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Research and Teaching Interests

Geomorphology, Geohydrology, Isotope and Low-temperature Geochemistry, Environmental Geology, Glacial Geology, Neotectonics, Surface Processes, Geoeducation, Geohazards

Academic Training

Ph.D., 1993, Geology, University of Washington, Seattle, WA with A. Gillespie
"Cosmogenic Isotopes and the Evolution of Granitic Landforms"
MS, 1990, Geology, University of Washington, Seattle, WA with A. Gillespie
"Accuracy and Precision of Rock Varnish Cation Ratio Dating"
BA, 1985, Geology and Environmental Studies, Williams College, Williamstown, MA
"Deglaciation of Northwestern Massachusetts," (cum laude and senior thesis)

Professional Experience

2002-present Professor University of Vermont, Geology Department and School of Natural Resources (secondary appointment) – have taught Geomorphology, Geohydrology, Geohazards, Regional Geology, Interdisciplinary Watershed Fieldcamp; Graduate seminars in Surface Processes, Environmental Geology, Neotectonics, Cosmogenic Isotopes, Critical Writing, First year Earth Hazards Seminar and lecture, and Introduction to Graduate Studies, on-line course in Vermont Landscape Change; advise 4 MS and 1 PhD student; direct cosmogenic isotope extraction lab and Landscape Change Program.

- 2000-2001 Course Designer Norwich University and VISMT, Web-based K-8 Earth Science Curriculum
- 1999-2002 Associate Professor University of Vermont, School of Natural Resources
- 1999-2002 Associate Professor University of Vermont, Geology Department
- 1993-1998 Assistant Professor University of Vermont, Geology Department
- 1993 Invited Researcher University of Adelaide, Australia -- collaborated with R. Twidale studying granite landforms
- 1992-1993 Lecturer University of Washington -- developed and taught five-credit course in Geologic Hazards
- 1989-1992 Research Assistant University of Washington, Geology -- performed fieldwork, chemical, and isotopic analyses as part of MS and Ph.D. theses
- 1987-1989 Teaching Assistant University of Washington, Geology -- developed and taught laboratories: Introductory Geology, Geomorphology, Quaternary Environments, Hillslope Geomorphology
- 1985-1987 Hydrogeologist and Project Manager Alliance Technologies, Bedford, MA. - performed hydrologic and geologic fieldwork, interpreted geologic, hydrologic, and water quality data, wrote reports and proposals
- 1985-1987 Instructor Museum of Science, Boston -- developed and taught programs designed to encourage girls' participation in science
- 1984-1985 Teaching Assistant Williams College, Geomorphology and Photography

Honors and Accomplishments

- Nominated as Faculty of the Year, National Society of Collegiate Scholars, 2006
- Distinguished Teaching Scholar, Director's Award, National Science Foundation, 2005
- Fellow, Center for Research on Vermont, 1998
- CAREER award for integration of research and teaching, National Science Foundation, Hydrologic Sciences, 1997
- PKAL Member, nominated 1997
- National Science Foundation, Waterman Award, nominee, 1997
- Donath Medal for Research Achievements as a Young Scientist, Geological Society of America, 1996
- National Science Foundation, Presidential Faculty Fellowship nominee, 1995
- U.S. Delegate, International Quaternary Union, Berlin, 1995
- Faculty Fellowship, University of Washington, 1992
- Fuller Fellowship, University of Washington, 1991
- Honorable Mention, National Science Foundation Graduate Fellowship, 1987 and 1988
- Nominated to Sigma Xi, 1985
- Best Student Speaker, Vermont Geological Society Meeting, Middlebury, 1985

Honor and Accomplishments of Graduate Students

Ashley Corbett, NSF Graduate Fellow, 2009
Jane Duxbury, Association of Women Geoscientists' Chrysalis Scholarship, 2007
Eric Butler, GTF of the Year Award, 2003
Joanna Reuter, NSF Graduate Fellow, 2003
Kyle Nichols, Geological Society of America, Mackin Award, 2002
Kyle Nichols, Jonathon Davis Award, 2002
Sarah Brown, Geological Society of America, Howard Award, 2000
Sara Gran-Mitchell, NSF Graduate Fellow, 1999
Amy Church, Geological Society of America, Howard Award, 1995

Primary University-level Courses Taught

Earth Hazards – A means by which to increase the understanding of science and geologic fundamentals in a survey course for non majors. Structured using best practices for large courses including discussion sections and numerous in-class exercises, videos, and participatory demonstrations to kindle student interest. Enrollment 140 to 240 students.

Geomorphology – Field-based course for scientists at the 2nd- and 3^d-year levels that emphasizes understanding processes active on Earth's dynamic surface by collecting field data. Central to the course are semester-long small group research projects including the collection of primary data followed by written and oral presentations. Enrollment 20 to 30 students.

Geohydrology – Field- and exercise-based course emphasizing practical hydrologic techniques and scientific writing for 3^d and 4th year students along with the occasional graduate student. Students complete three professional style reports analyzing field data they collect. Each semester has a service learning component; most recently we have worked to help Burlington understand the magnitude and effects of land use change on runoff quantity and quality. Enrollment 15 to 20 students.

Graduate Seminars – A variety of seminars in which we read and critique papers of interest to Geology students and those in the Field Naturalist, Engineering, SNR, and Plant and Soil Science programs. During the Critical Writing seminar, students review both their own and faculty papers which are *in draft* and have yet to be submitted to journals. Enrollment 5 to 15 students (graduates and honors undergraduates).

