

Keith Daniel Putirka

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PERSONAL

Born: Los Angeles, CA, 7/30/62

Married to Heather Bacon-Putirka; three daughters, Noelani Ann (b. 8/9/87), Sarah Elizabeth (b. 4/15/02), and Naomi Marie (b. 6/20/04).

EDUCATION

Degrees:

10/97 Ph.D., Geological Sciences, Columbia University, New York, NY
11/92 M.S., Geology, California State University, Los Angeles, CA
8/86 B.S., Geology, California State University, Northridge, CA

Other Institutions Attended:

7/83 Texas Tech University, Lubbock, TX (Field Camp in Salida CO)
1981-1983 Glendale Community College, Glendale, CA

PRESENT POSITION

8/12 – present Professor, California State University, Fresno
Department of Earth and Environmental Sciences.

PRIOR POSITIONS

7/12 – 6/19 Editor, *American Mineralogist*
7/07-8/12 Associate Professor, California State University, Fresno
Department of Earth and Environmental Sciences.
7/02-7/07 Assistant Professor, California State University, Fresno
Department of Earth and Environmental Sciences
8/99-7/02 Assistant Professor, Indiana University of PA Geoscience Department
10/97-8/99 Post-Doctoral Research Staff Member, Lawrence Livermore National
Laboratory, Livermore, CA.
9/92-5/95 Teaching Assistant, Columbia University, New York, NY. Igneous
and Metamorphic Petrology Labs
9/92-5/95 Teaching Assistant, California State University, Los Angeles, CA.
Oceanography Lab, Geology of National Parks
8/86-6/91 Teacher, Los Angeles Unified School District, Sun Valley, CA
Courses Taught: Algebra, Physical Science

SOCIETY MEMBERSHIPS

American Astronomical Society
American Association for the Advancement of Science

American Geophysical Union
Geological Society of America
Geochemical Society

COLLABORATIONS AND OTHER AFFILIATIONS (PAST 10 Y)

Arevalo, Ricardo, Jr.: NASA Goddard Space Flight Center, Greenbelt, MD
Armienti, Pietro: University of Pisa, Italy
Busby, Cathy: University of CA, Davis
Cawthorn, Grant: University of the Witwatersrand, South Africa
Clynne, Michael: U.S. Geological Survey, Menlo Park, CA
Cousens, Brian: Carleton University, Ottawa, Canada
Hari, K.R.: University of Raipur, Chhattisgarh, India
Hinkel, Natalie: Southwest Research Institute, San Antonio
Jackson, Matt: University of California, Santa Barbara
Kuntz, Mel: U.S. Geological Survey, Denver, CO
Mollo, Silvio: National Institute of Geophysics and Volcanology, Rome, Italy
Perinelli, Cristina: Università di Roma, Italy
Paterson, Scott: University of Southern California, Los Angeles, CA
Perfit, Michael: University of Florida, Gainesville
Ryerson, Frederick: Lawrence Livermore National Laboratory
Tao, Yan: Chinese Academy of Sciences, Guiyang, China
Whattam, Scott: King Fahd University of Petroleum and Minerals, Saudi Arabia
Unterborn, Cayman: Arizona State University
Xu, Siyi: Gemini Observatory, Hawaii

GRADUATE AND POSTDOCTORAL ADVISORS

Walker, David, Columbia University (Ph.D. thesis advisor)

Johnson, Marie, U.S. Military Academy at West Point (member, Ph.D. thesis committee)
Kinzler, Rosamond, Natural History Museum, N.Y. (member, Ph.D. thesis committee)
Langmuir, Charles, Columbia University (member, Ph.D. thesis committee)
Longhi, John, Columbia University (member, Ph.D. thesis committee)
Ryerson, Frederick, Lawrence Livermore National Laboratory, Post-doctoral advisor

GRANTS (LEAD PI)

