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Research and Teaching Interests

Geomorphology, Geohydrology, Isotope and Low-temperature Geochemistry, Environmental Geology, Glacial Geology, Neotectonics, Surface Processes, Geoeducation, Geohazards, Science Writing, Public Outreach for Science

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 <u>Professor</u> University of Vermont, Geology Department and School of Natural Resources (secondary appointment) – have taught Climate: past, present, future, 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 2 MS, 2 PhD student and one post doc; direct NSF/UVM Community 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

1994-present Faculty Leader, Governor's Institutes of Vermont, Science and Technology

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 for UVM Kroepsch-Maurice Excellence in Teaching Award, 2020

Gund Faculty Fellow, University of Vermont, 2017- present

Nominated for NSF Presidential Awards for Excellence in Science, Mathematics & Engineering Mentoring, Governors Institute of Vermont, 2011

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

Bella Bennet, UVM Gund Fellow and Doctoral fellowship
Mae Kate Campbell, UVM Gund Fellow
Hannah Weiss, UVM Gund Fellow
Chris Halsted, UVM Gund Fellow and Doctoral fellowship
Ashley Corbett, NSF DDRI award, 2014
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

Climate: past, present, future – A course designed to teach basic climate and climate change literacy to students at all levels across campus. Structured using best practices for large courses including discussions and numerous in-class exercises, scientist portraits, and demonstrations to increase student interest. Enrollment 170 students.

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 in-class think/pair/share, videos, and participatory demonstrations to kindle student interest. Enrollment 140 to 300 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 15 to 30 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 ^{36}Cl, ^{26}Al and ^{10}Be

Experienced operator, accelerator mass spectrometer, scanning electron microscope, electron microprobe, XRF, 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 70,000 images of Vermont as it was and as it is. The program has been continuously supported by the NSF for over a decade and is now supported by the National Endowment for the Humanities and contains extensive resources for researchers and teachers.

UVM/NSF Community Cosmogenic Laboratory (uvm.edu/cosmolab) – For more than a decade, Bierman has maintained an extensive web site for the UVM (now NSF) community 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 and visitors from around the world.

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. Was active for 6 years until killed by UVM in spring 2019.

Professional Service

Panelist, National Science Foundation, *GLD*, 2021
Panelist, National Science Foundation, *P2C2*, 2020
Organizer, Greenland Oldest Ice International workshop, 41 participants, 2019
Associate Editor, Science Advances, AAAS, 2016-ongoing
Session organizer, GSA annual meeting, 2017, 2018
Director, UVM/NSF community cosmogenic facility, 2018- ongoing.
Panelist, National Science Foundation, *Postdoctoral Fellowship panel*, 2017-2018
Panelist, National Science Foundation, *Graduate Research Fellowship*, 2017
National Science Foundation, GEO Directorate advisory panel, 2013-2016.
Field trip leader, NEIGC, 2018, Mt Mansfield, 46 participants
Field trip co-leader, NEIGC, 2018, Mt Greylock, 24 participants
Field trip leader, AGU annual meeting, Washington, DC, 2018, *Great Falls (48 participants)*
Field trip leader, GSA annual meeting, Baltimore, MD, 2015, *Kirk Bryan Field Trip: Great Falls (84 participants)*
Member, National Science Foundation, Surface Earth Processes Committee of Visitors, April 2014
Liason, Arctic Sciences, National Science Foundation, Polar Programs Committee of Visitors, September 2013
Invited participant, NSF-sponsored Workshop on Geomorphic Prediction of Landscape Response to Climate and Land Use Change in Tucson, AZ, September 2013
National Science Foundation, Polar Programs advisory panel, 2011-2013.
Theme Session Proposer, Organizer, and Chair, NE GSA, Bretton Woods, 2013
Field trip co-leader, GSA annual meeting, Charlotte, NC, 2012, *Kirk Bryan Field Trip: Piedmont Potpourris: New Perspectives on An Old Landscape (and Some of its Younger Parts)*
Proponent Expert, Thyspunt SSHAC Level 2 Seismic Hazard Workshop, Cape Town South Africa, 2012
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, *^{10}Be 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, Earth Surface Dynamics, Nature Communications, Proceedings of the National Academy of Science

Service to the University and Community

CAS Administrative Burden Reduction Committee, 2019-2020

Burack lecture host, Micheal Mann, Climate change, 2019

Expert testimony, City of Burlington, Landslide Hazard and response, Public Works and Conservation Commissions including multiple WCAX interviews, 2019

Gund Doctoral Fellowship Selection Committee, 2018

Admitted students day presentations, Arts and Sciences, 2014-2018

Associate Dean Search Committee, College of Arts and Sciences, 2014-2015

Advisor, Vermont Commons School, senior project, Mr. Ross Hiatt, S. Burlington and Burlington Interstate Highway rephotography, 6 weeks, spring 2013.

