geologic applications in digital technology. This session will showcase (1) the wide variety of digital GIS methods used in geoscience research; (2) new teaching pedagogies used in developing GIS-based courses; and (3) the wide range of digital GIS-based maps being produced.

4. **Remote Sensing Applications to Geomorphology.** Patrick A. Burkhart, Slippery Rock Univ. (SRU), patrick.burkhart@sru.edu; Jack Livingston, SRU.

LIDAR and other remote sensing technologies provide an unprecedented opportunity to investigate landforms and landscapes. This session will present recent discoveries that reveal the power of these developments for the study of geomorphic systems.

5. **Geoarchaeology: Sites, Substrate, Sources, and Context.** *Cosponsored by Eastern Section SEPM.* Alice R. Kelley, Univ. of Maine, akelley@maine.edu; Allen Gontz, Univ. of Massachusetts–Boston, allen.gontz@umb.edu.

Geoarchaeology is a diverse field that combines techniques from geology and archaeology to better understand human societies, culture, and their environment. This session addresses terrestrial and underwater geoarchaeological methods, sites, geological resources, or other uses of geology to address archaeological questions.

6. **Glacial and Paraglacial Coasts: Stratigraphy, Processes, and Geomorphology.** *Cosponsored by Eastern Section SEPM.* Dan Belknap, Univ. of Maine, belknap@maine.edu.

Glaciated coasts, past and present, comprise a diverse mix of processes and environments affected by glacial landforms, sediment sources, and isostatically influenced sea-level changes. Coastal landscapes of the northeastern U.S. and Canadian Maritimes are profoundly influenced by glacial history, as are many other populated regions around the world.

7. **Rheology, Kinematics, and Strain Localization in Faults and Shear Zones.** Scott Johnson, Univ. of Maine, johnsons@maine.edu; Michael Williams, Univ. of Massachusetts–Amherst, mlw@geo.umass.edu; Christopher Gerbi, Univ. of Maine, christopher.gerbi@maine.edu.

This session covers strain localization, kinematic analysis, and rheological evolution in zones of high strain spanning the upper to lower continental crust, with presentations on the northeastern Appalachians and other orogenic belts and plate boundaries. Broadly structural-tectonic in context, this session highlights papers reflecting work at any scale of observation.

8. **Advances in Stratigraphy and Paleontology of Paleozoic Dark Shales.** Alex Bartholomew, SUNY–New Paltz, barthola@newpaltz.edu; Diana Boyer, SUNY–Oswego, dboyer@oswego.edu.

Among the vast array of paleoenvironments preserved in the rock record, dysoxic to anoxic shale-dominated facies remain some of the most poorly understood, yet these rocks preserve

resources that have recently become economically attractive. Recent investigations into a broad spectrum of shallow- to deep-water, low oxygen paleoenvironments have brought about a much better understanding of processes that dominated ecology and deposition in this important suite of sedimentary facies.

9. **Bioevents, Tectonics, and Sea-Level Change in Marine to Non-Marine Strata of Northeastern North America.** Sean Cornell, Shippensburg Univ., srcornell@ship.edu; Patrick McLaughlin, Wisconsin Geological Survey, pimclaughlin@wisc.edu.

The Paleozoic marine to non-marine intervals of eastern North America are now being reexamined from the perspective of paleontology, event stratigraphy, and sequence stratigraphy. These analyses provide significant insight into multiple types of biotic events and a range of environmental disturbances, especially within the Ordovician through Devonian succession. They also contribute to the understanding of tectonic events and the timing of tectonism within the Paleozoic of eastern Laurentia.

### **The following Theme Sessions will run jointly with the Maine Water Conference.**

10. **Habitat Restoration in North Atlantic Watersheds.** Karen Wilson, Univ. of Southern Maine, kwilson@usm.maine.edu; Noah P. Snyder, Boston College, noah.snyder@bc.edu; Ellen M. Douglas, Univ. of Massachusetts–Boston, ellen.douglas@umb.edu.

