ALAN DANA JOHNSTON
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Education

B.S.	Geology	1976	Bates College
M.S.	Mineralogy/Petrology	1978	University of Minnesota
Ph.D.	Geology	1983	University of Minnesota

Positions Held

2019-	Shipboard Earth Science Specialist, Lindblad/National Geographic Expeditions (Antarctica, Canadian Maritimes, Iceland, Newfoundland and Labrador, Patagonia)
2018-2019	Special Assistant to Senior Divisional Dean
2017-2018	Special Assistant to Divisional Dean of Natural Sciences
2014-	Professor Emeritus, Department of Earth Sciences, University of Oregon
2010-2014	Divisional Dean of Natural Sciences, University of Oregon
1995-2007	Head, Department of Earth Sciences, University of Oregon
2001	Guest Investigator, Woods Hole Oceanographic Institution
1998-2014	Professor, Department of Earth Sciences, University of Oregon
1992-1998	Associate Professor, Department of Earth Sciences, University of Oregon
1986-1992	Assistant Professor, Department of Earth Sciences, University of Oregon
1985-1986	Research Fellow, California Institute of Technology (advisor: Prof. Peter J. Wyllie)
1983-1985	Postdoctoral Fellow, University of Bergen, Norway (advisor: Prof. Sven Maaløe)
1981-1983	Research Assistant, University of Minnesota (advisor: Prof. James H. Stout)
1978-1981	Staff Petrologist, Energy Minerals Section, Phillips Petroleum Company Research Center
1976-1978	Teaching Assistant, University of Minnesota

Awards and Honor

1997	Richard A. Bray Faculty Fellow, College of Arts and Sciences, University of Oregon
1992	Ersted Distinguished Teaching Award, University of Oregon
1983-1985	Postdoctoral Fellow, Norwegian National Research Council, University of Bergen
1981-1983	Phillips Petroleum Foundation Fellow in Geology, University of Minnesota

Professional Service and Memberships

Member, National Science Foundation Petrology & Geochemistry Review Panel (2008-2010)
External Ph.D. examiner, 2008, University of Alberta, Rajeev Nair (advisor: Prof. Tom Chacko)
Local Chair, NSF-MARGINS Subduction Factory Conference, Eugene, OR (August 19-25, 2000)
Guest co-editor, *Canadian Mineralogist*, Special Issue on Primitive Arc Magmas (vol. 35), 1996-1997
External Ph.D. examiner, 1997, Univ. of British Columbia, Ben Edwards (advisor: Prof. Kelly Russell)
Co-convenor, Special Session on Primitive Arc Magmas, GAC/MAC Meeting, Victoria, B.C., 1995
Participant, NSF-MARGINS Planning Workshop, Austin, TX, 1993
Member, Peer Review Panel, Department of Energy, Pasadena, CA, 1993
Member, Technical Program Committee, VGP Section, 1992, 1993 AGU national meetings
Chair, 1992 Geological Society of America Cordilleran Section Meeting, Eugene, Oregon
Editor, *Journal of Volcanology and Geothermal Research* (1989-1992)

Updated: February 14, 2024

Associate Editor, *Journal of Volcanology and Geothermal Research* (1987-1989, 1993-2007)
Member, American Geophysical Union (1983-2015); Mineralogical Society of America (1975-2013)

University of Oregon Administration and Service

Special Assistant to Divisional Deans, College of Arts and Sciences, 2017-2019; review collective bargaining agreement policies; review promotion & tenure dossiers; review TTF and NTTF faculty performance reviews; coordinate assessment program, other tasks as assigned