Member, Geochemistry Faculty Search Committee, 2012-2013, Geology Department

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

UVM review panel member, Office of the Vice President for Research, Formal Investigation of Research Misconduct, 2012.

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

Vermont Science Initiative, K-8 Teacher trainer, 2006-2011.
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.
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 6 Ph.D. students, 33 MS students, 5 BS theses, 1 MEd, 1 MAT, and 20 undergraduate research projects
Undergraduate Advisor, 10-15 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, 1994-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)

Co-Investigator, US EPA Region 1, 2019-2020, *Lead in the Burlington Environment*, $25,000

Principal Investigator, National Science Foundation, 2020-2023, *A place-based, student-led research project on the Pioneer Mountains, MT: an investigation of very dry, alpine glaciation proximal to the Laurentide Ice Sheet*, $37,403

Principal Investigator, National Science Foundation, 2017-2021, Instrumentation and Facilities, *Development of Technique: Systematically measuring the cosmogenic 26Al/10Be production ratio at a variety of altitudes and latitudes*. $93,453 plus $18,200 supplement for ICP replacement

Co-Investigator, National Science Foundation, 2018-2019, *NSF Rapid - Documenting the temporal variance of the isotopic signature of detrital sediments following massive stochastic events using Hurricane Maria as a case study,* $8,800

Principal Investigator, National Science Foundation, 2018-2023, *Laboratory Technician Support: National sample preparation facility for broadening participation, research, and hands-on research training in cosmogenic nuclide studies*, $551,678 plus supplement for sample preparation of $19,661

Principal Investigator, National Science Foundation, 2017-2021, *Collaborative Research: The Cuban landscape, quantifying the effects of industrialized agriculture followed by country-wide soil conservation using sediment-associated isotopes*, $79,013 plus supplement for sample preparation of $15, 756

Principal Investigator, National Science Foundation, 2016-2021, Collaborative Research: *Constraining the Timing and Rate of Southeastern Laurentide Ice Sheet Thinning During the Last Deglaciation with Cosmogenic Nuclide Dipsticks, $94,240.*

Principal Investigator, National Science Foundation, 2015-2016, Instrumentation and Facilities, *Workshop support - Optimizing the next generation of AMS for measuring 10-Be and 26-Al, $9,720*

Principal Investigator, US Geologic Survey, 2014-2015, *Differential Uplift and Incision of the Yakima River, $24,089*

Principal Investigator, National Science Foundation (Critical Zone Observatory, subcontract), 2014-2018, *Using the Susquehanna - Shale Hills CZO to Project from the Geological Past to the Anthropocene Future*, *$119,985*

Principal Investigator, National Science Foundation, 2013-2016, *Collaborative Research: Canyons of the Southwestern Colorado Plateau: Transient Response to Baselevel Fall or Lithologic Control on River Incision, $25,298*

Principal Investigator, National Science Foundation, 2011-2016, *Deciphering Connections Between Land Management, Soil Erosion, and Sediment Yield in Large River Basins* (collaborative w/A. Henck and D. Rood) $188,942

Principal Investigator, National Science Foundation, *2011-2014, Synchronizing the North American Varve Chronology and the Greenland Ice Core Record Using Meteoric ^{10}Be Flux* (collaborative w/G. Balco, J. Ridge, D. Rood) $125,390

Principal Investigator, National Endowment for the Humanities, 2010-2013, *Interpreting the Interstates – how highways changed Rural America's sense of place,* $200,000

Principal Investigator, National Science Foundation, *Deciphering 6 My of the Greenland Ice Sheet History Using In Situ 10-Be From Marine Sediment Cores,* 2010-2016, $324,613

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, $219,665

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

Andrew Christ, *Sediment from the basal Camp Century Ice core*, 2019-2021

Jeremy Shakun, Geology (part time), *Deciphering 6 My of the Greenland Ice Sheet History,* 2010-2013

Devin McPhillips, Geology, *Erosional effects of climate change from single-clast Be-10*, 2011-2013

