

## **RACHEL J. BEANE**

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### **EDUCATION**

STANFORD UNIVERSITY, Stanford, CA

Ph.D. in Geological and Environmental Sciences, June 1997.

*Dissertation*: "Petrologic evolution and geochronologic constraints for high-pressure metamorphism in the Maksyutov Complex, south Ural Mountains." Research combined field, petrologic, geochemical, and geochronologic studies to investigate the formation and exhumation of a Devonian high-pressure metamorphic complex that includes eclogite boudins in metasediments and metasomatized island-arc volcanics in serpentinite melanges. Advisors: J. G. Liou, R. G. Coleman, W. G. Ernst and M. O. McWilliams.

WILLIAMS COLLEGE, Williamstown, MA

B. A. *magna cum laude* with Highest Honors in Geology, June 1993.

*Undergraduate thesis*: "Field relations, petrology and geochemistry of Sugarloaf Intrusive Center, Pikes Peak Batholith, Colorado." Geochemical evolution of a syenite intrusion was modeled and compared with other sodic intrusive centers in the batholith. Research was part of a Keck Geology Consortium Project. Advisor at Williams College: R. A. Wobus.

### **TEACHING**

ASSISTANT PROFESSOR, Bowdoin College, 1998-present.

Teach Introduction to Physical Geology, Geological Field Methods, Mineralogy, Structural Geology, Igneous and Metamorphic Petrology, and Mountain Belts. All courses emphasize problem-solving and writing, and have field-trips to examine local geology.

ASSISTANT PROFESSOR, Bowling Green State University, 1997-1998.

Taught introductory physical geology to two 90-person classes. Designed and taught new graduate-level course in metamorphic petrology. Co-taught field geology course in the San Juan Mountains, Colorado.

TEACHING ASSISTANT, Geographic Information Systems, Stanford University, 1996 - 1997.

Prepared laboratory exercises, presented introductory lectures, and arranged guest speakers for GIS course. Served as resource for GIS related questions in the School of Earth Sciences.

INSTRUCTOR, Outdoor Education Program, Stanford University, 1994-1996.

Facilitated discussions and exercises on natural history and wilderness skills; led weekend field trips; and, coordinated teaching responsibilities among ten instructors. Elected as program director, 1995.

### **PUBLICATIONS**

Beane R. J. and Connelly J. N., 2000.  $^{40}\text{Ar}/^{39}\text{Ar}$ , U-Pb, and Sm-Nd constraints on the timing of metamorphic events in the Maksyutov Complex, southern Ural Mountains. *Journal of the Geological Society, London*, v. 157, p. 811-822.

Beane R. J. and Wobus R. A., 1999. Petrogenesis of the Sugarloaf Syenite, Pikes Peak Batholith, Colorado. *Rocky Mountain Geology*, v. 34, p. 313-324.

Smith D. R., Noblett J., Wobus R. A., Unruh, D., Douglass, J., Beane R. J., Davis, C., Goldman, S., Kay, G., Gustavson, B., Saltoun, B. and Stewart, J., 1999. Petrology and geochemistry of late-stage intrusions of the A-type, mid-Proterozoic Pikes Peak Batholith (Central Colorado, USA): implications for petrogenetic models. *PreCambrian Research*, v. 98, p. 271-305.

Dobretsov, N. L., Shatsky V. S., Coleman R. G., Lennykh V. I., Valizer P. M., Liou J. G., Zhang R. and Beane R. J., 1996. Tectonic Setting of Ultrahigh-pressure Metamorphic Rocks in the Maksyutov Complex, Ural Mountains, Russia. *International Geology Review*, v. 38, p. 136-160.

Beane R. J., Liou J. G., Coleman R. G. and Leech M. L., 1995. Petrology and Retrograde P-T Path for Eclogite of the Maksyutov Complex, Southern Ural Mountains, Russia. *The Island Arc*, v. 4, p.254-266.

Lennykh V. I., Valizer P. M., Beane R. J., Leech M. L. and Ernst W. G., 1995. Proliferation of Eclogite in the Maksyutov Complex, Southern Urals, Russia: Implications for Ultrahigh-Pressure Metamorphism. *International Geology Review*, v. 37, p. 584-600.

