

James Ashton Van Orman
Curriculum Vitae

Department of Geological Sciences
Case Western Reserve University
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EDUCATION

- Ph.D., Massachusetts Institute of Technology, Cambridge, MA, USA (2000)
- B.S., Florida State University, Tallahassee, FL, USA (1994)

APPOINTMENTS

- Associate Professor, Case Western Reserve University (1 July 2008-present)
- Visiting Professor, Swiss Federal Institute of Technology (ETH) (1 June – 15 August 2007)
- Assistant Professor, Case Western Reserve University (2002-2008)
- Postdoctoral Fellow, Carnegie Institution of Washington (2000-2002)

HONORS AND AWARDS

- F.W. Clarke Medal, Geochemical Society (2005)
- National Science Foundation Earth Sciences Postdoctoral Fellowship (2000-2002)
- National Science Foundation Graduate Research Fellowship (1994-1997)

REFEREED PUBLICATIONS

- Van Orman J.A., Crispin K.L. (2010) Diffusion in Oxides. Reviews in Mineralogy and Geochemistry, submitted.
- Van Orman J.A., Saal A.E. (2010) Diffusion constraints on rates of melt production in the mantle. Chapter submitted to book "Timescales of Magmatic Processes: From Core to Atmosphere", A. Dosseto, S. Turner, J.A. Van Orman, eds.
- Crispin K.L., Van Orman J.A. (2010) Influence of the crystal field effect on chemical transport in Earth's mantle: Cr³⁺ and Ga³⁺ diffusion in periclase. *Physics of the Earth and Planetary Interiors* in revision.
- Zhang L., Van Orman J.A., Lacks D.J. (2009) The influence of atomic size and charge of dissolved species on the diffusivity and viscosity of silicate melts. *American Mineralogist* 94, 1735-1738.
- Zhang L., Lacks D.J., Van Orman J.A. (2009) Diffusivity calculation on noble gas silica systems using first principles molecular simulations. *Molecular Simulation* 35, 942-952.
- Van Orman J.A., Saal A.E. (2009) Influence of crustal cumulates on ²¹⁰Pb disequilibria in basalts. *Earth and Planetary Science Letters* 284, 284-291.
- Touboul M., Kleine T., Bourdon B., Van Orman J.A., Maden C., Zipfel J. (2009) Hf-W thermochronometry: II. Accretion and thermal history of the acapulcoite-lodranite parent body. *Earth and Planetary Science Letters* 284, 168-178.