2019-2022 NSF-EAR: Collaborative Research: Controls on arc evolution and petrogenesis, central Sierra Nevada Ancestral Cascades Arc, California; \$190,661; Collaborative with Cathy Busby, UCD; Award #: NSF-1921182.
2019-2020 NSF-MRI: Acquisition of a wavelength dispersive X-ray fluorescence spectrometer for teaching and research at Fresno State; \$352,088; Co-PIs: Aric Mine (EES), John Wakabayashi (EES), Beth Weinman (EES); NSF Award # NSF-1920357.
2013-2015 NSF-EAR: Collaborative Research: Recharge, Mixing and Eruption Triggering Mechanisms at Chaos Crags and 1915 Eruptions, Lassen Volcanic Center, California; \$105,372; Collaborative with Kari Cooper, UCD; Award #: NSF-1250323.
2013-2015 NSF-EAR: Collaborative Research: From Gabbros to Granites - An Investigation of Arc-Scale Differentiation at the Guadalupe Igneous Complex, Sierra Nevada, CA; \$103,169; Collaborative with Scott Paterson, USC; Award # NSF-1250322.

- 2007-2009 NSF-EAR: Collaborative Research: Origin and Significance of High Potassium Volcanism: Insights from the Ancestral Cascades, California; \$157,804; Collaborative with Cathy Busby, UCSB; Award # NSF-EAR 0711150
- 2004-2005 NSF-EAR-RUI: An investigation of the Mauna Kea magma plumbing system: insights from mineral composition from the HSDP core; \$105,188; Award # NSF-0337345.
- 2004 NSF-MRI: Acquisition of an X-ray Diffraction Instrument: Developing an Interdisciplinary; Research/Teaching X-ray Diffraction Laboratory; \$148,105; Co-PIs: Zhi Wang (CSU Fresno, DEES); Horacio Ferriz (CSU Stanislaus, Geology and Physics Dept.); Award # NSF- 0421272
- 2003 Claude Laval Jr. Award for Innovative Technology and Research: Some New Instrumental Techniques applied to Hawaiian Volcanism; \$5,000
- 2002-2003 NSF-MRI: Development of an X-ray Fluorescence Laboratory: Integrating Geology Undergraduate Coursework with Geochemical Research, \$303,297 (NSF Contribution: \$198,106; CSU Matching: \$105,191); Co-PIs: Steve Hovan (Geoscience), Charles Lake (Chemistry), Devki Talwar (Physics). Award # NSF-MRI 0313688. (Awarded to Indiana University of Pennsylvania and transferred to Fresno State).

PUBLICATIONS

BOOKS AND FIELD GUIDES EDITED

- Formation of the Sierra Nevada Batholith: Magmatic and Tectonic Processes and Their Tempos.* GSA Field guide, Geological Society of America, 2014; Memeti, V., Paterson, S.R., and Putirka, K.D. [Editors].
- Geologic excursions from Fresno, California, and the Central Valley; A Tour of California's Iconic Geology.* GSA Field Guide, Geological Society of America, 2013; Putirka, Keith [Editor]
- Minerals, Inclusions and Volcanic Processes.* Reviews in Mineralogy and Geochemistry, Mineralogical Society of America 2008; Putirka, Keith D. and Tepley, Frank J., III. [Editors]

PAPERS PUBLISHED

- Putirka, K. Dorn, C., Hinkel, N. and Unterborn, C. (2021) Compositional diversity of rocky exoplanets. *Elements*, accepted.
- Whattam, S.A., Shervais, J.W., Reagan, M.K., Coulthard Jr., D.A., Pearce, J.A., Jones, P., Seo, J., Putirka, K., Chapman, T., Heaton, D., Li, H., Nelson, W.R., Shimizu, K., and Stern, R.J. (2020) Mineral compositions and thermobarometry of basalts and boninites recovered during IODP Expedition 352 to the Bonin forearc. *American Mineralogist*, 105, 1490-1570, doi: 10.2138/am-2020-6640
- Putirka, K. and Rarick, J.C. (2019) The composition and mineralogy of rocky exoplanets: a survey of >4,000 stars from the Hypatia Catalog. *American Mineralogist*, 104, 817-829.
- Putirka, K. (2019) Editorial: Why scientists should study chess. *American Mineralogist*, 104, 785-787.
- Busby, C.J., Putirka, K., Melosh, B., Renne, P.R., Hagan, J.C., Gambs, M., and Wesoloski, C. (2018) A tale of two Walker Lane Belt pull-aparts in the ancestral Cascades arc, central Sierra Nevada, California. *Geosphere*, 14 (5): 2068-2117.