## CONFERENCE ABSTRACTS

- Lawrence, K. E.\* and Beane, R. J., 2001. Geochemistry of the metamorphosed Spring Point and Cushing Formations. *Abstracts with Programs, Geological Society of America*, v. 33.
- Meyer, E. E.\* and Beane, R. J., 2001. A petrographic study of the Spring Point Formation, Casco Bay, Maine. *Abstracts with Programs, Geological Society of America*, v. 33.
- Van Vleck, H.\* and Beane, R. J., 2001. Petrography and geochemistry of mafic blocks in the Hurricane Mountain melange in west-central Maine. *Atlantic Geoscience Society Colloquium*.
- Thomas, D. W.\* and Beane, R. J., 2000. Deformation of the Hurricane Mountain Formation Melange along Tomhegan and Cold Streams, west-central Maine. *Abstracts with Programs, Geological Society of America*, v. 32, p.78.
- Beane, R. J., 1998. Implications of mineral textures and element zoning for the formation of atoll-shaped garnets in eclogite. *Eos, American Geophysical Union; Supplement*, v. 78 (V31B-12).
- Beane R. J., 1997. Ar/Ar evidence for Devonian high-pressure metamorphism in the South Urals. *Abstracts with Programs, Geological Society of America; v. 29*, p. 119.
- Beane R. J., 1996. Calcium Metasomatism in Mafic Rocks of the Maksyutov Complex, Southern Urals. *EOS, American Geophysical Union; Supplement*, v. 77, p. 837. *Session co-convener*.
- Beane R. J., Connelly J. N., and Liou J. G., 1996. Evidence for Devonian Eclogite-facies Metamorphism in the Maksyutov Complex, Southern Ural Mountains, Russia. *Abstracts with Programs, Geological Society of America; v. 28*, p. 170. *Invited talk*.
- Leech M. L., Valizer P. M., Ernst W. G., and Beane R. J., 1996. Metamorphism and deformation in the high- to ultrahigh-pressure Maksyutov Complex, southern Ural Mountains, Russia. EUROPROBE, Conference on the Uralides, Granada, Spain.
- Beane R. J., 1995. Metamorphism of the Serpentinite Melange in the Maksyutov Complex, Southern Ural Mountains. *EOS, American Geophysical Union; Supplement*, v. 76, p. 678.
- Lennykh V. I., Valizer, P. M., Beane R. J., Leech M. L. and Ernst W. G., 1995. Proterectonics of the Maksyutov Ultrahigh-Pressure/High-Pressure Metamorphic Complex, South Ural Mountains, Russia. *EOS, American Geophysical Union; Supplement*, v. 76, p. 668.
- Beane R. J. and Liou J. G., 1995. Serpentinite Melanges of the Maksyutov Complex, Southern Ural Mountains, Russia. *Abstracts with Programs, Geological Society of America; v. 27*, p. 316.
- Beane R. J., Liou J. G., Coleman R. G., McWilliams M. O. and Lennykh V., 1994. Field Relations, Mineral Assemblages and Age of HP-UHPM, Maksyutov Complex, Ural Mountains, Russia. *EOS, American Geophysical Union; Supplement*, v. 75, p. 744.
- Beane R. J., Liou J. G., Zhang R. Y., Coleman R. G., McWilliams M. O. and Lennykh V., 1994. Compositional and  $^{40}\text{Ar}/^{39}\text{Ar}$  Data for HP-UHPM, Maksyutov Complex, Ural Mountains, Russia: Evidence for P-T Conditions and Age of Metamorphism. *Abstracts with Programs, Geological Society of America; v. 26*, p. 226.
- Beane R. J. and Wobus R. A., 1993. Field Relations, Petrography and Geochemistry of the Sugarloaf Intrusive Center, Pikes Peak Batholith, Colorado. *EOS, American Geophysical Union; Supplement*, v. 74, p. 634.
- Sturm M., Smith D. R., Beane R., Wobus R. A. *et al.*, 1993. Geochemistry of Late Stage Alkaline Intrusions of the Pikes Peak Batholith, Colorado. *Abstracts with Programs, Geological Society of America; v. 25*, p. 271.
- Beane R. J., 1993. Field Relations, Petrology, and Geochemistry of Sugarloaf Complex, Pikes Peak Batholith. *Keck Research Symposium in Geology, Abstracts Volume; v. 6*, p. 22-25.
- Beavers R. L. and Beane R. J., 1992. Use of Image Processing to Map Sedimentary Environments and Vegetation Zones of Sandy Beach Marsh, Gaspe, Canada. *Keck Research Symposium in Geology, Abstracts Volume; v. 5*, p. 33-36.

\* denotes undergraduate student author

**GRANTS**

- National Science Foundation Grant, "Improving undergraduate learning through use of a low-vacuum scanning electron microscope with an energy dispersive x-ray spectrometer," \$100,000, 1999-2002.
- Fletcher Research and Travel Grant, "Electron Backscatter Diffraction at University of Liverpool," 2001.
- Faculty Leave Supplement, "Geochemical interpretations of eclogite," Bowdoin College, 2001-2002.
- Course Development Fund, "Geographic Information Systems," Bowdoin College, 1999-2001.
- Course Development Fund, "Creating a new mineralogy course," Bowdoin College, 2000-2002.
- Druckenmiller Research Fellowship, Bowdoin College, 1998-2000.
- Faculty Development Grants, Bowling Green State University, 1997 and 1998.
- National Science Foundation, Graduate Fellowship, 1993-1996.
- Geological Society of America, Research Grants, 1994 and 1995.
- Sigma Xi, Grant-in-Aid of Research, 1995.
- McGee Foundation Grants, through Stanford University, 1995 and 1996.
- Shell Fund Grants, through Stanford University; 1993, 1994, 1995, and 1996.

