



# THE GREEN MOUNTAIN GEOLOGIST

NEWSLETTER OF THE VERMONT GEOLOGICAL SOCIETY

Winter 2001

VOLUME 28

No. 1

**CALL for ABSTRACTS  
VGS Spring Meeting, April 21, 2001  
Norwich University  
Abstracts Due by March 23, 2001**

## TABLE OF CONTENTS

PRESIDENT'S LETTER .....	2
CALL FOR ABSTRACTS.....	4
GSA ANNUAL MEETING IN BURLINGTON! .....	6
STATE GEOLOGIST'S REPORT .....	9
VGS SUMMER MEETING AND FIELD TRIP.....	14
2001 VGS STUDENT RESEARCH GRANTS.....	14
CONSTITUTION AND BYLAWS.....	15
VGS CALENDAR - 2001 .....	21
TREASURER'S REPORT.....	22

**THE GREEN MOUNTAIN GEOLOGIST**  
VERMONT GEOLOGICAL SOCIETY  
DEPARTMENT OF GEOLOGY  
UNIVERSITY OF VERMONT  
BURLINGTON, VERMONT 05405-0122

The GREEN MOUNTAIN GEOLOGIST is published quarterly by the Vermont Geological Society, a non-profit educational corporation.

### **Executive Committee**

President	Shelley Snyder	453-2333
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Treasurer	Kristen Underwood	865-4288
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Advancement of Science	Stephen Howe
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Public Issues	Laurence Becker
Publications/Newsletter	Marjie Gale, Jeff Hoffer, Peter Gale

### **ADDRESS CHANGE?**

Please send it to the Treasurer at the above address.  
-Printed on Recycled Paper-



## PRESIDENT'S LETTER

Dear Members,

News first. Dave Westerman indicated that Norwich was ready to take a turn at hosting the student papers spring meeting to be held at Norwich University on April 21, 2001. Students should submit abstracts for consideration for presentation at this meeting. Those students who wish to apply for financial assistance for their research should apply for grant funding. Information regarding where to send applications is elsewhere in this newsletter. Applications should be in by the stated deadline, as we will announce the winners at the spring meeting. Acceptance of this award assumes that the recipient will make a report to the Vermont Geological Society at the next spring meeting (in 2002).

Many thanks to members who volunteered during Earth Science Week 2000. The poster contest in October was a success again. Many students and parents attended the ceremony held at the Perkins Museum. I recently ran into a current geology student. I saw in him the same excitement that I remember from my undergraduate years. As an educator I found this to be very satisfying. In this new millennium, I trust that we all will find the time to plant that excitement and wonder in our students. We are all educators in some way, passing our combined knowledge and enthusiasm to future generations.

Welcome to the new millennium. I hope that this newsletter finds you all well and extend best wishes to you and yours.

Sincerely,

Shelley F. Snyder  
VGS President  
Mt. Abraham Union High School  
7 Airport Drive  
Bristol, VT 05443  
(802) 658-0575  
SSNYDER@mtab.k12.vt.us

## EXECUTIVE COMMITTEE MEETING MINUTES

Fall Meeting, Saturday, September 23, 2000

Following an excellent field trip led by Stephen Wright, a meeting of the VGS executive committee meeting and general membership took place at Cafe Banditos in Jeffersonville. The election of executive committee members for 2001 was led by Marjie Gale. Election results are as follow.

President: Shelley Snyder  
Vice President: Ray Coish  
Secretary: Jeff Hoffer  
Treasurer: Kristen Underwood  
Board of Directors: Kent Koptiuch, Kristen Underwood, and Stephen Wright

Committee chairs for 2001 are as follow.

Geological Education Committee Chair: Christine Massey  
Public Issue Committee Chair: Larry Becker  
Publications/Editorial Committee Chair: Marjorie Gale  
Advancement of Science Committee Chair: Stephen Howe

Other business included a discussion of general issues such as the upcoming schedule for 2001, the spring student talks, VGS research grants, etc. A decision was made to send out a copy of the VGS bylaws with the Winter 2001 GMG (this issue). The Winter GMG will also put out a call for student research grants. The guidelines for the research grants will be sent as requested. Potential field trips for the spring and fall were discussed. Any volunteers or requests for specific field trips are welcome!

The meeting adjourned at 7:00 PM.

Respectfully submitted,  
Jeff Hoffer, VGS Secretary

## CALL FOR ABSTRACTS

Spring Meeting of the Vermont Geological Society  
Saturday, April 21, 2001, 8:30 AM

Spring 2001 Presentation of Student Papers  
Department of Geology, Norwich University  
Northfield, Vermont

The Vermont Geological Society will hold its Spring 2001 meeting at Norwich University in Northfield, Vermont. The meeting is dedicated to students conducting research in the geological sciences. Undergraduate and graduate students are encouraged to submit abstracts outlining the results of their research. Abstracts covering all aspects of the geological sciences are welcome and will be published in the Spring issue of the Green Mountain Geologist. The Charles Doll Award for outstanding undergraduate paper will be presented. A cash award for "Best Paper and/or 2nd place" will also be presented based on quality of the research, the abstract, and presentation of the paper. A copy of the evaluation form is included in this issue of the GMG.

