

Timothy Thorpe Allen

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EDUCATION and CREDENTIALS

Ph.D. in Geology, 1992, Dartmouth College, Hanover, NH.

Dissertation: Migmatite Systematics and Geology, Carter Dome—Wild River Region, White Mountains, New Hampshire. C. Page Chamberlain, advisor.

M.S. in Geology, 1990, Dartmouth College, Hanover, NH.

Thesis: Part I, Thermal Consequences of Mantled Gneiss Dome Emplacement; Part II, Petrologic Constraints on the Tectonic History of the Northern—Shyok Suture and the Main Karakorum Thrust, Baltistan, Northern Pakistan. C. Page Chamberlain, advisor.

B.A. cum laude in Geological Sciences, 1984, Harvard University, Cambridge, MA.

Thesis: The Fall Mountain Outlier, a piece of the Fall Mountain Nappe. James B. Thompson, Jr., advisor.

State of New Hampshire **Licensed Professional Geologist**, No. 3

TEACHING EXPERIENCE

Professor of Environmental Studies, 2009-present, Keene State College, Keene, NH.

Professor of Geology & Environmental Studies, 2002-2009;

Associate Professor of Geology & Environmental Studies, 1997-2002

Assistant Professor of Geology & Environmental Studies, 1992-1997

Current courses: The Environment of Central New England, Matter and Energy in the Environment, Groundwater and the Environment, Environmental Geology, Environmental Geochemistry, Energy and Sustainability, Junior and Senior Seminars in Environmental Studies.

Past courses: Perspectives of Earth (and Lab), Physical Geology (with integrated lab), Introduction to Environmental Studies, Global Environmental Change, and Integrative Quantitative Literacy, Investigating Environmental Problems, The Hydrologic Cycle, Meteorology, Geochemistry, Hydrogeology, and Structural Geology, as well as seminars in the Geology of the Northern Appalachians and the Geology of Wyoming.

I have also organized and led geological field trips throughout New England, to Wyoming and adjacent states, and to northern Arizona and southern Utah.

External Undergraduate Honors and Graduate Thesis/Dissertation Advisory Committees on which I have served:

Janna Levin: The origins of migmatites in the Presidential Range, New Hampshire, B.S., 1998, Bates College, Lewiston, ME.

Thomas Weymouth: The stratigraphy and structural geology of the Pinkham Notch area, Presidential Range, New Hampshire, B.S., 1998, Bates College, Lewiston, ME.

Charles M. Kerwin: Structure and Bedrock Geology of the Massabesic Gneiss Complex in Southern New Hampshire, M.S., 2000, University of New Hampshire, Durham, NH.

Charles M. Kerwin: Mapping, Petrological and Geochemical Explorations of the Massabesic Gneiss Complex in New Hampshire, Ph.D., 2007, University of New Hampshire, Durham, NH.

Teaching Assistant in the Department of Earth Sciences, 1987-1992; Dartmouth College, Hanover, NH: Courses included: Hydrogeology, Structural Geology (3 terms), Exploration Geophysics (3 terms), Physical Geology (2 terms), Remote Sensing, Earth History, and Marine Geology.

Mathematics Teacher and Athletics Coach, 1984-1986; Kearsarge Regional High School, North Sutton, NH: Courses included Introductory Algebra, Plane Geometry, General Math, and Basic Math. Teams coached included Cross-Country Skiing for boys and girls, and Nordic Ski Jumping for boys. I also served as an Assistant Coach for Cross-Country Running (fall) and Track (spring) for both boys and girls.

RESEARCH EXPERIENCE

Consulting Professional Geologist, Keene, NH, 1992–present; occasional consultant on hydrological, geological, and environmental issues of concern to various public and private clients.

Professor of Geology and Environmental Studies, 1992–present; Keene State College, Keene, NH: conduct research in hydrology and hydrogeology, geochemistry, environmental issues, and the bedrock geology of New Hampshire; supervise student Independent Study and Senior Seminar projects.

Co-director, Center for Environmental BioGeoChemistry, 2000-present; Keene State College, Keene, NH: oversight of environmental sample preparation laboratory, and operation and maintenance of a wavelength dispersive x-ray fluorescence spectrometer and a stable isotope ratio mass spectrometer with both dual bellows and continuous flow inlet systems; recent projects include analysis of heavy metals in river sediment and soils.