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

Current Graduate Students

Mae Kate Campbell, Cuban erosion and landuse, MS

Christ Halsted, New England deglacial history, PhD

Bella Bennet, Cuban erosion and water quality, PhD

Former Graduate Students

1. Hannah Weiss, *Over-summer snow storage*, MS, 2020
2. Andrew Christ, *Antarctic glacial history investigated using ^{10}Be*, PhD, 2019
3. Allison Denn, MS, *Shale Hills CZO sediment generation and movement*, *2017*
4. Veronica Sosa-Gonzales, Natural Resources Ph.D., *Human induced erosion in three rivers area of China, 2016*

5. Sophie Greene, MS, *Stable beryllium extraction systematics, 2016*
6. Lee Corbett, Natural Resources, Ph.D., *Preservation and sediment cycling beneath "Ghost Glaciers": how cold-based ice dictates arctic landscape evolution,* 2016.
7. Ana Vang, Geology, MS, *The Vermont Interstate Highway system – landscape change,* 2015.
8. Thomas Neilson, Geology MS*, Tracking erosion with sediment associated isotopes in Yunnan, China,* 2015.
9. Benjamin Dejong, Natural Resources, Ph.D., *Informing coastal resource management with geologic records,* 2015
10. Luke Reusser, Natural Resources, Ph.D., *Quantifying human impacts on natural rates of erosion along continental margins,* 2014
11. Alice Nelson, Geology MS, *Using in situ cosmogenic ^{10}Be as a sediment source tracer in Greenland's paraglacial environment,* 2013
12. Veronica Sosa-Gonzales, Natural Resources MS, *Determining long-term erosion rates in Panama: An application of ^{10}Be,* 2012
13. Lee Corbett, Geology MS, *Investigating The timing of deglaciation and the efficiency of subglacial erosion in central-western Greenland with cosmogenic ^{10}Be and ^{26}Al,* 2011
14. Charles Trodick, Geology MS, *In situ and meteoric 10-Be concentrations of fluvial sediment collected from the Potomac River*, 2011
15. Eric Portenga, Geology MS, *Using ^{10}Be to constrain erosion rates of bedrock outcrops globally and in the central Appalachian Mountains*, 2011
16. Joseph Graly, Geology MS, *Interpretation of meteoric ^{10}Be in marginal ice-bound sediment of the Greenland Ice Sheet, West Greenland*, 2010
17. William Hackett, Geology MS, *Changing land use, climate, and hydrology in the Winooski River Basin*, Vermont, 2009
18. Mathew Jungers, Geology MS, *Using cosmogenic nuclides to determine sediment production and transport rates on steep hillslopes in varied tectonic and climatic settings, 2008*
19. Jane Duxbury, Geology MS, *Erosion of the Shenandoah National Park, 2008*
20. Colleen Sullivan, Geology MS, *Erosion of the Blue Ridge Escarpment, 2007*
21. Joanna Reuter, Geology MS, *Erosion rates and patterns inferred from cosmogenic ^{10}Be in the Susquehanna River Basin*, 2005
22. Luke Reusser, Geology MS, *Late Pleistocene bedrock channel incision of the lower Susquehanna River: Holtwood Gorge, Pennsylvania*, 2004
23. Eric Butler, Geology MAT, *Landscape history of Shelburne*, Vermont, 2004
24. Adam Parris, Geology MS, *Holocene paleohydrology in the northeastern United States: a high resolution record of storms and floods*, 2003
25. 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

26. Kyle Nichols, Natural Resources, Ph.D., *Understanding Desert Piedmonts*, 2002
27. Anders Noren, Geology MS, *Severe storm record in New England lakes*, 2001
28. Karen Jennings, Geology MS, *Depositional histories of New England alluvial fans*, 2001
29. Kyle Nichols, Geology MS, *Investigation of different temporal and spatial scales of sediment generation,* 2000
30. Kris Bryan, Education and Geology, M.Ed., *Vermont Landforms Web page*, 2000
31. Sara Gran, Geology MS, *The displacement history of the Nahef East fault scarp, Israel: a cosmogenic ^{36}Cl approach*, 2000
32. Sarah Brown, Geology MS, *Terrestrial sediment deposition in Ritterbush Pond: Implications for Holocene storm frequency in northern Vermont*, 1999
33. Timothy Whalen, Geology MS, *Post-glacial fluvial terraces in the Winooski River Basin, Vermont*, 1998
34. 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
35. Amy Church, Geology MS, *Fan deposits in northwestern Vermont: depositional activity and aggradation rates over the last 9,500 years*, 1997
36. Mike Abbott, Geology MS, *Isotopic characterization of groundwater recharge and flow in an upland bedrock aquifer, Vermont*, 1997
37. Lin Li, Geology MS, *Environmental changes inferred from pollen analysis and ^{14}C ages of pond sediments. Green Mountains, Vermont*, 1996
38. 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 Honors Thesis Students