- Goodrich C.A., Fioretti A.M., Van Orman J. (2009) Petrogenesis of augite-bearing ureilites Hughes 009 and FRO 90054/93008 inferred from melt inclusions in olivine, augite and orthopyroxene. *Geochimica et Cosmochimica Acta* 73, 3055-3076.
- Zhang L., Van Orman J.A., Lacks D.J. (2009) Effective radii of noble gas atoms in silicates from first principles molecular simulation. *American Mineralogist* 94, 600-608.
- Bourdon B., Van Orman J.A. (2009) Melting of enriched mantle beneath Pitcairn seamounts: Unusual U-Th-Ra systematics provide insights into melt extraction processes. *Earth and Planetary Science Letters* 277, 474-481.
- Van Orman J.A., Li C., Crispin K.L. (2009) Aluminum diffusion and Al-vacancy association in periclase. *Physics of the Earth and Planetary Interiors* 172, 34-42.
- Wilson L., Goodrich C.A., Van Orman J.A. (2008) Thermal evolution and physics of melt extraction on the ureilite parent body. *Geochimica et Cosmochimica Acta* 72, 6154-6176.
- Van Orman J.A., Keshav S., Fei Y. (2008) High-pressure solid/liquid partitioning of Os, Re and Pt in the Fe-S system. *Earth and Planetary Science Letters* 274, 250-257.
- Saal A.E., Hauri E.H., Lo Cascio M., Van Orman J.A., Rutherford M.C., Cooper R.F. (2008) Volatile content of lunar volcanic glasses and the presence of water in the Moon's interior. *Nature* 454, 192-195.
<http://www.nature.com/nature/journal/v454/n7201/edsumm/e080710-07.html>
- Kleine T., Touboul M., Van Orman J.A., Bourdon B., Maden C., Mezger K., Halliday A. (2008) Hf-W thermochronometry: Closure temperature and constraints on the accretion and cooling history of the H chondrite parent body. *Earth and Planetary Science Letters* 270, 106-118.
- Goodrich C.A., Van Orman J.A., Wilson L. (2007) Fractional melting and smelting on the ureilite parent body. *Geochimica et Cosmochimica Acta* 71, 2876-2895.
- Lacks D.J., Van Orman J.A. (2007) Molecular dynamics investigation of viscosity, chemical diffusivities and partial molar volumes of liquids along the MgO-SiO₂ join as functions of pressure. *Geochimica et Cosmochimica Acta* 71, 1312-1323.
- Yunker M.L., Van Orman J.A. (2007) Interdiffusion of solid iron and nickel at high pressure. *Earth and Planetary Science Letters* 254, 203-213.
- Van Orman J.A., Saal A.E., Bourdon B., Hauri E.H. (2006) Diffusive fractionation of U-series radionuclides during mantle melting and shallow level melt-cumulate interaction. *Geochimica et Cosmochimica Acta* 70, 4797-4812.
- Koch-Müller M., Dera P., Fei Y., Hellwig H., Liu Z., Van Orman J., Wirth R. (2005) Polymorphic phase transition in Superhydrous Phase B. *Physics and Chemistry of Minerals* 32, 349-361.
- van Westrenen W., Li J., Fei Y., Frank M.R., Hellwig H., Komabayashi T., Mibe K., Minarik W.G., Van Orman J.A., Watson H.C., Funakoshi K.-i., Schmidt M.W. (2005) Thermoelastic properties of (Mg_{0.64}Fe_{0.36})O ferropericlase based on in situ X-ray diffraction to 26.7 GPa and 2173 K. *Physics of the Earth and Planetary Interiors* 151, 163-176.
- Van Orman J.A. (2004) On the viscosity and creep mechanism of Earth's inner core. *Geophysical Research Letters* 31, Art. No. L20606.
- Fei Y., Li J., Hirose K., Minarik W., Van Orman J., Sanloup C., van Westrenen W., Komabayashi T., Funakoshi K.-I. (2004) A critical evaluation of pressure scales at high temperatures by in situ X-ray diffraction measurements. *Physics of the Earth and Planetary Interiors* 143-144, 515-526.