Geological Field Technician, 1989; Kennecott Exploration, Camden, SC: precious metal exploration project in northern New Hampshire, including grid-scale mapping and outcrop sampling; geological, structural, geophysical and geochemical data analysis and interpretation; as well as map and cross-section drafting.

Research Assistant, Stable Isotope Geochemistry Laboratory, 1990-1992; Dartmouth College, Hanover, NH: operated silicate-oxygen extraction line apparatus and gas-source isotope-ratio mass-spectrometer; designed and built new reaction-vessel manifold and cooling jacket.

Geological Mapper, 1987-1992; Dartmouth College, Hanover, NH: geological mapping in the Karakorum Mountains of Pakistan, and the White Mountains of New Hampshire and Maine.

Geological Mapping Assistant, 1983; Harvard College, Cambridge, MA: geological mapping in southwestern New Hampshire.

Geological Mapping Field Camp, 1983; Sierra Madre Foundation, Saratoga, Wyoming.

Reviewer of grant proposals for the Hydrologic Sciences Program (1997) and for the Tectonics Program (1996) at the National Science Foundation; of hydrogeology textbooks for McGraw-Hill (2000) and Simon & Schuster / Prentice-Hall Publishers (1996); of manuscripts for the Vadose Zone Journal (2003), an ASTM Symposium on Subsurface Fluid Flow Modeling (1995), and the Journal of Structural Geology (1992); and of abstracts for meetings of the Geological Society of America (1998, 2007).

LEADERSHIP, MANAGEMENT and SERVICE EXPERIENCE

Keene State College, Keene, NH

Chair, Department of Environmental Studies, 2009-2013: established new department.

Environmental Studies Program Steering Committee, 1993–2009 (Chair, 2001–2006; 1995–1999): oversaw curricular and program development, led program through KSC's Academic Program Review process (1995, 2002), organized the Environmental House living-learning program.

Science Building Campaign Steering Committee (2003-2005), helped to raise \$4,000,000 contributed toward the construction of KSC's new Science Center, and was a featured speaker at the final Campaign celebration event.

Science Building Committee, 2001–2004; participated in the selection of Architects, and Construction Managers; represented interests of Environmental Studies and Geology in programming, planning, and design meetings.

Member of Search Committee for Vice President of Academic Affairs, 1994–1995.

Chair of Faculty Search Committees: Environmental Studies, 2009, 2010, 2012.
Member of Faculty Search Committees: Physics, 2015; Chemistry, 2003;
Biology/ENST, 1998; Geography/ENST, 1996.
Member of Search Committee for Analytical Instrumentation Engineer, 2012.
Member of Search Committee for Research Associate, Environmental Studies, 2011.
Service on many Discipline Peer Evaluation Committees, evaluating faculty in
Environmental Studies, Geology, Chemistry, Biology, Geography, and Physical
Education, both in regular performance reviews, as well as for promotion and
tenure reviews.
Faculty Evaluation Advisory Committee, 2002–2004 (Chair, 2003–2004); made
recommendations regarding promotion and tenure applications from faculty
across the campus.
Interdisciplinary Program Council, 2003–2004 (Chair).
Interim Chair of Geology Department, 1999; author of Geology Department
Academic Program Review Self-Study document, 2000.
Chair, Instruction & Scholarship subcommittee of the College Information
Technology Committee, 1994–1997; lead author of College's initial 5-year
technology plan (1996).
MonadNet Technical Advisory Group, 1993-1995; MonadNet was a non-profit
community-based local internet service provider startup established in 1994 by a
collaboration between the College, local businesses, and other community
organizations.
Council for a Sustainable Future, 2001-2006, 2009-2012 (ex officio)
Academic Standards Committee, 1998-1999
Faculty Development Fund Committee, 1997-1998, 2009-2012.
Continuing Education Committee, 1994–1996
Orientation Advising, 1994-1997
First Year Experience Program, 1993-1997

State of New Hampshire

Board of Professional Geologists, 2000–2009 (Chair, 2006–2007; Vice-Chair,
2002–2006; Secretary, 2000–2002); establish and review administrative rules,
review applications for licensure, adjudicate disciplinary matters. Appointed by
the Governor. Term limited by statute.
Legislative Commission to Study Issues Relevant to Groundwater Withdrawals
(SB155), 2003–2006; member representing the Joint Board of Licensure and
Certification, appointed by the Governor.

