

RESUME
G. NELSON EBY

DATE: August 19, 2019

EDUCATION:

Ph.D., Geology, Boston University, 1971

M.S., Geology, Lehigh University, 1967

B.A., Geology, Lehigh University, 1965

PROFESSIONAL AND RESEARCH EXPERIENCE:

University of Massachusetts Lowell

Professor, 1986-present

Associate Professor, 1975-1986

Assistant Professor, 1972-1975

Instructor, 1970-1972

Chair, Department of Environmental, Earth & Atmospheric Sciences, 1/1/2011 - 1/17/2017

Affiliated Faculty Member, University of Massachusetts Marine Sciences Graduate Program, 2003-present

Faculty Associate, Center for Environmental Engineering, Science and Technology (CEEST), University of Massachusetts Lowell, 1992-2001

Principal Researcher, Russian Academy of Sciences, 1999

Visiting Scientist, Institute for Earth Sciences, Academia Sinica, Taipei, Taiwan, 2019

Visiting Associate Professor, Boston University, 1985

Visiting Academic

Department of Geological Sciences, University of Cape Town, South Africa, 2019

Department of Geology, University of Canterbury, New Zealand, 1998, 1990

Department of Geology and Mineralogy, University of Queensland, Australia, 1997-1998, 1989

Department of Earth Sciences, University of Oxford, 1987, 1982

Guest of the Institute, MIT, 1969-1971

Industrial

Exxon Minerals, 1972, 1968, 1967

North American Exploration, 1966

Cleveland Cliffs Iron, 1965

COURSES TAUGHT:

General Education:

Forensic Geology (Honor's course)
General Geology I & II
Introduction to Environmental Science
Introduction to Environmental Science (Honor's course)
Introduction to the Oceans
The Earth and Its Environment I & II

Undergraduate Science Majors:

Introduction to Computers in the Geosciences (freshman-junior)
Principles of Earth and Environmental Systems I & II (sophomore)
Oceanography (sophomore-junior)
Earth Materials I & II (sophomore-senior)
Environmental Geochemistry (junior)
Geology for Engineers (junior-senior)
Igneous & Metamorphic Petrology (junior-senior)
Mineralogy & Crystallography (junior-senior)
Sedimentation & Stratigraphy (junior-senior)
Structural Geology (junior-senior)
Honors Research: Environmental Studies (senior honor's projects)
Honors Research: Geoscience (senior honor's projects)
Research: Geoscience (senior research project)
Internship: Geoscience (internship supervision)

Advanced Undergraduate:

Advanced Geochemistry
Applied Geophysics
Economic Geology
Environmental and Engineering Geology
Marine Geology

Graduate Courses:

Structural Geology
Topics in Environmental Geochemistry

UNDERGRADUATE RESEARCH PROJECTS SUPERVISOR:

Chemistry, and Distribution of Dust Derived from Playas and Anthropogenic Sources, Salt Lake City – Provo – Wasatch Mountains Area, Utah – Ben Nye (2018)

Elemental Analysis of Ore Minerals from the Franklin Furnace and Sterling Hill Mines: Characterization and Petrogenetic Interpretations – Joe Fontaine (2018)

Elemental Analysis of Emerald (Beryl): Development of forensic fingerprints and Petrogenetic Interpretations – Casey Beaudoin (2018)

Chemical Analysis of Minerals Used at the Palmerton, Pa, Zinc Smelter – Sam Fontaine (2017)

Nuclear Forensics: the Trinity Case – Lauren Jendrock (2017)

Quantifying the Carbon Footprint of Paris with LIDAR Remote Sensing Observations in the Boundary Layer (Committee member) – Briana Lynch (2017)

Using Elemental Analysis to Identify Soil Contaminants from the Palmerton, PA, Zinc Smelters – Alyssa Soucy (2017)

Voltage Patterns & Hydration Stress in Yucca elephantipes – Mary Everett (2017)

Chemistry and Petrogenesis of Coastal New England Mafic Dikes – Ryan Farrell, Allison O'Connor and Tom Tannozone (2014)