- Putirka, K., Tao, Y., Hari, K.R., Perfit, M., Jackson, M., and Arevalo Jr., R. (2018) The mantle source of thermal plumes: minor elements in olivine and major oxides of primitive liquids (and why the olivine compositions don't matter). *American Mineralogist*, 103, 1253-1270.
- Ratschbacher, B.C., Keller, C., Brenhin, C., Schoene, B., Paterson, S.R., Anderson, J.L., Okaya, D., Putirka, K., Lippoldt, R. (2018) A new workflow to assess emplacement duration and melt residence time of compositionally diverse magmas emplaced in a sub volcanic reservoir. *Journal of Petrology*, 59, 1787-1810.
- Scruggs, M. and Putirka, K. (2018) Eruption Triggering by Partial Crystallization of Mafic Enclaves, at the Chaos Crags, Lassen Volcanic Center, California. *American Mineralogist*, 103, 1575-1590.
- Putirka, K. (2017) Geothermometry and Geobarometry, in White, W.M. ed., *Encyclopedia of Geochemistry*, Springer International Publishing, 1-19, doi: 10.1007/978-3-319-39193_322-1.
- Putirka, K. (2017) Down the crater: where magmas are stored and why they erupt. *Elements*, 13, 11-16.
- Putirka, K. (2017) Editorial: A new high JIF for *American Mineralogist* (by all early indications), why you shouldn't care, and a note on values, *American Mineralogist*, 102, 1369-1372.
- Neave, D. and Putirka, K. (2017) A new clinopyroxene-liquid barometer, and implications for magma storage pressures under Icelandic rift zones. *American Mineralogist*, 102, 777-794.
- Perinelli, C., Mollo, S., Gaeta, M., De Cristofaro, S.P., Palladino, D.M., Armienti, P., Scarlato, P., and Putirka, K. (2016) An improved clinopyroxene-based hygrometer for Etnean magmas and implications for eruption triggering mechanisms. *American Mineralogist*, 101, 2774-2777.
- Putirka (2016a) Editorial: The most-cited journal in mineralogy and petrology (and what scientists can learn from baseball). *American Mineralogist*, 101, 497-499.
- Putirka, K. (2016b) Rates and styles of planetary cooling on Earth, Moon, Mars and Vesta, using new models for oxygen fugacity, ferric-ferrous ratios, and olivine-liquid Fe-Mg Exchange and mantle potential temperature. *American Mineralogist*, 101, 819-840.
- Putirka, K. (2016c) Amphibole thermometers and barometers for igneous systems, and some implications for eruption mechanisms of felsic magmas at arc volcanoes. *American Mineralogist*, 101, 841-858.
- Sharma, R. K., Putirka, K. D., & Stone, J. J. (2016) Stream sediment geochemistry of the upper Cheyenne River watershed within the abandoned uranium mining region of the southern Black Hills, South Dakota, USA. *Environmental Earth Sciences* 75: 823. doi: 10.1007/s12665-016-5522-8.
- Putirka, K. (2015) Editorial: Data, Ideas and the Nature of Scientific Progress. *American Mineralogist*, 100, 1657-1658.
- Putirka, K. (2015) Editorial: The *American Mineralogist* at 100 years, and a Mineralogy Renaissance, *American Mineralogist*, 100, 1-2.
- Lessel, J. and Putirka, K. (2015) New thermobarometers for martian igneous rocks, and some implications for secular cooling on Mars. *American Mineralogist*, 100, 2163-2171.
- Tao, Y., Putirka, K., Hu, R-Z., and Li, C. (2015) The magma plumbing system of the Emeishan large igneous province and its role in basaltic magma differentiation in a