Mount Washington Observatory, North Conway, NH

Co-Leader, “EduTrip” on glacial geology and climate change, 1997–2012; help
ensure the safety and well-being of guests to the Observatory’s summit facilities
on overnight trips in winter.
Member of Committee, Billings Fund for Geological Research in New England,
1996–present; review grant proposals and make recommendations on funding.

Geological Society of America, Boulder, CO

Field Trip Co-Leader, 2013 & 2015 Northeast Section Meetings, Bretton Woods, NH.
Chair, Northeast Section, 2007–2008
Vice Chair, Northeast Section, 2006–2007
Technical Program Co-Chair, 2007 Northeast Section Meeting, Durham, N.H.
Field Trip Co-Leader (and logistics manager), 2001 Annual Meeting, Boston, MA.

New England Intercollegiate Geological Conference

Co-Organizer, 2012 conference
Field Trip Leader or Co-Leader, 1988, 1996, 1997, 2003, and 2012 conferences.
Webmaster, 1996–2008

Geological Society of New Hampshire

Member-at-Large, Board of Directors, 1993–2001.
Editor and Publisher of *The Granite State Geologist*, 1991–2001.
Webmaster, 1996–2004

NEES (Northeast Environmental Studies Group)

External Review Team, Center for Earth and Environmental Science, State University of New York at Plattsburgh, 2004.
Organizer, 1998 Annual Meeting of Environmental Studies program directors from colleges across the country, held at Keene State College, Keene, NH.

Other Leadership, Management and Service

Co-proprietor, Harborfields, Inc., West Boothbay Harbor, ME, 2011–present (webmaster since 2006; Treasurer & CFO since 2012).
President, West Harbor Recreation, Inc., West Boothbay Harbor, ME, 2013-present.
Treasurer, Keene High School Alpine Ski Team Booster Club, Keene, NH, 2013-present.
Skipper of GREYHAWK, an offshore racing sailboat, 2005–present; responsibilities include leading and managing the boat's crew so as to ensure a safe and successful voyage, whether the mission be a race, a delivery, or a pleasure cruise.
Treasurer, Fuller School Association, Keene, NH, 2007-2009; managed the Association's finances, which involved cash flows on the order of \$50,000 per year. Responsibilities also included all filings with the IRS and the State of New Hampshire.
Head Coach of Skiing, Keene State College, Keene, NH, 1986-1987; While I oversaw the whole program (alpine and nordic), I was personally directly responsible for men's and women's cross-country skiing. We competed in NCAA/EISA Division I. (Note that my time as ski coach pre-dates by five years, and is independent of, my appointment as a member of the faculty.)
Co-Captain and Manager of the Varsity Ski Team, Harvard College, Cambridge, MA, 1982-1984; oversaw all spending and expense reporting for the team, and received special recognition from the Harvard Department of Athletics for my service.

Other Employment: Farm Carpenter, Digitizer of Oil Well Logs, Ski Trail Groomer, Audio-Visual Media Services Technician, Computer Consultant, Bicycle Mechanic.

AWARDS & ACCOLADES

Campus Compact for New Hampshire, President's Good Steward Award, April 12, 2011

Commendation from Governor John H. Lynch for service on the New Hampshire Board of Professional Geologists, October 14, 2009

PUBLICATIONS and PRESENTATIONS

* indicates undergraduate co-authors

Refereed Journal Articles

Allen, T.; *Comeau, M.; *Carson, H.; *Hurd, E., 2003, "A Reconnaissance of the Heavy Metal Content of Ashuelot River Sediments," *Studies in New England Geography*, No. 17, 23 pages.

Allen, T. and C. P. Chamberlain, 1991, Metamorphic evidence for an inverted crustal section, with constraints on the Main Karakorum Thrust, Baltistan, northern Pakistan, *Journal of Metamorphic Geology*, v. 9, pp. 403–418.

Allen, T., and C. P. Chamberlain, 1989, Thermal Consequences of Mantled Gneiss Dome Emplacement, *Earth and Planetary Science Letters*, v. 93, pp. 392–404.

Proceedings Chapters

Allen, T., 2012, "Bedrock Geology of the Lake Sunapee Area, West-Central New Hampshire," (revised from 2003) in *Guidebook to Field Trips in Western New Hampshire and Adjacent Vermont and Massachusetts*, Thomposn, P.J., and Thompson, T.B., editors, New England Intercollegiate Geological Conference 104th Annual Meeting, pp. 195-208.

