

Terry Plank

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PROFESSIONAL APPOINTMENTS

2013-present Arthur D. Storke Memorial Professor, Earth & Env. Sci, Columbia University
2016-2019 Wiess Visiting Professor, Dept of Earth Sci, Rice University
2016 Benjamin Meaker Visiting Professor, University of Bristol, UK
2008-2013 Professor, Earth and Env. Sci, Columbia University
2005-2007 Professor, Earth Sciences, Boston University
1999-2005 Associate Professor, Earth Sciences, Boston University
2002 Visiting Professor, Universite Joseph Fourier, Grenoble, France
1995-1999 Assistant Professor, University of Kansas
1998 Visiting Professor, University of Rennes, Rennes, France
1993-1995 Post-doctoral Fellow, Cornell University (W.M. White, supervisor)

EDUCATION:

1985-1992 Lamont-Doherty Earth Observatory at Columbia University,
Ph.D., Geosciences, *with distinction*, May 1993
Thesis title: Mantle Melting and Crustal Recycling at Subduction Zones.
Advisor: Charles H. Langmuir

1981-1985 Dartmouth College
A.B., Earth Sciences, *summa cum laude*, 1985
Sr Thesis: Magmatic Garnets from the Cardigan Pluton, NH
Advisor: John B. Lyons

HONORS AND FELLOWSHIPS:

Elected, American Academy of Arts and Sciences (2016), Geological Society of America
Thompson International Distinguished Lecturer (2016-2017) • Honorary Degree, Doctor of
Science, Dartmouth College (2015) • Elected, National Academy of Sciences (2013) •
MacArthur Foundation Fellow (2013-2017) • EarthScope Lecturer (2011-2012) • Fellow of the
Geochemical Society (2011) • Mineralogical Society of America Distinguished Lecturer (2010-
2011) • Fellow of the Mineralogical Society of America (2009) • Fellow of the American
Geophysical Union (2008) • Ingerson Lecturer, Geochemical Society (2007) • MARGINS
Distinguished Lecturer (2006) • Donath Young Scientist Medal, Geological Society of America
(1998) • Fellow of the Geological Society of America (1998) • Houtermans Young Scientist
Medal, European Assoc'n Geochemistry (1998) • Joint Oceanographic Institutions/USSAC
Distinguished Lecturer (1994-5) • National Science Foundation Postdoctoral Fellowship (1993-
4) • Heezen Prize for Excellence in Research, Lamont-Doherty Earth Obs. (1991) • JOI/USSAC
Ocean Drilling Program Fellowship (1998-90) • National Science Foundation Graduate
Fellowship (1985-88) • John Ebers Geology Award, Dartmouth College (1985) • Upham
Geology Prize, Dartmouth College (1985) • Summer Undergraduate Research Fellow, GSO, U.
Rhode Island (1984) • Phi Beta Kappa, Dartmouth College (1984)

PROFESSIONAL ACTIVITIES – LAST 5 YEARS

- 2016 Co-Chair, Organizing Committee, Subduction Zone Observatories Workshop
2016 Member, Committee on Improving Understanding of Volcanic Eruptions,
NRC Report, National Academies
2014-2015 Co-Convener, CIDER Summer Program: Solid Earth & Hydro/Carbosphere
2014-2015 Convener, DCO Thematic Instit. Carbon from the Mantle to the Surface
2014-2015 Co-Convener, SOTA, State-of-the-Arc, Montserrat, Caribbean
2014 Organizer, Workshop on the Geology of the Manhattan Prong, Lamont
2014 Organizer, Symposium in honor of Dave Walker, Lamont
2013-2015 Executive Committee, Deep Carbon Observatory, Sloan Foundation
2012-2015 Member, WHOI Ionprobe Nation Facility Advisory Committee
2012-2013 Goldschmidt Medal Committee, Geochemical Society
2012-2013 Goldschmidt Conference, Subduction Theme Organizer
2012-2015 Advisory Committee for CIDER-II (Cooperative Inst. for Dynamic Earth Research)
2012-2013 Steering Committee for Reservoirs and Fluxes, Deep Carbon Observatory
2012-2015 NAS: U.S. National Committee for Geodesy and Geophysics
2011-2012 EarthScope Distinguished Lecturer
2011 Convener, Lithosphere-Asthenosphere Boundary (EarthScope Institute)
2010 Lecturer, CIDER (Cooperative Institute for Dynamic Earth Research)