Abstracts should be limited to one double spaced 8.5 x 11 inch sheet and can include figures. Font size should not be less than 10. Please submit both a paper and electronic copy (e-mail or disk; e-mail preferred) of abstracts, reviewed by the student's advisor, to the editor at the address given below. Disks should include both a formatted and "text only" version of the abstract (either Mac or IBM; IBM preferred).

Abstracts submitted by e-mail should be sent to [marjieg@dec.anr.state.vt.us](mailto:marjieg@dec.anr.state.vt.us). Oral presentations will be limited to 15 minutes with 5 minutes for questions. Two slide projectors and an overhead projector will be available. Deadline for Abstracts: Friday, March 23, 2001. Send abstracts to:

Marjorie Gale  
Vermont Geological Survey  
103 South Main St., The Laundry Building  
Waterbury, VT 05671-0301  
E-MAIL: [marjieg@dec.anr.state.vt.us](mailto:marjieg@dec.anr.state.vt.us)

For additional information contact Shelley Snyder at 658-0575 or Marjie Gale at 241-3608 (o) or 899-5002 (h).

### VERMONT GEOLOGICAL SOCIETY STUDENT PRESENTATION EVALUATION FORM

SPRING MEETING \_\_\_\_\_ Date \_\_\_\_\_

GRAD / UNDERGRAD: \_\_\_\_\_

SPEAKER NAME: \_\_\_\_\_

ABSTRACT AUTHORS: \_\_\_\_\_

ABSTRACT TITLE: \_\_\_\_\_

#### Pre-Presentation

ABSTRACT CONTENT \_\_\_\_\_

ABSTRACT WRITING STYLE \_\_\_\_\_

#### Syn-Presentation

INTRODUCTION / BACKGROUND / PROBLEM STATEMENT \_\_\_\_\_

METHODS / APPROACH TO PROBLEM \_\_\_\_\_

DISCUSSION / CONCLUSIONS / RESULTS \_\_\_\_\_

#### Overall and Post-Presentation

ORAL PRESENTATION \_\_\_\_\_

VISUAL PRESENTATION \_\_\_\_\_

TALK MECHANICS (FORMAT, TIMING) \_\_\_\_\_

RESPONSE TO QUESTIONS / KNOWLEDGE OF SUBJECT \_\_\_\_\_

ORIGINALITY / RELEVANCE \_\_\_\_\_

POINT SYSTEM: \_\_\_\_\_ TOTAL \_\_\_\_\_

WELL ABOVE AVERAGE 5

ABOVE AVERAGE 4

AVERAGE 3

BELOW AVERAGE 2

WELL BELOW AVERAGE 1

NAME OF JUDGE: \_\_\_\_\_

COMMENTS:

## GSA ANNUAL MEETING IN BURLINGTON!

The NORTHEASTERN SECTION of the GEOLOGICAL SOCIETY OF AMERICA 36TH ANNUAL MEETING will be held on March 12-14, 2001, at the Sheraton Conference, 870 Williston Road, Burlington VT, 05403. To register and find more detailed information, please see the GSA website:

[www.geosociety.org/sectdiv/northe/01nemtg.htm](http://www.geosociety.org/sectdiv/northe/01nemtg.htm)

The pre-registration deadline is February 2, 2001.

The hosts for the 2001 meeting are the University of Vermont, Middlebury College, Norwich University, Vermont State Colleges at Johnson, Lyndonville and Castleton, the State University of New York at Plattsburg, the Vermont Geological Society, and the Vermont Geological Survey. Meeting also at this time are the Eastern Section of SEPM, the Northeastern Section of the Paleontological Society (NEPS), the Eastern New England Sections of the National Association of Geology Teachers (NAGT), the Association of Women Geoscientists, and the council on Undergraduate Research Geology Division.

We hope to see many of you presenting or attending at this regional meeting. If you have any questions, please contact Tracy Rushmer, Program Chair, at the University of Vermont at (802) 656-8136 or [trushmer@zoo.uvm.edu](mailto:trushmer@zoo.uvm.edu).

### TECHNICAL PROGRAM

#### SYMPOSIA

1. Caledonian magmatism: Cross-Atlantic connections.
2. Fault Zone Evolution and Convergent Tectonics - A Symposium in Honor of Rolfe Stanley.
3. Glacial Processes in New England: A Symposium in Honor of Fred Larsen.
4. Thermochronology From Apatite to Monazite: Deciphering Polymetamorphic Terranes.
5. Environmental Records from Large Estuaries along the Northeastern US Seaboard. Sponsored by the Northeast Section of SEPM.

GSA Continued...

6. Early and Middle Paleozoic sequence stratigraphy---Tectonic and eustatic signatures in eastern Laurentia. Sponsored by the Northeast Section of SEPM.