Allen, T., Vernon, J., and Pendelton, R., 2012, Hydrogeology and Environmental Geology of the Keene Area, New Hampshire, in Thompson, P.J. and Thompson, T.B., eds., *Guidebook to Field Trips in Western New Hampshire and Adjacent Vermont and Massachusetts*, Thomposn, P.J., and Thompson, T.B., editors, New England Intercollegiate Geological Conference 104th Annual Meeting p. 323.

Allen, T., 2003, "Bedrock Geology of the Lake Sunapee Area, West-Central New Hampshire," in *Guidebook to Field Trips in the Five College Region*, Brady, J.B., and Cheney, J.T., editors., New England Intercollegiate Geological Conference 95th Annual Meeting. pp. A4.1–A4.14.

Allen, T., Creasy, J., Davis, P.T., Eusden, J.D., Fowler, B., and Thompson, W.B., 2001, The Notches: Bedrock and Surficial Geology of New Hampshire's White Mountains, in *Guidebook for Field Trips for the Geological Society of America's 2001 Annual Meeting*, Boston, Richard Bailey and David West, editors, Geological

- Society of America, Boulder, Colorado. pp. C1–C33.
- Allen, T., 1997, Nappes, Gneiss Domes and Intrusive Sheets of West-Central New Hampshire, in *Guidebook to Field Trips in Vermont and Adjacent New Hampshire and New York*, Timothy W. Grover, Helen N. Mango, and Edward J. Hasenohr editors, New England Intercollegiate Geological Conference 89th Annual Meeting. pp. A2.1A2.19.
- Allen, T., 1996, A Stratigraphic and Structural Traverse of Mount Moriah, New Hampshire, in *Guidebook to Field Trips in Northern New Hampshire and Adjacent Regions of Maine and Vermont*, Mark Van Baalen, editor, New England Intercollegiate Geological Conference 88th Annual Meeting, pp. 155169.
- Allen, T., 1996, Petrology and Stable Isotope Systematics of Migmatites in Pinkham Notch, New Hampshire, in *Guidebook to Field Trips in Northern New Hampshire and Adjacent Regions of Maine and Vermont*, Mark Van Baalen, editor, New England Intercollegiate Geological Conference 88th Annual Meeting, pp. 279298.
- Chamberlain, C. P., J. B. Thompson, and T. Allen, 1988, Stratigraphic and Structural Relationships of the Fall Mountain Nappe, in: *Guidebook for Field Trips in Southwestern New Hampshire, Southeastern Vermont and North-Central Massachusetts*, W. A. Bothner, editor, New England Intercollegiate Geological Conference 80th Annual Meeting, pp. 32–39.

Abstracts (presentations or posters given at meetings)

- Endrich*, A., Revette*, R., Roden-Tice, M., and Allen, T., 2015, Early Cretaceous Displacement on the Georges Mills Fault, Lake Sunapee, New Hampshire, Based on Apatite Fission-Track Analysis, *Geological Society of America Abstracts with Programs*, 47(3):93
- Allen, T., 2013, Metal Contamination of Sediments in the Ashuelot River, Keene, N.H., *Geological Society of America Abstracts with Programs*, 45(1):126
- Geer*, P.S., Currier*, L.B., Allen, T., 2013, Assessment of a Storm Drain Outfall to the Metal Contamination of Sediments in the Ashuelot River, *Geological Society of America Abstracts with Programs*, 45(1):55
- Allen, T.T., 2008, "Contamination of Soils and Sediments in Keene, NH, from Lead Paint," (abstract), *Geological Society of America Abstracts with Programs*, 40(2):8 (Northeast Section Meeting, Buffalo, New York).
- Allen, T.T., *Ferrigno, S., and Renfrew, R., 2007, Trace Element Fingerprinting of Bird Feathers by WD-XRF, (abstract), *Geological Society of America Abstracts with Programs*, 39(1):47 (Northeast Section Meeting, Durham, New Hampshire).
- Allen, T.T., and *Burns, E., 2006, Occurrence and Distribution of Trace-Metal Contaminated Sediments in the Ashuelot River, Keene, N.H., (abstract), *Geological Society of America Abstracts with Programs*, 38(2):12 (Northeast Section Meeting, Camp Hill, Pennsylvania).
- *Burt, C., *Saxon, D., and Allen, T.T., 2002, "Bedrock Geology of the Lake Sunapee Area, New Hampshire," (abstract), *Geological Society of America Abstracts with Programs*, 34(1):A–68 (Northeast Section Meeting, Springfield, Massachusetts).
- *Saxon, D., Allen, T., *Burt, C., *King, J., and *Lindberg, J., 2001, Geology of the Lake

