

BIOGRAPHICAL SKETCH

Roderic I. Brame

Assistant Professor

Department of Geological Sciences

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a. Professional Preparation

i) Degrees

B.S. Geology, minor Mathematics, Radford University, Radford VA 1992

M.S. Science Education, Radford University, Radford VA 1995

Ph.D. Geological Sciences, Virginia Polytechnic Institute and State University

ii) Certificates

Certificate in Engineering Geosciences, Radford University 1995

b. Academic Positions

Wright State University, Assistant Professor of Geology, Fall 2000 to present.

Virginia Tech, Instructor of Geology, Fall 1997, 1999-2000.

Radford University, Instructor of Geology, Fall 1994-1996.

New River Community College Instructor of Geology, 1995–1996 and Spring 2000.

c. Publications

Brame, Roderic I., 2001. Graphic Display of the Upper Devonian Biostratigraphy in the Central-Southern Appalachian Basin. *Paleobios*, Program and Abstracts, North American Paleontological Convention 2001. Vol 21, Supplement to number 2, p. 34

Brame, Roderic I. and William Slattery, 2001. Implementing the Standards: Inquiry Based Field Experience for Pre-Service High School Teachers [Invited Speaker]. National Meeting G.S.A. Boston, 2001. Abstracts with Programs, Vol.33 No.6 p.177

Brame, Roderic I., 2000, Revised Stratigraphy of the Upper Devonian (Frasnian) to the Basal Mississippian (Tournaisian) in the South-Central Appalachian Basin, Section Meeting, Southeast Geological Society of America, Abstracts with Program Vol. 32

Brame, Roderic I. and Richard Bambach, 1999, Chemung is Foreknobs in Southwestern Virginia. Section Meeting, Southeast Geological Society of America, Abstracts with Program Volume 31.

Brame, Roderic I. 1999, Chemung Really is Foreknobs: Extension of John Dennison's Units into the Valley and Ridge of Southwestern Virginia. Section Meeting, Southeast Geological Society of America, Abstracts with Program Volume 31.

Brame, Roderic I., 1998, Biostratigraphy and Sequence Stratigraphy for the Upper Devonian to Early Carboniferous in Southwestern Virginia. Third Annual -Virginia Tech Geological Sciences Student Research Symposium. Abstracts with Program p.28.

Brame, Roderic I., 1997, Upper Devonian to Early Carboniferous detailed stratigraphic column of marine sedimentary rocks in Montgomery County, Virginia. The Amadeus Grabau Symposium: International Meeting on Cyclicity and Bioevents in the Devonian System, Rochester, Program with Abstracts p.19.

- Brame, Roderic I., 1996, *Evolution of the Appalachians in Southwestern Virginia*; Chart combining stratigraphic columns, sea-level curves, geophysical information, orogenic events, and paleontology that is used to explain the evolution of the Appalachian Mountains in southwestern Virginia, 1996 (copied on request, over 350 as of December 2001).
- Brame, Roderic I., 1995, Stratigraphic and Structural Studies of the Brush Mountain area, Valley and Ridge Province of Southwestern Virginia. Section Meeting, Southeastern Geological Society of America, Abstracts with Program Volume 27 No.2 p 37.
- Brame, Roderic I., and Rebecca L. Parks, eds., 1994, *Hugh?: Some elementary School Science Activities*. Science Activity Book, Physical Science, Radford University Press, Radford, Virginia.
- Brame, Roderic I., 1994, Geologic map of the Radford North quadrangle, 1994 (for future publication).

d. Synergistic Activities

i) *Teaching and Service Awards*

Graduate Student Service Award, Virginia Tech, 1999-2000

Jake Tillman Award for Teaching Excellence, Virginia Tech Department of Geological Sciences, 1996-1997, 1997-1998, and 1998-1999

Outstanding Service Award, Virginia Tech Department of Geological Sciences, 1998-1999

ii) *Professional Development of In-Service Teachers through Funded Workshops*

Project Rise, Eisenhower Funded, Inquiry Based Science, Integration of Chemistry and Earth Science, Professional Development of Science Teachers, Summer 2001.

C.L.A.S.S. Project, NSF Funded Workshop with Special Education, Science Teachers, and Students with Physical Disabilities from Across the Country 2001.

Discovery Model Schools, Systemic Improvement for Science Education through Whole Building Approach, 2001.

Science Education workshops with science teachers from Orville Wright

Elementary School in Dayton; 1. Science education workshop with the entire faculty, 2001; 2. Science and Mathematics teacher workshop, 2001.

Sustain Workshops for Professional Development of Science and Mathematics Teachers, Summer 2001.

Dayton City Schools, Program for Improving Science Education, Rocks and Minerals, Climate, Solar System, and the Universe, 2001.

Millennium-End Mini-Conference for Earth Science Teachers, Exploring computer based Earth Science resources for meeting the Standard Of Learning requirements for the Virginia Department of Education, 1999.

Montgomery County School in-service workshop for Earth Science Teachers, How to use the local geology and fossils in the Jefferson National Forrest for science education, grades 6-12, Montgomery County, Virginia, 1999.