Noah Stommel, *University of Vermont Housing: Motivations Behind Institutional Sustainability Transitions*, UVM campus vision, 2020

Landon Williamson, *Cuban weathering interpreted from XRD and XRF measurements of stream sediments*, 2020

Melinda Quock, *Dominica erosion rates monitored with in situ and meteoric ^{10}Be*, 2019

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. Sandra Walser, Geology MS, on going (external member)
2. Melisa Diaz, The Ohio State University, PhD 2020 (external member)
3. Sarah Francis, Western Washington University, MS, 2018 (external member)
4. Jennifer Nair, Syracuse University, MS, 2018 external member)
5. Marc Goedhart, South Africa, PhD, 2017 (external examiner)
6. Hennrieta Linge, Denmark, PhD, 2017 (external examiner)
7. Alyson Hampsch, Geology MS, 2017
8. Rebecca Harvey, Chemistry PhD, 2016
9. Adrian Bender, Geology, Western Washington University, 2015
10. Victoria Carhart, Chemistry, MS, 2015
11. Julia R. Larouche, Ph.D., Natural Resources, 2015
12. Allan Bacon, Ph.D., Duke University, Soil Science, 2014
13. Lalita Oka, Ph.D., Civil and Environmental Engineering, 2011
14. Jaron Borg, MS, Civil and Environmental Engineering, 2010
15. Kimmie Beal, MS Botany, 2009
16. Alexandru Codilean, University of Glasgow, PhD, 2008
17. Adam Hunt, Chemistry PhD, 2007
18. Ken Oldrid, Geology MS, 2007
19. Tiffany Larsen, Geology MS, 2007
20. Zoe Dokou, Engineering, PhD, 2007
21. Corey Coutu, Geology MS, 2007
22. Daniel Newcomb, Natural Resources MS, 2007
23. Maeve McBride, Civil and Environmental Engineering, 2007
24. Danica Lefever, Civil and Environmental Engineering, MS, 2006
25. Dave Weber, Plant and Soil Science, MS, 2006
26. Charlie Eisman, Botany MS, 2006
27. Elizabeth M. Andre, Historic Preservation, 2006
28. Kelly McCutcheon, SNR MS, 2005
29. Kwaw Andam, Engineering MS, 2003
30. Andrea Lord, Geology MS, 2002
31. Willard Morgan, Field Naturalist MS, 2002
32. Edward Navarre, Chemistry Ph.D., 2002
33. John W. Diebold, Civil Engineering MS, 2001
34. Josh Galster, Geology MS, 2001
35. Todd Menes, Natural Resources MS, 2000
36. Megan O'Reilly Natural Resources MS, 2000
37. Anne Perrault, Natural Resources MS, 2000
38. Alexander Spiliotopoulous, Engineering Ph.D., 1999

39. Adam Brown, Geology MS, 1999
40. Paul Zehfuss, Geology MS, Humboldt State University, 1998
41. Graciela Herrera, Mathematical Sciences, Ph.D. 1998
42. Chad Farrel, Engineering MS, 1998
43. Harold Linnemeyer, Engineering MS, 1997
44. Lisa Windhausen, Natural Resources MS, 1996
45. Theodore Lillys, Engineering MS, 1996
46. Michael Stevens, Field Naturalist MS, 1996
47. Erik Clapp, Geology MS, 1995
48. Heather Weiss, Plant and Soil Science MS, 1995
49. Doug Bechtel, Field Naturalist MS, 1995
50. Lyn Baldwin, Field Naturalist MS, 1995

Independent Undergraduate Research

Noah Stommel, *UVM Eco Housing,* 2019-2020

Noah Stommel, Adela Miller, and Matt Voss, *Creating an accessible climate and climate change note set for teaching*, 2020

Hannah Weiss, *Snow storage in a warming climate, Craftsbury, Vermont* 2017-2018

Parker Forsley, *Gullying erosion of marine and lacustrine sediments in Chittenden County, Vermont*, 2015

Taylor Kravits, *Snow melt prediction, northeastern Vermont*, 2012

Samuel Hellman, *Mid-Atlantic Coastal Plain stratigraphy*, 2012

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 core*s, 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

Parker Hacket, Geology BA, *Weathering zones on Baffin Island*, 1995-1996

Refereed Journal Publications – 177 total (*graduate student* author*,* <u>undergraduate</u> author, *post-doc**)**

*Christ, A.J., Bierman, P.R, and others, (in press, 1/2021) A multi-million-year-old record of Greenland vegetation and glacial history preserved in sediment beneath 1.4 km of ice at Camp Century, PNAS

<u>Grande</u>, A., Schmidt, A., Bierman, P., Corbett, L., López-Lloreda, C., Willenbring, J., McDowell, W., and Caffee, M., (in press, 2/2021) Landslides, hurricanes, and sediment sourcing impact basin-scale erosion estimates in Luquillo, Puerto Rico, Earth and Planetary Science Letters.