- continental setting. *American Mineralogist*, 100, 2509-2517.
- Putirka, K., Canchola, J., Rash, J., Smith, O., Torrez, G., Paterson, S., and Ducea, M. (2014) Pluton assembly and the genesis of granitic magmas: insights from the GIC pluton in cross section, Sierra Nevada Batholith, California, *American Mineralogist*, v. 99, p. 1284-1303.
- Farner, M.J., Lee, C-T., and Putirka, K.D. (2014) Mafic-felsic magma mixing limited by reactive processes: a case study of biotite-rich rinds on mafic enclaves. *Earth and Planetary Science Letters*, a393, 49-59.
- Putirka, K.D., Canchola, J., McNaughton, M., Paterson, S.R., Smith, O., Torrez, G., and Ducea, M. (2014) Day 1: The Guadalupe Igneous Complex – From Gabbros to Granites, in: *Formation of the Sierra Nevada Batholith: magmatic and tectonic processes and their tempos*, GSA Field guide, Geological Society of America, 2014; Memeti, V., Paterson, S.R., and Putirka, K.D. [Editors]. (in press)
- Putirka, K. (2013) Editorial: Why publish your best papers in *American Mineralogist*: An International Journal of Earth and Planetary Materials, *American Mineralogist*, v. 98, p. 1377-1378.
- Paterson, S.R., Lackey, J.S., Miller, J.S., Miller, R.B., Mundil, R., and Putirka, K.D. (2014) Introduction, in: *Formation of the Sierra Nevada Batholith: magmatic and tectonic processes and their tempos*, GSA Field guide, Geological Society of America, 2014; Memeti, V., Paterson, S.R., and Putirka, K.D. [Editors]. (in press)
- Putirka, K., Kunz, M., Swainson, I., and Thomson, J. (2013) Journal impact factors; their relevance and their influence on society-published scientific journals. *American Mineralogist*, v. 98, p. 1055-1065.
- Mollo, S., Putirka, K., Iezzi, G., and Scarlato, P. (2013) The control of cooling rate on titanomagnetite composition: Implications for a geospeedometry model applicable to alkaline rocks from Mt. Etna volcano. *Contributions to Mineralogy and Petrology*, v. 165, p. 457-475.
- Mollo, S., Putirka, K., Misiti, V., Soligo, M., and Scarlato, P. (2013) A new test for equilibrium-based on clinopyroxene-melt pairs; clues on the solidification temperatures of Etnean alkaline melts at post-eruptive conditions. *Chemical Geology*, v. 352, p. 92-100.
- Putirka, K., and Platt, B. (2012) Basin-and-Range volcanism as a passive response to extensional tectonics, in review, *Geosphere*, v. 8, doi: 10.1130/GES00803.1.
- Paterson, S.R., Lackey, J.S., Memeti, V., Miller, R.B., Miller, J.S., Mundil, R., and Putirka, K.D. (2013) Formation of the Sierra Nevada Batholith; magmatic and tectonic processes and their tempos. *GSA Today*. V. 23, p. 15-17.
- Armienti, P., Perinelli, C., and Putirka, K.D. (2012) Deep-level magma ascent rates at Mt. Etna (Sicily, Italy), *Journal of Petrology*, doi:10.1093/petrology/egs85.
- Putirka, K., Jean, M., Sharma, R., Torrez, G., Carlson, C. (2012) Cenozoic volcanism in the Sierra Nevada, and a new model for lithosphere degradation, *Geosphere*, v. 8, p. 265-291, doi:10.1130/GES00728.1
- Putirka, K., and Busby, C. (2011) Introduction: Origin and evolution of the Sierra Nevada and Walker Lane, *Geosphere*, v. p. 1269-1272, doi:10.1130/GES00761.1
- Putirka, K.D., Ryerson, F.J., Perfit, M., and Ridley, W.I. (2011) Mineralogy and composition of the oceanic mantle, *Journal of Petrology*, v. 52, p. 279-313.
- Mollo, S., Putirka, K., Iezzi, G., Pierdomenico, D.G., and Scarlato, P. (2011) Plagioclase-melt (dis)equilibrium due to cooling dynamics: implications for thermometry, barometry and hygrometry, *Lithos*, v. 125, p. 221-235.