Other Training and Skills

Designed and set-up clean lab isotope extraction laboratories for ³⁶Cl, ²⁶Al and ¹⁰Be

Experienced operator, accelerator mass spectrometer, scanning electron microscope, electron microprobe, and ICP

LIDAR Processing and Analysis, Geological Society of America Short Course, 2007

Global Positioning Systems, Geological Society of America Short Course, 1996

Ground Water Flow and Contaminant Transport, Geological Society of America Short Course, 1986

Geology Field Camp, University of Montana, Bozeman, 1983

Williams College -- Mystic Seaport Program in Maritime Studies, 1982

Web-based Resources

UVM Landscape Change Program (uvm.edu/landscape) – Since 1999, Bierman has overseen the Landscape Change Program, a public service, on-line archive of over 25,000 images of Vermont as it was and as it is. The program has been continuously supported by the NSF and contains extensive resources for researchers and teachers.

UVM Cosmogenic Laboratory (uvm.edu/cosmolab) – For more than a decade, Bierman has maintained an extensive web site for the UVM cosmogenic nuclide laboratory. The web site provides, as a community service, the details of our chemical methods and access to our publications. The web-site provides up to date safety and operating procedures for all who work in the lab. It provides detailed construction documents for use by service personnel.

Key Concepts in Geomorphology (uvm.edu/geomorph/textbook) – This web site is a portal for information related to new style of textbook, Bierman and Montgomery's, *Key Concepts in Geomorphology*. This NSF-supported project includes community authored Case Studies (Vignettes) and extensive community input and review of textbook content.

Imaging Earth's Surface (uvm.edu/geomorph/gallery) – This NSF-supported archive provides for free public use, images of Earth's surface useful for teaching and research. Images are contributed by the community, described, and sorted by topic.

Professional Service

Chair, Quaternary Geology and Geomorphology Division, Geological Society of America, 2009-2010.

First Vice-Chair, Quaternary Geology and Geomorphology Division, Geological Society of America, 2008-2009.

Co-convener, Teaching Geomorphology in the 21st Century, Cutting Edge, National Association of Geology Teachers Workshop, October 2007- August, 2008.

Second Vice-Chair, Quaternary Geology and Geomorphology Division, Geological Society of America, 2007-2008.

Session Co-organizer, International Quaternary Union, Cairns Australia, 2007

Contributor and Consultant, 2007, Fleming Museum gallery exhibit, *Burlington and Winooski 1920-2020: The Evolution of our Built Environment*

Workshop Leader, National Science Foundation, *Reconsidering the Textbook*, National Academy of Science, 2006

Field trip leader, Johns Hopkins University, 2006

Field trip leader, Geological Society of America National Meeting, 2006

Pardee session organizer, Geological Society of America National Meeting, 2006

Panelist, National Science Foundation, *Research Experience for Undergraduates*, 2006

Panelist, National Science Foundation, *Course and Curriculum Improvement*, 2005 (Phase I), 2007 (Phase 2 and 3)

Panelist, National Science Foundation, *Geomorphology and Landscape Dynamics* 2004-2006.

Member, Editorial Review Board for the DLESE Community Review System, 2004-2007.

Field trip leader, Geological Society of America Regional Meeting, 2004, *¹⁰Be and the incision history of a passive margin river, the Potomac near Great Falls and Terraces of the Potomac River at Great Falls*

Theme session organizer, Geological Society of America Regional Meeting, 2004, *Geomorphic process rates on the passive margin and New directions in Appalachian Geomorphology*

Theme session organizer, Geological Society of America National Meeting, 2003, *Large Intro Courses That Work: Sharing Exciting and Effective Teaching Strategies*

Panelist, National Science Foundation, *STC Site visit*, Univ. Minnesota, 2001

Editorial Board, *GEOLOGY*, 1999- 2005

Associate Editor, Geological Society of America Bulletin, 1997-2005

Theme session organizer, Geological Society of America Regional Meeting, *Terrestrial Records of Holocene Climate Change*, 2001

Theme session co-organizer, Geological Society of America National Meeting, *Reshaping Glacial Geomorphology*, 2000

Leader, New England Intercollegiate Geologic Conference Fieldtrip, northern Vermont, 1999

Co-leader, Field trip as part of International Conference on Drainage basin Dynamics and Morphology, Jerusalem, Israel, 1999

Symposium Organizer and chair, American Association for Advancement of Science, *Geologic Records of Human Impact*, 1998

Co-leader, New England Intercollegiate Geologic Conference Fieldtrip, Huntington, Vermont, 1997

Instructor, Geological Society of America National Meeting, *Cosmogenic Isotopes and Geomorphology* Short-course, 1994, 1995, 1997; 1999 at Hebrew University, Jerusalem Symposium Organizer and chair, *Isotopes and Earth Surface Processes*, Geological Society of America National Meeting, 1997

Contributor, Friends of the Pleistocene Fieldtrip, Owens Valley, 1997

Panelist, National Science Foundation, *Water and Watersheds* competition, 1995 and 1999

Session Chair, Geological Society of America National Meeting, 1994

Leader and Organizer, Geological Society of America Fieldtrip, Owens Valley, 1991

Leader, National Association of Geology Teachers Fieldtrip, Williamstown Glacial Geology, 1986

Proposal reviews for Hydrologic Sciences (NSF), Tectonics (NSF), Polar Programs (NSF), Geology (NSF), Petrology (NSF), Equipment and Facilities (NSF), Earth Systems History (NSF), Geology (Australian Research Council), NASA, Army Research Office, Livermore National Laboratory, Los Alamos National Laboratory, National Environmental Research Council (Britain), Research Council of Norway, Canadian Foundation for Climate and Atmospheric Sciences, Dutch Research Council, US Civilian Research and Development Foundation, Melbourne University

Manuscript and book reviews for GEOLOGY, Geological Society of America Bulletin, American Antiquity, Quaternary Research, Quaternary International, Chemical Geology, Freeman Press, GSA Today, Earth Surface Processes and Landforms, Earth and Planetary Science Letters, Geological Society of London, Geophysical Research Letters, Kendall-Hunt, NATURE, SCIENCE, Geomorphology, McGraw Hill, Annals of the Association of American Geographers, Basin Research

Service to the University and Community

Leader, *Key Concepts in Geomorphology* textbook project, with international community involvement workshops, textbook creation, and e-media development, 2008-present.

