

Curriculum Vita
JAMES H. MACDONALD, Jr., Ph.D.
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Dept. of Marine and Ecological Sciences
Florida Gulf Coast University
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Fort Myers, FL 33965

EDUCATION

Ph.D. **University at Albany, State University of New York**
Petrology / Tectonics / Geochemistry, 2006

*Petrology, Petrogenesis, and Tectonic setting of Jurassic rocks of the Central Cascades,
Washington, and Western Klamath Mountains, California-Oregon*
Gregory D. Harper (chair), Robert B. Miller, William S.F. Kidd

B.S. **New Paltz, State University of New York**
Environmental Geology, 1998

A.A. **Dutchess Community College, State University of New York**
Liberal Arts and Social Science, 1996

EMPLOYMENT

Assistant Professor of Geology, Florida Gulf Coast University, Present

Instructor, Wright State University, 2006-2007

Part-time lecturer, University at Albany, State University of New York, 2005-2006

Teaching Assistant, University at Albany, State University of New York, 2000-2005

Research Assistant, University at Albany, State University of New York, 2002

Researcher, Bureau of Land Management, US Dept. of Interior, 2003

Teaching Assistant, New Paltz, State University of New York, 1997-1999

TEACHING EXPERIENCE

Instructor, Environmental Geology, FGCU, spring 2008, fall 2007
Introductory environmental geology course for science and engineering majors.

Instructor, Physical and Historical, FGCU, spring 2008, fall 2007
Introductory geology course for science and engineering majors.

Instructor, The Evolving Earth, WSU, spring 2007
Introductory historical geology course for non-science majors.

Instructor, Earth and Human Affairs, WSU, spring 2007
Introductory environmental geology course for non-science majors.

Instructor, Earth Science by Inquiry/Concepts in Geology, WSU, spring 2007, winter 2007 (two sections)
Introductory survey course for Education majors.

Co-Instructor, Great Ideas in Science, WSU spring 2007
General survey course to introduce non-science majors to the great ideas of science, their origin and history, and their impact on modes of thought.

Instructor, Planet Earth, WSU, winter 2007
Introductory geology course for non-science majors.

Co-Instructor, Earth Science by Inquiry/Concepts in Geology, WSU, fall 2006
Introductory survey course for Education majors.

Instructor, Planet Earth, SUNY Albany, summer 2006, summer 2005
Introductory geology course for both science and non-science majors.

Instructor, Petrology, SUNY Albany, spring 2006
Taught aspects of igneous and metamorphic geology to students within the major. Also constructed labs and advised teaching assistants in running the lab.

Instructor, Geo-hazards and surface processes, SUNY Albany, spring 2005
Introduced geological hazards such as volcanoes, earthquakes, tsunamis, weather, etc, to both science and non-science majors.

Teaching Assistant, Tectonics, lab instructor, fall 2001, 2003 & 2004

Teaching Assistant, Petrology, lab instructor, spring 2001, 2002, 2003 & 2004

Teaching Assistant, Stratigraphy, lab instructor, fall 2001

Teaching Assistant, Field excursions in stratigraphy, fall 2001

Teaching Assistant, Mineralogy, lab instructor, fall 1997, 1998, 1999 & 2000

Teaching Assistant, Field Geology, fall 2004

RESEARCH INTERESTS

My main interests concentrate on petrology, petrogenesis, geochemistry, and tectonics. I apply this research towards the petrogenesis and tectonic origin of basaltic rocks, with particular interest in Cordilleran Jurassic ophiolites. I have also worked on the tectonic evolution of the Cascades Mountains within Washington State and the Taconic Mountains within New York and adjoining states. I am also interested in the provenance of sedimentary rocks using whole-rock and trace element geochemistry, detrital heavy mineral geochemistry, and U/Pb isotopes of detrital zircons. I also am currently undertaking education based research on how students learn, the effectiveness of tests, and inquiry based learning.

AWARDS/HONORS/GRANTS

Winthrop D. Means award for most outstanding teaching assistant.

Wright State University Department of Intercollegiate Athletics Scholar-Athletes
Recognized for assisting a Student-Athlete achieve academic excellence

Whitaker Center for Science, Technology, Engineering and Mathematics Education, Faculty Member.

Invited speaker, Jurassic Tectonics and Magmatism in Outboard Terranes from Northern California to Washington session, Geological Society of America Cordilleran Section Meeting, 2002.

Invited speaker, Ophiolites, Batholiths, and Regional Geology: A Session in Honor of Cliff Hopson, Geological Society of America Cordilleran Section Meeting, 2005.