- Armienti, P., Gasperini, D., Perinelli, C., and Putirka, K.D. (2009) A new model for estimating deep-level magma ascent rates from thermobarometry: an example from Mt. Etna, and implications for deep-seated magma dehydration, *Acta Vulcanologica*, v. 21, p. 145-158.
- Putirka, K and Kuntz, M., Unruh, D., Vaid, N. (2009) Magma evolution and ascent at the Craters of the Moon and neighboring volcanic fields, southern ID, USA: implications for the evolution of polygenetic and monogenetic fields, *Journal of Petrology*, v. 50, p. 1639-1665.
- Busby, C.J., and Putirka, K. (2009) Cretaceous-Cenozoic landscape evolution of the SW USA: evidence from Cenozoic paleocanyon fill in the central Sierra Nevada, *International Geology Review*, v. 51, p. 670-701.
- Koerner, A., Busby, C.J., Putirka, K., and Pluhar, C., 2009, New evidence for alternating effusive and explosive eruptions from the type section of the Stanislaus Group in the “cataract” paleocanyon, central Sierra Nevada, *International Geology Reviews*, v. 51, p. 962-985.
- Gorny, C., Busby, C., Pluhar, C.J., Hagan, J., and Putirka, K. (2009) An in-depth look at distal Sierra Nevada paleochannel fill drill cores through the Table Mountain Latite near Kings Ferry, *International Geology Review*, v. 51, p. 824-842.
- Hagan, J.C., Busby, C.J., Putirka, K., Renne, P. (2009) Cenozoic paleocanyon evolution, ancestral Cascades arc volcanism, and structure of the Hope Valley – Carson Pass Region, Sierra Nevada, California, *International Geology Reviews*, v. 51, p. 777-823.
- Du Bray, E.A., John, D.A., Putirka, K., and Cousens, B. (2009) Geochemical database for igneous rocks of the ancestral Cascades arc—southern segment, California and Nevada, U.S. Geological Survey Digital Data Series 439, 1 CD-ROM. [Available at URL <http://pubs.usgs.gov/ds/439>]
- Putirka, K. D. (2008) Thermometers and barometers for volcanic systems, in: Putirka, K. D., and Tepley, F. eds., *Rev. Mineral. Geochem.* vol. 69, p 61-120.
- Putirka, K.D. (2008) Introduction to Minerals, Inclusions and Volcanic Processes, in: Putirka, K. D., and Tepley, F. eds., *Rev. Mineral. Geochem.* vol. 69, p. 1-8.
- Putirka, K. (2008) Hot arguments to cool off plume debate?: Comment, *Geology*, doi: 10.1130/G25165C.1.
- Putirka, K. (2008) Excess Temperatures at Ocean Islands: Implications for Mantle Layering and Convection, *Geology*, v. 36, p. 283-286.
- Busby, C.J., Hagan, J., Putirka, K., Pluhar, C., Gans, P., Rood, D., DeOeo, S., Skilling, I. Wagner, D. (2008) The ancestral Cascades arc: Implications for the development of the Sierran microplate and tectonic significance of high K₂O volcanism. In, J. Wright and J. Shervais (ed.) *Ophiolites, Arcs and Batholiths*, *Geol. Soc. Am. Spec. Paper* 438, 331-378.
- Garrison, N.J., Busby, C.J., Putirka, K., Gans, P.B., and Wagner, D.L. (2008) A Mantle Plume Beneath California? The Mid-Miocene Lovejoy Flood Basalt, Northern California, in *Ophiolites, Arcs, and Batholiths*, *Geol. Soc. Am., Special Paper* 438, 551-572.
- Putirka, K., and Busby, C.J. (2007) The tectonic significance of high K₂O volcanism in the Sierra Nevada, California, *Geology*, v. 35, p. 923-926.
- Putirka, K., Perfit, M., Ryerson, F.J., and Jackson, M.G. (2007) Ambient and excess mantle temperatures, olivine thermometry, and active vs. passive upwelling, *Chemical Geology*, v. 241, p. 177-206.