Divisional Dean of Natural Sciences, 2010-2014; Position reports to the Dean of the College of Arts and Sciences. Responsible for oversight for eight academic departments (Biology, Chemistry, Computer and Information Science, Earth Sciences, Human Physiology, Mathematics, Physics, and Psychology) with approximately 200 tenure-related faculty as well the General Science Program. Also serves as the College's main liaison with eight research centers and institutes which report to the Vice President for Research and Innovation (Institute of Marine Biology, Materials Science Institute, Institute of Molecular Biology, Institute of Neuroscience, Center for High Energy Physics, Center for Optics, Institute of Ecology and Evolution, and Theoretical Science Institute), and is responsible for the College's equipment budget. Position carries membership on the UO Academic Leadership Team, and the UO Campus Planning Committee

Member, Research Advisory Board, Vice President for Research and Innovation Office, 2012-2014

Member, Assistant Vice President for Academic Administration Search Committee, 2012

Member, Director of Facilities Services Search Committee, 2012

Member, Information Services & Technology Review Committee, 2012

Chair, Campus Planning Committee Design Review Subcommittee, 2011-12

Chair, Scientific Programmers Search Committee, CAS-IT, 2011-13

Chair, Research Computing Needs Task Force, 2011-12

Member, Associate Dean of the Graduate School Search Committee, University of Oregon, 2010

Member, Graduate Council, 2009-10; advisory group to Dean of the Graduate School; elected position

Chair, Promotion & Tenure Committee, Department of Earth Sciences, 2008-9; 3 tenure cases

Member, Dean's Advisory Committee, 2008-2010; six-member promotion and tenure evaluation committee for College of Arts & Sciences; elected position; approximately 60 cases considered

Head, Department of Earth Sciences, 1995-2007; responsible for day-to-day operations of a department with 17 tenure-line faculty, 5 office/technical staff, ~40 graduate students, ~80 undergraduate majors. Presided over eleven faculty and five staff hires, five tenure cases and six full professor promotions, three faculty retention cases, five tenure reduction/retirement agreements, a complete curriculum review and revision, and a significant building remodel

Member, Classified and Officer of Administration Award Selection Committee, 2005

Member, Science Librarian Search Committee, 2001

Member, Dean's Advisory Group, 1998-1999; 2005-2006

Member, Environmental Sciences Curriculum Committee, 1997-1998

Member, Distinguished Teaching Award Selection Committee, 1996; 2001; 2002

Member, Off-Campus Research Committee, 1995-1996

Chair, Graduate Admissions Committee, Department of Earth Sciences, 1992-1995

Member, Shared Science Services Committee, 1994

Member, Graduate Teaching Fellow Award Selection Committee, 1994

Panel Member, Teaching Effectiveness Workshops, 1993, 1994

Member, Science Machine and Electronics Shops Operations Committee, 1994-2010

External Research Funding

NSF-EAR-8720150: Experimental and Theoretical Studies of Granitic Melt Segregation During Ultrametamorphism, $69,157, May 15, 1988 - May 14, 1990, sole P.I.

NSF-EAR-8816108: Experimental Studies of the Interrelationship Between High-Al and High-Mg Subduction-Related Basalts, $81,532, June 1, 1989 - May 31, 1991, sole P.I.

NSF-EAR-8903476: Acquisition of a Piston-Cylinder Apparatus, $59,624, February 15, 1990 - February 14, 1992, sole P.I.

NSF-EAR-8915624: Generation of Peraluminous Granitoids by Ultrametamorphism of Aluminous Metasediments, $90,000, June 1, 1990 - May 31, 1992, sole P.I.

NSF-EAR-9117438: Experimental Determination of the Partitioning Behavior of Y and the Rare Earth Elements Between Pyroxene and Melt at High Pressure (10-20 kbar), $95,854 (UO portion: $55,791), March 1, 1992 - February 28, 1994, co-P.I.: RL Nielsen (Oregon State University, Oceanography).

NSF-EAR-9204754: Experimental Studies of Crustal Anatexis, $36,000, September 1, 1992 -August 31, 1993, sole P.I.

NSF-EAR-9204446: Acquisition of a Modern Image Analysis Facility, $131,000, June 1, 1992 - May 31, 1994, co-P.I.'s: KV Cashman and JM Rice.

