



# THE GREEN MOUNTAIN GEOLOGIST

QUARTERLY NEWSLETTER OF THE VERMONT GEOLOGICAL SOCIETY

VGS Website: <http://www.uvm.org/vtgeologicalsociety/>

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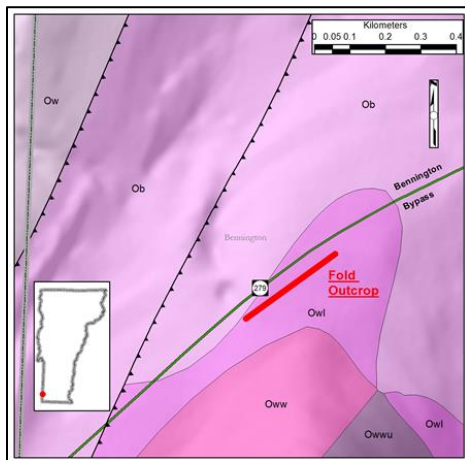
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## PRESIDENT'S LETTER



Asymmetric anticline with steeper western limb (right). The syncline is out of the photo to the right.

The old adage says that geologists can be distracted drivers in the presence of spectacular roadside geology and..... it is true. I have driven past the new outcrop on the Bennington Bypass (Route 279) a number of times in the past few years and thus only observed the huge folds while swerving slightly at 65 mph. Last weekend, while returning from a family gathering in eastern New York State, I decided that I had to stop the car and gawk at the tight, asymmetric, and west-verging folds at the pull-off/ weigh station in the northbound lane (see map below). The outcrop itself is about ~200 meters long. The folds form an anticline and syncline pair in the limestone member of the Upper Ordovician Walloomsac Formation (Owl). Presumably, these folds are related to the thrust fault immediately to the west (see map). I recommend that you take the time to look at this outcrop whenever you are in the Bennington area.



Bedrock geologic map of the Bennington Bypass area modified from Ratcliffe et al. (2011).

Owl = limestone member of Walloomsac Fm.  
Oww = Whipstock Breccia member of Walloomsac Fm.  
Ow = shales with limestone and quartzite interbeds of the Walloomsac Fm.

Respectfully submitted,  
Jon Kim, President

## SUMMER FIELD TRIP ANNOUNCEMENT

The Vermont Geological Society summer field trip will be held at the Bristol Waterworks property on Saturday August 9 (see map below).

*Rocks, Dirt, and Plants: A Natural History Tour of the Bristol Waterworks*

Leaders: Jon Kim- Vermont Geological Survey  
George Springston- Norwich University  
Everett Marshall- Vermont Dept. of Fish and Wildlife

The Vermont Geological Survey and Norwich University have recently completed bedrock and surficial geologic maps of the Bristol area. Join us for a hiking tour of the Bristol Waterworks where Jon and George will present key elements of the geology of the area and Everett will give the holistic view of how the geology and plant ecology fit together. Wear sturdy shoes and bring a lunch. Be prepared for a round-trip hike of ~2 miles. Meet at the main parking lot for the Waterworks on Plank Road at 9:45 am, which is on the north side of the road (see map). The trip will leave promptly at 10 am and will return approximately at 2 pm. We will be joined by a local group from the Bristol area. Please RSVP to Jon Kim at [jon.kim@state.vt.us](mailto:jon.kim@state.vt.us) (802/522-5401) if you plan to attend.

### Map of Summer Field Trip Area



## TREASURER'S REPORT

**Finances:** The Society remains in good financial health. To date this year we have received \$2,809 as income in the form of dues and contributions to the research fund. Expenses were \$725, as follows:

- \$500 Catering for Student Paper Meeting – Middlebury College
- \$100 Sarina Patel, Middlebury College – Best student paper
- \$75 Julia Favorito, Middlebury College – 2<sup>nd</sup> best student paper
- \$50 Zach Perzan, Middlebury College – 3<sup>rd</sup> best student paper

Our balance as of June 30, 2014 is \$11,645 with most of the 2014 dues and research fund gifts already received.