- Putirka, K. (2005a) Mantle potential temperatures at Hawaii, Iceland, and the mid-ocean ridge system, as inferred from olivine phenocrysts: Evidence for thermally-driven mantle plumes, *Geochemistry, Geophysics, Geosystems*, doi:10.1029/005GC000915
- Putirka, K., (2005b) Igneous thermometers and barometers based on plagioclase + liquid equilibria: test of some existing models and new calibrations, *American Mineralogist*, v. 90, p. 336-346.
- Putirka, K. and Kuntz, M. (2005) A Mineralogic View Into the Magma Plumbing Systems of the Craters of the Moon and Neighboring Volcanic Lava Fields in the Snake River Plain, ID. Goldschmidt Meeting, Moscow ID, post-meeting trip.
- Putirka, K. and Condit, C. (2003) A cross section of a magma conduit system at the margins of the Colorado Plateau, *Geology*, v. 31, 701-704.
- Putirka, K., Ryerson, F. J., and Mikaelian, H. (2003) New igneous thermobarometers for mafic and evolved lava compositions, based on clinopyroxene + liquid equilibria, *American Mineralogist*, v. 88, p. 1542-1554.
- Putirka, K. (1999a) Melting depths and mantle heterogeneity beneath Hawaii and the East Pacific Rise: Constraints from Na/Ti and REE ratios, *Journal of Geophysical Research*, v. 104, p. 2817—2829.
- Putirka, K. (1999b) Clinopyroxene+liquid equilibrium to 100 kbar and 2450 K, *Contributions to Mineralogy and Petrology*, v. 135, p. 151-163.
- Putirka, K. (1998a) Garnet+liquid equilibrium, *Contributions to Mineralogy and Petrology*, v. 131, p. 273—288.
- Putirka, K. (1997a) Magma transport at Hawaii: inferences from igneous thermobarometry, *Geology*, v. 25, p. 69—72.
- Putirka, K., M. Johnson, R. Kinzler, and D. Walker (1996) Thermobarometry of mafic igneous rocks based on clinopyroxene-liquid equilibria, 0-30 kbar, *Contributions to Mineralogy and Petrology*, v. 123, p. 92-108.

ABSTRACTS/PRESENTATIONS (CSU FRESNO STUDENT AUTHORS ARE UNDERLINED):

- Putirka, K. (2020) Planetary and Extrasolar Insights on the Lower Mantle Source of the Hawaiian, and Other Plumes, Goldschmidt Meeting, Honolulu (virtual session).
- Teter, F., Putirka, K.D., and Burns, D.H.. (2019) Wide Range of Post-Mixing Cooling Timescales from Chaos Crags, Lassen Volcanic Center. Fall Meeting of the American Geophysical Union, V51F-0124.
- Platt, B., and Putirka, K. (2019) Does the Arrival of mafic recharge trigger volcanic eruptions? New insights from feldspar and pyroxene geothermometry at the Lassen Volcanic Center. Fall Meeting of the American Geophysical Union, V13A-06.
- Mata, F., Putirka, K.D., Canchola, J., Lackey, J.S., Paterson, S., Ratschbacher, B. (2019) Phase-equilibria evidence for the Bachmann-Bergantz model of granitic melt segregations: test from the Guadalupe Igneous Complex, California. Fall Meeting of the American Geophysical Union, V31E-0182.
- Larsen, A., Putirka, K., and Busby, C. (2019) Transtensional stresses tap magmas from the middle crust and also low-degree melts in crystal-liquid mush zones: evidence from the Sierra Crest-Little Walker volcanic system, central California. Fall Meeting of the American Geophysical Union, V13D-0185.
- Putirka, K.D., and Xu, S. (2019) A comparative study between the mineralogy of rocky objects around white dwarfs and FGM stars. Fall Meeting of the American Geophysical Union, P51G-3431.
- Cawthorn, R.G., Christyakova, S.Y., Latypov, R.M., and Putirka, K.D. (2019) Did