Core Science Team member – EPSCoR Complex Systems Initiative, 2007-2009

Vermont Science Initiative, K-8 Teacher trainer, 2006-present.

Nomination and hosting of Burack Presidential lecturers; David Montgomery (2009); Andrew Revkin (2008); Richard Alley (2005).

Physical Science lead faculty, UVM-NSF NEAGEP initiative (Northeast Alliance for Graduate Education and the Professoriate), 2007-present

Chair, Search Committee, College of Engineering and Mathematics, Ecohydrology, 2008.

Invited Member, Executive committee of the Center for Research on Vermont, 2007-2009.

Invited Member, Provost's Planning Grant Task Force for a Sustainable and Desirable Future, 2007-2008.

Invited Member, planning committee for the 2008 Aiken series, focus on Complex Systems as related to Energy and the Environment, 2007-2008.

Director, EPSCoR Strand, Integrated Research on Water in the Environment, 2005-present.

Teacher Training Workshop, Vermont ESA, 2006

Vermont Environmental Science & Technologies Plan, workshop leader, 2006

Director, Landscape Change Program, 1999-present

Faculty Supervisor, ICP lab and instrument, 2003-present

Coordinator, Oakledge Park public signage project, 2003-2006

Chair, Geology faculty search committee for Geochemist, 2002-2003

Manage and maintain computing laboratories in Geology Department, 1994-2003

Cooperating Scientist, Burlington Public Works, Land use change, 1998-present

Expert Witness, representing Mansfield Avenue neighbors in regard to McAuley Square development, 1999

University Reaccreditation, Session Moderator, *UVM and Its Students*, 1998-1999

Faulty Search Committee, Active Tectonics position, Geology Department, 1998-1999

Building Advisory Committee, Perkins Geology Hall renovation, 1998-present

Teacher Advisor Program, 1998, *Earth Hazards* Class for first year students

Primary mentor to 2 Ph.D. students, 14 MS students, 4 BS theses, 1 MEd, 1 MAT, and 19 undergraduate research projects

Undergraduate Advisor, 10 students yearly

Presentations in Admitted Student Visitation Program, 1998

Invited Lecturer, Grant Writing Seminar, Office of Sponsored Programs, 1998

Curriculum Committee, College of Arts and Sciences, 1996-1999

Coordinator, Graduate Program, Geology Department, 1996-1998

Director, Environmental Geology Program, 1994-present

Chairperson, Physical Sciences Division, University Committee on Research and Scholarship, 1997-1998

Member Physical Sciences Division, University Committee on Research and Scholarship, 1995-1998

Liaison and Instructor, Geology Department, Governor's Institute Summer High School Science and Technology Program, 1995-present

Coordinator, external Speaker Series, Geology Department, 1994-1997

Aiken Lecture Series, University Program Committee, 1996

Participant, Undergraduate Connections Program, 1994, 1995, 1998, 1999

Funding, design and implementation of new geology computer teaching facility, 1997

Faculty Search Committee, GIS/Remote Sensing, School of Natural Resources, 1995

Faculty Search Committee, Isotope Geologist, Geology Department, 1994

Research Funding (Internal and External)

- Principal Investigator, US Geological Survey, *Potomac River Basin Erosion Rates*, 2008-2010, \$59,493.
- Principal Investigator, National Science Foundation, CCLI - Phase I, *Textbook Reconsidered - Creating the Shortbook of Geomorphology*, 2008-2011, \$201,977.
- Principal Investigator, National Science Foundation, Polar Programs, *Detrital cosmochronology of the Greenland Ice Sheet*, 2007-2009, \$273,052
- Principal Investigator, National Science Foundation, EAR –EHR, *Piloting an Interdisciplinary Watershed Field Camp*, 2006-2008, \$151,522
- Principal Investigator, National Science Foundation, EAR-HER, *Landscape Change Imagery: preparing a DLESE-ready and easily searchable resource*, 2006-2007, \$24,489
- Principal Investigator, National Science Foundation, DUE-DTS, *Workshop proposal - Reconsidering the Textbook*, 2006-2007, \$99,949
- Co-Principle Investigator, US Geological Survey, *Evaluating Quantitative Models of Riverbank Stability*, 2006-2007, \$88,114 with 2008 supplement of \$50,000.
- Principal Investigator, National Science Foundation, DUE, Director's award for Teaching Scholars, *Landscape Imagery: a catalyst for formal and informal science education*, 2005-2009, \$306,495
- Principal Investigator, National Science Foundation, CCLI-Educational Materials Development, *Bringing Relevance to Earth Science Introductory Curricula through Images Showing Human/Landscape Interaction*, 2005-2007, \$75,000
- Principal investigator, Lintilhac Foundation, *Images of Vermont Landscape Change*, 2005-2007, \$15,000
- Principal investigator, National Science Foundation, Geoscience Education, *REU supplement for Landscape Change*, 2004, \$13,700
- Co- Investigator, National Science Foundation, Geography, *Collaborative Research - Sediment Production and Alluvial Buffering in a Steepland River Basin: Waipaoa river Basin, New Zealand*, 2003-2006, \$129,301 (UVM portion)
- Principal Investigator, National Science Foundation, Geology, *Eroding the Appalachians*, 2003-2006, \$199,856
- Principal Investigator, US Army Research Office, Principal Investigator, DEPSCoR Program, *Quantifying Erosion and Sedimentation in Extreme Environments: refining and applying the cosmogenic method for Army-relevant landscape analysis*, 2003-2006, \$757,808
- Principal Investigator, National Science Foundation, Hydrologic Sciences, 2003-2004, *Cosmogenic Constraints on Sediment Generation and Transport, Namibian Rivers* 2003-2004, \$59,539