- Saal A.E., Van Orman J.A. (2004) The ^{226}Ra enrichment in oceanic basalts: Evidence for diffusive interaction processes within the crust-mantle transition zone. *Geochemistry, Geophysics, Geosystems* 5, Art. No. Q02008.
- Fei Y., Van Orman J.A., Li J., van Westrenen W., Sanloup C., Minarik W., Hirose K., Komabayashi T., Walter M., Funakoshi K. (2004) In situ X-ray diffraction measurements of the postspinel transition boundary in Mg_2SiO_4 using MgO as an internal pressure standard and its geophysical implications. *Journal of Geophysical Research* 109, Art. No. B02305.
- Koga K.T., Van Orman J.A., Walter M.J. (2003) Diffusive relaxation of carbon and nitrogen isotope heterogeneity in diamond: A new thermochronometer. *Physics of the Earth and Planetary Interiors* 139, 35-43.
- van Westrenen W., Van Orman J.A., Watson H., Fei Y., Watson E.B. (2003) Assessment of temperature gradients in multi-anvil assemblies using spinel layer growth kinetics. *Geochemistry, Geophysics, Geosystems* 4, Art. No. 1036.
- Van Orman J.A., Fei Y., Hauri E.H., Wang J. (2003) Diffusion in MgO at high pressures: Constraints on deformation mechanisms and chemical transport at the core-mantle boundary. *Geophysical Research Letters* 30, 1056-1059. (Editors' Choice, *Science*, 299:981)
- Van Orman J.A., Grove T.L. and Shimizu N. (2002) Diffusive fractionation of trace elements during production and transport of melt in Earth's upper mantle. *Earth and Planetary Science Letters* 198, 93-112.
- Tanton L.T.E., Van Orman J.A., Hager B.H. and Grove T.L. (2002) Reexamination of the lunar magma ocean cumulate overturn hypothesis: melting or mixing is required. *Earth and Planetary Science Letters* 196, 239-249.
- Watson E.B., Wark D.A., Price J.D. and Van Orman J.A. (2002) Mapping the thermal structure of solid-media pressure assemblies. *Contributions to Mineralogy and Petrology* 142, 640-652.
- Van Orman J.A., Grove T.L., Shimizu N. and Layne G.D. (2002) Rare earth element diffusion in a natural pyrope single crystal at 2.8 GPa. *Contributions to Mineralogy and Petrology* 142, 416-424.
- Van Orman J.A., Grove T.L. and Shimizu N. (2001) Rare earth element diffusion in diopside: Influence of temperature, pressure and ionic radius, and an elastic model for diffusion in silicates. *Contributions to Mineralogy and Petrology* 141, 687-703.
- Van Orman J.A. and Grove T.L. (2000) Origin of lunar high-Ti ultramafic glasses: Constraints from phase relations and dissolution kinetics of clinopyroxene-ilmenite cumulates. *Meteoritics and Planetary Science* 35, 783-794.
- Van Orman J.A., Grove T.L., and Shimizu N. (1998) Uranium and thorium diffusion in diopside. *Earth and Planetary Science Letters* 160, 505-519.
- Ragland P.C., Conley J.F., Parker W.C., and Van Orman J.A. (1997) Use of principal components analysis in petrology: an example from the Martinsville igneous complex, Virginia, U.S.A. *Mineralogy and Petrology* 60, 165-184.
- Van Orman J., Cochran J.R., Weissel J.K., and Jestin F. (1995) Distribution of shortening between the Indian and Australian plates in the central Indian Ocean. *Earth and Planetary Science Letters* 133, 35-46.

OTHER PUBLICATIONS

- Van Orman J.A. (2007) Acceptance of the 2005 F.W. Clarke Medal. *Geochimica et Cosmochimica Acta* 71, S20-S21.

van Westrenen W., Van Orman J.A., Editors (2003) Special Issue: Diffusion and partitioning in planetary interiors. *Physics of the Earth and Planetary Interiors* 139, 1-169.

CONFERENCE ABSTRACTS (2002-present; *Denotes Invited; †Denotes Keynote)