NSF-EAR-921890: Crystallization and Vesiculation of Hawaiian Basalt, $105,000, March 1, 1993 - April 30, 1995, co-PI: KV Cashman.

W.M. Keck Foundation: Acquisition of an Image Analysis Facility for Research in the Earth and Materials Sciences, $180,000, 1993, co-PI's: KV Cashman and JM Rice.

NSF-EAR: Technician Support for the Electron-beam Facility at the University of Oregon: Phase I $120,000, January 1, 1994 - December 31, 1996, co-PIs: JM Rice, MH Reed, KV Cashman.

NSF-EAR-9510026: Equipment upgrade for the Cameca SX-50 Electron Microprobe at the University of Oregon, $40,000, July 1, 1995 - June 30, 1996, co-PI: JM Rice.

NSF-EAR-9506045: The effects of variable peridotite mode and compositional fertility on the stoichiometry of near-solidus mantle melting reactions, $140,881, June 1, 1995 - May 30, 1998, sole PI.

NSF-EAR-9712115: Technician support for the electron-beam facility at the University of Oregon: Phase II, $80,000, August 1, 1997 - July 31, 1999, co-PI: JM Rice.

NSF-EAR-9804913: Continued experimental studies of mantle melting, $96,000, July 15, 1998 - June 30, 2000, sole PI.

NSF-EAR-9909507: Continued studies of rates of magma ascent, degassing, and crystallization--controls on eruptive processes, $172,853, January 1, 2000, December 31, 2002, co-PI: KV Cashman.

NSF-EAR-0105500: Ion Probe Studies of Mantle-Melting Run Products, $63,441, 9/1/01 – 2/31/03, sole P.I.

NSF-EAR-0230373: Collaborative Research: North Sister Volcano: A Window into Deep Crustal Processes in a mafic Arc. $275,620 (UO portion: $139,327), 4/1/03-9/30/06, co-PI: AL Grunder (Oregon State University, Geosciences).

NSF-EAR-0345908: Acquisition of a New Electron Microprobe, $547,851 (with $234,793 UO match), 2/1/04-1/31/06, lead-PI: PJ Wallace; co-PIs: AD Johnston, KV Cashman, MH Reed, D Johnson (Chemistry)

NSF-EAR-0444483: Development of a Rapid-Quench, Cold-Seal Hydrothermal laboratory with Automated Pressure Cycling for Petrologic, Volcanologic, and Ore Deposits Research, $66,620,

4/15/05-3/31/08.

NSF-MRI-(EAR)-0421524: Acquisition of a Variable Pressure Scanning Electron Microscope, $260,181 (with $146,500 match from the Murdoch Foundation), lead-PI: KV Cashman; co-PIs: AD Johnston, MH Reed, PJ Wallace, D Johnson, (Chemistry), 8/1/05-7/31/06.

NSF-EAR-0739065: Experimental Investigation of Magma Generation in Subduction Zones: Hydrous Liquidus Phase Relations of Primitive Magmas from the Trans-Mexican Volcanic Belt, $307,252 plus $44,746 supplement, 6/1/08-11/30/12, co-PI: Paul Wallace.

NSF-OCE-0926385: Collaborative Research: Experimental Determination of Trace Element Partition Coefficients Between Anorthitic Plagioclase and MORB, (UO portion: $178,006), 9/1/09-8/31/13, co- PI: Roger Nielsen (Oregon State University).