Chemistry and Petrogenesis of Post-Orogenic Granites, Western Argentina - Andrew Beane (2010)

Trace Element Geochemistry and Sources of Cameroon Volcanic Line Oceanic Basalts - Kathy Milidakis (2001)

Trace Element Geochemistry and Sources of Cameroon Volcanic Line Continental Basalts - Jaime Hussey (2001)

Instrumental Neutron Activation Analysis of Lyttelton Lavas and a Petrogenetic Model for the Lyttelton Volcano, New Zealand - Lori Weeden (2000)

K-Ar and U-Pb Geochronology of the North Nyasa Alkaline Province, Malawi - Craig Carpenter (1997)

Geochemistry of the Granite Mountain and Bath Quarry Syenite Complexes, Arkansas Alkaline Province - Louis Burkhardt (1995)

Geochemistry of the Magnet Cove and Potash Sulfur Springs Carbonatite Complexes, Arkansas Alkaline Province - Gino Tiella (1995)

Petrology and Geochemistry of the Beemerville Complex, New Jersey - Laurene Poland (1993)

Nepheline Syenite and Mafic Dike Rocks of the Beemerville Carbonatite-Alkalic Rock Complex, New Jersey - Scott Maher (1993)

Partial Analysis of the Foliated Diorite Unit of the Mount Pawtuckaway Ring-dike Complex - Mark Kick (1990)

Geochronology and Petrochemistry of Chaone and Chinduzi Plutons of the Chilwa Alkaline Province, Malawi - Elizabeth Herling (1989)

Trace Element Geochemistry and Apatite Fission-track Geochronology for Zomba and Malosa Mountains, Malawi - Wade Ewing (1989)

Major Element Geochemistry and Petrology of Little Rattlesnake Hill, Fremont, New Hampshire - William Stefanov (1987)

Petrology of the Foliated Diorite Unit of the Mount Pawtuckaway Plutonic Complex - John Dadoly (1985)

Geochemistry of the Merrymeeting Lake Complex, White Mountain Petrographic Province - Robert Peterson (1981)

Geochemistry of the Mount Pawtuckaway Ring-dike complex, White Mountain Petrographic Province - Mark Lambert and James Plunkett (1981)

Physical and Biological Aspects of Spruce Swamp - Thomas Dufresne, William Smith, and Thomas Valorose (1974)

MASTERS RESEARCH PROJECTS:

Master's Thesis Advisor:

Major and Rare-earth Geochemistry of Mount Rougemont, Quebec - Carolyn Jacobson, Department of Geology, Boston University (1980-1981)

M.S. Thesis Committee:

Modal and Acoustic Evaluation for the Petrographic Properties of Florida Coarse Aggregate - Peter Tavilla, Department of Mechanical Engineering, University of Massachusetts, Lowell (2007)

A Case Study of the Princeton, Massachusetts "Father's Day" Tornado of June 17, 2001 - Richard Hamel, Department of Environmental, Earth, and Atmospheric Sciences, University of Massachusetts, Lowell (2004)

MSc. External Examiner:

The Geology of Lyttelton 1 Volcano - Robert Neumayr, Department of Geological Sciences, University of Canterbury, New Zealand (1998)

PH. D. RESEARCH PROJECTS:

Ph.D. Thesis Committee:

Mapping, petrologic and geochemical explorations of the Massabesic Gneiss Complex in New Hampshire - Charles Kerwin, Department of Earth Sciences, University of New Hampshire (2002-2007)

Atmospheric Deposition of Metals and Organics onto Massachusetts and Cape Cod Bays: A Comparison of Measurement Techniques and Source Apportionment - Jeffrey Underhill, Department of Civil Engineering, University of Massachusetts, Lowell (1993-1995)

Ph.D. External Examiner:

Archaean Crustal Evolution in Eastern Finland: New Geochronological and Geochemical Constraints from the Kuhmo Terrain and the Nurmes Belt - Aski Käpyaho, Department of Geology, University of Helsinki, Finland (2007). **Official Opponent**