**INVITED TALKS**

- Boston University, Massachusetts, 2001. "Implications of high-pressure metamorphism with examples from the south Ural Mountains."
- University of Maine at Orono, 2000. "Implications of high-pressure metamorphism with examples from the south Ural Mountains."
- Williams College, Williamstown, Massachusetts, 2000. "Implications of high- and ultrahigh- pressure metamorphism, with examples from Russia and Kazakhstan."
- University of Maine at Farmington, 2000. "Implications of high- and ultrahigh- pressure metamorphism, with examples from Russia and Kazakhstan."
- Bowdoin College, Brunswick, Maine, 1999. Panelist for "Women in Science" discussion.
- Research Science Institute (a summer program for high-school students) at Massachusetts Institute of Technology, Cambridge, Massachusetts, 1998: "High-pressure metamorphism in subduction zones."
- Bowdoin College, Brunswick, Maine, 1998: "High-pressure metamorphism in a Paleozoic subduction zone, Ural Mountains, Russia."
- Eastern Transvaal Consolidated Mines Ltd., Barberton, South Africa, 1997: "Metasomatism and high-pressure metamorphism in the South Ural Mountains."
- Bowling Green State University, Bowling Green, Ohio, 1997: "Sleuthing in the South Urals."
- Geological Society of America Symposium (S24) on the Tectonic Evolution of the Urals and Surrounding Basins; Denver, Colorado, 1996: "Evidence for Devonian eclogite-facies metamorphism in the Maksyutov Complex, southern Ural Mountains, Russia."

**EXTENDED FIELD TRIPS AND FIELD COURSES**

- Blueschists and eclogites of Syros, Greece. Keck Geology Consortium Project, 2000.
- Geological Society of America Field Forum: Correlating volcanic and plutonic perceptions of silicic magma chamber processes - evidence from coastal Maine plutons, 2000.
- Geology of South Africa field trip. Participant and contributor to field guide. Stanford University, 1997.
- Geology of Alaska field trip. Coordinated itinerary and field guide. Stanford University, 1995.
- Kokchetav Massif, Kazakhstan. Field examination of ultrahigh-pressure metamorphism, 1994.
- Geology summer field course, Big Horn Basin, Wyoming. Iowa State University, 1992.
- Paleogeology of rocky shores field course, Baja California, Mexico. Williams College, 1992.
- Research assistant for Keck Geology Consortium Project on the Gaspè Peninsula, Quebec, 1991.

**TEACHING WORKSHOPS**

- Hewlett teaching workshop, Bowdoin College, 2000.
- Women throughout the curriculum workshop, Bowdoin College, 1999.
- Workshop for early career faculty, National Association of Geoscience Teachers & NSF, 1999.
- First-year seminar writing and teaching workshop, Bowdoin College, 1998.
- Effective teaching workshop, National Association of Geoscience Teachers, GSA, 1995.

**OTHER WORKSHOPS AND COURSES**

- Thermodynamic Modeling of Mineral Reactions: An Introduction to GIBBs, F. Spear, 2001.
- MARGINS Theoretical and Experimental Institute: Inside the Subduction Factory, 2000.
- Appalachian Symposium (Convener), Bowdoin College, 2000.
- Microanalysis Course, EDAX, 2000.
- Ultrahigh-Pressure Metamorphism and Tectonics Workshop, Stanford University, 1998.
- Emergency Medical Technician Course, Wilderness Medicine Institute, Colorado, 1996.
- Ultrahigh-Pressure Metamorphism and Tectonics Workshop, Stanford University, 1994.

**COLLEGE SERVICE**

- Recording Committee, 2000-2001.
- Academic Computing Committee, 1999-2000.
- First-year and major advisor, 1999-present.
- Member of search and ad-hoc search committees, 1998-present.
- Bowdoin Outing Club pre-orientation trip, 1999.

**PROFESSIONAL SERVICE**

- Keck Geology Consortium advisory board member, 1998-present.
- Research Science Institute alumni representative, 1997-present.
- Williams College Admissions alumni interviewer, 1994-present.

**PROFESSIONAL MEMBERSHIPS**

American Geophysical Union  
Association of Women Geologists  
Geologic Society of America  
Geologic Society of Maine

Mineralogic Society of America  
Microscopy Society of America  
National Association of Geoscience Teachers  
Sigma Xi