#### THEME SESSIONS

1. Terrestrial Records of Late Pleistocene and Holocene Climate Change.
2. Paleolimnological Records of Holocene Climate Change.
3. Deformation, Metamorphism and Melting: Interactions in the Crust.
4. Geologic Evolution of the Northern Appalachians; The Quebec - Vermont Connection.
5. Carbonate geology with a focus on the Trenton/Black River and Beekmantown. Sponsored by the Northeast Section of SEPM.
6. Geologic aspects of environmental problems in the Northeast.
7. K-16 Education: Earth and Environmental Science.
8. Undergraduate Research. Sponsored by the Geology Division of the Council on Undergraduate Research. (Poster)

#### SHORT COURSES

System Dynamic Modeling of Natural Environments: An Introduction to STELLA: Sunday, March 11 (9 a.m.- 5 p.m.)

New Advances in XRF Spectroscopy and their Applications to the Geological Sciences: Sunday, March 11 (9 a.m. - noon)

Full Pattern Rietveld Analysis Applied to Poly-Mineralic Phase Identification in Geology: A More Accurate Alternative to the Traditional Single Line Approach: Sunday, March 11 (noon - 4:00 p.m.)

Thermodynamic Modeling of Mineral Reactions: An Introduction to GIBBS. Monday, March 12 (6:00-9:00 p.m.)

#### STUDENT WORKSHOP

Roy Shlemon Mentor Program in Applied Geology. Practical advice for graduate and undergraduate students with career interests in consulting. Monday, March 12, 11:30 a.m. to 1:30 p.m.

GSA Continued...

#### FIELD TRIPS

Sunday, March 11. The Stanley Outcrops. 9:00 a.m. - 5:00 p.m. Meet at the Sheraton Conference Center parking lot. Lunch provided.

Sunday, March 11. Teaching Hydrology in the winter, a hands-on field trip. Leaders: 7:30 a.m. - 5:00 p.m. Meet at the Perkins Building, University of Vermont. Lunch Provided.

Monday 12 and Tuesday, March 13. The Champlain Thrust at Lone Rock Point. (2-3 hour trip morning or afternoon). Further details will be available at the registration desk.

Monday, March 12, and Wednesday, March 14. The Salmon Hole/Redstone Quarry. (2-3 hour trip morning or afternoon). Further details will be available at the registration desk.

#### SPECIAL EVENTS

University of Vermont Perkins Geology Museum Open House. Monday, March 12, 5 - 7 p.m.

Map Blast IV. An informal session for display and discussion of newly published, unpublished, or in-progress geologic maps of any sort. Monday, March 12, 7:30-9:30 p.m.

GSA Northeast Section Reception and Banquet. Tuesday, March 13, 6-9 p.m.

## State Geologist's Report

### Geologists in the Parks

October 8-14, 2000 was the third annual Earth Science Week both nationwide and in Vermont. The week was a joint project of the Division, the Vermont Geological Society, Perkins Museum at the University of Vermont, and the American Geological Institute. The celebration featured a poster contest and open house at Perkins Museum, a mineral workshop at Vermont Marble Exhibit and in Springfield, and the Geologist-in-the-Parks activity at seven Vermont parks. Our primary focus this year was to present the parks activity for school groups, although we also coordinated activities, kept events current on our web site, recruited volunteers, sought the Governor's proclamation, made several mass mailings, and judged the poster contest. This year, acting upon a suggestion from Ginger Anderson of Forest and Parks, we held the Geologist-in-the-Parks day during the week instead. Marjorie Gale did a great job organizing the volunteers; keeping up with the schools and all the details.

Approximately 500 students attended, making the parks day a very successful one. The activities, in line with Vermont's standards for education, involved basic geology, geography, mapping, field methods, scientific method, historical and current land use, natural hazards (earthquakes, floods, volcanoes), water quality and provided site specific geologic information and interpretation. The connection made between scientists, school children and educators seemed important with some children noting that all scientists are not boring! For many guests, this was their first field science experience. The teachers and students came prepared with many questions and lots of enthusiasm. We will be soliciting feedback from teachers and volunteers so that we can improve on and hopefully expand this activity next year. With something that got so big so fast, there were a few logistical connections that will need improvement next year.

Many thanks to the geoscientists in the parks. Participation from so many members of the VT Geological Society is appreciated. We would especially like to recognize Robert Anderson and his students at Vermont Academy for their work at Mt. Ascutney. The students learned about the geology, prepared activity stations, and when the site geologist became ill at the last minute they rose to the occasion and served as guides for 85 elementary school guests on October 10th. Also, Bruce Amsden and Ginger Anderson

provided us with ideas and assistance, our State Parks were excellent hosts for the day, and Geoff Byerly in Montpelier helped plan for the Hubbard Park tours.

### Geology and State Lands Management Plans

The Vermont Survey transferred to Roy Burton, State Lands Forester, geologic information for the Roaring Brook Wildlife Management Area in the Brattleboro Quadrangle and Townshend State Forest. The information addresses: geologic sources of calcium for tree growth, the physical system that supports biodiversity, general geology for educational purposes, unique geologic sites, depth to bedrock, sand and gravel, other mineral resources including ground water, potential geologic hazards etc.

