

Kurt Hollocher, Vita

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Education

Antioch College 1973-1977 Geology B.S. 1978. B.S. Bedrock Geology of the Geneva Peak Area, Montezuma Quadrangle, Colorado: 32 p.
U. Mass., Amherst 1977-1981 Geology Petrology M.S. 1981. M.S. Retrograde Metamorphism of the Lower Devonian Littleton Formation in the New Salem Area, West-Central Massachusetts: 268 p.
U. Mass., Amherst 1981-1985 Geology Geochemistry Ph.D. 1985. Ph.D. Geochemistry of Metamorphosed Volcanic Rocks in the Partridge Formation, and Amphibole Dehydration Reactions in the High-Grade Metamorphic Zones of Central Massachusetts: 275 p.

Academic work

Sept. 1984-Jan. 1985: Instructor of Geology, Mount Holyoke College, taught two courses as a sabbatical replacement.
Sept. 1985-Aug. 1991: Assistant Professor of Geology, Union College.
Aug. 1986-Aug. 1988: Acting Geology Department Head, Union College.
Sept. 1991-Sept. 2002: Associate Professor of Geology, Union College.
Aug. 1993-Sept. 1997: Director of the Union College Environmental Studies Program.
July. 1998-Sept. 2004: Department Chair, Geology Department.
Sept. 2002-present: Professor of Geology, Union College.

Professional society memberships

Geological Society of America
American Geophysical Union
Mineralogical Society of America

Teaching interests

My interests include basic geology, geochemistry, petrology, geologic hazards, environmental geology, materials science, planetary geology, science and public policy, computers, birds, canoeing, and hiking, among other things. I believe these interests all add directly to my teaching and research abilities. I have working knowledge of some everyday aspects of many fields of science and technology, in addition to a good knowledge of my specialty fields in geology. I try to keep current my knowledge of geologic and related fields.

Courses currently taught

Physical Geology: Introduction to geologic materials, geologic structures, and geologic processes. Bi-weekly labs and field trips.

Mineralogy: Form, symmetry, internal structure, identification, crystal chemistry, X-ray diffraction, scanning electron microscopy, mineral optics. Weekly labs including a project using X-ray diffraction equipment.

Petrology: Origin of igneous, metamorphic, and (previously) sedimentary rocks. Phase diagrams, intracrystalline, crystal-crystal and crystal-fluid reactions, rock textures and textural interpretation. Weekly labs using polarizing microscopes, three all-day field trips.

Geochemistry: Study of several geochemical systems, including chemical analysis of geological materials and computer modeling of the geochemical systems using acquired data. Weekly labs with sample collection, preparation, analysis, and writing mathematical models for the geochemical systems being examined.

Research interests

Historically my principal research interests have been in the general fields of geochemistry and the petrology of igneous and metamorphic rocks. This work involves limited field mapping, rock collection from worthy sites, preparation of samples, analysis of the rock and mineral samples, data interpretation, and modeling. In general, the purpose of this work is to understand geologic development of the field areas, and the rocks and the mineral assemblages they contain, in terms of mathematical and conceptual models that include paleotectonic environments, source areas, chemistry, pressure, temperature, time, and reaction progress. I have also done work in the geochemistry of natural waters, a little paleontology, and am the analytical arm for some biological work.

Publications

- Bull, J. and Hollocher, K., 1996, Geochemistry of the Fourmile and Monson Gneisses, central Massachusetts: examples of the plutonic roots of the Taconian island arc. Geological Society of America Abstracts with Programs, v. 28, no. 3, p. 42.
- Caruso, E., Quarless, K., and Hollocher, K., 2021, Heavy metal contaminants in drinking water: interim results of a long-term public outreach program. Geological Society of America Abstracts with Programs, v. 53, No. 1, doi: 10.1130/abs/2021NE-361702.
- Catalano, J., Hollocher, K., and Wong, M., 2009, Anisotropy of magnetic susceptibility and geochemistry of the Hyde School Gneiss and Rockport Granite, northwest Adirondack Lowlands. Geological Society of America Abstracts with Programs, v. 41, no. 3, p. 109.
- Catalano, J.P., Baldwin, S., Fitzgerald, P.G., Webb, L.E., Hollocher, K., 2010, Temporal and geochemical constraints on active volcanism in southeastern Papua New Guinea. American Geophysical Union, Fall Meeting Abstracts, #T13C-2204.
- Chazey, B. and Hollocher, K., 1998, A geochemical analysis of the spring, well, and surface waters of Saratoga Springs and Saratoga State Park, NY. Geological Society of America Abstracts with Programs, v. 30. no. 1, p. 10-11.
- Denny, A., Hirsch, D., and Hollocher, K., 2008, Determination of the duration of retrograde metamorphism at Gore Mountain, NY: Geological Society of America Abstracts with Programs, 43rd annual Northeastern Section Meeting, Buffalo, NY, v. 40, no. 2, p. 21.