- Sunapee Area, New Hampshire, *Geological Society of America Abstracts with Programs* v. 33, n. 1, p. A12 (Northeast Section Meeting, Burlington, Vermont).
- Allen, T., 1998, Field Laboratories in Hydrogeology and Environmental Geology, *Geological Society of America Abstracts with Programs*, v. 30, n. 7, p. A306 (Annual Meeting, Toronto, Ontario; co-convener of theme session).
- Allen, T., 1998, Structure and Stratigraphy in Migmatite Gneisses, Gorham NH-ME Quadrangle, (invited) *Geological Society of America Abstracts with Programs*, v. 30, n. 1, p. 1 (Billings Symposium, Northeast Section Meeting, Portland, Maine).
- *O'Rourke, J.; *Ravella, M.; *Lance, D.; *Smith, M.; *Grunneaur, A.; *Stiles, T.; *Martin, J.; Allen, T. T.; *Villanova, J.; and *Drobat, P., 1998, Field Studies of Sub-Surface Hydrologic Dynamics, *Geological Society of America Abstracts with Programs*, v. 30, n. 1, p. 64 (Northeast Section Meeting, Portland, Maine).
- Allen, T., 1997, Geophysics in an Environmental Geology Context, *Geological Society of America Abstracts with Programs*, v. 29, n. 6, p. A368 (Annual Meeting, Salt Lake City, Utah).
- Allen, T., 1994, New Hampshire Migmatites: Oxygen Isotope Fractionation During Partial Melting, and Suggestions of Structurally Enhanced Magma Migration, (invited) *EOS, Transactions of the American Geophysical Unions*, v. 75 n. 16, p. 360361 (Spring Meeting, Baltimore, Maryland).
- Allen, T., 1994, Outcrop Modal Analysis: A Petrographic Application of Digital Image Processing Techniques, *Geological Society of America Abstracts with Programs*, v. 26, n. 1, p. 2 (Northeast Section Meeting, Binghamton, New York).
- Allen, T., 1993, Stable Isotope Fractionation During Partial Melting in Migmatites, *Geological Society of America Abstracts with Programs*, v. 25, n. 6, p. A448 (Annual Meeting, Boston, Massachusetts).
- Smith, H.A., Chamberlain, C.P., Allen, T., and Zeitler P.K., 1993, Relationship Between Deformation and Monazite Ages: Two Counter-Examples from the Himalaya. *EOS, Transactions of the American Geophysical Unions*, v. 74, n. 16, p. 123 (Spring Meeting, Baltimore, Maryland).
- Allen, T., and Chamberlain, C.P., 1992, Pluton Migration Through Crust Leaves Migmatites Behind, *Geological Society of America Abstracts with Programs*, v. 24, p. A338 (Annual Meeting, Cincinnati, Ohio).
- Allen, T., and Chamberlain, C.P., 1989, Petrologic Constraints on the Tectonic History of the Northern-Shyok Suture in Baltistan, Northern Pakistan, *Geological Society of America Abstracts with Programs*, v. 21, n. 6, p. A181 (Annual Meeting, St. Louis, Missouri).
- Allen, T., and Chamberlain, C.P., 1988, Thermal Consequences of Gneiss Dome Formation, *EOS, Transactions of the American Geophysical Union*, v. 69, n. 16, p. 509 (Spring Meeting, Baltimore, Maryland).
- Allen, T., 1985, A Reinterpretation of the Fall Mountain Nappe, as seen from Fall Mountain, North Walpole, New Hampshire, *Geological Society of America Abstracts with Programs*, v. 17, n. 1, p. 2 (Northeast Section Meeting, Lancaster, Pennsylvania).