Magmatic Processes Associated with the Development of Large Silicic Calderas - Ben Kennedy, Department of Earth and Planetary Sciences, McGill University, Canada (2006)

Geochronology, Geochemistry and Petrography of Late Archaean to Early Cretaceous Magmatic Rocks in Northeast China: Implication for Development of the Central Asian Orogenic Belt - Matthew Grant, Department of Geology, Curtin University of Technology, Australia (2005)

Petrogenesis of the Late Archean Quetico Alkaline Suite Intrusions, Western Superior Province, Canada - Birgitte Lassen, Department of Earth Sciences, University of Ottawa, Canada (2004)

The Petrology of the Hohonu Batholith, North Westland, New Zealand - Tod Waight, Department of Geology, University of Canterbury, New Zealand (1995)

Ph.D. External Advisor:

Mineralogy, petrology and geochemistry of Foid-Syenites of East Azarbaijan, NW Iran - Nasser Ashrafi, Department of Geology, Faculty of Natural Sciences, Tabriz University, Iran (2007 - 2010)

Mineralogy and Trace Elements of the Cretaceous Greymouth Coals and their Combustion Products - Li Zhongsheng, Department of Geological Sciences, University of Canterbury, New Zealand (1998-2002)

Provenance Study of the Torlesse Terranes - Implications for the Origin of the Continental Crust of Eastern New Zealand - Anekant Wandress, Department of Geological Sciences, University of Canterbury, New Zealand (1998-2002)

Eruptional and Post-Eruptional Processes in Rhyolite Domes - Jens Richnow, Department of Geological Sciences, University of Canterbury, New Zealand (1998-1999)

The Petrology and Geochemistry of Tongariro Volcano, New Zealand - Barbara Hobden, Department of Geology, University of Canterbury, New Zealand (1990-1993)

UNIVERSITY SERVICE ACTIVITIES:

Faculty Advisor:

Outing Club, 1996

Sigma Gamma Epsilon (Earth Science Honor Society), 1990-2009

Society of Environmental Scientists, 1990-2005

Rugby Club, 1993-1994

University Honors' Program:

Chair, Honors Council Steering Committee, 2004-2010

Department Honors Coordinator, 1996-present
Member of Honors' Council, 1996-present

University Speaker's Bureau, 1990-1996
Topical presentations at local high schools
Career planning presentations
Bourgeois Residential College Adopt-A-Faculty Program, 1992-1994

Faculty Senate
Senator, 1992-1996
Member, Research and Development Committee, 1992-1996
Chair, Research and Development Committee, 1995-1996
Member of Executive Committee, 1995-1996
Member, Graduate Policy and Affairs Committee, 1996-1997

Graduate Committee, College of Sciences
Member 1992-2011
Chair, 1996-2011

University Radiation Safety Committee
Member, 1977-present
Vice-Chair, 2017-present

University General Education Committee
Member 2006-2010

HONORS:

Elected Fellow, Mineralogical Society of America, 2014
Elected Fellow, Geological Society of London, 2012
Visiting Senior Fellow, Linacre College, University of Oxford, 1982-present
Erskine Fellow, University of Canterbury, New Zealand, 1998
Elected Fellow, Geological Society of America, 1986
Listed in Who's Who in America Science and Engineering, 1999-present
Listed in Who's Who Among America's Teachers, 1996-present
Listed in American Men & Women of Science, 1989-present
Elected Full Member, Sigma Xi, The Scientific Research Society, 1971

GRANTS AND CONTRACTS:

UMass Lowell SEED Grant – Climate variability and environmental impacts at Walden Pond, 2018-present (\$9,990)

NATO Collaborative Research Grants Programme - Petrogenesis of ultrapotassic lavas, carbonatites and mantle xenoliths, southwest Uganda, 1996-1998 (\$6,000)

National Research Council Collaboration in Basic Science and Engineering Grants Program - Geology, Geochemistry, Geochronology, Isotope Geology and Petrogenesis of Early Proterozoic A-type Granitoids, Kola Peninsula, Russia, 1996 (\$2,200)