Graduate Students and Post-doctoral Researchers Advised

Graduate Students

Ph.D. Students

1. Alberto Patiño Douce, Ph.D., 1990: Ultrametamorphism and Anatexis of Continental Crust: An Experimental and Theoretical Study. 1st position: Assistant Professor, University of Georgia; current: retired
2. David S. Draper, Ph.D., 1991: Petrologic Studies of Primitive Alumina-rich Basaltic Magmas: An Experimental, Geochemical and Tectonic Investigation. 1st position: Postdoctoral Research Associate, Bristol University U.K.; current: Deputy Chief Scientist, NASA, Washington D.C.
3. Shaojian Mo, Ph.D. 1994: Olivine-Fe/Mg-Ferrite Equilibrium at One Atmosphere Total Pressure from 1100-1400^{o}C: An Experimental and Thermodynamic Modeling Study. Left the field.
4. Charlene Montierth, Ph.D. 1999: Geothermometry, Crystallization, and Vesiculation of Mauna Loa Basalts (co-supervised with KV Cashman). 1st position: Assistant Professor, Clark College, Vancouver, WA; current: retired.
5. Jennifer Pickering, Ph.D. 1999: High Pressure Experimental Studies of Melting Within Continental Crust and Beneath Mid-Ocean Ridges. 1st position: Postdoctoral Research Associate, UC-Davis, current: STEM coordinator, Anchorage Public School District.
6. Brandon Schwab, Ph.D. 2000: High Pressure Experimental Investigations of the Melting Systematics of Compositionally Variable Peridotites and the Electrical Conductivity of Partially-Molten Peridotite. 1st position: Assistant Professor, Humboldt State University; Arcata, CA; current: Vice Chancellor for Academic Affairs and Provost, University of Illinois—Springfield.
7. Celeste Mercer, Ph.D. (2009) Mineralogic Indicators of Magmatic and Hydrothermal Processes in Continental Crust (co-supervised with MH Reed). Recipient of 2019 Presidential Early Career Award in Science and Engineering. 1st position: Visiting Assistant Professor, Colorado College, Colorado Springs, CO; current: Research Scientist, Ore Deposits Group, U.S. Geological Survey, Denver, CO.
8. Stephanie Weaver, Ph.D. (2012) Mantle Heterogeneity and the Origins of Primitive Arc Lavas: an Experimental Study with a Focus on the Trans-Mexican Volcanic Belt (co-supervised with PJ Wallace). 1st and current position: Exxon-Mobil, Houston, TX.

M.S. Students

1. Kaylynn Bishop, M.S., 1991: The Origin of the Skagit Gneiss Migmatites.
2. David Hauth, M.S., l991: The Occurrence and Origin of Highly Alkaline Siliceous Glasses in Peridotite Xenoliths from Kauai, Hawaii.
3. Paul Hack, M.S., 1993: Experimentally Determined Rare Earth Element and Y Partitioning Behavior Between Clinopyroxene and Basaltic Liquids at Elevated Pressures.

4. Michael Harrell, M.S., 1994: An Examination of One Type of Olivine Oxidation in Natural and Experimental Samples.
5. Michael Dewey, M.S., 1996: Water and the Multiple Saturation Characteristics of an Aleutian High-MgO Basalt.
6.) Carrie Brugger, M.S., 2001: Experimental Determination of One-atmosphere Phase Relations for Melt Compositions of Augustine Volcano (co-supervised with KV Cashman).
7.) Stephanie Weaver M.S., 2007: P-T-H_2O Phase Relations of an Aleutian, High-MgO basalt: Results from Hydrous Experimental Studies and Thermodynamic Modeling.
8.) Rachel Weber (2010) Near-liquidus Hydrous Phase Relations of High-Magnesia Andesite from the Trans- Mexican Volcanic Belt (co-supervised with PJ Wallace).

<u>Postdoctoral Research Associate</u>
Dr. Kjell P. Skjerlie, Professor, University of Tromsø, deceased

PUBLICATIONS

*denotes advised graduate student or post-doc; Google Scholar citations: 5,080

Peer-reviewed papers

1. **Johnston, A. Dana** and Stout, James H. (1984) A highly oxidized ferrian salite-, kennedyite-, forsterite-and rhoenite-bearing alkali gabbro from Kauai, Hawaii, and its mantle xenoliths. *American Mineralogist*, **69**: 57-68.