Science, Mathematics, and Technology 511X. Eisenhower funded graduate and undergraduate teacher workshop to help improve the level of understanding of basic concepts in science, mathematics, and technology for professional K-8 teachers.

iii) *K-12 Outreach for Quality Science Education*

Rockin' with Geoscience, summer geoscience workshop for inner city high school students from Richmond, Virginia, from the Greater Richmond Area Health Education Center, Summer 1998 and 1999.

Geology Display at the State of Virginia 4H club, Virginia Tech, 1999

Science outreach program for Dept. of Geological Sciences at Virginia Tech, 1997

Rock, Mineral, and Fossil talks at Montgomery County Schools, Virginia 1993 - 1998

Fossils of Virginia, display for Science Museum of Western Virginia, 1998

iv) *Curriculum development and philosophy*

Development of "hands-on minds-on" interactive science lessons and activities for academic levels ranging from elementary school to upper class college courses. The concept of the curriculum is to enhance intellectual development through increased understanding and synthesis of major concepts into an overall scientific critical thinking process used for problem solving. The problem solving skills are then used for discovery based learning. Successful implementation of the curriculum from elementary to college levels has been achieved and is continuing.

Development and design of an Earth Science Resource web page for the Virginia Department of Education to provide access to Earth Science information on the world wide web for K-12 Earth Science Teachers. VESR (Virginia Earth Science Resource). <http://www.geol.vt.edu/vesr>

Development and design of interactive discovery based activities, in concert with the NSES, for Concepts of Geology (GL345); a geology course designed to teach content and delivery of complex geologic concepts in an intellectually challenging way that also conveys how to teach Earth Science to K-8 students.

Development of capstone Science and Mathematics Courses (SM445/446) for middle school science teacher licensure in Ohio based on the NSES, Project 2061, and the Ohio State Science Standards. (Funded by a Title II Grant from the Ohio Board of Regents, 2001)

Design and develop science laboratory experiences that are universally accessible activities, intellectually developing, and meet the NSES. The implementation and testing of these activities are accomplished in summer workshops with physically disabled students, special education teachers, science teachers, lab assistants, and other science educators. The purpose is to deliver scientific concepts, in a meaningful way, to ALL students ranging from K-16.

v) *Professional Service*

Organizer and Co-Leader for Short Course sponsored by NAGT, *Earth Science Education and the Development of Reasoning*. Geological Society of America North-Central Southeast Joint Meeting, 2001

Co-Chair for National Association of Geoscience Teachers Symposium, *Inquiry-Based Learning: Field Work to High Tech*. Geological Society of America North-Central Southeast Joint Meeting, 2001

Paleontological Society Education and Outreach Committee, 2001

Review Board for Journal of Geoscience Education, 2001

Reviewer of a Paleontology textbook: *Bringing Fossils to Life* by Donald Prothero
For McGraw Hill publishers, 2001

Paleontological Society Booth, set up, take down, and man booth at regional and
national Geological Society of America meetings, 1999-present.

vi) *Guest Lectures*

Mineralization of the Caldwell Quarry, Cincinnati Mineral Society, 2001

Evidence for the Evolution of Life from the Precambrian, Radford University, 2001

**The Biostratigraphy of the Upper Devonian in the Central-Southern Appalachian
basin**, University of Cincinnati, 2000

The Fossil Record of the Precambrian, Radford University, 2000

Fossils of the La Brea Tar Pits, Roanoke Rock and Mineral Club, 2000

Comparison of the Devonian marine fossil record with present day marine biology,
Baldwin-Wallace College, 1999

The Geologic History of Virginia, Roanoke Gem and Mineral Show, 1999

Gems and Minerals of Virginia, Roanoke Gem and Mineral Show, 1999

Evidence of Life in the Archean and Proterozoic, Radford University, 1999

Improving the Geologic Time Scale, Western Oregon University, 1999

Fossils in Virginia, Roanoke Rock and Mineral Club, 1998

Life from the Archean through the Vendian, Radford University, 1998

What does the Fossil Record Represent? Radford University, 1997

Origin of Life, Radford University, 1997

Punctuated Equilibrium, Radford University, 1996

vii) *Volunteer work*

West District Science Day, Scientific Review Board for Regional Science Fair, 2001

Science Olympiad, organized and participated in rock and mineral study sessions for
teams from several local schools, 2001 and 2002

Judge for Orville Wright Elementary School Science Fair, Dayton Ohio, fall, 2001

Virginia Tech Architecture Class Consultant, production of a geologic map and cross
section for site analyses and site use project and on site consulting with students, Virginia
Tech Department of Architecture, Spring 2000

GTA workshop for new graduate students at Virginia Tech, assigned to teach Earth
Science Laboratories, fall 1997

Member of Committee on Outreach and Museum Activities for Virginia Tech
Department of Geological Sciences, 1997-98 and 1998-99 academic years.