Principal Investigator, US Army Research Office, Principal Investigator, STIR Program, *Quantifying sediment generation in humid tropical regions using cosmogenic nuclides – A proof of method*, 2002-2003, \$26,363

Principal Investigator, National Science Foundation, Geoscience Instrumentation and Facilities, 2002-2004, *Acquisition of ICP for research and research training*, \$168,000

Principal Investigator, Lintilhac Foundation, 2002-2003, *Optimizing Residential Green Space Restoration Techniques, Burlington, Vermont*, \$5000

Principal Investigator, National Science Foundation, Geoscience Education, 2001–2003. *Looking Forward -- Scaling Up The Digital Image Archive of Landscape Change*, \$99,649

Co-Investigator, NSF Polar Programs, 2001-2002, *Deglacial history of eastern Baffin Island*, \$17,000

Principal Investigator, NSF Geology, 2001-2004, *Erosion history of the Potomac and Susquehanna Rivers*, \$150,000

Principal Investigator, University of Vermont, 2001, Deans fund, *Completion of campus well field*, \$1400

Principal Investigator, University of Vermont, 2000, *Instructional Incentive Grant for multicultural development of Geohazards class*, \$2000

Principal Investigator, USGS, 2000-2002, *Erosion of the Great Smoky Mountains National Park*, \$97,000

Principal Investigator, subcontract to University of Washington (NASA funded), 2000, *Preparation of Cosmogenic Isotope Samples*, \$50,000

Principal Investigator, University of Argentina, 1999, *^{10}Be dating of rock-slides*, \$3,000

Co-Investigator, NSF Polar Programs, 1999-2000, *Deglacial History of Baffin Island through ^{26}Al and ^{10}Be* with T. Davis, Bentley College, \$25,000.

Principal Investigator, National Science Foundation, Geoscience Education, *Human-Induced Landscape Change -- A Digital Image Archive Created by Students*, 1999-2001, \$74,717

Principal Investigator, US Army Research Office, DEPSCoR, *Understanding rates of change at Earth's dynamic surface*, 1999-2002, \$225,000

Principal Investigator, University of Leeds, *Dating glaciation in Greece*, 1998, \$1,300

Principal Investigator, University of Vermont, *Instructional Incentive Grant for first year program*, 1998, \$1,300

Principal Investigator, USGS, 1998-2000, *Rio Puerco Sediment Transport, New Mexico*, \$29,500

Faculty Supervisor, University of Vermont, SUGR grant, 1998, *Dating faults in Israel*, \$5,000

Principal Investigator, Union College, 1998, *Dating of Argentinean glaciation*, \$4,400

Principal Investigator, University of Argentina, 1998, *^{10}Be dating of rock-slides*, \$2,000

Principal Investigator, Hebrew University, 1997, *36-Cl dating of Galilee fault scarp*, \$4,800

Principal Investigator, University of Vermont, *Travel support for Israel collaboration*, 1997, \$2,500

Principal Investigator, US Army Research Office, 1997-1999, ASSERT supplement to *Isotopic Method For Determining Erosion Rates*, \$50,000

Principal Investigator, University of Vermont and Lintilhac Foundation, 1997-1998, *Geology Computer Laboratory for Instruction*, \$144,200

Principal Investigator, University of Vermont, 1997, *Renovation of Cosmogenic Isotope Laboratory*, \$73,000

Principal Investigator, NSF Major Research Instrumentation, 1997-1998, *Equipment for Surface Process Studies*, \$161,000

Principal Investigator, NSF Hydrologic Sciences CAREER, 1997-2002, *Timing and Distribution of Extreme Hydrologic Events*, \$200,563

Principal Investigator, National Geographic Society, 1997-1998, *Quantifying Rates of Rock Weathering in Hyper-arid Southern Africa*, \$16,630

Principal Investigator, USGS NEHRP, 1997-1998, *Cosmogenic Estimates of Long term Faulting Rates*, \$34,900 with A. Gillespie (University of Washington)

Principal Investigator, subcontract to University of Wisconsin (NSF funded), 1997-1998, *Dating Wisconsin ice retreat*, \$16,000

Principal Investigator, NSF Surfaces Processes, 1996-1999, *Geomorphic Process Zones in Large Mountain Ranges*, \$50,800 with T. Dunne (UC Santa Barbara)

Principal Investigator, NSF Hydrologic Sciences, 1996-1999, *Sediment Dynamics of Large Drainage Basins*, \$115,400 with M. Johnson (Bryn Mawr) and L. Derry (Cornell)

Principal Investigator, USGS, 1996-1997, *Rio Puerco Erosion Rates, New Mexico*, \$20,500

Principal Investigator, US Army Research Office, 1996-1999, *Isotopic Method For Determining Erosion Rates*, \$216,000 with A. Cassell (UVM)

Principal Investigator, subcontract to University of Washington (NASA funded), 1996, *Preparation of Cosmogenic Isotope Samples*, \$32,000

Principal Investigator, USGS, 1995-1997, *Characterizing Ground Water Flow in a Vermont Upland Basin*, \$47,500 with Lini, Drake and Wright (UVM)

Co-Investigator, NSF Polar Programs, 1994-1997, *Deglacial History of Baffin Island through ^{26}Al and ^{10}Be* with T. Davis, Bentley College, \$162,000

Principal Investigator, University of Vermont, Dean's Fund, 1996, *Development of teaching well-field*, \$2000

Principal Investigator, US Army Research Office, STIR program, 1995, *Numerical Validation Of Isotopic Method For Determining Erosion Rates*, \$9,666

Principal Investigator, subcontract to University of Washington (NASA funded), 1994, *Preparation of Cosmogenic Isotope Samples*, \$14,100