- 2009 – *Van Orman J.A., Crispin K.L., Watson H.C., The influence of defect associates on diffusion in periclase (MgO), AGU Joint Assembly, Toronto, Canada.
- 2009 – Crispin K.L., Van Orman J.A., Cr³⁺-vacancy and Ga³⁺-vacancy defect pairs in MgO: binding energy, mobility and the influence of electronic structure, AGU Joint Assembly, Toronto, Canada.
- 2009 – Hauri E.H., Saal A.E., Van Orman J.A., Rutherford M.J., Stable isotope systematics of volatiles in Apollo 15 lunar volcanic glasses, Goldschmidt Conference, Davos, Switzerland.
- 2009 – Fitoussi C., Van Orman J.A., Bourdon B., Kleine T., Metal-silicate silicon isotope fractionation in enstatite chondrites, Goldschmidt Conference, Davos, Switzerland.
- 2009 – Parman S.W., Kelley S.P., Ballentine C.J., Van Orman J.A., Partitioning and diffusion of noble gases in olivine at mantle pressures, Goldschmidt Conference, Davos, Switzerland.
- 2009 – Van Orman J.A., Goodrich C.A., Wilson L., Metal and siderophile elements in ureilites: reconciliation with smelting? 40th Lunar and Planetary Science Conference, Houston, #1986.
- 2009 – Ash R.D., Goodrich C.A., McDonough W.F., Van Orman J.A., Metal in ureilites: Siderophile elements from LA-ICP-MS. 40th Lunar and Planetary Science Conference, Houston, #1422.
- 2009 – Huang S., Humayun M., Downes H., Singletary S., Van Orman J.A., Jacobsen S.B., Petrogenesis of augite-bearing ureilites: A LA-ICP-MS approach. 40th Lunar and Planetary Science Conference, Houston, #1330.
- 2009 – Hauri E.H., Saal A.E., Van Orman J., Rutherford M.J., Friedman B., New estimates of the water content of the Moon from Apollo 15 picritic glasses. 40th Lunar and Planetary Science Conference, Houston, #2344.
- 2009 – Friedman B., Saal A.E., Hauri E.H., Van Orman J., Rutherford M.J., The volatile content of the Apollo 15 picritic glasses. 40th Lunar and Planetary Science Conference, Houston, #2444.
- 2009 – Goodrich C.A., Van Orman J.A., Dominik K., Berkley J.L., Metal in ureilites: Petrologic characterization. 40th Lunar and Planetary Science Conference, Houston, #1132.
- 2008 – Toboul M., Kleine T., Bourdon B., Van Orman J.A., Maden C., Zipfel J., Irving A.J., Bunch T.E., Hf-W thermochronometry of the acapulcoite-lodranite parent body. *Meteoritics and Planetary Science* 43, A156.
- 2008 – Crispin K.L., Van Orman J.A., Diffusion of trivalent cations in MgO: Implications for diffusion in Earth's lower mantle. Goldschmidt Conference, Vancouver. *Geochim. Cosmochim. Acta* 72, A189.
- 2008 – Van Orman J.A., Kleine T., Bourdon B., Closure temperature of the ¹⁸²Hf-¹⁸²W system in chondrites: A model. 39th Lunar and Planetary Science Conference, Houston.
- 2008 – Saal A.E., Hauri E.H., Lo Cascio M., Van Orman J., Rutherford M., Cooper R., The Apollo 15 Very Low-Ti glasses, evidence for the presence of indigenous water in the Moon's interior. 39th Lunar and Planetary Science Conference, Houston.
- 2007 – *Van Orman J.A., Crispin K.L., Li C., Defect interaction and diffusion in periclase (MgO), EOS Trans. AGU 88(52) Fall Meet. Suppl., Abstract MR33A-04.