- Dolcimascolo, A., Frey, H.M., and Hollocher, K.T., 2017, Union College tests for heavy metal contaminants in drinking water: Geological Society of America Abstracts with Programs, v. 49, no. 6, p. 52-7, <http://dx.doi.org/10.1130/abs/2017AM-307982>.
- Dougherty, A., Naples, C., Lederer, R., Hollocher, K. and Locke, S., 1997, Chemical variations of surface waters of Saratoga County and the Saratoga mineral springs and wells of New York State. Geological Society of America Abstracts with Programs, v. 29, no. 1, p. 42.
- Englander, L., Hollocher, K., and Robinson, P., 2002, Geochemical affinities of intermediate and mafic layers in metamorphosed late Proterozoic sedimentary and rhyolitic strata, Pelham dome, Massachusetts: Geological Society of America Abstracts with Programs, v. 34, no. 1, p. A-19.
- Fakhry, A.A., Ruiz, J., Dardir, A.A., Eltahlawi, A. and Hollocher, K., 1993, Spatial distribution of REE within the Abu-Tartur phosphorite bed, Egypt. *Journal of the Less-Common Metals*.*
- Finks, R., Hollocher, K., and Thies, K., 2011, A major Eocene sponge fauna (Castle Hayne Formation, North Carolina). *Journal of the North Carolina Academy of Science*, v. 127, no. 2, p. 39-175.
- Hirsch, H.V.B., Mercer, J., Sambaziotis, H., Huber, M., Stark, D.T., Torno-Morley, T., Hollocher, K., and Ghiradella, H., 2003, Behavioral effects of chronic exposure to low levels of lead in *Drosophila Melanogaster*. *Neurotoxicology*, v. 24, p. 435-442.
- Hirsch, H.V.B., Possidente, D., Averill, S., Despain, T.P., Buytkins, J., Thomas, V., Goebel, W.P., Shipp-Hilts, A., Wilson, W., Hollocher, K., Possidente, B., Lnenicka, G., Ruden, D.M., 2009, Variations at a quantitative trait locus (QTL) affect development of behavior in lead-exposed *Drosophila melanogaster*. *Neurotoxicology*, v. 30, p. 305-311.
- Hollocher, K., 1980, Retrograde metamorphism of the Lower Devonian Littleton Formation, New Salem area, Bronson Hill anticlinorium, Massachusetts. Geological Society of America Abstracts with Programs, v. 12, p. 42.
- Hollocher, K., 1981, Systematic sheet silicate composition changes in retrograded Littleton Formation schists, west-central Massachusetts. Geological Society of America Abstracts with Programs, v. 13, p. 475.
- Hollocher, K., 1981, Retrograde metamorphism of the Lower Devonian Littleton Formation in the New Salem area, west-central Massachusetts. Contribution #37 (M.S. Thesis), Department of Geology and Geography, University of Massachusetts, Amherst, 268 p.
- Hollocher, K., 1983, Major element geochemistry and possible origin of volcanic rocks in the Middle Ordovician Partridge Formation, central Massachusetts. Geological Society of America Abstracts with Programs, v. 15, p. 172.
- Hollocher, K., 1984, Hornblende, cummingtonite, and gedrite breakdown reactions in the eastern Acadian metamorphic high, south-central Massachusetts and northern Connecticut. Geological Society of America Abstracts with Programs, v. 16, p. 25.
- Hollocher, K., 1985, Characterization of pre-metamorphic alteration processes in mafic volcanics of the Middle Ordovician Partridge Formation, west-central Massachusetts. Geological Society of America Abstracts with Programs, v. 17, p. 25.
- Hollocher, K., 1985, Geochemistry of metamorphosed volcanic rocks in the Middle Ordovician Partridge Formation, and amphibole dehydration reactions in the high-grade metamorphic zones of central Massachusetts. Contribution #56 (Ph.D Thesis), Department of Geology and Geography, University of Massachusetts, Amherst, 275 p.