Massachusetts Department of Public Health - Neutron Activation Analysis of Arsenic in Hair, 1994 (\$1,000)

Polaroid Corporation - Neutron Activation and Analysis to Determine Cr Concentration in Paper Samples, 1992 (\$338)

Massachusetts Bays Program - Atmospheric Deposition of Contaminants onto Massachusetts and Cape Cod Bays (co-PI), 1991-1993 (\$149,998)

Geological Survey of Canada - Geochemical Study of Magmatic Rocks of the Saint John District, New Brunswick, 1988-1989 (\$7,000)

NATO Collaborative Research Grants Programme - Mineralogy and Geochemistry of Pre-Chilwa Province Alkaline Rocks, Malawi, 1988-1989 (\$5,500)

Geological Survey of Canada - Geochemistry of Basaltic Rocks of the Saint John Area, New Brunswick, 1987-1988 (\$6,000)

Geological Survey of Canada - Petrography and Geochemistry of Volcanic Rocks from the St. John District of New Brunswick, 1986-1987 (\$5,000)

U. S. Geological Survey - Fission-track Geochronology of the Arkansas Alkaline Province, 1986 (\$3,000)

National Science Foundation - Petrography, Geochemistry, Geochronology, and Isotope Geology of Selected White Mountain Plutons (EAR-8600058), 1986-1988 (\$40,000)

National Science Foundation - Acquisition of Gamma-Ray Spectroscopy Equipment for Research in the Earth and Environmental Sciences (EAR-8507042), 1985-1986 (\$40,000 matching fund)

National Science Foundation - Acquisition of Research Microscope and Accessories for Research in Geology (PRM-8112191), 1982-1983 (\$24,700)

Geological Society of America Penrose Grant, 1969-1970 (\$1,500)

PROFESSIONAL MEMBERSHIPS:

American Geophysical Union
Association of Engineering Geologists, New England Section
Geochemical Society
Geological Society of America
Geological Society of London
Geological Society of New Hampshire
Health and Geology Division, Geological Society of America
Massachusetts Geological Society
Mineralogical Association of Canada
Mineralogical Society of America

OTHER PROFESSIONAL ACTIVITIES:

Editorial:

Lithos - Editor-in-Chief, 2007-2018

The Canadian Mineralogist - Associate Editor, 1995-1998

Journal of African Earth Sciences - Regional Editor, 1994-1997

Co-editor of a special issue of *The Canadian Mineralogist*, "Alkaline Rocks: Petrology and Mineralogy", 1996, v. 34, pt. 2.

National:

National Science Foundation, Division of Undergraduate Education, CCD/UFE panel member, 1996, 1997, 1999

Geological Society of America Campus Representative, 1985-present

Meetings:

Co-organizer of a special session on Mesozoic Igneous Features on Northeastern North America: Magmatic Origins and Links to Tectonic Events. Northeast section meeting of the Geological Society of America, Bretton Woods, New Hampshire (2013)

Co-organizer of a special session on Geology and Health. Northeast Section meeting of the Geological Society of America, Durham, New Hampshire (2007)

Member of the organizing committee, Association of Engineering Geologists National Meeting, Boston, 2006

Co-organizer of a special symposium on the alkaline rocks, GAC/MAC meeting, spring 1994

Geological Society of America Northeast Section Meeting, Boston, 1976. Member of organizing committee, treasurer and in charge of registration

Leadership:

Vice-Chair, New England Section, Association of Engineering and Environmental Geologists, 2018-present

First Vice-Chair, Geology and Health Division, Geological Society of America, 2017-

Vice-President, New Hampshire Geological Society, 1994-1996

President, University of Massachusetts-Lowell Sigma Xi Club, 1984-1989, 1976-1982. University delegate to a number of National Sigma Xi meetings

Member and Chairperson of Burlington Conservation Commission, 1976-1982. Responsible for the enforcement of the Massachusetts Wetlands Protection Act and acquisition and development of conservation land.