2. **Johnston, A. Dana** and Stout, James H. (1984) Development of orthopyroxene-Fe/Mg ferrite symplectites by continuous olivine oxidation. *Contributions to Mineralogy and Petrology*, **88**: 196-202.

3. **Johnston, A. Dana**, Stout, James H., and Murthy, V. Rama (1985) Geochemistry and origin of some unusually oxidized alkaline rocks from Kauai, Hawaii. *Journal of Volcanology and Geothermal Research*, **25**: 225-248.

4. **Johnston, A. Dana** and Stout, James H. (1985) Compositional variation of naturally occurring rhoenite. *American Mineralogist*, **70**: 1211-1216.

5. **Johnston, A. Dana** (1986) Anhydrous P-T phase relations of near-primary high-alumina basalt: Implications for the origin of island arcs and tonalite-trondhjemite series rocks. *Contributions to Mineralogy and Petrology*, **92**: 368-382.

6. Maaløe, Sven and **Johnston, A. Dana** (1986) Geochemical aspects of some accumulation models for primary magmas. *Contributions to Mineralogy and Petrology*, **93**: 449-458.

7. **Johnston, A. Dana** and Beckett, John R. (1986) Compositional variation of coexisting olivine-orthopyroxene-Fe/Mg ferrite as a function of $f\,O_2$ and T: a geothermometer and oxygen barometer. *Contributions to Mineralogy and Petrology*, **94**, 323-332.

8. **Johnston, A. Dana** and Wyllie, Peter J. (1988) Interaction of granitic and basic magmas: experimental observations on contamination processes at 10 kbar with H_2O. *Contributions to Mineralogy and Petrology*, **98**: 352-362.

9. **Johnston, A. Dana** and Wyllie, Peter J. (1988) Constraints on the origin of Archean trondhjemites based on phase relations of the Nûk Gneiss with H_2O at 15 kbar. *Contributions to Mineralogy and Petrology*, **100**: 35-46.

10. Wyllie, Peter J., Carroll, Michael R., **Johnston, A. Dana**, Rutter, Michael J, Sekine T., and Van der Laan, Sieger R. (1989) Interactions among magmas, vapors, and rocks in subduction zones: experimental studies from slab to mantle to crust. *European Journal of Mineralogy*, **1**: 165-179.

11. **Johnston, A. Dana** and Wyllie, Peter J. (1989) The system tonalite-peridotite-H_2O at 30 kbar, with applications to hybridization in subduction zone magmatism. *Contributions to Mineralogy and Petrology*, **102**: 257-264.

12. *Patiño Douce, Alberto E., Humphreys, Eugene D., and **Johnston, A. Dana** (1990) Anatexis of overthickened crust: an integrated petrologic and physical study. *Earth and Planetary Science Letters*, **97**: 290-315.

13. *Patiño Douce, Alberto E., **Johnston, A. Dana**, and Humphreys, Eugene D. (1990) Closed system anatexis in the Cordilleran Interior: The importance of initial lithologic structure. Commentary for VGP News: Mechanisms for Inducing Crustal Anatexis, Cordilleran Interior, Western U.S., Part 1, *Transactions of the American Geophysical Union*, **71**: 298-300.

14. *Patiño Douce, Alberto E. and **Johnston, A. Dana** (1991) Phase equilibria and melt productivity in the pelitic system: Implications for the origin of peraluminous granitoids and aluminous granulites. *Contributions to Mineralogy and Petrology*, **107**: 202-218.

15. **Johnston, A. Dana** and *Draper, David S. (1992) Near-liquidus phase relations of an anhydrous high magnesia basalt from the Aleutian Islands: Implications for arc magma genesis and ascent. *Journal of Volcanology and Geothermal Research*, **52**: 27-41.