Reports

- Allen, T., 2011, *Monitoring Well Locations*, for Mitchell Sand and Gravel, 1 page.
- Allen, T., 2010, *Hydrogeology Report*, for Mitchell Sand and Gravel, 7 pages.
- Allen, T., 2010, *Hydrogeology Report*, for private client, 10 pages.
- Allen, T., 2010, *Hydrogeology of the Atherton Hill Area*, for the Friends of Atherton Hill Road, 16 pages.
- Allen, T., 2008, *Uranium Potential of the Pullen Property*, for the Monadnock Conservancy, 4 pages.
- Allen, T., 2005, *Hydrologic Report*, for private client, 17 pages and 2 maps.
- Allen, T., 2002, *Keene State College Environmental Studies Program Self-Study Report*, 34 pages plus appendices.
- Allen, T., 2000, *Keene State College Geology Program Self-Study Report*, 82 pages, including appendices.
- Allen, T., 1998, *Preliminary Report on the Hydrogeology of the Harrisville Spring*, for the Conservation Commission, Town of Harrisville, NH. 6 pages.
- Allen, T., 1997, *Third Annual Report, Test Wells off Krif Road*, for Planning Director, City of Keene, NH. 2 pages.
- Keene State College Information Technology Committee, 1996. *Keene State College 5-Year Technology Plan*, 12 pages, plus appendices.
- Allen, T., 1996, *Second Annual Report, Test Wells off Krif Road*, for Planning Director, City of Keene, NH. 1 page.
- Allen, T., 1995, *Keene State College Environmental Studies Program Self Study Report*, 33 pages plus appendices.
- Allen, T., 1995, *First Annual Report, Test Wells off Krif Road*, for Planning Director, City of Keene, NH. 11 pages.

Other Products

- Allen, T., 2008, Editor, *GEODES 2008 Spring Field Trip Guidebook: Northern New Hampshire and Western Maine*.
- Allen, T.T., 2006, *Greyhawk's wicked good adventure: six men sail a leaky little boat to Maine*, <http://sailing.thorpeallen.net/Greyhawk/Delivery/index.html>
- Allen, T., 2005, Editor, *GEODES 2005 Spring Field Trip Guidebook: Northern Arizona and Southern Utah*.
- Allen, T., 2001, Editor, *GEODES 2001 Spring Field Trip Guidebook: Coastal Maine*.
- Allen, T. T., 2000, *Organization of Scientific Research Papers*, <http://tim.thorpeallen.net/Courses/Reference/Organization.html>
- Allen, T. T., 2000, *Citing References in Scientific Research Papers*, <http://tim.thorpeallen.net/Courses/Reference/Citations.html>
- Allen, T., 2001, *Energy Equations*, <http://tim.thorpeallen.net/Courses/Reference/energyEquations.pdf>
- Allen, T., 1998. Editor, *GEODES 1998 Spring Field Trip Guidebook: Wyoming and adjacent states*.
- Allen, D. H., 1998, *Don't Die on the Mountain*, Diapensia Press: New London, NH, 224 pages (I contributed several technical illustrations, and a photograph, to this book).

- *Ravella, M., *Lance, D., and Allen, T., 1996, *Potential Aquifer Recharge Locations in the Keene Area*. <http://tim.thorpeallen.net/Research/Hydrology/RLA/index.html>
- Allen, T., 1994, *Outcrop Modal Analysis: A Petrographic Application of Digital Image Processing Techniques*
<http://tim.thorpeallen.net/Research/Reports/ModalAnalysis/index.html>
- Allen, T., 1995, editor, *GEODES 1995 Spring Field Trip Guidebook: Northern New Hampshire and Western Maine*.
- Allen, T., 1993, editor, *Mount Washington, White Mountains of New Hampshire*.
Guidebook for 3rd Annual Field Trip, New Hampshire Geological Society.

Invited Professional Presentations

- Geology of Lake Sunapee, Lake Sunapee Protective Association Scientific Workshop, April 4, 2005, New London, N.H.
- Past and Current Work in the Karakorum Mountains of Northern Pakistan, New Hampshire Geological Society Spring Meeting, Bedford, NH, April 13, 2000.
- Migmatites from Pinkham Notch, New Hampshire: Observations on Migmatization Processes and Relationships to Orogeny, Boston University Department of Geology, March 30, 1998.
- Migmatites in the White Mountains: Implications for Mountain-Building Processes, New Hampshire Geological Society Annual Meeting, Concord, NH, October 8, 1992.
- Thermal Consequences of Mantled Gneiss Dome Emplacement, Geological Society of America Penrose Conference, Determining Criteria for Establishing the Relative Timing of Pluton Emplacement and Regional Deformation, Mariposa, CA, September 1988.