Principal Investigator, NSF Hydrologic Science, 1993-1995, *Estimating Basin-Scale Erosion Rates Using Cosmogenic Isotopes*, \$98,988

Principal Investigator, Lintilhac Foundation, *Processes and Timing of Vermont Deglaciation*, 1994-1996, \$32,500
Principal Investigator, University of Vermont, Research Advisory Committee, *Graphical Computing Facility*, 1994-1995, \$12,800
Principal Investigator, University of Vermont, University Committee on Research and Scholarship, *Chronology of Vermont Deglaciation*, 1994-1995, \$4,000
Author and Co-Investigator, NSF Surface Processes, 1990-1992, *Exposure Age Determination Using Cosmogenic Isotopes*, \$88,000
Author and Co-Investigator, USGS NEHRP Grants and Renewals (Earthquake Hazards) 1989-1992, *Neotectonic Activity on the Lone Pine Fault*, \$57,000

Post Doctoral Associates

Ari Matmon, Geology, *Erosion of the Great Smoky Mountains National Park*, 2000-2002

Current Graduate Students

Luke Reusser, Natural Resources, Ph.D, *Sediment dynamics of the Waipaoa River, New Zealand*.

Lee Corbett, Geology MS, *Detrital Cosmochronology of the Greenland Ice Sheet*

Joseph Graly, Geology MS, *Detrital Cosmochronology of the Greenland Ice Sheet*

Charles Trodick, Geology MS, *Erosion of the Potomac River Basin*

Eric Portenga, Geology MS, *Erosion rates of Appalachian Bedrock*

Former Graduate Students

1. William Hackett, Geology MS, *Changing land use, climate, and hydrology in the Winooski River Basin, Vermont*, 2009
2. Mathew Jungers, Geology MS, *Using cosmogenic nuclides to determine sediment production and transport rates on steep hillslopes in varied tectonic and climatic settings*, 2008
3. Jane Duxbury, Geology MS, *Erosion of the Shenandoah National Park*, 2008
4. Colleen Sullivan, Geology MS, *Erosion of the Blue Ridge Escarpment*, 2007
5. Joanna Reuter, Geology MS, *Erosion rates and patterns inferred from cosmogenic ^{10}Be in the Susquehanna River Basin*, 2005
6. Luke Reusser, Geology MS, *Late Pleistocene bedrock channel incision of the lower Susquehanna River: Holtwood Gorge, Pennsylvania*, 2004
7. Eric Butler, Geology MAT, *Landscape history of Shelburne, Vermont*, 2004
8. Adam Parris, Geology MS, *Holocene paleohydrology in the northeastern United States: a high resolution record of storms and floods*, 2003
9. Erik Clapp, Natural Resources, Ph.D., *Long-term rates of denudation and sediment generation over different spatial scales quantified using in situ produced cosmogenic ^{10}Be and ^{26}Al in sediment and rock*, 2003

10. Kyle Nichols, Natural Resources, Ph.D., *Understanding Desert Piedmonts*, 2002
11. Anders Noren, Geology MS, *Severe storm record in New England Lakes*, 2001
12. Karen Jennings, Geology MS, *Depositional histories of New England Alluvial Fans*, 2001
13. Kyle Nichols, Geology MS, *Investigation of different temporal and spatial scales of sediment generation*, 2000
14. Kris Bryan, Education and Geology, M.Ed., *Vermont Landforms Web page*, 2000
15. Sara Gran, Geology MS, *The displacement history of the Nahef East fault scarp, Israel: a cosmogenic ^{36}Cl approach*, 2000
16. Sarah Brown, Geology MS, *Terrestrial sediment deposition in Ritterbush Pond: Implications for Holocene storm frequency in northern Vermont*, 1999
17. Timothy Whalen, Geology MS, *Post-glacial fluvial terraces in the Winooski River Basin, Vermont*, 1998
18. Kim Marsella, Geology MS, *Timing and extent of glaciation in the Pangnirtung Fjord Region, Baffin Island: Determined using in situ produced cosmogenic ^{10}Be and ^{26}Al* , 1998
19. Amy Church, Geology MS, *Fan deposits in northwestern Vermont: depositional activity and aggradation rates over the last 9,500 years*, 1997
20. Mike Abbott, Geology MS, *Isotopic characterization of groundwater recharge and flow in an upland bedrock aquifer, Vermont*, 1997
21. Lin Li, Geology MS, *Environmental changes inferred from pollen analysis and ^{14}C ages of pond sediments. Green Mountains, Vermont*, 1996
22. Patrick Larsen, Geology MS, *In situ production rates of cosmogenic ^{10}Be and ^{26}Al over the past 21,500 years determined from the terminal moraine of the Laurentide ice sheet, north central New Jersey*, 1995

Undergraduate Thesis Students

- Nathan Toke, *Urban storm water hydrology*, 2003.
- Lyman Persico, Environmental Science BS with honors, *Tracing painted pebbles in the Mojave desert*, 2002
- Darrin Santos, Environmental Science BS with honors, *Channel initiation in the Mojave desert*, 1999
- Paul Zehfuss, Geology BS, *Alluvial fans in Vermont as recorder of changes in sedimentation rates due to deforestation*, 1996
- Kristine Bryan, Geology BS with honors, *Deglaciation of southern Chittenden County and northern Addison County, Vermont*, 1995