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Graly, J. A., Corbett, L. B., Bierman, P. R., Lini, A., Neumann, T. A., (2020) Corrigendum to "Meteoric Be-10 as a Tracer of Subglacial Processes and Interglacial Surface Exposure in Greenland" (Vol 191, Pg 118, 2018). Quat. Sci. Rev., v. 239, 106366. doi.org/10.1016/j.quascirev.2020.106366

Koester, A. J., Shakun, J. D., Bierman, P. R., Davis, P. T., Corbett, L. B., Goehring, B.M., Vickers, A. C., Zimmerman, S. R., (2020) Laurentide Ice Sheet thinning and erosive regimes at Mount Washington, New Hampshire, inferred from multiple cosmogenic nuclides, GSA Special Paper. doi.org/10.1130/2020.2548(15)

Balco,G., *DeJong*, B., Ridge, J. C., Bierman, P. R. and Rood, D. H., (2020) Atmospherically-produced beryllium-10 in annually laminated late-glacial

sediments of the North American Varve Chronology, Geochronology. doi.org/10.5194/gchron-2020-16

Bierman, P. R, Bender, A. M., *Christ, A., Corbett, L., *Halsted*, C., Portenga, E., and Schmidt, A., (2020) Dating by Cosmogenic Nuclides, Encyclopedia of Geology, Second Edition, p. 101-115. doi.org/10.1016/B978-0-08-102908-4.00124-7

Corbett, L., Bierman, P. R., Neumann, T. A., Graly, J. A., Shakun, J. D., Goehring, B. M., Hidy, A. J., Caffee, M.W., (2020) Multiple cosmogenic nuclides in glacial cobbles record Greenland exposure and erosion history, Earth and Planetary Science Letters. doi.org/10.1016/j.epsl.2020.116673

Bender, A., Lease, R. O., Corbett, L. B. Bierman, P. R., Caffee, M. W., and Rittenour, T. (2020) High latitude river response to late-Cenozoic climate change. Nature Geoscience.

Pico, T., Bierman, P., Doyle, K., & Richardson, S. (2020). First authorship gender gap in the geosciences. Earth and Space Science, 7, e2020EA001203. doi.org/10.1029/2020EA001203

Bierman, P.R. and Schmidt, A. (2020) Together, Cuban and American scientists show sustainable agriculture works. The Conversation.

Bierman, P. (2020) Teamwork, the Cuban way, Working Life, Science, vol. 367, issue 6483 p. 1274. doi.org/10.1126/science.367.6483.1274

Bierman et al. (2020) ¡Cuba! River water chemistry reveals rapid chemical weathering, the echo of uplift, and the promise of more sustainable agriculture. GSA TODAY. click to download PDF doi.org/10.1130/GSATG419A.1

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*Christ, A. J., Bierman, P. R., Knutz. P., Corbett, L. B., Fosdick, J.C., Thomas, E. K., Cowling, O. C., Hidy, A. J. and Caffee, M.W., (2019) The northwest Greenland Ice Sheet during the Early Pleistocene was similar to today. Geophysical Research Letters. 10.1029/2019GL085176

Weiss, H. S., Bierman, P. R., Hamshaw, S. D. and Dubief, Y. (2020) Optimization of over-summer snow storage at mid-latitude and low elevation. Cryosphere. doi.org/10.5194/tc-13-3367-2019

Regalla, C., Bierman, P.R., and Rood, D. (2019) Meteoric 10Be reveals a young, active accretionary prism and structurally complex décollement in the vicinity of the 2011 Tohoku earthquake rupture, G-Cubed. doi.org/10.1029/2019GC008483

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Calchaquí River Catchment, Eastern Cordillera, NW Argentina. Journal of Geophysical Research – Earth Surface.doi.org/10.1029/2019JF005091

Neely, A.B., DiBiase, R.A., Corbett, L.B., Bierman, P.R., and Caffee, M.W., 2019 Bedrock fracture density controls on hillslope erodibility in steep, rocky landscapes with patchy soil cover, southern California, USA, Earth and Planetary Science Letters 522, p. 186-197, doi.org/10.1016/j.epsl.2019.06.011