Standards Programs:

Participant, IAEA (International Atomic Energy Agency) NAA Proficiency Test. Round robin analysis of marine sediment and animal tissue samples, 2018.

Participant, PRIS Inter-laboratory Analytical Program for certification of sediments S-1 and S-2, 1996-1997.

Participant, U.S.G.S. round robin analysis program for new U.S.G.S. standard rock AGV-2, 1996

Participant, Canadian Certified Reference Materials Project, calibration of standard rock SY-4, 1994

Participant, international collaborative study of the chemistry of the new rock standard AC-E. Data reported in Govindaraju, K. (1987) 1987 compilation report on Ailsa Craig Granite AC-E with the participation of 128 GIT-IWG laboratories. Geostandards Newsletter 11, 203-255.

Short Courses and Workshops:

NSF “Geology and Human Health”, Montana, May 2004

NSF “Teaching Petrology Workshop”, Montana, July 2003

Chautauqua “Volcanic Hazards”, Washington, July 2002

Chautauqua “Environmental Geochemistry”, Illinois, June 1992

Invited participant, Carbonatite Field Workshop, Homa Bay, Kenya, 1987

Presenter - Teacher Workshops

Forensic Geology - An Inquiry Driven Approach to Learning Earth Science, Geological Association of New Jersey 2007 Annual Meeting, East Stroudsburg, PA, October 12, 2007.

Forensic Geology - An Inquiry Driven Approach to Learning Earth Science and Boston Basin Field Trip, Association of Engineering Geologists 2006 Annual Meeting, Boston, MA, November 4, 2006.

Theme Speaker, Geochemistry, New England Association of Chemistry Teachers Fifty-First Summer Conference, Roger Williams College, Bristol, RI, August 14-18, 1989.

Invited Lectures:

Association of Engineering Geologists, Bates College, Boston University, Bridgewater State University, Brigham Young University, Central Florida Community College, Geological Society of New Hampshire, Hamilton College, Lehigh University, North Shore Rock & Mineral Club, Rensselaer Polytechnic Institute, Salem State University, United States Geological Survey (Menlo Park), University of Arkansas, University of Florida, University of Hartford, University

of New Hampshire, University of Pennsylvania, Wesleyan University, Weston Observatory (Boston College)

Acadia University (CA), Carleton University (CA), Dalhousie University (CA), Geological Survey of Canada Logan Lecture (CA), St. Marys University (CA), Xavier University (CA)

University of Helsinki (FIN), University of Cordoba (AR), Kings College (UK), Queen's University (UK), University of Oxford (UK), University of Edinburgh (UK), Kola Geoscience Centre (RU), Stellenbosch University (SA), University of Cape Town (SA), Rhodes University (SA), University of Auckland (NZ), University of Canterbury (NZ), Victoria University of Wellington (NZ), Panjab University (IN), Wadia Institute of Himalayan Geology (IN), Nanjing University (CHI), Peking University (CHI), University of Queensland (AUS), University of New South Wales (AUS), Macquarie University (AUS), Curtin University (AUS), National Taiwan University (TW), National Taiwan Normal University (TW), Institute for Earth Sciences, Academia Sinica (TW)

Other:

Contributed Instrumental Neutron Activation Analysis (INAA) page to the Cutting Edge Geochemical Instrumentation and Analysis web site.

Chair, Commonwealth College Honors Program Review Committee, Amherst, MA, 2006.

Keynote Speaker, "The Cortlandt-Beemerville Magmatic Belt and the Cameroon Volcanic Line: A Tale of Two Alkaline Provinces". Geological Association of New Jersey Twenty-First Annual Meeting, 2004.

Speaker, Massachusetts Council for International Education (MaCIE), "Killer Lakes of Cameroon", 2004-2006.

Speaker, Lowell Rotary Club, 2004.

CURRENT RESEARCH:

Monitoring environmental change and contamination using tree-ring records. Collaborative project with Walden Pond and Walden Woods entities.

Chemistry and petrology of Coastal New England igneous province. Collaborative project with Marty Ross, emeritus, Northeastern University.