Graduate Student Committees

1. Jaron Borg, MS, Civil and Environmental Engineering, in progress

2. A. J. Rossman, Ph.D., Civil and Environmental Engineering, in progress
3. Lalita Oka, Ph.D., Civil and Environmental Engineering, in progress
4. Kimmie Beal, MS Botany, 2009
5. Alexandru Codilean, University of Glasgow, PhD, 2008
6. Adam Hunt, Chemistry PhD, 2007
7. Ken Oldrid, Geology MS, in progress
8. Tiffany Larsen, Geology MS, in progress
9. Zoe Dokou, Engineering, PhD, 2007
10. Corey Coutu, Geology MS, 2007
11. Daniel Newcomb, Natural Resources MS, 2007
12. Maeve McBride, Civil and Environmental Engineering, 2007
13. Danica Lefever, Civil and Environmental Engineering, MS, 2006
14. Dave Weber, Plant and Soil Science, MS, 2006
15. Charlie Eisman, Botany MS, 2006
16. Elizabeth M. Andre, Historic Preservation, 2006
17. Kelly McCutcheon, SNR MS, 2005
18. Kwaw Andam, Engineering MS, 2003
19. Andrea Lord, Geology MS, 2002
20. Willard Morgan, Field Naturalist MS, 2002
21. Edward Navarre, Chemistry Ph.D., 2002
22. John W. Diebold, Civil Engineering MS, 2001
23. Josh Galster, Geology MS, 2001
24. Todd Menes, Natural Resources MS, 2000
25. Megan O'Reilly Natural Resources MS, 2000
26. Anne Perrault, Natural Resources MS, 2000
27. Alexander Spiliotopoulos, Engineering Ph.D., 1999
28. Adam Brown, Geology MS, 1999
29. Paul Zehfuss, Geology MS, Humboldt State University, 1998
30. Graciela Herrera, Mathematical Sciences, Ph.D. 1998
31. Chad Farrel, Engineering MS, 1998
32. Harold Linnemeyer, Engineering MS, 1997
33. Lisa Windhausen, Natural Resources MS, 1996
34. Theodore Lillys, Engineering MS, 1996
35. Michael Stevens, Field Naturalist MS, 1996
36. Erik Clapp, Geology MS, 1995
37. Heather Weiss, Plant and Soil Science MS, 1995
38. Doug Bechtel, Field Naturalist MS, 1995
39. Lyn Baldwin, Field Naturalist MS, 1995

Independent Undergraduate Research

- James M. Taylor, *Photo-documenting changes since the 1927 in Vermont River Channels*, 2008
- Emily Reymeyer, *Computer Science and Geography BS, Automated geographic distribution analysis*, 2006
- Jehanna Howe, SNR BS, *Riparian zone quality over time*, 2005
- Michala Peabody, Geology BS, *Erosion and landsliding related to historic clearcutting in Vermont*, 2005
- Elizabeth Stanley-Mann, Geology BA, *Landscape change on the Winooski and White Rivers since the 1927 flood*, 2005
- Serena Hollmeyer, Geology BS, *Metals content of mine drainage*, 2004
- Susan King, Environmental Studies BS (thesis), *Designing an environmental education curriculum for the King Street youth Center after school program*, CALS (committee member) 2003
- Keith Musselman, Environmental Science BS, *Precipitation patterns in two paired basins on Mt. Mansfield*, 2003
- Megan McGee, Environmental Science BS, *The hydrology of remediating damaged greenspace*, 2003
- Jackie Hickerson, Environmental Science BS, *Public environmental outreach related to the hydrology of greenspace*, 2003
- Paul Melillo, Environmental Science BS, *Quantifying the hydrologic effects of greenspace loss caused by university students in Burlington*, 2002.
- Angela Conlan, Environmental Science BS, *Comparing grain size measurements in lake cores*, 2001
- Andrew Bosely, Environmental Science BS, *Lake Morey grain size measurements*, 2001
- Jim Kurfis, Geology BS, *Urban hydrology and land-use changes*, 1999-2001
- Dan Eurich, Environmental Science BS, *Campus well-field characterization*, 2000
- Drew Lamneck, undecided, *Holocene lake histories in New England*, 1999
- James Parker, Geology, BA, *UVM campus groundwater quality*, 1997-1998
- William Oetjen, Geology and Education BA, *Field Geology Web Page*, 1997-1998
- Jeremy Malczhyk, Geology BS, *Vermont Quaternary Web page*, 1997-1998
- Christopher Valin, Geology BS, *Northwest Vermont terrace history*, 1996-1997
- David Shaw, Geology BS, *River and groundwater interactions*, 1996-1997
- Nilah Mazza, Geology BS, *Debris flows and landslides*, 1996-1997
- Erin Golec, Geology BA, *Impact of urbanization on stream water quality*, 1994-1995
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- Matmon, A. and Bierman, P., (1999) How fast do rift escarpments retreat? **Geological Society of America Abstracts with Programs**, 31 (7), A-445. (National)
- Lini, A., Levine, S., Bierman, P. (1998) The birth of post-glacial lakes: a tale of stable isotopes. . **Geological Society of America Abstracts with Programs**. v. 30, n.7, A-164 (National)
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- Gillespie, A. R., Clark, D. H., and Bierman, P. R. (1996) New exposure ages support asynchronism between alpine glaciation and sea-level fluctuations, Sierra Nevada, California: **Geological Society of America Abstracts with Programs**, v. 27, no. 7, p. A-133. (National)
- Patterson, C. J., Bierman, P. R., and Caffee, M.. (1996) ¹⁰Beryllium indicates some mid-western glacial surfaces are >150,000 years old: **Geological Society of America Abstracts with Programs**, v. 28, no. 7, p. A-56. (National)
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- Davis, P. T., Marsella, K. A., Bierman, P. R., and Caffee, M. W. (1996) Paired glacial boulder and bedrock cosmogenic analyses: **EOS**. v.77, F-193. (National)
- Clark, D. H., Bierman, P. R. and Gillespie, A. R. (1995) New cosmogenic ¹⁰Be and ²⁶Al measurements of glaciated surfaces, Sierra Nevada, California - They're precise but are they accurate. **Geological Society of America Abstracts with Programs** 27 (6) A-170 (National)
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- Lini, A., Bierman, P. R., Lin, L. and Davis, P. (1995) Stable carbon isotopes in post-glacial lake sediments: a technique for timing the onset of primary productivity and verifying AMS 14-C dates. **Geological Society of America Abstracts with Programs** 27 (6) A-58 (National)
- Gillespie, A. R. and Bierman, P. R. (1991) Theoretical precision estimates for exposure-age and erosion-rate data from analysis of cosmogenic isotopes. **Geological Society of America Abstracts with Programs**, 23, A409. (National)