Corbett, L. B., Bierman, P. R., Woodruff, T. E. and Caffee, M. W. (2019) A homogeneous liquid reference material for monitoring the quality and reproducibility of in situ cosmogenic ^{10}Be and ^{26}Al analyses. NIMB Proceedings. doi.org/10.1016/j.nimb.2019.05.051

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Bender, A. M., Lease, R. O., Haeussler, P. J., Rittenour,T. , Corbett, L. B., Bierman, P. R., Caffee, M. W. (2019) Pace and process of active folding and fluvial incision across the Kantishna Hills anticline: neotectonic implications for southern Alaska, Geophysical Research Letters. doi.org/10.1029/2018GL081509

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Corbett, L. B., Bierman, P. R., Wright, S., Shakun, J., Davis, P.T., Goehring, B., *Halsted*, C., *Koester*, A., Caffee, M., and Zimmerman, S. (2018) Analysis of multiple cosmogenic nuclides constrains Laurentide Ice Sheet history and process on Mt. Mansfield, Vermont's highest peak, Quaternary Science Reviews. doi.org/10.1016/j.quascirev.2018.12.014

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Moon, S., Merritts, D., Snyder, N. P., Bierman, P. R., Fosdick, J., Sanquini, A. and Hilley, G. E. (2018) Erosion of coastal drainages in the Mendocino Triple Junction region (MTJ), northern California. Earth and Planetary Science Letters. v. 502, p. 156-165.doi.org/10.1016/j.epsl.2018.09.006

Portenga, E., Bierman, P. R., *Trodick*, C., *Dejong*, B., *Greene*, S. and Pavich, M. (2019) Background rates of erosion and sediment generation in the Potomac River basin, USA, derived using in situ ^{10}Be, meteoric ^{10}Be, and ^{9}Be. GSA Bulletin. doi.org/10.1130/B31840.1

Bender, A. M., Lease, R. O., *Corbett*, L. B., Bierman, P. R. and Caffee, M. W. (2018) Ongoing transient bedrock incision of the Fortymile River driven by Late Pliocene Yukon River headwater capture, eastern Alaska and Yukon, Canada. Geology. Published online: 7 June 2018. doi:10.1016/j.quascirev.2018.05.009

Graly, G., *Corbett*, L. B., Bierman, P. R., Lini, A. and Neumann, T. (2018) Meteoric ^{10}Be as a tracer of subglacial processes and interglacial surface exposure in Greenland. Quaternary Science Reviews. v. 191, p. 118-131. doi:10.1016/j.quascirev.2018.05.009

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*Shakun, J.D., Corbett, L. B., Bierman, P. R., Underwood, K., Rizzo, D. M., Zimmerman, S.R., Caffee, M., and Naish, T. (2018) Minimal East Antarctic Ice Sheet retreat onto land during the past 8 Myr, Nature.

Del Vecchio, J., DiBiase,, R. A., *Denn, A. R.*, Bierman, P. R., Caffee, M.W., and Zimmerman, S. R. (2018). Record of coupled hillslope and channel response to Pleistocene erosion and deposition in a sandstone headwater valley, central Pennsylvania. Geological Society of America Bulletin.

Denn, A., Bierman, P.R., Caffee, M, Zimmerman, S., Corbett, L., and Kirby, E. (2018) Cosmogenic nuclides indicate that boulder fields are dynamic, ancient, multigenerational features. GSA Today.doi: 10.1130/GSATG340A.1.

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Corbett, L., Bierman, P. R., Stone, B. D., and Caffee, M. W. (2017), Cosmogenic nuclide age estimate for Laurentide Ice Sheet recession from the terminal moraine, New Jersey, USA, and constraints on Latest Pleistocene ice sheet behavior, Quaternary Research. doi.org/10.1017/qua.2017.11

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Corbett, L. B., Bierman, P. R., Rood, D. H., (2016) An approach for optimizing in situ cosmogenic ^{10}Be sample preparation, **Quaternary Geochronology**. Vol: 33, Pages: 24-34, ISSN: 1871-1014

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Church, A. and Bierman, P. R. (1994) Post-glacial landscape change in northern Vermont: erosion and sedimentation in the Winooski Basin: **Geological Society of America Abstracts with Programs,** 26(7), A301. (National)

Bierman, P. and Caffee, M. (1994) Cosmogenic erosion rate estimates for granite landforms; Eyre Peninsula, South Australia. **Geological Society of America Abstracts with Programs**, 26(7), A256. (National)