Chemistry and distribution of dust derived from playas and anthropogenic sources, Salt Lake City – Provo – Wasatch Mountains area, Utah. Collaborative project with Greg Carling, BYU.

Origin of the Franklin and Sterling Hill ore deposits.

Origin of contaminants in soils in the vicinity of the Palmerton, PA, zinc smelters.

Chemistry and petrology of Trinitite.

Application of Instrumental Neutron Activation Analysis (INAA) to forensics.

Fluorine and chlorine in alkaline magmas as monitored by the chemistry of micas, amphiboles and apatites. Joint project with N. Charnley, University of Oxford.

Petrogenesis of ultrapotassic lavas, carbonatites and mantle xenoliths, southwest Uganda. Joint project with A. R. Woolley, British Museum (now the Natural History Museum), F. Lloyd, University of Reading, and F. Stoppa, University of G. d'Annunzio, Italy.

Geology, Geochemistry, Geochronology, Isotope Geology and Petrogenesis of Early Proterozoic A-type Granitoids, Kola Peninsula, Russia. Joint project with D. Zozulya. Russian Academy of Sciences, Kola Science Centre.

Geochemistry of the Chilwa alkaline province, Malawi. Joint research program with A. R. Woolley, Natural History Museum, UK.

Geochemistry and geochronology of the North Nyasa Alkaline Province, Malawi. Joint research program with A. R. Woolley, Natural History Museum, UK and G. Platt, Lakehead University, Canada.

Geology, geochemistry and geochronology of the Montereian Hills, Quebec, and White Mountains, New England, petrographic provinces.

PUBLICATIONS

INVITED PAPERS:

Eby, G. N. (2017) Mesozoic magmatism in Northeastern North America and Canada: A classic A1-type granite province. 06h: Making granites: petrogenetic processes, tectonic environments and secular variations: A-type granitoids. Goldschmidt Conference, Paris, France.

Eby, G. N. (2016) The Coastal New England and White Mountain igneous provinces: Triassic-Jurassic intraplate magmatism in Northeastern US and Southeastern Canada. Annual Meeting Geological Society of America, T153 Alkaline Rocks: in Honor and Memory of Daniel S. Barker, Paper # 19-5.

Eby, G. N. (2014) Classification and origin of granites. International Workshop on Convergent Margins. Karadeniz Technical University, Trabzon, Turkey.

Eby, G. N. (2014) A-type granites: characteristics and petrogenesis. International Workshop on Convergent Margins. Karadeniz Technical University, Trabzon, Turkey.

Eby, G. N. (2013) Post CAMP magmatism: The White Mountain and Montereian Hills Igneous Provinces, North America. Geological Society of America Abstracts with Programs 45, 1, p. 127.

Eby, G. N. (2011) A-type granites: magma sources and their contribution to the growth of the continental crust. Seventh Hutton Symposium on Granites and Related Rocks, p. 50-51.

Eby, G. N., Charnley, N. (2009) Using apatite and biotite as monitors for the fluorine and chlorine concentrations of alkaline felsic magmas. Geological Association of Canada – Mineralogical Association of Canada, Joint Annual Meeting, Ottawa 2009, Program with Abstracts 34, p.28.