Invited Presentations

- 2009, Australian National Science and Technology Organization, *Using Cosmogenic Isotopes to Study Landscape Change; what we know and can learn about the Australian Continent*
- 2009, European Geological Society Annual Meeting, *New ways of using an old isotopic system – meteoric ^{10}Be is back and ready to do geomorphology*, Invited Speaker
- 2008, Fine sediment and the Chesapeake Bay Watershed, Maryland Department of Natural Resources, *Rates of Making and Moving Sediment in the Appalachians, the Power of Isotopic Analyses.*
- 2008, Macquarie University (Australia), *Eroding and Incising an Ancient Mountain Range, the Appalachians of Eastern North America.*
- 2008, Weybridge Farmers club, *Traveling Back in Time: Vermont's Changing Landscape*
- 2008, North Branch Nature Center, Naturalist Journeys Lecture, *Traveling Back in Time: Vermont's Changing Landscape*
- 2008, University of Washington, Department Earth and Space Sciences, *Eroding and Incising the Appalachian Mountains.*
- 2008, University of Glasgow, Department of Geographical and Earth Sciences, *Eroding the Appalachians, a North American view through a ^{10}Be lens.*
- 2008, University of Vermont, Mastering the Maze, *Images of UVM and Vermont through Time*
- 2008, Keynote Talk, Governor's Institute, Climate Change Winter Weekend, *What's Climate change mean to Vermont?*
- 2008, Invited Presentation and Panel Member, Lake Champlain Research Conference, *The Watershed and Inputs*
- 2007, 13th Annual New England Conference on Gifted and Talented Education, *Global climate change – Newly developed program lets exceptional high school students gain their voice,*
- 2007, University of New Mexico, *Using ^{10}Be to establish background rates of sediment generation and transport.*
- 2007, Elder Education Enrichment, *The Landscape Change Program: Imaging the*

Place that was and is Vermont

- 2007, Pennsylvania State University, *Using 10-Be to understand how the Appalachians are eroding over time and space*
- 2007, University of Tasmania, *13,000 years of landscape change in northern New England imaged through mud, sand and historic images.*
- 2007, University of Tasmania, *Using 10-Be to understand how ancient mountainous landscapes erode over time and space.*
- 2007, Colby College, *Measuring Appalachian Erosion - looking back in time through various lenses*
- 2007, UVM RSEN AWES, *What atom counting tells us about background rates of sediment generation and transport*
- 2007, Fleming Museum Lunch Series, *Images of a Vanished Landscape, Imagining what was Burlington and Winooski*
- 2007, University of Vermont, Mastering the Maze, *Images of UVM and Vermont through Time*
- 2007, Vermont Science Teachers Association, Pathways to Standards Conference, *Using images to visualize environmental change over time*
- 2006, Vermont Humanities Council, annual fall conference, keynote lecture, *Imaging and Imagining the Place that was and is Vermont*
- 2006, Geological Society of American, Pardee invited lecture, *Erosion in an old decaying mountain range – the Appalachians*
- 2006, CCTV Burlington, Preservation Burlington, *The landscape change program, 30 minute live interview*
- 2006, Johns Hopkins University, *Using 10-Be to establish background rates of sediment generation and transport.*
- 2006, Yale University, *A cosmogenic look at erosion of the North American passive margin*
- 2006, Keynote talk Goldschmidt Conference, Melbourne, *More than Rates or Dates: the Power of Amalgamation when Tracing Landscape-scale Processes with 10-Be*
- 2006, Barre Lions Club, , *The Landscape Change Program*
- 2006, University of Vermont, Mastering the Maze, *Vermont Time Machine*
- 2006, *Switchboard*, Vermont Public Radio, February 23
- 2005, Williston Historical Society, *The Landscape Change Program*
- 2005, Pittsford Public Library Society, *The Landscape Change Program*
- 2005, Computer Science Department, University of Vermont, *A programming challenge, getting the UVM Landscape Change Program off the dirt road and onto the information superhighway*
- 2005, Greensboro Historical Society, *The Landscape Change Program*
- 2005, National Science Foundation, for GEO directorate, *Floods, Erosion, Dirt and*