The State Geologist attended a field visit to the Sleepers River Watershed in Danville. A White Mountain National Forest geologist working with naturalist Charlie Cogbill is studying forest plots in association with trenches dug to analyze the C zone in soils (parent material). The search is for sources of calcium in relation to the plots association with bedrock types. The till plots will lead to information about enriched woods sites and the ability of maple to resist forest decline and as influenced by acid rain.

### STATEMAP Geologic Map Advisory Committee

The projects for the STATEMAP grant proposal track the ANR Strategic Plan and both are supported by the Advisory Committee. A surficial geologic and hazard map for the Third Branch of the White River will provide the detailed information for town planning that is the goal of the hazard map initiative. The Third Branch project is coordinated with the White River Partnership and the DEC Watershed Coordinator. A bedrock geologic and naturally occurring radionuclide hazard map for the Colchester 7.5 minute quadrangle covers Milton/Colchester where domestic well water can exceed radionuclide standards by substantial margins in and near the Clarendon Springs Formation. A radionuclide susceptibility map will result that supports the Ground Water and Earth

Materials outcome of providing geologic hazard information through town and regional plans. Bill Bress, State Toxicologist of the Health Department wrote a letter of support. In December, the Vermont Survey received preliminary notification that we are fully funded for the summer 2001 field work.

### Ground Water Quality

The Geologic Division met with Jeff Comstock of the VT Dept. of Agriculture regarding the geologic context of nitrate contamination in bedrock wells in the East Montpelier area. A geologic report is forthcoming.

Jon Kim of the Geologic Division gave a talk titled "Bedrock Geology and the Quality of Drinking Water" as part of the November Environment 2000 Lecture Series at the Cyprian Leaning Center in Waterbury.

### HAZUS Damage Assessment

In September, Jon Kim of the Geologic Division gave a talk titled "Using HAZUS in Vermont" for the annual Northeast States Emergency Consortium HAZUS Users Group meeting. This talk summarized the HAZUS runs completed by the Geologic Division for Chittenden, Franklin, Lamoille, Caledonia, Windsor, and Orange counties. The HAZUS software program was developed by FEMA and is being used nationwide to estimate potential earthquake damage. Representatives from FEMA Region I and II offices, Massachusetts, Rhode Island, New Hampshire, and Vermont were in attendance. FEMA is currently developing a HAZUS Floods module that will be used in estimating flood damage.

Submitted By,  
Laurence Becker  
Vermont State Geologist

### ----- **Earth Science Week 2000**

The participation of our membership in the Geologists-in-the-Parks days, the Poster Contest, Mineral Workshops and organization of the week is crucial for the success of Earth Science Week in Vermont. We appreciate the efforts of so many people and hope everyone is included on the thank you list. Many thanks to the following people for volunteering during Earth Science Week 2000:

Bob Anderson and students, Larry Becker, Alice Blount, Barry Doolan, Rob Farley, Marjorie Gale, Peter Gale, Ruth Gibbud, Tim Grover, Sue Hadden, Roger Haydock, Craig Heindel, Jon Kim, Kent Koptiuch, Winslow Ladue, Laura Mallard, Helen Mango, Christine Massey, Shelley Snyder, Kristen Underwood, and John Warren

## GETIT!

The Geoscience Education Through Interactive Technology (GETIT) project produced scientifically accurate educational computer software that incorporates a set of interesting and realistic tools allowing students to gain an understanding of geoscience. In 1995, together with the Geological Society of America, Drs. Stuart Birnbaum, Leslie Kanat, and Alan Morris received a grant from the National Science Foundation (#9450251 for \$1.3 million) to develop GETIT, an earth science curriculum appropriate for middle and high school grade levels, and introductory college level classes. GETIT uses computers to provide a truly interactive teaching tool, and represents the future of geoscience education. Students must analyze and evaluate data, conduct experiments, and interpret their results. The software reflects our dedication to excellence in education and research through its emphasis on true interactivity and its incorporation of a minds-on and hands-on approach.

The underlying goal of the project is to teach students about energy transfer and the geosciences by focusing on Earth's internal and external energy sources. The nature of heat and the laws of thermodynamics are central to interpreting the physical evolution of the earth and the way in which natural systems operate. Solar energy drives oceanic and atmospheric circulation through the mechanisms of heat transfer. The Earth's internal energy, primarily in the form of heat, drives plate motions and is a cause of volcanism and seismicity. GETIT explores the results of energy transfer within and toward the Earth.

Volcanoes, earthquakes, and hurricanes are attention-grabbing topics sharing a common cause: energy transfer. GETIT used the attractive power of these catastrophic events to convey some of the intricacies of scientific inquiry and the fundamental driving force behind our planet's dynamism. Although GETIT is based around earth science topics, many mathematical tools are utilized and key physical science concepts are fully explored.

Closely allied with an emphasis on depth of understanding is an appreciation for the nature of science. It soon becomes clear to the student that science is not a seamless fabric of established facts, but a complex network of ideas and processes. Upon completion of GETIT, students will have experienced a richness of material and concepts and will have gained insight into the way the world works.