- Eby, G. N. (2008)** Instrumental neutron activation analysis (INAA) - practice and application. National Organization of Test, Research, and Training Reactors 2008 Annual Meeting Program with Abstracts, p. 21.
- Eby, G. N. (2007)** Forensic Geology as a Vehicle for Inquiry-Driven Learning: The Case of the Sandy Body. Geological Society of America Abstracts with Programs 39, 6, p. 458.
- Eby, N. (2006)** Distinctions between A-type granites and petrogenetic pathways. In Dall'Agnol, R. et al. (eds.) 2006. Symposium on Magmatism, Crustal Evolution, and Metallogenesis of the Amazonian Craton, Abstracts Volume and Field Trips Guide. Belém, PRONEX-UFPA/SBG-NO, p. 48.
- Eby, G. N. (2006)** Carbonatites to alkali granites - Petrogenetic insights from the Chilwa and Montereian Hills-White Mountain igneous provinces. Geological Association of Canada - Mineralogical Association of Canada, Joint Annual Meeting, Montreal 2006, Program with Abstracts 31, p. 45.
- Eby, G. N., Lloyd, F. E., Woolley, A. R., Stoppa, F. (2002).** Geochemistry and mantle source(s) of carbonatitic and potassic lavas from SW Uganda. In Ulrych, J., Cajz, V., Adamovi, J. and Bosák, P. (eds.) HIBSCH 2002 Symposium, Excursion Guide Abstracts. Czech Geological Survey, Prague, Czech Republic, p. 73.
- Eby, G. N. (2000)** Geochronology, geochemistry and petrogenesis of the Arkansas Alkaline Province. Geological Society of America Abstracts with Programs 32, 3, p. A9.
- Woolley, A. R., **Eby, G. N.**, Platt, R. G. (1994). The North Nyasa alkaline province, Malawi. Geological Association of Canada-Mineralogical Association of Canada Program with Abstracts 19, A121.
- Eby, G. N., Maher, S. G., Poland, L. J. (1994)** Petrology and geochemistry of the Beemerville nepheline syenite complex, northern New Jersey. Geological Association of Canada-Mineralogical Association of Canada Program with Abstracts 19, A32.
- Eby, G. N. (1993)** The Montereian Hills-White Mountain igneous province. An extended period of Mesozoic intraplate magmatism, eastern North America. Ancient Volcanism & Modern Analogues, IAVCEI 1993 General Assembly, p. 29.
- Eby, G. N. (1992)** A-type granitoids - myth or reality. EOS, 1992 Spring Meeting Abstracts Volume, p. 346.
- Eby, G. N. (1992)** Characterization and petrogenetic subdivision of A-type granites. In Brown, P. E. and Chappell, B. W. (eds.) Second Hutton Symposium on Granites and Related Rocks, Transactions of the Royal Society of Edinburgh 83, p. 489.
- Eby, G. N. (1989)** Trace element systematics of felsic alkaline rocks: petrogenetic and tectonic implications. 28th International Geological Congress Abstracts, v. 1, p. 432-433.
- Morris, E. M., **Eby, G. N. (1986)** Petrologic and age relations in Granite Mountain syenites. Geological Society of America Abstracts with Programs 18, p. 134.

Mariano, A. N., **Eby, G. N. (1986)** Geology and geochronology of carbonatites peripheral to the Parana Basin, Brazil-Paraguay. Geological Association of Canada, Mineralogical Association of Canada, Canadian Geophysical Union Joint Annual Meeting Program with Abstracts 11, p. 66.

Eby, G. N. (1985) Mafic alkaline rocks of the Montereian Hills, Quebec. Geological Association of Canada-Mineralogical Association of Canada Program and Abstracts 10, p. A15.

Eby, G. N. (1984) The Montereian Hills and White Mountain alkaline igneous provinces, Eastern North America. Alkaline Igneous Rocks, Geological Society Volcanic Studies Group, Edinburgh, p. 10.

Eby, G. N. (1983) Geology, geochemistry, and petrogenesis of the Montereian Hills alkaline province, Quebec. Geological Society of America Abstracts with Programs 15, p. 565.

Creasy, J. W., **Eby, G. N. (1983)** The White Mountain batholith as a model of Mesozoic felsic magmatism in New England. Geological Society of America Abstracts with Programs 15, p. 549.

CONTRIBUTED PAPERS:

Eby, G. N., Nye, B. (2019) A dusty tale: Determining sources for elements found in Salt Lake dusts. Annual Meeting Geological Society of America, T162 Environmental and Engineering Geology Division, Paper #277-8.

Severson, A., Kuiper, Y., **Eby, G. N.**, Hepburn, J. (2019) New U-Pb detrital zircon ages from metasedimentary rocks along the western-most boundary of the interpreted Avalon terrane in the Southeastern New England Appalachians – A possible West Africa source area? Annual Meeting Geological Society of America, T56 New Developments in the Appalachian-Caledonian-Variscan Orogen I, Paper #243-5.