**New Members:** None, but one application pending.

Respectfully submitted,  
David S. Westerman, Treasurer

## SECRETARY'S REPORT



Award winners for the best talks given at the Vermont Geological Society Spring Meeting were from left to right, Zach Perzan (3<sup>rd</sup> place), Julia Favorito (2<sup>nd</sup> place), and Sarina Patel (1<sup>st</sup> place).

The Vermont Geological Society Meeting was held at Middlebury College on April 26th, 2014 and was widely hailed as a great success. First prize and the Doll Award went to Sarina Patel for her talk “The magmatic history of the Banks Peninsula, New Zealand”, second prize to Julia Favorito for her talk “Lithologic and structural controls on radionuclides in groundwater in the Bristol Quadrangle, Vermont”, and third prize to Zach Perzan for his talk “A pre-Wisconsinan paleoenvironmental record from Weybridge Cave, VT.” The meeting was followed by lunch at Mr. Upps with VGS members, Middlebury, and UVM students. Thanks to Larry Becker, Peter Gale and Craig Heindel for serving as judges for the student presentations. Thanks to everyone who participated for making it such a fun and successful event!

Respectfully submitted,  
Will Amidon, Secretary

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**ADVANCEMENT OF SCIENCE COMMITTEE REPORT**

The Advancement of Science Committee for the Vermont Geological Society received one research grant proposal by the April 1, 2014 deadline. This proposal, which was submitted by Christopher Defelice, a Norwich University undergraduate student, was entitled: "Structural analysis of the Richardson Memorial Contact in Woodbury, Vermont". The committee decided to fund this grant proposal in-full for \$555.00.

The research grant proposals are due on October 1, 2014 and must be postmarked by this date. Application details and an application form are posted on-line at <http://www.uvm.org/vtgeologicalsociety/grantpolicy.html>

Respectfully submitted,  
Jon Kim, Chair

**STATE GEOLOGIST'S REPORT**Geologic Maps

The Vermont Geological Survey and Norwich University partner submitted bedrock and surficial geologic maps of the South Mountain Quadrangle to the U.S. Geological Survey to fulfill our STATEMAP grant obligations. These maps comprise the basic geologic framework for the Town of Bristol and will be integrated with well log data to assess the groundwater and gravel resources of the town. The results of this study will be presented to Bristol town officials and residents in late 2014. A collaborative study with the Middlebury College Geology Dept. on the groundwater chemistry of the Bristol area, which involved testing for arsenic and radionuclides, was completed in May. Map link and references below:  
<http://www.anr.state.vt.us/dec/geo/ofreps.htm>

Kim, J., Gale, M.H., Chu, K., Cincotta, M., and Cuccio, L., 2014, Bedrock Geologic Map of the northern two-thirds of the South Mountain Quadrangle, Vermont: Vermont Geological Survey Open File Report VG14-1, scale 1:24,000.

Springston, G.E. and Thomas, E., 2014, Surficial Geologic Map the northern two-thirds of the South Mountain Quadrangle, Vermont: Vermont Geological Survey Open File Report VG14-2, scale 1:24,000.

Seismic Hazard – Vermont Approach Presented at National Meeting

The Northeastern States Emergency Consortium (NESEC) supported the VT State Geologist to attend the National Earthquake Program Managers meeting in Denver, Colorado on May 21-22, 2014. FEMA headquarters representatives were also in attendance. The State Geologist presented seismic hazard maps developed by the Vermont Geological Survey (VGS) in cooperation with the UVM Engineering Dept. and the Norwich University Geology Dept. with FEMA funds for the Burlington/Colchester area. The maps are used as educational tools to help inform critical facilities of the hazard. Critical facilities must plan for all hazards. NESEC and the VGS are planning for another presentation to critical facilities in Chittenden County

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sometime in September of 2014 that will also include a FEMA presentation on non-structural earthquake mitigation.