- 2007 – Saal A.E., Hauri E.H., Lo Cascio M., Van Orman J., Rutherford M., Cooper R., Volatiles in the lunar volcanic glasses, evidence for the presence of indigenous water in the Moon's interior, EOS Trans. AGU 88(52) Fall Meet. Suppl., Abstract U13C-02.
- 2007 – Lacks D.J., Van Orman J.A., Molecular dynamics simulation of isotope fractionation in a temperature gradient, EOS Trans. AGU 88(52) Fall Meet. Suppl., Abstract V51E-0834.
- 2007 – †Van Orman J.A., Saal A.E., Reconciling ^{210}Pb deficits with the physics of melt extraction, *Geochim Cosmochim Acta* 71:A1058.
- 2007 – Van Orman J.A., Crispin K.L., Li C., Aluminum diffusion and Al-vacancy association in MgO, *Geochim Cosmochim Acta* 71:A1057.
- 2006 – Crispin K.L., Van Orman J.A., Li C., Diffusion of trivalent cations in MgO at 1 atm and high temperature (1473-1775 K), EOS Trans. AGU 87(52) Fall Meet. Suppl., Abstract V33A-0632.
- 2006 – Lacks D.J., Rear D., Van Orman J.A., Molecular dynamics investigation of melts in the MgO-CaO-SiO₂ system at high pressures. EOS Trans. AGU 87(52) Fall Meet. Suppl. Abstract MR32A-03.
- 2006 - *Van Orman J.A., Keshav S., Fei Y. (2006) High pressure solid-metal/liquid-metal partitioning of Os, Re and Pt in the Fe-S system. Goldschmidt Conference, Melbourne, Australia.
- 2006 - Bourdon B., Van Orman J. (2006) ^{226}Ra deficits in OIB: a key to the rate of melt extraction in the mantle. Goldschmidt Conference, Melbourne, Australia.
- 2005 - *Van Orman J.A. (2005) Chemical exchange between Earth's core and mantle, 3rd Workshop on Earth's Mantle Composition, Structure, and Phase Transitions, Saint Malo, France.
- 2005 - Van Orman J.A. (2005) On the viscosity and creep mechanism of Earth's inner core. Poster presented at Gordon Conference on Interior of the Earth, June 2005.
- 2005 - Saal A.E., Van Orman J.A. (2005) Diffusive fractionation of ^{226}Ra - ^{230}Th during shallow level interaction, Goldschmidt Conference, *Geochim Cosmochim Acta* 69:A337.
- 2005 - *Van Orman J.A. (2005) Diffusion in mantle and core materials, Goldschmidt Conference, *Geochim Cosmochim Acta* 69:A176
- 2004 - *Van Orman J.A., Saal A.E., Bourdon B., Hauri E.H. (2004) Diffusive fractionation of U-series nuclides during MORB production, EOS Trans. AGU 85(47), Fall Meet. Suppl., Abstract V51E-02.
- 2004 - Yunker M.L., Van Orman J.A. (2004) Interdiffusion of iron and nickel at high pressure, EOS Trans. AGU 85(47), Fall Meet. Suppl., Abstract MR43A-0866.
- 2004 - Li J., van Westrenen W., Komabayashi T., Hellwig H., Van Orman J., Fei Y., Minarik W., Funakoshi K. (2004) Experimental constraints on silicon in the Earth's core. EOS Trans. AGU 85(47), Fall Meet. Suppl., Abstract MR41A-06.
- 2004 - Keshav S., Van Orman J.A. (2004) Diffusion in zinc at high pressure and rheology of the Earth's inner core. EOS Trans. AGU 85(47), Fall Meet. Suppl., Abstract MR43A-0868.
- 2003 - Koch-Muller M., Dera P., Fei Y., Hellwig H., Liu Z., Van Orman J., Wirth R. (2003) Polymorphic phase transition in superhydrous phase B. 10th International Symposium on Experimental Mineralogy, Petrology and Geochemistry, *Lithos* 73(1-2), S59.
- 2003 - van Westrenen W., Li J., Fei Y., Frank M.R., Hellwig H., Komabayashi T., Mibe K., Minarik W.G., Van Orman J.A., Watson H.C., Funakoshi K.-i., Schmidt M.W. (2003) Extension of (Mg_{0.64}Fe_{0.36})O ferropericlasite equation of state measurements to 25 GPa and 2173 K. EOS Trans. AGU 84(46), Fall Meet. Suppl., Abstract S21E-0369.

