Ethan Finley Baxter

Professor
Department of Earth & Environmental Sciences

Boston College
Devlin Hall, Commonwealth Ave.
Chestnut Hill, Massachusetts 02467,
USA

Ph. 617-552-1124
Email: ethan.baxter@bc.edu

History of Employment

Associate Dean for the STEM Disciplines, Boston College	Sept 2023 - present
Professor of Earth & Environmental Sciences, Boston College	July 2017 – present
• Established new E&ES PhD Program in 2019	
Chair, Dept. of Earth & Environmental Sciences, Boston College	July 2016 – June 2022
Associate Professor of Earth & Environmental Sciences, Boston College	July 2015 – June 2017
Associate Professor of Earth & Environment, Boston University	July 2012 - June 2015
Guest Professor, ETH Zurich, Switzerland	Jan 2011- Aug 2011
Associate Professor of Earth Sciences, Boston University	Sept 2008 - July 2012
Assistant Professor of Earth Sciences, Boston University	Nov 2002 - Aug 2008
California Institute of Technology - Prize Postdoctoral Fellow in Geochemistry	Sept 2000-Oct 2002

Degrees

Yale University - Geology & Geophysics	B.S. 1995
University of California, Berkeley - Geology	Ph.D. 2000

Narrative of Research Experience

- **Isotope Geochemistry & Geochronology:** development of innovative methods to measure geologic rates and timescales at the highest levels of precision and accuracy. Measurement and modeling of isotope ratios as a tracer of dynamic geologic processes ranging from the mantle, to the crust, to the Earth's surface. Established and managed two TIMS and clean lab suites at BU and BC.

- **Earth and Solar System History:** evolution and origin of platetectonics and long term global geochemical cycles. Interplay of the Earth's solid interior with the hydrosphere and atmosphere. Measurement and model applications of the rates, timescales and mechanisms of solid earth processes including reaction, deformation, mass transport, metamorphism, tectonics, and ore formation through time. Development of the geological and meteorite archive of diverse Earth, Mars, and solar system processes and events.

Short List of Key Publications *(* denotes Baxter advisee; † denotes TIMS Facility Collaborator)*

- *†Seal, DM, *†Chen, MZ, †Nicklas, RW, **Baxter, EF**, Day, JMD, Rider-Stokes, BG, Love, AB, Malley, J 2026. Implications for martian mantle reservoirs from petrogenesis of the 1.27 Ga olivine-phyric shergottite Northwest Africa 13441. Geochimica et Cosmochimica Acta, 426, 40-55

- †Castro, AE, Viete, DR, †Walker, S, Jaret, SJ, †Brunet, I, Morin, K, Brenner, DC, Roy, S, **Baxter, EF**, Wolfe, OM, Thomas, J, 2026. Decoupled monazite and garnet petrochronology reveals short-duration, high-temperature Acadian metamorphism in the Manhattan Schist, New York City, USA. *Geology*, 54, p. 133-137

- †Brigham, JM, Baldwin, SL, †*Schroeder, KL, †Walker, S, **Baxter, EF**, 2025. Temporal and spatial scales of garnet growth associated with serpentinization: A case study from Belvidere Mountain, Vermont, USA. Lithos, 508, 108098.

- *†Farrell, T, Aerden, D, **Baxter, EF**, *†Starr, PG, Williams ML, 2024. Rapid development of spiral garnets during subduction zone metamorphism revealed from high-resolution Sm-Nd garnet geochronology. *Geology*, https://doi.org/10.1130/G51882.1

- †Sjöqvist, A.S.L., Zack, T., †Honn, D.K., **Baxter, E.F**., 2020. Modification of a rare-earth element deposit by low-temperature partial melting during metamorphic overprinting: Norra Kärr alkaline complex, southern Sweden. *Chemical Geology*, **545**, https://doi.org/10.1016/j.chemgeo.2020.119640

- *†Gerrits, A.R., Inglis, E., *†Starr, P.G., Dragovic, B., **Baxter, E.F**., Burton, K. (2019) Release of oxidizing fluids in subduction zones recorded by iron isotope zonation in garnet. *Nature Geoscience*. https://doi.org/10.1038/s41561-019-0471-y

- **Baxter, E.F.**, Caddick, M.J., Dragovic, B. (2017). Garnet: A Rock Forming Mineral Petrochronometer. *Reviews in Mineralogy & Geochemistry*, **83**, p. 469-533.

- **Baxter E.F.**, and Scherer E.E. 2013. Garnet: Timekeeper of Tectonometamorphic Evolution. *Elements*, **9**, 433-438

- **Baxter E.F**., and Caddick, M.J., 2013. Garnet growth as a proxy for progressive subduction zone dehydration. *Geology*, **41**, 643-646.

- **Baxter, E.F**. 2010. Diffusion of Noble Gases in Minerals. *Reviews in Mineralogy & Geochemistry*, **72**, p. 509-557.

- **Baxter, E.F.** 2003. Natural Constraints on Metamorphic Reaction Rates. *in Geochronology - linking the isotopic record with petrology and textures*. eds. Vance, Muller & Villa. Geological Society of London, Special Publication, **220**, p. 183-202.

Honors

- **New England Regional EMMY Nomination** in the Children/Youth Category. For "*Every Rock Has A Story*" 2023, 2024, 2025, 2026

- **Mineralogical Society of America, Fellow**, 2017. Members who have contributed significantly to the advancement of mineralogy, crystallography, geochemistry, petrology, or allied sciences and whose scientific contribution utilized mineralogical studies or data, may be designated as Fellows upon proper accreditation by the Committee on Nomination for Fellows and election by the Council

- **Mineralogical Society of America Distinguished Lecturer**, 2011-2012. Two or three lecturers are nominated by the Society each year. With the support of MSA, Lecturers travel to approximately nine host institutions in North America and Europe to present one, two, or three research seminars.

- **F.W. Clarke Medal**, 2007. Awarded annually by the Geochemical Society to one early-career scientist for a single outstanding contribution to geochemistry or cosmochemistry. Awarded at the 2007 Goldschmidt Conference, Cologne Germany

- **NSF Grant** EAR-0547999 "CAREER: Rates and Timescales of Metamorphic Reactions at Convergent Plate Boundaries", start date: January 1, 2006

- **Journal of the Geological Society; Young Author Award, 2002** for "Prograde temperature-time evolution in the Barrovian type locality constrained by precise Sm/Nd garnet ages from Glen Clova, Scotland"

Professional Society Memberships

- American Geophysical Union (AGU), Geochemical Society (GS), Geological Society of America (GSA), Mineralogical Society of America (MSA), National Earth Science Teachers Association (NESTA), National Science Teachers Association (NSTA), Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)