Stream restoration projects, ranging from bank protection to dam removals to watershed-scale regional planning efforts, are common throughout eastern North America. Many of these projects are motivated by the need to restore migration pathways and habitat for diadromous fish species. In 2008, the Universities of Maine and Massachusetts received National Science Foundation funding to create the Diadromous Species Restoration Research Network (DSRRN), designed to develop and sustain facilitated interactions of multiple research, government, and stakeholder entities focused on restoring diadromous fish populations throughout the North Atlantic region. The strength of this network is in its connection to and integration with the Penobscot River Restoration Project. This session will explore current research and management efforts in stream restoration across the North Atlantic region, with the goal of fostering interdisciplinary dialogue. Session participants should strive make their presentations (poster or oral) accessible to an interdisciplinary audience of scientists, resource managers, and practitioners.

12. **Land Conservation and Management Strategies for Protecting Water Quality.** David Hart, david.hart@umit.maine.edu.

In New England, water quality and point-source protection is generally pursued by three distinct constituencies: water district professionals, non-governmental organizations, and government. A proliferation of sometimes competing state mandates and an absence of uniform information and expectations have resulted in a patchwork of protection and management strategies that often lack watershed-wide cohesion. We will first explore best practices for supporting comprehensive watershed-level protection strategies and implementation. The second part of this session will examine community-based conservation models as management tools. Community-based research has become a continuum that ranges from a top-down citizen science–participant methodology to a bottom-up collaboration between

community members and a variety of stakeholders. We will look at how these programs affect the environment, the stakeholders, the community, local governments, and future policy decisions. What makes a program successful; how is success defined; and how can it be replicated and/or sustained?

14. **Using Monitoring Data to Influence Management and Conservation of Aquatic Ecosystems.** Tom Danielson, Maine Dept. of Environmental Protection–Bureau of Land and Water Quality, thomas.j.danielson@maine.gov.

This session will focus on the importance of using monitoring data to inform and improve the management and conservation of aquatic ecosystems and will provide examples of well-designed integration of sound science into management decisions.

15. **Competitive Demands for Groundwater Resources in the Northeast.** Martha Nielsen, USGS–Maine Water Science Center, mnielsen@usgs.gov.
16. **State of Maine’s Environment.** John Peckenham, Senator George J. Mitchell Center for Environmental & Watershed Research, Univ. of Maine, jpeck@maine.edu.

This session highlights ongoing water-related research in Maine, including presentations on the consequences of climate change on water resources, practices for restoring the quality of Maine’s urban impaired streams, and a comparison of brook trout populations in Maine’s lakes and streams from a regional perspective.

18. **Chemical, Biological, Hydrological, and Geochemical Aspects of Surface Waters and Groundwaters and Their Policy and Economic Implications (Posters).** Ruth Hallsworth, Univ. of Maine, hallsworth@maine.edu.

This session includes abstracts from the Maine Water Conference juried student poster competitions addressing water quality or quantity issues, such as the chemical, biological, hydrological, and geochemical aspects of surface waters and groundwaters and their policy and economic implications.

## WORKSHOPS

1. **Innovative Geoscience Education Using Tools and Models in Google Earth.** 8 a.m.–5 p.m., Sat., 21 March. Fee: US\$35; does not include lunch. Declan De Paor, Old Dominion Univ., ddepaor@odu.edu, +1-757-683-4619; Steve Whitmeyer, whitmesj@jmu.edu.

This workshop for undergraduate geoscience instructors will demonstrate new approaches to using Google Earth to teach plate tectonics and regional geology. Participants will create interactive 3-D models of plate boundaries, igneous intrusions, structures, paleogeography, and ore bodies for use on Google Earth via simple templates. Participants will need to bring their own laptops.

2. **Digital Mapping Techniques in the Geosciences.** 8 a.m.–5 p.m., Sat., 21 March. Fee: professionals, US\$35; students, US\$25; lunch and transportation provided. Max.: 12. Mark Swanson, Univ. of Southern Maine, mswanson@usm.maine.edu.

Get practical, hands-on experience with a variety of digital geologic mapping tools. The morning session, to be held at a local coastal outcrop, will cover instruments and techniques for collecting geologic field data and imagery, including establishing data using static GPS, RTK survey-grade GPS in conjunction with total stations for integrated surveying, handheld GPS, and GPS-enabled PDAs for data logging and mapping, and a digital camera pole for low-elevation aerial imagery. The afternoon session, at the Univ. of Southern Maine’s Gorham campus GIS

lab, will focus on download and processing of collected field data in ArcGIS. Instrument download and formats, post-processing data with NOAA’s OPUS Web site, formatting data for GIS, geo-referencing aerial imagery and preexisting maps, use of statewide digital aerial imagery, and final map production will be covered.