16. *Draper, David S. and **Johnston, A. Dana** (1992) Anhydrous PT phase relations of an Aleutian high-MgO basalt: An investigation of the role of olivine-liquid reaction in the generation of arc high-alumina basalts. *Contributions to Mineralogy and Petrology*, **112**: 501-519.

17. *Skjerlie, Kjell P. and **Johnston, A. Dana** (1992) Vapor-absent melting at 10 kbar of a biotite- and amphibole-bearing tonalitic gneiss: Implications for the generation of A-type granites and orthopyroxene-bearing granulites. *Geology*, **20**: 263-266.

18. *Skjerlie, Kjell P. and **Johnston, A. Dana** (1993) Reply to Rogers and Satterfield: Vapor-absent melting at 10 kbar of a biotite- and amphibole-bearing tonalitic gneiss: implications for the generation of A- type granites. *Geology*, **21**: 89-90.

19. *Patiño Douce, Alberto E., **Johnston, A. Dana**, and Rice, Jack M. (1993) Octahedral excess mixing properties in biotite: a working model with applications to geobarometry and geothermometry. *American Mineralogist*, **78**: 113-131.

20. *Skjerlie, Kjell P. and **Johnston, A. Dana** (1993) Fluid absent melting behavior of a F-rich tonalitic gneiss at mid crustal pressures: implications for the generation of anorogenic granites. *Journal of Petrology*, **34**: 785-815.

21. *Skjerlie, Kjell P., *Patiño Douce, Alberto E and **Johnston, A. Dana**. (1993) Fluid absent melting of a layered crustal protolith: implications for the generation of anatectic granites. *Contributions to Mineralogy and Petrology*, **114**: 365-378.

22. *Hack Paul J., Nielsen, Roger L., and **Johnston, A. Dana** (1994) Experimentally determined rare-earth element and Y partitioning behavior between clinopyroxene and basaltic liquids at pressures up to 20 kbar. *Chemical Geology*, **117**: 89-105.

23. *Montierth, Charlene, **Johnston, A. Dana,** and Cashman, Katharine V (1995) An empirical glass composition-based geothermometer for Mauna Loa lavas. <u>in</u> M. Rhodes and J. Lockwood (eds.) <u>Mauna Loa Revealed: Structure, Composition, History, and Hazards</u>, *Geophysical Monograph* **92:** American Geophysical Union, 207-217.

24. *Skjerlie, Kjell P. and **Johnston, A. Dana** (1996) Vapor-absent melting from 10 to 20 kbar of crustal rocks that contain multiple hydrous phases: implications for anatexis in the deep to very deep continental crust and active continental margins. *Journal of Petrology,* **37**: 661-691.

25. Myers, James D. and **Johnston, A. Dana** (1996) Phase equilibria constraints on models of

subduction zone magmatism. in Bebout GE, Scholl DW, Kirby SH and Platt JP (eds.) Subduction: Top to Bottom, *Geophysical Monograph* **96:** American Geophysical Union, 229-250.

26. Nixon, Graham, **Johnston, A. Dana**, and Martin, Robert F. (1997) Preface to special issue on primitive arc magmas. *Canadian Mineralogist*, **35**: 253-256.

27. *Pickering, Jennifer M., *Schwab, Brandon, and **Johnston, A. Dana** (1998) Off-center hotspots: double thermocouple measurements of the thermal gradient in 1/2" piston-cylinder furnace assemblies. *American Mineralogist,* **83**: 228-235.

28. *Pickering, Jennifer M. and **Johnston, A. Dana** (1998) Fluid-absent melting behavior of a two mica metapelite: Experimental constraints on the origin of the Black Hills granites. *Journal of Petrology*, **39**: 1787-1804.

29. *Pickering-Witter, Jennifer M. and **Johnston, A. Dana** (2000) The effect of variable bulk composition on the melting systematics of fertile peridotitic assemblages. *Contributions to Mineralogy and Petrology*, **140**: 191-210.