Whenever possible, GETIT research activities utilize an inquiry approach to learning, with exercises and investigations that closely simulate real-life research practices using real data. Real databases and appropriate mathematics integration help students see the importance of quantifiable phenomena, but the nature of science as a human endeavor is acknowledged. These research endeavors require active participation and allow and encourage students to build their knowledge using results of computer-based research and exploration.

The interactivity of GETIT activities varies along a continuum from strongly guided, step-by-step tasks to very open-ended, free-form explorations. The interactive nature of each activity is determined by the degree of prerequisite knowledge necessary to complete the research and the perceived difficulty of the concept addressed.

Although we emphasize the use of real data, and students do real science, we have developed a learning environment that can be summarized as "science with an attitude". We have created an entertaining, engaging and stimulating environment that draws students into the learning endeavor. To assist us in this we employ the omniscient animated characters, the host and hostess of Science Showtime, Professor Exactamundo and Throbby the Brain.

Learn more about GETIT at <http://cambrianSystems.com/getit>. The GETIT project, and associated Teachers' Guide, is currently being published by the Learning Team, Inc. (<http://learningteam.com>).

Submitted by:  
Dr. Leslie Kanat  
Johnson State College

## HELP!

1) Does anyone have a copy of Vermont Geology, volume 6?  
If so, please contact Marjie Gale at 241-3608 or e-mail  
[marjieg@dec.anr.state.vt.us](mailto:marjieg@dec.anr.state.vt.us).

## VGS Summer Meeting and Field Trip

About 20 VGS members and associated family and friends toured the facilities of the Cold Regions Research and Engineering Laboratory (CRREL) in Hanover, New Hampshire on Saturday, July 22, 2000. Part of the U.S. Army Corps of Engineers, CRREL's mission is to conduct research to better understand the behavior of materials in cold regions, particularly snow, ice, and frozen soil. The tour visited a variety of ice engineering, frost effects research, and ice-core laboratories, as well as a well-equipped library.

A short business meeting over lunch followed the CRREL tour. After the meeting, Steve Howe briefly described the geology and geochemistry of the Elizabeth Mine, an abandoned Cu-Pb-Zn mine near South Strafford, Vermont. About half of the original group then drove to the mine where Lori Barg led us on a tour of several large waste dumps and discussed the environmental implications of base metal-rich waters with very low pH draining into Copperas Brook and the West Branch of the Ompompanoosuc River, as well as attempts at remediation.

Our thanks go to Larry Gatto and Lori Barg for organizing this most interesting Summer field trip!

Cheers,  
Steve Howe  
Dept. of Earth & Atmos. Sciences  
State University at Albany  
1400 Washington, Albany, NY 12222-0001

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## 2001 VGS Student Research Grants

If you are an undergraduate or graduate student, or a secondary school teacher doing original research on Vermont geology, you are encouraged to apply for a Vermont Geological Society research grant. The deadline for 2001 is March 30, 2001. Please fill out a student grant application (enclosed), and mail to Stephen Wright, Department of Geology, University of Vermont, Burlington, VT, 05405-0122. Grants to be announced at the Spring Meeting.

VERMONT GEOLOGICAL SOCIETY, INC.

## CONSTITUTION and BYLAWS

### CONSTITUTION

#### Article I: NAME AND FORM

The name of this organization shall be the Vermont Geological Society, Inc., a non-profit, non capital stock corporation.

#### Article II: PURPOSE

The purpose of the Society shall be:

1. To advance the science and profession of geology and its related branches by encouraging education, research and service through the holding of meetings, maintaining communications, and providing a common union of its members.
2. To contribute to the public education of the geology of Vermont and to promote the proper use and protection of its natural resources.
3. To advance the professional conduct of those engaged in the collection, interpretation and use of geologic data.

#### Article III: MEMBERSHIP

Membership in the Society shall consist of Members with full voting rights, and other membership categories not having voting rights in Society proceedings.

#### Article IV: MANAGEMENT

The affairs of the Society shall be managed by the officers and board of directors elected at regular intervals from the voting membership of the Society. The officers and board of directors constitute the executive committee.

#### Article V: ANNUAL CORPORATE MEETING

The annual corporate meeting of the Society for the election of officers and board of directors and for such other business as may properly come before the meeting shall be held at such time and place as the executive committee may from time to time prescribe.

#### Article VI: BYLAWS

Bylaws not inconsistent with this Constitution or with the Certificate of Incorporation shall be adopted at the time of adoption of this Constitution and may be amended as therein provided.

#### Article VII: AMENDMENTS

Amendments to this Constitution may be made at any annual corporate meeting of the Society by a two-thirds vote of the members voting, due notice having been given each member of such proposed amendment at least four weeks before the annual corporate meeting.



## VERMONT GEOLOGICAL SOCIETY, INC.

BYLAWS

## Article I: MEMBERSHIP

## A. Member:

Membership shall be open to any person who has a degree in geology or is professionally engaged in geology and whose application, filed in the proper manner, has been approved by the executive committee.