Member of Education Scholarship Committee for the Roanoke Rock and Mineral
Club

e. **Collaborators and Other Affiliations**

i) *Collaborators since Jan 1999* (excluding research students and technicians)

Dr. Beth Basista, Wright State University; Andrew Bush, Harvard University; Dr.

Suzanne Lunsford, Wright State University; Dr. William Slattery, Wright State

University; Dr. James Tomlin, Wright State University; Dr. Michele Wheatly, Wright

State University; Wendi Williams, University of Arkansas Little Rock.

ii) *Graduate Advisor*: Dr. Richard K. Bambach, Virginia Polytechnic Institution and State University (Currently at Harvard University).

f. Teaching Activities

i) *Courses Taught*

Biostratigraphy 699, (for paleontology graduate students) Wright State University
Concepts in Geology 345, (for pre-service teachers) Wright Sate University
Environmental Geology 113, Radford University
Historical Geology 1014-112, Virginia Tech and New River Community College
Historical Geology for In-Service Teachers 699, Wright State University
Historical Geology for Geology Majors Laboratories 1114, Virginia Tech
Igneous and Metamorphic Petrology 385, Wright State University
Invertebrate Paleontology, Wright Sate University
Mineralogy 381, Wright State University; **Mineralogy 210**, Radford University
Optical Mineralogy 211, Radford University
Paleoecology 699, (for paleontology graduate students) Wright State University
Paleontology, Wright State University; **Paleontology Labs 3604**, Virginia Tech
Physical Geology 111, Radford University and New River Community College
Physical Geology for Geology Majors Laboratories 1104, Virginia Tech
Physical Science for Science Education Majors 350, Radford University
Physics Laboratories 112, Radford University
Projects in Science 446, Wright State University
Science Mathematics and Technology 511 (for in-service teachers), Radford University

ii) *Field Based Courses*

Field Geology 464, Field Camp, Wright State University
Geology of the Great Lakes 499/699, Wright State University
Igneous and Metamorphic Terranes of the New England States 499/699
Paleontology of the Eastern United States 499/699, Wright State University

iii) *Field Trips*

Hydrothermal Mineralization of the Caldwell Quarry in Richmond, Kentucky
Metamorphic Petrology of the Blue Ridge of Virginia
Geologic History of the Late Devonian and Early Mississippian
Paleobiology and Paleoecology of Near-shore Devonian Marine Communities
Faults, Folds, and Stratigraphy Produced from Paleozoic Orogenic Events in the South-Central Appalachians
Geomorphology and Geology of the Coastal Plane, Piedmont, and Valley and Ridge in Virginia
Precambrian-Cambrian Rift to Drift Sequence in Southwest Virginia
Precambrian Stratigraphy and Metamorphic Terranes in the Blue Ridge in Southwest Virginia
Middle Paleozoic Stratigraphy of the Valley and Ridge in Southwest Virginia
Lower Paleozoic Stratigraphy and Structural Geology of the Valley and Ridge in Southwest Virginia

Paleozoic Stratigraphy in Southwest Virginia
Pegmatite Forming Minerals of the Morefield Pegmatite Mine, Amelia, Virginia
Paleontology of the Middle Devonian, Capon Bridge, West Virginia
Paleoecology and Evolution in the Upper Devonian, Montgomery Co, Virginia

g. Grants

C.L.A.S.S. Project, Creating Laboratory Access for Students in Science, 2000-2004, Total Award: 500,000, Funding Agency: National Science Foundation

Projects in Science Course for Middle School: Preservice and Inservice Teachers, 2001-2002, Total Award: 18,000, Funding Agency: Ohio Board of Regents

Rural Integrated Science Experience, Active Period: 2002, Total Award: 101,499, Funding Agency: Ohio Board of Regents and Eisenhower Foundation

h. Consulting

Rock slope stability analysis of the Cedar Bluff road cut on route 460 in Virginia, using Rock-Pack computer software to determine geometric relationships among the orientation of fractures, bedding planes, and the dip angle and dip direction of the strata (1995).

Mining engineering, mapping of geochemical zones of highly fractionated rare earth elements within a pegmatite body, drilling and blasting, and development of the Morefield Pegmatite Mine, Amelia Virginia (Summers 1994 -97).

Site analyses for building structure, septic field, and well location for the lodge and housing structures located on the Se'lu conservancy owned by Radford University (1994).

j. Membership in Scientific Societies

Geological Society of America Foundation

Geological Society of America

National Association of Geoscience Teachers

Paleontological Society

Radford University Geological Society

Sigma Gamma Epsilon, Earth Science Honor Society

References

Richard Bambach, Professor of Paleontology at Harvard University, Department of Geological Sciences, Cambridge, Massachusetts (O) 617 – 495 - 7602
(H) 617 - 487 - 7457

J. Thomas Dutro Jr., Invertebrate Paleontology, Smithsonian Institution, Museum of Natural History, Washington D.C. (O) 202 - 343 - 3222
(H) 202 - 363 – 0480

John Pojeta Jr., Paleontology and Stratigraphy Branch, U.S. Geological Survey, Smithsonian Institution, Museum of Natural History, Washington D.C. (O) 202 – 343 - 5097