30. *Schwab, Brandon and **Johnston, A. Dana** (2001) Melting systematics of modally variable compositionally intermediate peridotites and the effects of mineral fertility. *Journal of Petrology*, **42**: 1789-1811.

31. *Brugger, Carrie R., **Johnston, A. Dana**, and Cashman, Katharine V. (2003) Phase equilibria in silicic systems at one-atmosphere pressure. *Contributions to Mineralogy and Petrology*, **146**: 356-369.

32. **Johnston, A. Dana**, and *Schwab, Brandon E. (2004) Constraints on clinopyroxene/melt partitioning of REE, Rb, Sr, Ti, Cr, Zr, and Nb during mantle melting: first insights from direct peridotite melting experiments at 1.0 GPa. *Geochimica et Cosmochimica Acta*, **68** 4949-4962.

33. *Mercer, Celestine N. and **Johnston, A. Dana** (2008) Experimental studies of the P-T-H_2O near-liquidus phase relations of basaltic andesite from North Sister Volcano, Oregon High Cascades: Constraints on lower-crustal mineral assemblages. *Contributions to Mineralogy and Petrology*, 155: 571-592.

34. * Weaver, Stephanie L., Wallace, Paul J., and **Johnston, A. Dana** (2011) A comparative study of continental vs. intraoceanic arc mantle melting: experimentally determined phase relations of hydrous primitive melts., *Earth and Planetary Science Letters*, 308: 97-106, doi: 10.1016/j.epsl.2011.05.040.

35. *Weber, Rachel M., Wallace, Paul J. and **Johnston, A. Dana** (2012) Experimental insights into the formation of high-Mg andesites in the Trans-Mexican Volcanic Belt, *Contributions to Mineralogy and Petrology*, 163: 825-840, doi: 10.1007/s00410-011-0701-9.

36. *Weaver Stephanie L., Wallace Paul J., and **Johnston A. Dana** (2013) Experimental constraints on the origins of primitive potassic lavas from the Trans-Mexican Volcanic Belt, *Contributions to Mineralogy and Petrology* (ISE Carmichael Memorial Special Issue*)*, **166**: 825-843.

37. Nielsen, Roger L., Ustunisik, Gocke, Weinsteiger, Allison B., Teppley III, Frank J., **Johnston, A. Dana**, and Kent, Adam JR (2017) Trace element partitioning between plagioclase and melt: An investigation of the impact of experimental and analytical procedures, *Geochemistry, Geophysics, Geosystems,* 2017GC007080R.

38. Lee C-Ty A, Sun C, Sharton-Bierig E, Phelps P, Borchardt J, Liu B, Costin G, **Johnston AD** (2022) Widespread phosphorous excess in olivine, rapid crystal growth, and implications for magma dynamics, *Volcanica*, **5**, 433-450.

Theses, books and memorials

39. **Johnston, Alan Dana** (1978) The Mineralogy, Petrology, and Origin of Some Spinel Lherzolite Xenoliths from Papapapaholahola Hill, Kauai, Hawaii. M.S. Thesis, University of Minnesota, 82pp.

40. **Johnston, Alan Dana** (1983) Mineralogy, Petrology, and Geochemistry of Some Unusually Oxidized Rocks from Kauai, Hawaii, and Their Entrained Mantle Xenoliths. Ph.D. Dissertation, University of Minnesota, 197pp.

41. **Johnston, A. Dana** (1991) *Earth's Landforms and Surficial Processes: Exercises in Physical Geology*. Kendall/Hunt Publishing Company, Dubuque, 64 pages, ISBN 0-8403-6392-3.

42. McBirney, Alexander R. and **Johnston, A. Dana** (2000) Memorial of William T. Holser, *American Mineralogist*, **85**: 1327.