- Hollocher, K., 1987, Petrology and geochemistry of the Monson Gneiss and related rocks, Bronson Hill anticlinorium, Massachusetts. Geological Society of America Abstracts with Programs, v. 19, p. 19.
- Hollocher, K., 1987, Systematic retrograde metamorphism of sillimanite-staurolite schists, New Salem area, Massachusetts. Geological Society of America Bulletin, v. 98, p. 621-634.
- Hollocher, K., 1988, Geochemical comparisons of the Monson Gneiss and associated tonalitic Acadian plutons and overlying Ordovician volcanics, Massachusetts. Geological Society of America Abstracts with Programs, v. 20, p. 28.
- Hollocher, K., 1988, Partial melting of tonalitic gneisses during regional metamorphism, Bronson Hill anticlinorium, west-central Massachusetts. Geological Society of America Abstracts with Programs, v. 20, p. A304.
- Hollocher, K., 1991, Prograde amphibole dehydration reactions during high-grade regional metamorphism, central Massachusetts, U.S.A.: American Mineralogist, v. 91, p. 956-970.
- Hollocher, K., 1992, Geology. In Clark, B. (editor), Environmental Trip Tips: The Capital Region Guide to Outdoor Recreation and Environmental Education, 3rd edition, Environmental Clearinghouse of Schenectady, Schenectady, NY, p. 88-96.
- Hollocher, K., 1992, Petrogenesis of the Ordovician Partridge volcanics, and its relationship to the Ammonoosuc Volcanics, western New England. Geological Society of America Abstracts with Programs, v. 24, p. 29.
- Hollocher, K., 1992, The Geology of New York, a Simplified Account and New York State Geological Highway Map (book review). Journal of Sedimentary Petrology, v. 62, p. 745.
- Hollocher, K., 1993, Geochemistry and origin of volcanics in the Ordovician Partridge Formation, Bronson Hill anticlinorium, west-central Massachusetts. American Journal of Science, v. 293, p. 671-721.
- Hollocher, K., 1993, Iodine as a Tuning Standard for Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry. Review of Scientific Instruments, v. 64, p. 2395-2396.
- Hollocher, K., 1993, Laser ablation-inductively coupled plasma mass spectrometry for microscale trace element analysis of solid geological materials. Geological Society of America Abstracts with Programs, v. 25, p. 24.
- Hollocher, K., 1994, Geochemistry of igneous rocks in the Taconian island arc system, Bronson Hill anticlinorium, and possible tectonic implications. Geological Society of America Abstracts with Programs, Northeastern Section Meeting, v. 26, p. 24.
- Hollocher, K., 1994, North-central Colorado as a geologic field area for lab instruction in Physical Geology. Journal of Geological Education, v. 42, p. 332-336.
- Hollocher, K., 1995, Traverse across the Taconian Orogen. In Garver, J.I. and Smith, J.A. eds., Field Trip Guide for the 67th Annual Meeting of the New York State Geological Association, Union College, Schenectady, NY, p. 145-161.
- Hollocher, K., 1997, A term-long mineralogy lab practical exam. In Brady, J.B., Mogk, D.W. and Perkins, D. III, eds., Teaching Mineralogy Workshop, Mineralogical Society of America, Washington, D.C., p. 43-46.
- Hollocher, K., 1997, Building crystal structure ball models using pre-drilled templates: sheet structures, tridymite, and cristobalite. In Brady, J.B., Mogk, D.W. and Perkins, D. III, eds., Teaching Mineralogy, Mineralogical Society of America, Washington, D.C., p. 255-282.
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- Hollocher, K., 2008, Origin of big garnets in amphibolites during high-grade metamorphism, Adirondacks, NY: Keck Geology Consortium, 2008 meeting at Smith College, Symposium v. 21, p. 129-134.
- Hollocher, K., 2014, A Pictorial Guide to Metamorphic Rocks in the Field. CRC Press, London, 310 p.
- Hollocher, K. and Bull, J., 1996, Geochemistry of metamorphosed Taconian plutonic and volcanic rocks in western New England: igneous materials available to adjacent sedimentary basins. Geological Society of America Abstracts with Programs, v. 28, no. 3, p. 64.
- Hollocher, J. and Hollocher, K., 1995, Building stones of Schenectady, New York, in Garver, J.I. and Smith, J.A. (editors), Field Trip Guide for the 67th Annual Meeting of the New York State Geological Association, Union College, Schenectady, NY, p. 275-291.
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- Hollocher, K. and Lent, A., 1987, Comparative petrology of amphibolites in the Monson Gneiss and the Ammonoosuc and Partridge volcanics, Massachusetts. Northeastern Geology, v. 9, p. 145-152.
- Hollocher, K. and Manon, M., 2011, Precambrian rocks, Cambrian stromatolites, and bubbling mineral waters of the southeastern Adirondack region (New York); in Hollocher, K., ed., Field Trip Guidebook, Keck Geology Consortium, 24th Annual Meeting, Union College, p. 22-67.