## B. Associate Member:

Associate membership shall be open to any person or organization interested in geology and its related branches whose application, filed in the proper manner, has been approved by the executive committee. Associate members shall enjoy the same rights and privileges as full members, except that they shall have no vote in Society proceedings nor be able to serve as officers.

## C. Student Member:

Student membership shall be open to any student interested in geology, whose application, filed in the proper manner, has been approved by the executive committee. Student members shall enjoy the same rights and privileges as full members except that they have no vote in Society proceedings nor be eligible to serve as officers.

## D. Lifetime Member:

A lifetime membership may be bestowed by the executive committee upon an individual who has made a significant contribution in Vermont geology.

## E. Honorary Non-Voting Member:

An honorary membership may be bestowed by the executive committee on an individual who has made a significant contribution to the Society.

## Article II: DUES

A. Dues for members and associate members shall be \$15.00 for each fiscal year of which \$5 shall be devoted to the Vermont Geological Society Student Research Grant.

B. Dues for student members shall be \$8.00 for each fiscal year of which \$3 shall be devoted to the Vermont Geological Society Student Research Grant.

C. Dues shall be due during the month of January.

D. Changes in dues shall be recommended by the executive committee, but shall not become effective until voted by the members of the Society.

E. Any member, associate member, or student member whose dues remain unpaid for a one year period and who fails to pay said dues within 30 days after written notification of said arrears shall be dropped from membership.

F. The fiscal year shall be divided into quarters and initial dues for new members reflect the period remaining in the fiscal year.

## Article III: FISCAL YEAR

The fiscal year of the Vermont Geological Society shall be the same as the calendar year.

## Article IV: OFFICERS

A. The officers of the Vermont Geological Society shall be a President, a Vice-president, a Secretary, and a Treasurer. These officers, together with the board of directors, consisting of three members and one representative from each of the four Permanent Committees, shall constitute the executive committee.

B. The officers shall be elected for a term of one year each and two members of the board of directors, for a term of two years each, one being elected each year at the annual meeting. The third member of the board of directors shall serve a term of one year and shall be the immediate past President of the Vermont Geological

Society. If there is no immediate past President, the third member of the board of directors shall be elected at the annual meeting.

C. No person, with the exception of charter members, shall be eligible to serve as an officer or a member of the board of directors who has not been a member for at least one full year.

## Article V: COMMITTEE ON NOMINATIONS

A. A committee on nominations, consisting of three members, shall be appointed annually by the executive committee at the regular meeting following the annual meeting and shall serve until the regular meeting following the next annual meeting.

B. The committee on nominations shall:

1. Select one nominee for each office to be filled at the next annual meeting.
2. Report to the executive committee one month after the spring meeting, the names of nominees. Additional nominations should be submitted by members to the secretary by 31 August so that names can be published in the Fall Green Mountain Geologist.
3. Mail a list of all nominees to all members not less than thirty (30) days prior to the annual meeting.

## Article VI: ELECTION OF OFFICERS AND DIRECTORS

A. Method of Election:

1. Officers and directors shall be elected at the annual meeting.
2. Voting shall be by ballot at the annual meeting. Those persons who will not be able to attend the annual meeting should return the absentee ballot printed in the Fall Green Mountain Geologist to the secretary so as to be received prior to the annual meeting.
4. Officers and directors shall assume their duties at the close of the meeting at which they were elected.

B. Vacancies in Office:

1. A vacancy in any office shall be filled for the unexpired term by a person elected by the executive committee.
2. Voting shall be by ballot if there is more than one nominee for the office.
3. A two-thirds vote of the members of the executive committee shall constitute an election.

## Article VII: DUTIES OF THE OFFICERS AND DIRECTORS

A. President:

The President shall:

- a. Preside at meetings of the Society and the executive committee.
- b. Be an ex-officio member of all committees except the nominating committee.
- c. Determine the duties of the Vice-president.
- d. Coordinate the work of the officers and committees, in order that the objectives of the Society may be promoted.
- e. Submit an annual report to the Society at the annual meeting.

B. Vice-President:

The Vice-President shall perform the duties of the President in the absence of the ability of that officer to serve, and those duties assigned by the President.

C. Secretary:

The Secretary shall:

- a. Record the minutes of all meetings of the Society and the executive committee.
- b. Be responsible for mailing to each member of the executive committee a copy of the minutes of all meetings of the Society and the executive committee.
- c. Conduct such correspondence as the Society, the officers, or the board of directors may direct.

- d. Notify officers and standing committee chairmen of their election.
- D. Treasurer:
  - The Treasurer shall:
    - a. Be a member of the budget committee.
    - b. Collect and record funds in accordance with the approved budget and/or upon direction of the executive committee.
    - c. Present a financial statement at the annual meeting.
    - d. Disburse funds and pay all bills by check when approved by the President.
    - e. Present a financial statement at each meeting and at other times as requested by the President.
    - f. Close the books at the end of the fiscal year and submit them for audit to the budget committee.
    - g. Send dues notices to members one month prior to the date that they are due.
    - h. The Treasurer shall be bonded in amounts determined by the executive committee. The expense of these bonds shall be paid for by the Society.
- E. All Officers and Directors:
  - All Officers and Directors shall:
    - a. Perform the duties prescribed in the parliamentary authority in addition to those outlined in these bylaws and those assigned from time to time.
    - b. Deliver to their successors all official material within fifteen (15) days following the close of the annual meeting at which their term of office expires.