- 10,000 Old Pictures... a dozen years of integrating research and teaching with NSF support*
- 2005, National Science Foundation, Review of Distinguished Teaching Scholar Award for Director of NSF and Program Managers, *Landscape Imagery -- a catalyst for formal and informal science education*
- 2005, Massachusetts Institute of Technology, *A 10-Be look at erosion of the North American passive margin*
- 2005, University of Vermont, *Mastering the Maze, Vermont Time Machine.*
- 2005, Vermont Computer Mapping Expo, *The Landscape Change Program*
- 2005, Waterways Experiment Station, US Army Corps of Engineers, *Using ¹⁰Be to Understand How Fast Sediment is Generated and How Fast it Moves*
- 2005, Williams College, Environmental Studies Program, *Using 10,000 old pictures of Vermont to look back at two centuries of environmental change and inform current decisions*
- 2004, Pardee Symposium, Geological Society of America, *Oh where, oh where did the sediment go: two decades of tracking desert sand from source to sink with 10-Be*
- 2004, Shelburne Farms docent training lecture, *Using the landscape change archive*
- 2004, Vermont-National Education Association Convention, Professional Development Workshop, *200 Years of Vermont Landscape History.*
- 2004, Echo Center first anniversary meeting, *Teaming between Echo and UVM Geology.*
- 2004, Chittenden County Regional Planning Commission, *Urbanization And Water Quality in Burlington, Vermont*
- 2004, Burlington Gem and Mineral Club, *15,000 years of New England Landscape History*
- 2004, Echo Center volunteers training, *The landscape change program, a digital community image archive.*
- 2004, Preservation Burlington, *Burlington's Disappearing Greenspace*
- 2004, US ARO, Arid regions Land use conference, *Use of 10-Be for determining land use change, Colorado Springs*
- 2004, NSF Visualization workshop, Carleton College, *Visualizing 150 years of landscape change with a web-based, community image archive with poster of same title.*
- 2004, Skidmore College, *15,000 years of New England Landscape History*
- 2004, Greensboro Historical Society, *The landscape change program, a digital community image archive.*
- 2003, Franklin and Marshall College, *15,000 years of New England Landscape History - from glaciers to clear-cuts and mega-storms*
- 2004, Shelburne Farms docent training lecture, *The landscape history of Oakledge*

Park

- 2002, Conservation Biology Seminar, *Saving urban greenspace*
- 2002, Burlington City Council, *Severe un permitted loss of urban green space*
- 2002, Purdue University, *Unraveling Appalachian erosion, incision and deposition history using ¹⁰Be.*
- 2002, Neighborhood Planning Association, Ward 6, Burlington, *Green space loss in Burlington*
- 2002, Goldschmidt Geochemistry Conference, Davos, Switzerland, *Tracking landscape scale sediment generation and transport using ¹⁰Be and ²⁶Al.*
- 2002, University of Vermont Environmental Council, *Uncontrolled Green space loss, its Causes and Effects*
- 2002, Burlington City Planning Commission, *Urban Hydrology and Land Use Change Over Time in Burlington*
- 2002, University of Vermont, Center for Research on Vermont, *Disappearing Burlington lawns: students, cars, and land use change,*
- 2001, University of Massachusetts at Amherst, Department of Geology, *Old surfaces on New England summits imply thin Laurentide ice*
- 2000, Boston University, Department of Geology, *Old surfaces on New England summits imply thin Laurentide ice*
- 2000, University of Vermont, Department of Plant and Soil Science, *Big storm and clear cutting in Vermont*
- 2000, United States Geological Survey, Reston, *Cosmogenic Isotopes as Erosion Monitors*
- 2000, Geological Society of Washington, *The Aging of Great Escarpments - Cosmic Rays and Geomorphology*
- 2000, Williams College, *Clear cuts and big storms -- landscape history in Vermont*
- 1999, Hebrew University and Israeli Nuclear Power Authority, *Cosmogenic Isotope Short Course*
- 1999, University of Vermont, Department of Chemistry, *What UVM geologists do with 10-Be and 26-Al*
- 1999, University of Vermont, College of Engineering, *10,000 years of big storms and 200 years of clear-cutting.*
- 1999, University of Vermont, School of Natural Resources, *Clear cuts and big storms -- landscape history in Vermont*
- 1999, Middlebury College, *Dirt and water, a record of big storms in the Holocene of New England?*
- 1999, Bryn Mawr College, *Clear cuts and big storms -- landscape history in Vermont*
- 1999, Brown University, *Cosmogenic Clear cuts and big storms -- landscape history in Vermont*
- 1999, University of New Hampshire, *Dirt and water, a record of big storms in the Holocene of New England?*

- 1999, National Science Foundation, *Dirt and Water, 10,000 Years of New England Storms*
- 1998, University of Michigan and Dartmouth University, *10,000 Years of New England Landscape History, 200 years of human Impact: Process and Products*
- 1998, University of Michigan and Dartmouth University, *Rates and Dates of Surface Processes -- a View through the Cosmogenic Window*
- 1998, Hampshire College, *10,000 Years of Climate Change and Human Impact on New England Landscapes*
- 1997, Harvard University, *Cosmogenic Geomorphology*
- 1997, Dartmouth University, *Cosmogenic Geomorphology*
- 1997, Indiana University/Purdue University *Cosmogenic Geomorphology*
- 1997, Hebrew University, Jerusalem, *Cosmogenic Geomorphology, Dates and Erosion Rates*
- 1997, Cornell University, *Rates and Timing of Geomorphic Processes*
- 1997, UCLA, *Faults, Fans, and the Weathering Function*
- 1996, US Army Research Office, Construction Engineering Research Laboratory, *Estimating Long-term erosion rates*
- 1996, United States geological Survey, Reston, *Uses of Cosmogenic Nuclides in Earth Science*
- 1996, Duke University, *Alluvial fans - East, West, Up, Down*
- 1996, SUNY Albany, *Cosmic Rays and Alluvial Fans - Tectonic and Landscape Implications For California and Vermont*
- 1996, University of Wisconsin, Madison, *Geomorphic Application of Cosmogenic Nuclides*
- 1996, Los Alamos National Laboratory, *10-Be and 26-Al Production Rates*
- 1995, Geological Society of America National Meeting, *Silicate Weathering Symposium*
- 1995, SUNY Binghamton, *Rates of Earth Surface Change*
- 1995, Williams College, *Rates of Earth Surface Change*
- 1994, University of Massachusetts, *Cosmogenic Answers to Questions of Continental Denudation*
- 1994, University of Vermont, Short course, *Geomorphic Applications of Cosmogenic Isotopes*
- 1993, Australian National University, *³⁶Cl and Rates of Granite Erosion*
- 1992, Chapman Conference, *Tectonics and Topography*
- 1991, Western Washington University, Seminar Series, *Surface Exposure Dating Methods*
- 1990, Penrose Conference, *Methods of Surface Exposure Dating*