Invited Public Presentations

- Geology of the Lake Sunapee Region, July 10, 2012, Lake Sunapee Protective Association, Sunapee, NH.
- Energy and Transportation, Keene State College Biennial Symposium: What Sustains Us? Envisioning the Future, November 3, 2011, Keene State College, Keene, N.H.
- Metals in Ashuelot River Sediments, Ashuelot River Local Advisory Committee, September 21, 2010, Keene Public Library, Keene, N.H.
- Baltistan and the Karakorum Mountains, March 1, 2010, "Opening Act" for the James D. Ewing World Affairs Lecture by Greg Mortenson, Keene State College, Keene, N.H.
- Geology of the Sunapee-Kearsarge Area, Sunapee-Ragged-Kearsarge Greenway Coalition, March 9, 2008, Kearsarge Region Presbyterian Church, New London, N.H.
- Geology of the White Mountains of New Hampshire, Lakes Region Conservation Trust, July 13, 2005, Castle-in-the-Clouds, Moultonboro, N.H.
- Global Climate Change and the Oil Peak, Cheshire County Chapter of the American Association of University Women, February 28, 2005, Keene, N.H.
- Geology of the White Mountains of New Hampshire, New Hampshire Chapter of

the Appalachian Mountain Club, February 8, 2003, White River Junction, VT.
Finite Difference Modeling and Mantled Gneiss Dome Emplacement, Keene State College Mathematics Department Colloquium, October 22, 1999.
Aquifers: what they are and how they work, joint meeting of the Town of Swanzey, NH, Planning Board and Conservation Committee, September 17, 1998.

GRANTS RECEIVED

- National Science Foundation (EAR-MRI), 2005, Upgrade of an XRF Spectrometer and Acquisition of an Ultrasonic Nebulizer Aerosol Deposition System for Research & Research Training in Environmental Geochemistry & Biogeochemistry, Award No. 0520938: \$116,516.
- National Science Foundation (CCLI-A&I) & Keene State College, 2001, Integration of Stable Isotopes across the Sciences (ISIS):Instrumentation for BioGeoChemistry and Environmental Studies, Award No. 0126706: \$180,737 (as Co-PI with Renate Gebauer, Principal Investigator, and Steve Bill).
- National Science Foundation (CCLI-A&I) & Keene State College, 2000, Geochemical Analysis Across the Geology Curriculum and in Related Courses in Chemistry and Environmental Studies, Award No. 0087860: \$242,223 (Peter Nielsen and Steve Stepenuck, Co-PIs).
- United States Geological Survey (EDMAP) & Keene State College, 2001, geological Mapping of Lake Sunapee and Surrounding Area, NH, Award No. 01HQAG0153: \$7328
- United States Geological Survey (EDMAP) & Keene State College, 2000, geological Mapping of Lake Sunapee and Surrounding Area, NH, Award No. 00HQAG0125: \$5540
- Keene State College, Faculty Development Fund, 2000, Construction of a Multi-Purpose Vacuum Line Laboratory for Stable Isotope Biogeochemistry, \$4994 (with Renate Gebauer).
- Keene State College Faculty Development Fund, 1994, Preliminary Investigation of Stable Isotope Fractionation as a Means of Quantifying Groundwater Recharge Rates, \$1400.
- Keene State College Instructional Innovation Center Mini-Grant, 1993, Improving the Teaching of Large Lecture Classes, \$500.
- National Science Foundation (ILI) & Keene State College, 1993, Teaching Lab for Remote Sensing and GIS for Geography, Award No. 9352679: \$40,000 (as Co-PI with Klaus Bayr, Principal Investigator, and Albert Rydant).
- Geological Society of America, Research Grant, 1990, Controls on the Distribution of Heat Producing Elements in Metamorphic Terranes, \$500.
- Sigma Xi, The Scientific Research Society, Grant-in-Aid of Research, 1988 & 1989, Petrologic and Cooling Age Constraints on the Tectonic and Uplift History of the Main Karakorum Thrust, Northern Pakistan, total \$600.
- Explorer's Club, Exploration Fund, 1988, Petrologic Constraints on the Tectonic History of the Main Karakorum Thrust, Baltistan, Northern Pakistan, \$1000.