Bierman, P., Gillespie, A., Caffee, M. (1993) Cosmogenic isotope exposure age estimates for Lone Pine Creek debris-flow fan boulders, southeastern Sierra Nevada, **Geological Society of America Abstracts with Programs,** 25(6), A461. (National)

Bierman, P., Gillespie, A., Caffee, M. and Elmore, D. (1993) Erosion rate and exposure age of granite landforms estimated using ^{36}Cl, **Geological Society of America Abstracts with Programs,** 25(6), A141. (National)

Bierman, P. & Steig, E. (1992) Using cosmogenic isotopes to measure basin-scale rates of erosion. **Geological Society of America Abstracts with Programs**, 24(7), A122. (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)

Bierman, P. & Gillespie, A. (1991) Lowering rates of granitic landforms determined by measurement of in situ produced cosmogenic nuclides. **EOS,** 72(44), 575. (National)

Bierman, P. & Gillespie, A. (1991) The evolution of granitic landforms -- field observations and cosmogenic insights. **Geological Society of America Abstracts with Programs**, 23(5), A89. (National)

Bierman, P. & Gillespie, A. (1990) An independent evaluation of the potential precision and accuracy of rock-varnish cation ratio dates. **Geological Society of America Abstracts with Programs**, 22(7), A270. (National)

Bierman, P. & Gillespie, A. (1990) Range Fire: A dramatic and significant factor in the dating and evolution of geomorphic surfaces. **Geological Society of America Abstracts with Programs**, 22(7), A109. (National)

Bierman, P. & Gillespie, A. (1990) Varnish cation-ratio ages -- How precise can they be? **Geological Society of America Abstracts with Programs,** 22(3), A8. (Cordilleran)

Bierman, P. & Gillespie, A. (1989) Rock varnish, alluvial fans, and tectonism in the southern Owens Valley, CA. **Geological Society of America Abstracts with Programs**, 21(6), A343. (National)

Bierman, P. & Marler, L. (1988) Ground water and a glacial lake--Williamstown, Massachusetts. **Geological Society of America Abstracts with Programs,** 20(1), 7. (Northeastern)

Bierman, P. (1986) Mapping Quaternary geology in disturbed areas-the importance of historical sources. **Geological Society of America Abstracts with Programs**, 18(6), 541. (National)

Bierman, P., & Dethier, D. (1985) The deglaciation of northwestern Massachusetts. **Geological Society of America Abstracts with Programs,** 17(1), 4. (Northeastern)

Invited Presentations

2021 US National Science Foundation, Distinguished lecturer, *Teamwork in the Geosciences -- Examples from NSF-supported research in Cuba and the NSF/UVM community cosmogenic facility*. Invited speaker

2021 Universidade Federal do Rio de Janeiro, Rio, (Zoom), *Dating and Geomorphology.* Invited speaker and workshop organizer.

2020 Baltimore Renaissance Program for elder education (Zoom) *What geologists do in 2020*, Invited speaker

2020 University of Vermont (Zoom), *CUBA travel log: learning geology, hydrology, and teamwork on an Island forbidden to Americans*, Invited speaker

2019 Williams College, *Travels in Central Cuba: An Environmental View of 26 Tropical Rivers*, Invited speaker

2019 Paleoclimate workshop inaugurating Geocentre projects SEALMiCO and ENIGMA, *News from multi-proxy work on Baffin Bay diamict samples*, Invited speaker.

2019 Oldest ice Workshop Copenhagen, Niels Bohr Institute, Copenhagen *^{10}Be in and on ice and icebound sediment*, Invited speaker.

2018 Magellan Plus Workshop Copenhagen, Geological Survey of Denmark and Greenland (GEUS), *Application of cosmogenic isotopes to interpret long-term weathering history*, Invited Keynote Speaker.

2018 Wolman Geomorphology Club (UMBC), *Twenty years of looking at the Appalachians through the lens of cosmogenic nuclides*, Invited Keynote speaker

2018 Rutland Osher Lifelong Learning Institute (OLLI), *Landscape change and the coming of the Interstate Highway System.* Invited speaker.

2017 PALSEA meeting, I*mplications for sea level change over thousands to millions of years – tracing Greenland 's ice using cosmogenic nuclides*. Invited speaker.

2017 AMS-14 meeting, *Deciphering the history of Greenlandic Climate over millions of years using cosmogenic nuclide*s. Invited speaker.

2017 Geological Society of American annual meeting, Seattle. *Counting atoms to place human impacts in a geologic context*. Invited speaker, Pardee Session.

2017 Greenland Ice Sheet stability NSF workshop, Buffalo NY. *Deciphering the history and processes of Greenland's Ice Sheet(s) over thousands to millions of years using cosmogenic nuclides.* Keynote speaker.