Eby, N., Beaudoin, C., Mariano, A. (2018) Using elemental abundances to determine the source of emeralds. In: Pringle, J., Ruffell, A. (2018) (ed.). *Environmental and Criminal Forensics*. The Geological Society Forensic Geoscience Group. FGG conference, booklet of abstracts, 5 December 2018, Geological Society of London, p. 19-21.

Beaudoin, C., **Eby G. N. (2018)** Trace element chemistry of emeralds. Annual Meeting of the Northeastern Section of the Geological Society of America, D1 Geochemistry, 8-8.

Fontaine, J. E., Fontaine, S., **Eby, G. N. (2018)** Geochemistry of ore minerals and calcite from the Franklin and Sterling Hill Zinc Mines. Annual Meeting of the Northeastern Section of the Geological Society of America, D1 Geochemistry, 8-3.

Eby, G. N., Soucy, A., Fontaine, S. (2017) Using factor analysis to identify soil contaminants from the Palmerton, PA, zinc smelters. Annual Meeting Geological Society of America, T16 Novel Approaches to Mine Remediation: Addressing the Legacy of Hardrock Mining through Innovative and Practical Methods, Paper #299-6.

Eby, G. N. (2016) Tree-ring record of smelter operations at Palmerton, PA. Annual Meeting Northeastern Section of the Geological Society of America, T21 Trace Metals in the Environment, Paper # 41-6.

Eby, G. N. (2015) Tracing F and Cl concentrations in alkaline felsic magmas. Book of Abstracts, The 8th Hutton Symposium on Granites and Related Rocks, Florianópolis, Brazil, September 2015. PT.095.

- Eby, G. N., Pirrie, D., Hermes, R., Charnley, N. (2014)** Nuclear forensics – identification of post-detonation debris. In: Morgan, R., Dawson, L. (2014) (ed.). *Forensic Geoscience: Future Horizons*. The Geological Society Forensic Geoscience Group. FGG conference, booklet of abstracts, 3 December 2014, Geological Society of London, p. 43-47.
- Eby, G. N. (2010)** A tree ring record of environmental contamination - Emissions from the Palmerton, PA, USA, New Jersey zinc smelter. In: Pirrie, D., Ruffell, A. 2010 (ed.). *Environmental and Criminal Forensics*. The Geological Society Forensic Geoscience Group. FGG conference, booklet of abstracts, 16 December 2010, Geological Society of London, p. 20.
- Eby, G. N., Charnley, N. (2010)** Fluorine and chlorine in alkaline rocks and A-type granites. In Ramo, O. T., Lukkari, S. R., and Heinonen, A.P. (eds.) 2010. International Conference on A-type Granites and Related Rocks through Time (IGCP-510). Helsinki, Finland, August 18-20, 2010. Abstract Volume 26-28.
- Zozulya, D. and **Eby, G. N. (2010)** Rare-metal ore occurrences, related to the Late Archean A-type granites from the Keivy zone (NE Fennoscandian shield). In Ramo, O. T., Lukkari, S. R., and Heinonen, A.P. (eds.) 2010. International Conference on A-type Granites and Related Rocks through Time (IGCP-510). Helsinki, Finland, August 18-20, 2010. Abstract Volume 113-115.
- Eby, G. N., Charnley, N., and Smoliga, J. (2010)** Trinitite - The atomic rock. Geological Society of America Abstracts with Programs 42, 1, 77.
- Eby, G. N. (2009)** Instrumental neutron activation analysis (INAA) and its application to forensic investigations. Geological Society of America Abstracts with Programs 41, 7, p. 309
- Eby, N. and Eby, S. (2008)** Instrumental Neutron Activation Analysis (INAA): practice and potential forensic applications. In: Donnelly, L. J. 2008 (ed). *Geoscientific Equipment & Techniques at Crime Scenes*. The Geological Society Forensic Geoscience Group. FGG 2008 conference, booklet of abstracts, 17 December 2008, Geological Society of London, pp. 28-30.
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