3. **Developing Competitive Proposals.** 9 a.m., Sat., 21 March. Fee: professionals, US\$25; students, US\$15; does not include lunch. *Workshop subsidized by NSF ADVANCE.* Suzanne O’Connell, Wesleyan University, soconnell@wesleyan.edu; Mary Anne Holmes, ADVANCE, Univ. of Nebraska, mholmes2@unl.edu; Sara Trickle, ADVANCE, Univ. of Nebraska.

The goal of this workshop is to help you write effective grant proposals by using time-tested strategies.

4. **Using the Explore Geoscience Classroom Resources to Engage K–12 Educators in Teaching Geology.** 8–11 a.m., Sun., 22 March. Free. Gary Lewis, GSA, glewis@geosociety.org.

This is a free workshop for earth science faculty wishing to provide teaching opportunities in geoscience for K–12 teachers.

5. **On The Cutting Edge Workshop: Pursuing an Academic Career.** 10 a.m.–4 p.m., Sat., 21 March. Fee: US\$25; includes box lunch. Rachel Beane, Bowdoin College, rbeane@bowdoin.edu, +1-207-725-3160.

Beginning an academic career is challenging. This workshop offers resources for and insights into effective course design and writing clear research and teaching statements.

## FIELD TRIPS

1. **Coastal Storms, Sediment Budgets, and Mitigating Engineering in Saco Bay.** 9 a.m.–4 p.m., Sat., 21 March. Cost: professionals, US\$35; students, US\$20; includes transportation, lunch, and field guide. Max.: 40; min.: 10. Stephen M. Dickson, Maine Geological Survey, stephen.m.dickson@maine.gov, +1-207-287-7174; Peter A. Slovinsky, Maine Geological Survey; Joseph T. Kelley, University of Maine (UMaine); Daniel Belknap, UMaine; Laura Brothers, UMaine.

Over the past 140 years, coastal engineering in Saco Bay has led to significant changes in shorelines and sediment budgets that cause loss of property and increase flood hazards. Natural dunes have been destroyed by erosion, and new dunes have been created by accretion in separate parts of the bay. Restoration of an equilibrium shoreline and reduction of land loss will be presented in the context of U.S. Army Corps of Engineers mitigation plans for additional coastal engineering in the form of segmented breakwaters and beach nourishment. Trip participants should be prepared to climb over rocks and walk the beach in inclement spring weather.

2. **The Sebago Pluton and the Sebago Migmatite Domain, Southern Maine: Results from New Studies.** 8:30 a.m.–5:30 p.m., Sat., 21 March. Cost: professionals, US\$35; students, US\$20; includes transportation, lunch, and field guide. Max.: 30; min.: 10. Gary Solar, SUNY College at Buffalo, solargs@buffalostate.edu; Paul Tomascak, SUNY-Oswego, tomascak@oswego.edu.

Participants will visit rocks typical of the Sebago pluton and the Sebago migmatite domain. We will examine evidence used to define the Sebago pluton (*sensu stricto*; ca. 293 Ma) separate from the migmatite domain and as a body smaller in area than shown on published maps. The trip will address new field, geochemical, and geochronological data that have helped

us to determine this spatial relation but also have led us to understand timing relations between the pluton and the migmatites. Outcrops are located along or close to roads, so no strenuous hiking is planned. If this trip is curtailed or cancelled due to high snow pack and outcrop inaccessibility, those who have *pre-registered* will have the option to take Trip 3 for no additional fee or receive a refund.

3. **Geology Cruise around Inner Casco Bay.** Half-day trip, Sat., 21 March: Meet at 12:30 p.m. for boarding at Casco Bay Lines ferry terminal, 56 Commercial Street, Portland, a 20-minute walk from the Holiday Inn By the Bay. Departure: 1 p.m.; return: 4 p.m. Cost: professionals, US\$45; students, US\$30. Max.: 200; min.: 40. Arthur M. Hussey, II, Bowdoin College (emeritus), hussgeo@gwi.net, +1-207-666-5526.