43. **Johnston, A. Dana,** Geist, Dennis, Morse, Tony, and Sparks, Steve, (2019) Memorial of Alexander (Mac) R. McBirney (1924-2019), *Transactions of the American Geophysical Union.*

Abstracts of conference presentations

44. **Johnston, A. Dana** and Stout, James H. (1980) Partial melting of mantle peridotite to produce a highly oxidized magma: an example from Papapapaholahola Hill, Kauai, Hawaii. *Geological Society of America Abstracts with Program*, **12**: 456.

45. Stout, James H. and **Johnston, A. Dana** (1980) Natural partial melt assemblages in spinel lherzolites. *Transactions of the American Geophysical Union*, **61**: 1143.

46. **Johnston, A. Dana** and Stout, James H. (1983) fO_2-T equilibration conditions of oxidation symplectites in lherzolite xenoliths, Kauai, Hawaii. *Transactions of the American Geophysical Union*, **64**: 320.

47. **Johnston, A. Dana** (1985) High-pressure melting interval of anhydrous high-Al basalt: implications for the origin of island arcs. *Transactions of the American Geophysical Union*, **66**: 1111.

48. **Johnston, A. Dana** and Wyllie, Peter J. (1986) Simulated H_2O-undersaturated two-layer magma chambers: rhyolite above basalt, 10-30 kbar. *Geological Society of America Abstracts with Program*, **18**: 122.

49. Beckett, John R. and **Johnston, A. Dana** (1986) Coexisting olivine, orthopyroxene, and Fe/Mg ferrite: a geothermometer and oxygen barometer. *Transactions of the American Geophysical Union*, **67**: 409.

50. **Johnston, A. Dana** and Wyllie, Peter J. (1986) Interaction of slab-derived melts with mantle peridotite: experimental constraints at 30 kbar with H_2O. *Transactions of the American*

Geophysical Union, **67**: 405.

51. **Johnston, A. Dana** and Wyllie, Peter J. (1987) T-X(H_2O) phase relations of the Nuk gneiss at 15 kbar: constraints on the origin of Archean trondhjemites. *Transactions of the American Geophysical Union*, **68**: 1542.

52. *Patiño Douce, Alberto E. and **Johnston, A. Dana** (1989) The fertility of metapelites as source rocks for peraluminous granitoid magmas: an experimental investigation of Cordilleran rocks. *Geological Society of America Abstracts with Program*, **21**: 128.

53. *Patiño Douce, Alberto E. and **Johnston, A. Dana** (1989) Melt productivity from aluminous metasediments as a function of temperature, pressure, and bulk composition of the source. *Transactions of the American Geophysical Union*, **70**: 1395.

54. **Johnston, A. Dana** and *Patiño Douce, Alberto E. (1989) Melting reactions during progressive anatexis of aluminous metasediments: Implications for restitic assemblages. *Transactions of the American Geophysical Union*, **70**: 1395.

55. van der Laan, Sieger R., **Johnston, A. Dana**, and Wyllie Peter J. (1990) Phase equilibria constraints on Archean crustal genesis from crystallization experiments on trondhjemite with water at 10-17 kbar, *21st Lunar and Planetary Science Conference abstracts*, 1268-1269.

56. *Patiño Douce, Alberto E. and **Johnston, A. Dana** (1990) Aluminum and titanium substitutions in granulite grade biotite: Their effects on biotite stability and potential application to geothermobarometry. *Transactions of the American Geophysical Union*, **71**: 1662.

57. **Johnston, A. Dana** and *Draper, David S. (1990) Reaction between olivine and high alumina basalt melt: A possible link between high-alumina and high-magnesia subduction related basalts. *Transactions of the American Geophysical Union*, **71**: 1679.

58. *Mo, Shaojian and **Johnston, A. Dana** (1991) Fe-Mg partitioning between coexisting olivine and ferrite spinel: an experimental study at 1 atm. from 1100˚-1400˚C. *Transactions of the American Geophysical Union*, **72**: 516.

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