#### Article VIII: REGULAR MEETINGS

- A. Regular meetings shall be held three times a year. Normally these will be held during the academic year.
- B. A special meeting may be called in lieu of or in addition to a regular meeting.
- C. The date, time and place of each meeting shall be determined by the executive committee.

#### Article IX: ANNUAL MEETING

- A. The annual meeting shall be held within thirty (30) days of 15 October and shall be considered a regular meeting.
- B. The date, time and place of each annual meeting shall be determined by the executive committee.
- C. The annual meeting shall be the governing body of the Society.

#### Article X: VOTING BODY

- A. The voting body of the meetings shall consist of the members of the Society.
- B. Each member shall have but one vote.
- C. At the annual meeting, those voting members present shall constitute a quorum, four of whom shall be members of the executive committee. Business may be conducted at other duly warned meetings without a quorum. All meetings shall be warned no less than two weeks prior to the meeting.

#### Article XI: EXECUTIVE COMMITTEE

- A. Membership:
  - 1. There shall be an executive committee comprised of the officers, two (2) members elected at large, the chairpersons of the four permanent committees and the immediate past President of the Society.
  - 2. The executive committee shall meet at the call of the President or upon written request of two of its members.
  - 3. A majority shall constitute a quorum.
- B. Duties:
  - The executive committee shall:
    - a. Perform the duties delegated to it here and also elsewhere under these by-laws.
    - b. Transact business referred to it by the membership.

- c. Receive and pass upon plans of work of chairmen of standing committees and authorize and direct the work of each.
- d. Select the time and place of all meetings, including the annual meeting.
- e. Submit to the membership such recommendations as it deems advisable.
- f. Determine the amount and authorize payment of fidelity bonds for the treasurer of the Society.
- g. Take no action in conflict with that of the membership.

#### Article XII: PERMANENT COMMITTEES

- A. Permanent Committees of the Society:
  - 1. Four permanent committees are established to promote the purposes and carry out the work of the Society. These permanent committees are:
    - Geological Education Committee
    - Advancement of the Science Committee
    - Public Issues Committee
    - Publications/Editorial Committee
  - 2. Each permanent committee shall consist of a chairperson and his/her appointees.
  - 3. Any permanent committee may be dissolved or an additional permanent committee established only through two-thirds vote of members voting at any annual meeting of the Society.
  - 4. A report summarizing the work and findings of each permanent committee must be made by the chair on or before the annual meeting of the Society.
- B. Chairpersons of Permanent Committees:
  - 1. Nominations:
    - a. Nominations for chair of each permanent committee shall be made by the committee on nominations, and shall be reported by the committee on nominations at the regular meeting prior to the annual meeting.
    - b. Additional nominations may be made from the floor of this meeting.
    - c. Only a member of the Society, whose consent has been secured, shall be eligible for chair.
  - 2. Election:
    - a. The election of chairpersons of permanent committees shall be held at the annual meeting prior to the election of officers and directors.
    - b. A majority of votes cast shall constitute an election.
  - 3. Term of Office:
    - The term of office for chair of each permanent committee shall be three years.
  - 4. Vacancies:
    - Vacancies will be filled by a person elected by the executive committee following procedures outlined in Article VI B. This person will serve until the next meeting of the Society.
  - 5. Duties:
    - The chair (or delegate) of each permanent committee is also a member of the executive committee and performs duties as outlined in Article XI B of these bylaws.

#### Article XIII: COMMITTEES:

- A. Standing Committees
  - 1. Standing committees may be created or dissolved by the executive committee as deemed necessary to promote the purpose and carry out the work of the Society.
  - 2. Each standing committee shall consist of a chairperson and such other persons as may be appointed by the executive committee.
- B. Nominations for Chairpersons:
  - 1. Nominations for chairpersons of standing committees shall be made by the committee on nominations, and shall be reported by the committee on nominations

at the regular meeting prior to the annual meeting.

2. Additional nominations may be made from the floor of this meeting.

3. Only a member of the Society, whose consent has been secured, shall be eligible for nomination for chairperson.

C. Election of Chairpersons:

1. The election of chairpersons of standing committees shall be held at the annual meeting prior to the election of officers and directors.

2. A majority of votes cast shall constitute an election.

D. Duties of Chairpersons:

The chairperson of each standing committee shall submit a plan of work to the executive committee for approval.

E. Vacancies in Chairs:

If a vacancy occurs in the chair of a standing committee, the executive committee shall be empowered to fill such vacancies.

F. Special Committees:

Special committees may be created and appointed by the President or by the executive committee.

G. President Ex-Officio:

The President shall be an ex-officio member of all committees except the committee on nominations.