- dolerite sill emplacement t pre-date basaltic volcanicsm in the Karoo Igneous Province, South Africa? LASI 6 Conference, 25-26.11.2019
- Busby, C.J. and Putirka, K. (2019) Controls of strain rate and pull-apart basin size on arc magmatism: examples from the ancestral Cascades arc, California, Geological Society of America, Annual Meeting, Phoenix. Abstract # - 338936.
- Platt, B., and Putirka, K. (2018) Is mafic recharge necessary to trigger andesitic volcanic eruptions? New insights from feldspar and pyroxene thermobarometry. Geological Society of America – Abstracts with Programs, 201811, v. 50, #276-6.
- Putirka, K.D., Teter, F., Burns, D., Scruggs, M.A., and Clynne, M.A. (2018) Magma storage and the triggering of volcanic eruptions. Goldschmidt Abstracts 2018, 2081.
- Putirka, K.D. and Rarick, J.C. (2018) Exoplanet mineralogy and related issues of bulk Earth and Solar compositions. Goldschmidt Abstracts 2018, 2080.
- Putirka, K.D., and Rarick, J.C. (2018) The composition and mineralogy of exoplanets, using the Hypatia catalogue: implications for extrasolar plate tectonics and mantle convection. Lunar and Planetary Institute Conference, Pasadena, CA, 2018, LPI contributions no. 2084, p. 4010.
- Platt, B. and Putirka, K. (2017) Does the arrival of mafic recharge trigger volcanic eruptions? New insights from feldspar thermometry. 2017 GSA Annual meeting, #308487.
- Ratschbacher B.C., Keller, C.B., Schoene, B., Paterson, S., Anderson, L., Okaya, D., Putirka, K., and Lippoldt, R. (2017) Time scales of construction and compositional evolution of a bi-modal shallow crustal reservoir and implications for differentiation in the upper crust. IAVCEI, Portland, OR, annual meeting.
- Putirka, K. (2016) Crystallization conditions at Cascade and other arc volcanoes: the role of recharge and ultimate, proximal and immediate causes of eruption. American Geophysical Union, Fall Meeting, San Francisco, California, V53B-3087.
- Busby, C., Putirka, K. and Renne, P. (2016) Controls of Walker Lane Belt Pull-Aparts on the plumbing system in the Ancestral Cascades Arc, Central Sierra Nevada, California. American Geophysical Union, Fall Meeting, San Francisco, California, V53C-3110.
- Putirka, K. (2015) Thermal Histories of Earth, Moon, Mars and Vesta, and A Thermal Signal for the Onset of Terrestrial-like Plate Tectonics. American Geophysical Union, Fall Meeting, San Francisco, California, DI31A-2544.
- De Los Reyes, A.M., Putirka, K., Scruggs, M., Clynne, M. and Jackson, B. (2015) Vapor Saturation as The Cause of Volcanic Eruptions at the Lassen Volcanic Center, California, as Inferred from Crystallization Pressures and Temperatures. American Geophysical Union, Fall Meeting, San Francisco, California, V43B-3126.
- Sherman, T., Putirka, K., De Los Reyes, A., and Ratschbacher, B. (2015) Amphibole Thermometry and a Comparison of Results from Plutonic and Volcanic Systems. American Geophysical Union, Fall Meeting, San Francisco, California, V23B-3112.
- Putirka, K. (2014) Fe-Mg exchange between olivine and liquid as a test of equilibrium: promises and pitfalls, GSA National Meeting, Vancouver, BC., paper #75-4.
- Putirka, K. (2014) Amphibole-liquid equilibria: barometers and thermometers for volcanic systems, GSA National Meeting, Vancouver, BC., paper #180-4.
- Busby, C.J., and Putirka, K. (2014) Tectonic controls on Cenozoic volcanism, western U.S. and Mexico: an Overview, GSA National Meeting, Vancouver, BC., Paper #343-1
- Putirka, K.D., Tao, Y., Hari, K.R., and Perfit, M. (2014) The plume source as

- characterized by trace elements in olivine. 2014 Goldschmidt Meeting, Sacramento California.
- Ratschbacher, B.C., Putirka, K.D. and Paterson, S.R. (2014) Segregation of felsic melts from a mafic crystal mush in a shallow-level magma reservoir: Implications for continental crust formation, 2014 Goldschmidt Meeting, Sacramento California.
- Scruggs, M.A., Putirka, K.D., and Clynne, M.A. (2014) Enclave formation and magma mixing at Chaos Crags, California, 2014 Goldschmidt Meeting, Sacramento California.
- Ratschbacher, B.C., Paterson, S.R., and Putirka, K.D. (2013) Chemical and isotopic relationship of mafic and felsic magmas in sub-volcanic reservoir: The Guadalupe Igneous Complex (GIC), Sierra Nevada, California. American Geophysical Union Fall Meeting, abstract #V51C-2668.
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