Invited speaker, Florida Gulf Coast University, Whitaker Center for STEM Education: Title of talk: Tectonics, Geochemistry, Their Interconnection, and Importance: ROCKS -- They Know More Than You Think They Do! Fall 2007

Invited speaker, Wright State University: Title of talk: Tectonic evolution of the Ingalls ophiolite complex, central Cascades, Washington. Spring 2007

Invited speaker, Pratt Institute: Title of talk: Limestones and Marbles: their geologic occurrence and artistic uses. Spring 2007

Invited speaker, SUNY New Paltz: Title of talk: Petrography, geochemistry and provenance of the Galice Formation, Klamath Mountains, Oregon-California. Fall 2005

Whitaker Center for STEM Education Faculty Research and Development Mini-Grant, \$500, 2008.

GSA grant in support of research, \$1150, 2001.

GSA grant in support of research, \$700, 2004.

Sigma Xi grant in aid of research, \$350, 2001.

SUNY Albany Graduate Student Organization grant, \$300, 2003.

6 Geological Society of America Student travel grants totaling \$ 2238.75

Stephen Jay Egemeier Memorial Scholarship for most improved graduating geology student.

I.R. Schwartz Scholarship for most improved graduating senior.

Participant in the National Science Foundation grant EAR-0003444.

Participating student in USGS EDMAP grant, 2004-2005.

PROFESSIONAL MEMBERSHIPS

Geological Society of America

American Geophysical Union

National Association of Geoscience Teachers

Geochemical Society

ANALYTICAL EXPERIENCE

Sensitive High Resolution Ion Micro Probe Reverse Geometry (SHRIMP-RG)

JEOL 8900 Electron Microprobe

Cameca SX-100 Electron Microprobe

Inductively Coupled Plasma Mass Spectrometer (ICP-MS)

X-ray Diffractometer

Scanning Electron Microscope

Ion Chromatograph

Atomic Absorption Spectrometer

FIELD EXPERIENCE

Field mapping of Jurassic ophiolite and associated rocks, Central Cascades, Washington.

Field mapping of Jurassic pluton and associated metamorphic rocks, Central Cascades, Washington.

Field mapping of Jurassic ophiolite and overlying sedimentary rocks, Klamath Mountains, California-Oregon.

Field mapping of Jurassic ophiolite and associated metasedimentary rocks, Coast Range Mountains, Oregon.

Field mapping of Ordovician rocks in eastern Ulster County and western Dutchess County, New York.

Field mapping of Precambrian marbles, Pine Island, New York.

PUBLICATIONS

Peer reviewed papers

Harper, G. D., Miller, R. B., MacDonald, J. H., Jr., Miller, J. S., and Mlinarevic, A. N., 2003, Evolution of a polygenetic ophiolite: the Jurassic Ingalls Ophiolite, Washington Cascades: *in* Swanson, T. W., ed., Western Cordillera and adjacent areas: Boulder, Colorado, Geological Society of America Field Guide 4, p. 251-265.

MacDonald, J.H., Jr., Harper, G.D., and Zhu, B., 2006, Petrology, geochemistry, and provenance of the Galice Formation, Klamath Mountains, Oregon-California, *in* Snoke, A.W., and Barnes, C.G., eds., Geological studies in the Klamath Mountains province, California and Oregon: Boulder, Colorado, Geological Society of America Special Paper 410, p. 77-101.

MacDonald, J.H., Jr., Harper, G.D., Miller, R.B., Miller, J.S., Mlinarevic, A.N., and Schultz, C.E., 2008, The Ingalls ophiolite complex, central Cascades, Washington: Geochemistry, tectonic setting, and regional correlations, *in* Wright, J.E., and Shervais, J.W., eds., Ophiolites, Arcs, and Batholiths: A Tribute to Cliff Hopson: Geological Society of America Special Paper 438, p. 133-159.

MacDonald, J.H., Jr., Harper, G.D., Miller, R.B., Miller, J.S., Mlinarevic, A.N., and Miller, B.V., 2008, Geochemistry and geology of the Iron Mountain unit, Ingalls ophiolite complex, Washington: Evidence for the polygenetic nature of the Ingalls complex, *in* Wright, J.E., and Shervais, J.W., eds., *Ophiolites, Arcs, and Batholiths: A Tribute to Cliff Hopson: Geological Society of America Special Paper 438*, p. 161–173.

Manuscripts in preparation

MacDonald, J. H., Jr., Harper, G. D., Miller, R. B., and Miller, J. S. New U/Pb SHRIMP-RG ages from the Manastash inlier, central Cascades, Washington. *To be submitted to the Geological Society of America Bulletin*.

MacDonald, J. H., Jr., Miller, R. B., Harper, G. D., and Miller, J. S. Sedimentary serpentinites from the Ingalls ophiolite complex: further evidence for a fracture zone setting. *To be submitted to the Journal of Geology*.