- 2002 - Van Orman J., Saal A., Bourdon B., Hauri E. (2002) A new model for U-series isotope fractionation during igneous processes, with finite diffusion and multiple solid phases. EOS Trans. AGU 83(47), Fall Meet. Suppl., Abstract V71C-02.
- 2002 - Saal A.E., Van Orman J.A., Hauri E.H., Langmuir C.H., Perfit M.R. (2002) An alternative hypothesis for the origin of high ^{226}Ra excess in MORBs. EOS Trans. AGU 83(47), Fall Meet. Suppl., Abstract V71C-01.
- 2002 - van Westrenen W., Li J., Fei Y., Minarik W.G., Komabayashi T., Van Orman J.A., Funakoshi K. (2002) Magnesio-wüstite ($\text{Mg}_{0.64}\text{Fe}_{0.36}\text{O}$) thermal equation of state to 25 GPa and 2073 K. EOS Trans. AGU 83(47), Fall Meet. Suppl., Abstract MR62B-1073.
- 2002 - Koch-Muller M., Dera P., Fei Y., Hellwig H., Liu Z., Van Orman J. (2003) Superhydrous phase B; a structural and spectroscopic study. Geol Soc Amer Abstracts with Programs 35(6), 621.
- 2002 - Mao H.-k., Van Orman J., Fei Y., Hemley R.J., Loveday J., Nelmes R., Smith R.I. (2002) Neutron diffraction study of silicate perovskites. EOS Trans. AGU 83(47), Fall Meet. Suppl., Abstract MR71A-02.
- 2002 - Fei Y., Van Orman J., van Westrenen W., Li J., Sanloup C., Komabayashi T., Funakoshi K. (2002) In situ x-ray diffraction measurements of the postspinel transition in a peridotitic composition. EOS Trans. AGU 83(47), Fall Meet. Suppl., Abstract S52C-09.
- 2002 - Murray J., Van Orman J.A., Fei Y. (2002) An investigation of diffusion rates in wadsleyite at 21 GPa and 1500-1900 °C. EOS Trans. AGU 83(19), Spring Meet. Suppl., Abstract V51B-03.
- 2002 - Van Orman J.A., Fei Y., Hauri E.H., Wang J. (2002) Cation and oxygen diffusion in periclase crystals and grain boundaries measured to 25 GPa and 2273 K. EOS Trans. AGU 83(19), Spring Meet. Suppl., Abstract V52B-04.
- 2002 - Saal A.E., Van Orman J.A., Hauri E.H., Langmuir C.H., Perfit M.R. (2002) An alternative hypothesis for the origin of the high Ra-226 excess in mid-ocean ridge basalts. 12th Annual V.M. Goldschmidt Conference, Geochim Cosmochim Acta 66(15A):A659.

INVITED SYMPOSIA

- Workshop on Transport Properties of the Lower Mantle, Yunishigawa, Japan, Keynote Address (Oct. 22, 2008)
- University of Chicago, Department of Geophysical Sciences (May 23, 2008)
- Yale University, Department of Geology and Geophysics (Feb. 5, 2007)
- Brown University, Department of Geological Sciences (Mar. 10, 2006)
- University of Illinois, Department of Geology (Sep. 16, 2005)
- 3rd Workshop on Earth's Mantle Composition, Structure, and Phase Transitions, Saint Malo, France (Sep. 3, 2005)
- Plenary Address by the Clarke Medalist, Goldschmidt Conference, Moscow ID (May 25, 2005)
- Yale University, Department of Geology (Feb. 18, 2004)
- Northern Ohio Geological Society (Dec. 4, 2002)
- University of Chicago, Department of Geophysical Sciences (Oct. 4, 2002)
- Brown University, Department of Geological Sciences (Apr. 29, 2002)
- George Washington University, Department of Geology (Feb. 21, 2002)
- Case Western Reserve University, Department of Geological Sciences (Jan. 11, 2002)

- Brown University, Department of Geological Sciences (May 10, 2001)
- Florida State University, Department of Geological Sciences (Apr. 5, 2001)
- Case Western Reserve University, Department of Chemical Engineering (Jan. 25, 2001)
- Carnegie Institution of Washington, Geophysical Laboratory (Jul. 31, 2000)
- Shimizu Symposium, Woods Hole Oceanographic Inst. (Mar. 7, 2000)
- Columbia University, Lamont-Doherty Earth Observatory (Feb. 28, 2000)
- Brown University, Department of Geological Sciences (Nov. 12, 1999)
- California Institute of Technology, Department of Earth and Planetary Sciences (Oct. 6, 1999)
- University of Wisconsin, Madison, Department of Geology (1997)
- Woods Hole Oceanographic Institution, Department of Geology & Geophysics (1997)