Join us for a guided tour of the rocky mainland shore and islands in Casco Bay. Lighthouses, stone forts, lobster boats, and vacation communities are perched on folded and faulted metamorphic rocks of an Ordovician backarc basin sequence. You will see several type localities of stratigraphic units in the Casco Bay Group and studied outcrops of importance to regional interpretations, all from the comfort of a modern all-weather ferry.

## OPPORTUNITIES FOR STUDENTS

### Mentor Programs

*Cosponsored by the GSA Foundation.* Questions? Contact Gary Lewis at [glewis@geosociety.org](mailto:glewis@geosociety.org).

**Roy J. Shlemon Mentor Program in Applied Geoscience.** 11:30 a.m.–12:30 p.m. and 12:30–1:30 p.m., Mon., 23 March. This is a chance for students to enjoy a FREE lunch and discuss career opportunities and challenges with professional geoscientists from multiple disciplines. Learn more at [www.geosociety.org/mentors/shlemon.htm](http://www.geosociety.org/mentors/shlemon.htm).

**John Mann Mentors in Applied Hydrogeology Program.** Noon–1:30 p.m., Tues., 24 March. This event gives students and recent graduates with an interest in applied hydrogeology or hydrology as a career an opportunity to interact and network with professionals over a FREE lunch. Learn more at [www.geosociety.org/mentors/mann.htm](http://www.geosociety.org/mentors/mann.htm).

### Travel Grants

**Application deadline:** 22 February 2009

Travel grants are open to GSA Student Members currently enrolled in Northeastern Section schools and presenting oral or poster papers. You must register for the meeting *before* applying for the travel grant at [www.geosociety.org/sectdiv/northe/08mtg/students.htm](http://www.geosociety.org/sectdiv/northe/08mtg/students.htm).

Questions? Contact Stephen Pollock, [pollock@usm.maine.edu](mailto:pollock@usm.maine.edu), or go to [www.geosociety.org/grants/negrant.htm](http://www.geosociety.org/grants/negrant.htm).

### SPECIAL MEETINGS

**NEGSA Management Board Meeting.** Sat., 21 March, 4–6 p.m. Open to the public.

**NEGSA 2010 and 2011 Planning Meeting.** Sun., 22 March, noon–1:30 p.m.

For 2010, contact: Noel Potter, [pottern@dickinson.edu](mailto:pottern@dickinson.edu). For 2011, contact: Patrick Burkhart, [patrick.burkhart@sru.edu](mailto:patrick.burkhart@sru.edu).

**Paleontological Society Luncheon and Business Meeting.** Sun., 22 March, noon–1:30 p.m. Fee: professionals, US\$18; students, US\$9.

**Eastern Section of the Society for Sedimentary Geology (ES-SEPM) Reception, Business Meeting, and Presidential Address.** Sun., 22 March, 6:30–8 p.m.

**Eastern and New England Sections of the National Association of Geology Teachers (NAGT) Luncheon and Business Meeting.** Sun., 22 March, noon–1:30 p.m. Fee: US\$18.

### SPECIAL EVENTS

**Welcoming Reception.** Sat., 21 March, 6–8:30 p.m. Holiday Inn By the Bay.

**Northeastern Section of GSA Map Blast XI.** Sun., 22 March, 7–9:30 p.m.

All attendees are welcome to bring, post, and discuss past, recent, or planned mapping efforts.

**Association for Women Geoscientists (AWG) Career Development Breakfast.**

Mon., 23 March, 6:30–8 a.m. Cost: professionals, US\$14; students, US\$9. Both AWG members and nonmembers are welcome.

**Conference Banquet.** Mon., 23 March, 7–9 p.m. Cost: professionals, US\$37.50; students, US\$12.50. Buffet with cash bar 6–8 p.m. 8 p.m. banquet address open to all.

**Water Conference Lunch.** Tues., 24 March, noon–1 p.m. Cost: US\$7.50.



Portland, Maine, USA. Photo courtesy Convention and Visitors Bureau of Greater Portland.

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Back cover and above: Bug Light Park, Portland, Maine, USA. Photo courtesy Convention and Visitors Bureau of Greater Portland.

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