#### Association of American State Geologists (AASG) – Landslides

The Vermont State Geologist attended 106th annual meeting of the Association of American State Geologists in Lexington, KY. The Washington State Geologist presented his experience at the Oso landslide and how he and his geologists fit into the Incident Command Structure during the recovery phase and the work they accomplish as technical experts informing recovery safety. A discussion between AASG, the USGS, and others focused on how Congress should be informed and approached about the landslide issue to improve our understanding and make information available for managing the problem nationwide. (See next related topic)

#### Congressional Briefing – American Chemical Society (Public Policy Communications)

The VT State Geologist is asked to participate in a Congressional briefing on “Water Hazards”. Based on discussions about the Jeffersonville landslide and the “Protocol for Identification of Areas Sensitive to Landslide Hazards in Vermont” as an appendix to the State Hazard Mitigation Plan, he is to cover the landslide issue. The presentation to Congressional staffers in Washington DC is planned for September.

#### Vermont Public Radio

On July 1, the State Geologist and Professor Charlotte Mehrtens of UVM appeared on Vermont Edition to cover geology topics and take questions. Web link: <http://digital.vpr.net/post/nice-gneiss-geology-vermont>

Respectfully submitted,  
Laurence Becker, Vermont State Geologist

### **AD HOC INTERNSHIPS COMMITTEE**

Internship Committee members Marjorie Gale, Helen Mango, Michelle Nucci and Miles Waite met on June 25 to discuss initial fact-finding and planning. Discussion focused on the role of VGS and on preliminary tasks to assess demand and partnerships. Our goal is to determine the number of students who may participate, understand possible obstacles, then generate a list of potential intern employers or volunteer sites, contact those potential employers, and be able to transfer the internship information to a department contact person. The tasks we plan to complete by December 2014 are: 1) Michelle – develop a set of questions for a survey of our membership and eventually prepare the Survey Monkey; 2) Helen – develop a set of questions to assess student demand for internships and the types of internships; goal is to have the survey ready in the Fall of 2014; 3) Miles – generate a preliminary list of potential companies and the contacts for each; step 2 will be to contact the employers; 4) Marjie – generate a list of departments and contacts; contact the departments to see if they’ll participate in the student survey and also assess interest in department participation.

### **ANNOUNCEMENTS AND MEMBER NEWS**

*Please* send us your member news for inclusion in the Fall GMG.

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## WHERE'S IT, WHAT'S IT?



Send an e-mail to [Marjorie.gale@state.vt.us](mailto:Marjorie.gale@state.vt.us) with the Vermont town name and a brief description of what's in the picture. What do you win? Bragging rights. Look for your answers in the Fall Issue of the GMG. Also, feel free to contribute some photographs of your own to use in the next puzzler. Photo taken by Jon Kim.

## CALENDAR

May 17 – Sept 17: A T. Rex Named Sue, Montshire Museum of Science, Norwich, VT;  
<http://www.montshire.org/exhibits/featured-exhibitions/a-t.-rex-named-sue/>

August 9: VGS Summer Field Trip, Bristol Waterworks (see page 3)

Oct 1: VGS Student Research Grant Applications are due. Contact Jon Kim at [jon.kim@state.vt.us](mailto:jon.kim@state.vt.us) for more information.

Oct 10-12: New England Intercollegiate Geologic Conference (NEIGC), hosted this year by Wellesley College, Wellesley, MA; <http://w3.salemstate.edu/~lhanson/NEIGC/Conference.html>

Oct 12-18: Earth Science Week, Earth's Connected Systems

Oct 17: Earth Science Week, Geologic Map Day; <http://www.earthsciweek.org/geologicmap/>

Oct 19-22: Geological Society of America Annual Meeting, Vancouver, BC;  
<http://community.geosociety.org/gsa2014/home/>

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The **Vermont Geological Society** is a non-profit educational corporation.  
The **Executive Committee** of the Society is comprised of the Officers, the Board of Directors,  
and the Chairs of the Permanent Committees.

#### **Officers**

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***ADDRESS CHANGE?***

*Please send it to the Treasurer at the above address*