PROFESSIONAL SERVICE

- Executive Committee, COMPRES, 2009-.
- Chair, Program Committee for COMPRES Annual Meeting, June 2010.
- Tri-Chair, Mineral Physics Long Range Science Planning Workshop, Tempe, Arizona, March 2-5, 2009.
- Organizing Committee, 2009 Goldschmidt Conference, Davos, Switzerland, “The Deep Earth: Formation, Evolution, and Dynamics” Theme.
- Review Panel, NSF EAR Petrology & Geochemistry Program, Spring 2007.
- Ad-hoc proposal review, NASA Cosmochemistry program; NASA Planetary Geology and Geophysics program; NSF EAR Petrology and Geochemistry program; NSF EAR Geophysics program; NSF EAR Instrumentation and Facilities program; Natural Environment Research Council (UK); Agence Nationale de la Recherche (France).
- Ad-hoc manuscript review, *American Mineralogist*; *Chemical Geology*; *Contributions to Mineralogy and Petrology*; *European Journal of Mineralogy*; *Geochemistry*, *Geophysics*, *Geosystems*; *Geochimica et Cosmochimica Acta*; *Geophysical Research Letters*; *Journal of Geophysical Research*; *Lithos*; *Meteoritics and Planetary Science*; *Nature*; *Physics and Chemistry of Minerals*; *Physics of the Earth and Planetary Interiors*; *Proceedings of the National Academy of Sciences*; *Reviews in Mineralogy and Geochemistry*; *Science*; *Swiss Journal of Geosciences*.
- Education & Outreach Committee, American Geophysical Union, 2004-2006.
- Special session convener, “Composition and evolution of iron-rich cores in the Earth and other planets”, American Geophysical Union Fall Meeting, San Francisco, Dec. 2008.
- Special session convener, “Structure and properties of silicate melts”, American Geophysical Union Fall Meeting, San Francisco, Dec. 2007.
- Special session convener, “Transport properties of Earth materials”, American Geophysical Union Fall Meeting, San Francisco, Dec. 2006.
- Special session convener, "The Core-Mantle Boundary: Theoretical, Experimental, and Observational Constraints", American Geophysical Union Fall Meeting, San Francisco, Dec. 2003.
- Guest editor, *Physics of the Earth and Planetary Interiors* v. 39/1-2, “Diffusion and Partitioning in Planetary Interiors” (2003).
- Session convener, “Element Partitioning and Diffusion in the Earth’s Deep Interior”, American Geophysical Union Spring Meeting, Washington DC, May 2002.

COURSES TAUGHT (EXCLUDING SEMINARS)

Course #	Title	Format	Type	# Terms Taught
GEOL 110	Intro to Physical Geology	Lecture	Non-Majors/Majors	3
GEOL 317	Introduction to Field Methods (Co-instructor)	Field (Death Valley)	Majors	2
GEOL 341	Mineralogy	Lecture/Lab	Majors	4
GEOL 344	Igneous & Met. Petrology	Lecture/Lab	Majors	1
GEOL 350	Geochemistry	Lecture	Majors/Grad	2
GEOL 390	Intro to Geological Research	Lecture	Majors	3
GEOL 392	Senior Project		Majors	1

POSTDOC/STUDENT SUPERVISION

Postdoctoral Researchers Supervised:

- Gaurav Goel (Aug. 2009 – present)
- Leslie Hayden (Nov. 2008 – present)
- Liqun Zhang (January 2008 – June 2009)
- Shantanu Keshav (August 2003 – Feb 2005)

Graduate Students Supervised:

- Jian Han (PhD; Aug. 2009 – present)
- Katherine Crispin (PhD; Aug. 2005 – present)
- David Rear (co-advisor (50%) with Prof. Dan Lacks; Aug. 2005 – Dec. 2007)
- Chen Li (M.S. August 2005; now working at the University of Arizona)
- Molly Yunker (M.S. June 2005; now a PhD student at the University of Michigan)

Undergraduate Students Supervised:

- Rita Cabral (Fall 2009 – present)
- Clark Short (Spring 2007 – Spring 2009)
- Zach Newman (Spring 2007)
- Everett Criss (Summer 2006)
- Molly Yunker (Fall 2002 – Summer 2004)
- David Bonner (Summer 2003)
- Catherine Shirvell (Summer 2002)
- Jeffrey Murray (Summer 2001)