2015 Geological Society of American annual meeting, Baltimore. *Mapping erosion of the Appalachian Mountains using cosmogenic ^{10}Be*. Keynote speaker, Pardee Symposium on Appalachian Geomorphology.

2015 Geological Society of American annual meeting, Baltimore. *Using ^{10}Be to decipher the incision history of the Potomac River near Great Falls*. Invited speaker, theme session in honor of Milan Pavich.

2014 American Geophysical Union meeting. *Cosmogenic Isotopic Tracing of Sediment Generated By the Greenland Ice Sheet*. Invited speaker.

2014 Nordic Workshop on Cosmogenic Nuclide Dating. Aarhus, Denmark, ^{10}Be Remote Sensing of Greenland Ice Sheet (erosion) history. Keynote speaker.

2014 Geological Society of American annual meeting, Vancouver. *Cosmogenic 10-Be analysis of debris flow boulders and sediment from Brazil indicates long return times.* Invited speaker.

2014 Williams College, Sperry Lecturer. *Erosion in the Ice Box - a Tale Told by Rare Isotopes in Greenland Ice Sheet Sediment*. Invited speaker

2014 Williams-Mystic, Annual Reunion, Alumni Speaker. *Adventures of a Greenland geologist, on and offshore*. Invited speaker

2014 AMS-13, Multinuclide workshop, Aix, France. *Multi-isotope analysis of Greenland outcrops and sediment indicates erosion and exposure history of the Greenland Ice Sheet*. Invited speaker

2013 Addison Historical Society, Addison, Vermont, *The Landscape Change Program - 70,000+ historic images of our state*. Invited speaker

2013 Pardee session, Geological Society of American annual meeting, Denver. *Quaternary cosmogenic geochronology - rates and dates - past, present, and future.* Invited speaker

2013 NSF-sponsored Workshop on Geomorphic Prediction of Landscape Response to Climate and Land Use Change in Tucson, AZ. *Rates of landscape change: erosion vs sediment yield*. Invited speaker.

2013 Scottish University Environmental Research Center, East Kilbride, Scotland, *Using 10-Be to understand more about Greenland Ice Sheet dynamics,* Invited speaker

2013 First Wednesday speaker, Vermont Humanities Council, St Johnsbury Antheneum. *Remaking the Landscape, 1958-1978: The Interstate Highways Come to Vermont.* Invited speaker

2012 Osher Lifelong Learning Institute, St. Albans, *Remaking the Landscape, 1958-1978: The Interstate Highways Come to Vermont.* Invited speaker

2012 Elder Education Enrichment, South Burlington, *Remaking the Landscape, 1958-1978: The Interstate Highways Come to Vermont.* Invited speaker

2012 American Geophysical Union meeting, *High-precision, high-resolution, post-glacial emergence curves for southern Greenland generated with in situ cosmogenic 10-Be.* Keynote, invited speaker.

2012 Thetford Historical Society Annual meeting, keynote. *Remaking the Landscape, 1958-1978: The Interstate Highways Come to Vermont.* Invited speaker

2012 International Geology Conference, Brisbane Australia, *10-Be, a powerful tool for quantifying present and ancient rates of Earth-surface processes*, Keynote speaker,

2012 Proponent Expert, Thyspunt SSHAC Level 2 Workshop, Cape Town South Africa, *Cosmogenic geochronology investigations for uplift rates and ages of surfaces: Implications for the tectonic stability and geomorphic evolution of Southern Africa.* Invited speaker

2011 First Wednesday speaker, Vermont Humanities Council Essex Public library. *Remaking the Landscape, 1958-1978: The Interstate Highways Come to Vermont.* Invited speaker

2011 Federal University of Brazil, Rio campus. Invited lecture. *The Use of Cosmogenic Isotopes to Assess Long-Term Erosion Rates and a Few Dates.* Invited speaker

2010, Brazilian National Geomorphology Symposium, *The use of cosmogenic isotopes to assess long-term erosion rate,* Keynote speaker.

2010, Geological Society of London, Landscapes to Rock, *Three decades tracing erosion and sediment with cosmogenic nuclides - where do we go next?* Invited speaker.

2010, Namibian Geological Survey, *New isotopic methods show the old Namibian landscape is slowly eroding*

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, Bentley College, *New Geomorphic Insights from Cosmogenic Isotopes*, The William Morris Davis Lecture.

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 RSENR 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 ^{10}Be 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 ^{10}Be.*

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 ^{10}Be and ^{26}Al.*

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, *^{36}Cl 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*