- Hollocher, K. and Robinson, P., 2001, Geochemistry of the Taconian volcanic arc, Bronson Hill anticlinorium, western New England: timing of magmatism and collision. Geological Society of America Abstracts with Programs, v. 33, no. 1, p. A-67.
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- Hollocher, K., Ruiz, J. and Turner, P.J., 1993, Reproducibility of element concentrations and isotope ratios by laser ablation-ICPMS (abstract). Eos, v. 74, no. 43, p. 627.
- Hollocher, K., Spencer, J. and Ruiz, J., 1994, Composition Changes in an Ash Flow Cooling Unit During K-Metasomatism, west-central Arizona. Economic Geology, v. 89, p. 877-888.
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- Hollocher, K., Bull, J., and Robinson, P., 2002, Geochemistry of the Metamorphosed Ordovician Taconian Magmatic Arc, Bronson Hill Anticlinorium, western New England: *Physics and Chemistry of the Earth*, v. 27, p. 5-45.
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- Hollocher, K., Robinson, P., Walsh, E., Terry, M.P., 2006, The Scandian Sætra Nappe: stratigraphic and geochemical correlation into highly deformed amphibolite and eclogite facies rocks in western Norway. *Geological Society of America Abstracts with Programs*, v. 38, no. 2, p. 9.
- Hollocher, K., Robinson, P., Walsh, E., 2007, Metamorphosed volcanics and related mafic intrusions of the Scandian Støren Nappe, Norway: Stratigraphic and geochemical correlation into highly deformed parts of the Western Gneiss Region. *Geological Society of America Abstracts with Programs*, v. 39, no. 1, p. 51.
- Hollocher, K., Robinson, P., Terry, M.P., and Walsh, E., 2007, Application of major- and trace-element geochemistry to refine U-Pb zircon, and Sm/Nd or Lu/Hf sampling targets for geochronology of HP and UHP eclogites, Western Gneiss Region, Norway. *American Mineralogist*, v. 92, p. 1919-1924.
- Hollocher, K., Robinson, P., Walsh, E., and Terry, M., 2007, The Neoproterozoic Ottfjället dike swarm of the Middle Allochthon, traced geochemically into the Scandian hinterland, Western Gneiss Region, Norway. *American Journal of Science*, v. 307, p. 901-953.
- Hollocher, K., Stack, K., Denney, A., and Emerson, E., 2008, Petrology of big garnet amphibolites, North Creek-Warrensburg area, Adirondacks, NY: *Geological Society of America Abstracts with Programs, 43rd annual Northeastern Section Meeting, Buffalo, NY*, v. 40, no. 2, p. 21.
- Hollocher, K., Hollocher, T., and Rigby, J.K., 2010, A phosphatic coprolite lacking diagenetic permineralization from the Upper Cretaceous Hell Creek Formation, northeastern Montana: Importance of dietary calcium phosphate in preservation. *Palaios*, v. 25, p. 132-140.
- Hollocher, K., Robinson, P., Walsh, E., 2010, Correlating segments of the Støren Nappe, central Caledonides, Norway: does geochemistry work as a long-distance reconstruction aid? *Geological Society of America Abstracts with Programs*, v. 42, no. 1, p. 174.
- Hollocher, K., Roberts, D., Robinson, P., and Walsh, E., 2012, Inferred paleotectonic settings and paleogeography at 500-450 Ma based on geochemical evaluation of Ordovician volcanics and gabbros of the Upper Allochthon, Mid Norway (abstract). *European Geosciences Union General Assembly 2012, Vienna, Austria, April 2012, Geophysical Research Abstracts*, v. 14, EGU2012-10123.
- Hollocher, K., Robinson, P., Walsh, E., and Roberts, D., 2012, Geochemistry of amphibolite-facies volcanics and gabbros of the Støren Nappe in extensions west and southwest of

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- Hollocher, K., Robinson, P., and Walsh, E.O., 2013, The geometric concept of the Thompson projection” of 1957 applied to metamorphosed cumulate gabbros in mid-Norway. *Geological Society of America Abstracts with Programs*, v. 45, no. 1, p. 89.
- Hollocher, K., Robinson, P., and Walsh, E.O., 2013, Thermodynamic modeling of epidote-amphibolite assemblages in metamorphosed cumulate gabbros from the Upper Allochthon, mid-Norway: Strategies to extract a P-T path from strongly zoned phases. *Geological Society of America Abstracts with Programs*, v. 45, no. 1, p. 129.
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- Hollocher, K., Robinson, P., Seaman, K., and Walsh, E.O., 2016, Metamorphosed plutonic rocks of the Scandian Upper Allochthon, coastal mid-Norway: Intrusive roots of an Ordovician-earliest Silurian calc-alkaline arc. *Geological Society of America Abstracts with Programs*, v. 48, no. 2, abstract 34-1. doi: 10.1130/abs/2016NE-272371
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- * [While cleaning out my office, I found a folder with a draft copy of this paper. I don't have the data, some figures seem to be missing, and also some captions seem to be missing. This is all that I know about.](#)