Article XIII: AMENDMENTS

These by-laws may be amended at any annual meeting of the Vermont Geological Society by two-thirds of the members voting, due notice having been given each member of such proposed amendment at least four weeks before the annual meeting.

*Editors Note: The Vermont Geological Society Constitution and Bylaws were originally adopted in February 1974, with various revisions since that time. Last revisions in October 1991.*

PHOTOGRAPHS WANTED!

We received the following e-mail from Michael J. Smith, Director of Education at American Geological Institute.

We urgently need earth science photographs that you are willing to donate for use in EarthComm and IES (new Earth Science curriculum for high school and middle school). Submissions can come in print, slide, or electronic format. All submissions used will receive a photo credit in the commercial edition of the text. Slides and prints sent to AGI can be returned. We have identified specific photographs needed for the second module of EarthComm at the following web address.

<http://www.agiweb.org/earthcomm/photo/index.html>

If you have any questions, please contact Eric Shih at [es@agiweb.org](mailto:es@agiweb.org), or by phone at (703)379-2480. Thank you for your assistance.

VGS Calendar - 2001

February 2: Pre-registration Deadline for NE GSA Meeting

March 12-14: NE Geological Society of America, Burlington, VT

March 23: Deadline for student abstracts for Spring VGS

March 23: Deadline for submission of articles for Spring 2001 GMG

March 30: Student Research Grant Proposals Due

April 10: Publish Spring GMG

April 21: Spring VGS Meeting, Norwich University, Northfield, VT

April 21: Student research grant money awarded

June 22: Deadline for articles and news items for Summer GMG

July: Spring/Summer Field Trip; details TBA

Sept. 4: Deadline for articles and news items for Fall GMG

Sept. 18: Publish Fall GMG

Oct. 7-13: Earth Science Week 2001

Vermont Geological Society Student Research Grants

are designed to aid our future geologists investigate Vermont's geo-history.

Help the VGS to promote a deeper insight into Vermont Geology.

Students receiving assistance through the program will present their research results at the VGS Spring Meetings. Your generosity will help cover a lot of terrane!



To contribute to the VGS Student Research Grant Program, clip or copy this form and send it, along with your check or money order made payable to VGS, to:

Kristen Underwood, Treasurer, Vermont Geological Society  
Department of Geology, University of Vermont  
Burlington, Vermont 05405-0122

• I'VE ENCLOSED MY TAX-DEDUCTIBLE CONTRIBUTION TO BE DEDICATED TO THE VGS STUDENT RESEARCH GRANT PROGRAM.

TOTAL GIFT: \$ \_\_\_\_\_

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

ORGANIZATION: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_



## TREASURER'S REPORT

December 28, 2000

Dear President and Board:

The financial condition of the Society remains strong. Please see the attached Income Statement for the period January 1, 2000 through December 28, 2000. The checking account balance is \$2,944.60 as of December 28, 2000. All bills received by me have been paid and are reflected in the above balance. I welcome feedback and suggestions from the Board and membership.

Sincerely,  
Kristen L. Underwood

### Income and Expenses 1/1/00 through 12/28/00

#### INCOME

Total Dues		\$1,609.00
Dues-Family	\$140.00	
Dues-Institution	\$15.00	
Dues-Member	\$1,430.00	
Dues-Student	\$24.00	
Interest	**	\$21.84
Student Research Grant Contributions		\$514.00
<b>TOTAL INCOME</b>		<b>\$2,144.84</b>

#### EXPENSES

US Post Office (stamps, GMG Distribution)	\$212.52
Minuteman Press (GMG Publishing)	\$460.73
Earth Science Week Poster Awards	\$90.00
Student Research Grant Awards (VGS Spring Mtg)	\$155.00
<b>TOTAL EXPENSES</b>	<b>\$918.25</b>
<b>TOTAL INCOME - EXPENSES</b>	<b>\$1,226.59</b>

\*\* Interest income earned 10/27/00 through 12/28/00 not reflected in this total.

## VERMONT GEOLOGICAL SOCIETY DUES STATEMENT 2001

Dear VGS member:

Membership dues for 2001 are \$15.00 for Members and Associate Members, \$20.00 for a family membership with one newsletter subscription, and \$8.00 for Student Members. Membership dues are used to publish the *Green Mountain Geologist*, to finance our Student Research Grants, and to cover the costs associated with meetings and field trips. If your address, phone, or e-mail address has changed since last year, please fill in this information below, if not, leave the form below blank. A new membership directory will be published with the Summer GMG. Return this form with your check for the appropriate amount made payable to the Vermont Geological Society by March 30, 2001. Send your payment to Kristin Underwood, Treasurer; Vermont Geological Society; Department of Geology; University of Vermont; Burlington, VT 05405-0122. Thank you.

Name:

Date:

Street or Box:

City, State, ZIP:

Work Phone:

Home Phone:

e-mail address:

Fax No.:

#### Circle Type of Membership:

Member (\$15)

Student Member (\$8)

Family (\$20)

Amount Due: \_\_\_\_\_

Additional Contribution to VGS Research Grants: \_\_\_\_\_

Total Enclosed: \_\_\_\_\_