Miller, R. B., Paterson, S. R., Lebit, H., Mlinarevic, A. N., Harper, G. D., and MacDonald, J. H., Jr., Structures at the termination of a major contractional belt: north Cascades, Washington.

Invited Abstracts

MacDonald, J.H., Jr., Harper, G.D., Miller, R.B., and Miller, J.S., 2002, Within-plate magmatic affinities of a lower pillow unit in the Ingalls Ophiolite Complex, northwest Cascades, Washington: Geological Society of America, Abstracts with Programs, v. 34, no. 5, p. A-22.

MacDonald, J. H., Jr., Harper, G. D., Miller, R. B., Miller, J. S., Mlinarevic, A. N., and Schultz, C. E., 2005, The Polygenetic Ingalls Ophiolite Complex and its Relationship to the Josephine and Coast Range ophiolites: Geological Society of America, Abstracts with Programs, v. 37, no. 4, p. 85.

Abstracts

Goodwin, B. P., Waines, R. H., and MacDonald, J. H., Jr., 2003, Preliminary stratigraphy and structure of a medial Ordovician Mount Merino inlier within the Livingston Taconic tectonic thrust slice in west-central Dutchess County, mid-Hudson valley, New York: Geological Society of America, Abstracts with Programs, v. 35, no. 3, p. 94.

MacDonald, J. H., Jr., Harper, G. D., and Miller, R. B., 2003, The De Roux unit of the central Cascades, Washington: geochemistry, tectonic setting, and possible correlations: Geological Society of America Abstracts with Programs, v. 35, no. 6, p. 513.

MacDonald, J.H., Jr., Harper, G.D., Miller, J.S., and Zhu, B., 2004, Petrology, provenance, and further age control of the Galice Formation, Klamath Mountains, Oregon-California: Geological Society of America, Abstracts with Programs, v. 36, no. 4, p. 36.

MacDonald, J. H., Jr., Harper, G. D., Miller, R. B., Miller, J. S., and Mlinarevic, A. N., 2004, Geochemistry and possible tectonic setting of the Esmeralda Peaks unit, and related rocks, Ingalls Ophiolite Complex, Washington: Geological Society of America, Abstracts with Programs, v. 36, no. 5, p. 23.

MacDonald, J. H., Jr., and Harper, G. D., 2005, Geochemistry and possible tectonic origin of mafic units from the Manastash inlier, Central Cascades, Washington: Geological Society of America, Abstracts with Programs, v. 37, no. 7, p. 71.

MacDonald, J. H., Jr., Mlinarevic, A. N., Harper, G. D., Miller, R. B., Miller, J. S., and Schultz, C. E., 2005, Sedimentary Serpentinites of the Ingalls Ophiolite Complex: further evidence of a fracture zone setting: Geological Society of America, Abstracts with Programs, v. 37, no. 4, p. 86.

- MacDonald, J. H., Jr., Harper, G. D., Miller, R. B., and Miller, J. S., 2006 New U/Pb SHRIMP-RG ages from the Manastash inlier, central Cascades, Washington: Geological Society of America, Abstracts with Programs, v. 38, no. 7, p. 449.
- MacDonald, J. H., Jr., Dragovich, J. D., Miller, R. B., and Metzger, E. P., 2008, Geology, geochemistry and possible tectonic and structural development of the Helena-Haystack mélangé, north Cascades, Washington state: Geological Society of America, Abstracts with Programs, v.40, no. 1, p.87.
- Mlinarevic, A. N., Miller, R. B., Harper, G.D., MacDonald, J. H., Jr., and Miller, J. S., 2003, Nodal basin (?) sedimentation in an ancient oceanic fracture zone, Ingalls Ophiolite Complex, Washington: Geological Society of America, Abstracts with Programs, v. 35, no. 6, p. 513.
- Schultz, C. E., Miller, R. B., Miller, J. S., and MacDonald, J. H., Jr., 2005, Mantle Peridotites in the Ingalls ophiolite: Geological Society of America, Abstracts with Programs, v. 37, no. 4, p. 85.
- Waines, R. H., Macdonald, J. H., Warnon, J. C. M., and Cunningham, R. W., 2001, The "ultimate" Taconic thrust slice; an extension of the Normanskill Sequence (early Medial Ordovician), mid-Hudson Valley, New York: Geological Society of America, Abstracts with Programs, v. 33, no. 1, p. 31.
- Warron, J. C. M., MacDonald, J. H., Jr., and Waines, R. H., 2000, Plagioclase Significance in a Taconian Arenite Sequence, Southeastern New York: Abstracts New York Natural History Conference, VI, New York State Museum Circular 62, p. 79.