KEYNOTE TALKS – Last 5 Years

- 2016** Plenary Speaker, Goldschmidt Conference, Yokohama, Japan
“The Volatile Input to Volcanoes and Eruptions”
2015 Shell Distinguished Woman in Science Lecture, Ohio State University
2015 Gordon Conference: Deep Earth
2015 Convocation Address, The Tatnall School, Delaware
2014 Jaeger-Hales Lecture, Australian National University
"At the Speed of Volcanic Eruptions"
2014 Research Briefings: A Sampling of the Work of Members Elected in 2013,
National Academy of Science: "Clocking the Run-up to Volcanic Eruptions"
2013 Convocation Address for M.A. Candidates, Columbia University
2013 Wetterhahn Science Research Symposium, Dartmouth College
2011 Symposium on "Frontiers in Earth Surface System Interactions" Yale University:
"From the Slab to the Eruption, the Water Cycle at Subduction Zones"
2010 MARGINS Successor Program Workshop (San Antonio, Texas):
"The Production and Fate of Fluids and Magmas at Active Margins"
2009 MARGINS Volatiles Theoretical and Experimental Institute (Mt. Hood, OR):
"Volatile Recycling at Subduction Zones"

PUBLICATIONS:

Total number publications: **78**

Total number citations (1987 - 2016): **9744** (*Google Scholar*)

h index: **40** (*Google Scholar*)

† Plank student, †† Plank postdoc • most cited publications: ** (n > 100), * (n > 50)

Ten Significant Papers of the Last Five Years

- †† Ferguson, D.J., Gonnermann, H.M., Ruprecht, P., **Plank, T.**, Hauri, E.H., Houghton, B.F. and Swanson, D.A. (2016) Magma decompression rates during explosive eruptions of Kilauea volcano, Hawaii, *Bulletin of Volcanology*, 78 (10), 712016.
- †† Ferriss, E., **Plank, T.**, Walker, D. (2016) Site-specific hydrogen diffusion rates during clinopyroxene dehydration. *Contrib. Mineral. Petrol.*, 171:55. DOI 10.1007/s00410-016-1262-8
- Plank, T.** and Forsyth, D.W. (2016) Thermal Structure and Melting Conditions in the Mantle beneath the Basin and Range Province from Seismology and Petrology, *Geochem. Geophys. Geosyst*, 17: 1312-1338, doi:10.1002/2015GC006205.
- * †Lloyd, A.S., **Plank, T.**, Ruprecht, P., Hauri, E. and Rose, W. (2013) Volatile Loss from Melt Inclusions in Pyroclasts of Differing Sizes. *Contributions to Mineralogy and Petrology*, 165: 129-153. DOI 10.1007/s00410-012-0800-2
- * **Plank, T.** (2013) The Chemical Composition of Subducting Sediments. In: Holland H.D. and Turekian K.K. (eds.) *Treatise on Geochemistry*, Second Edition, vol. 4, pp. 607-629. Oxford: Elsevier. <http://dx.doi.org/10.1016/B978-0-08-095975-7.00319-3>. Data tables archived at EarthChem Library: DOI: 10.1594/IEDA/100416
- †† Ruprecht, P. and **Plank, T.** (2013) Feeding andesitic eruptions with a high-speed connection from the mantle. *Nature*, v: 50, 68-72 doi:10.1038/nature12342.
- †† Ferguson, D.J., J. Maclennan, I.D. Bastow, D.M. Pyle, S.M. Jones, D. Keir, J.D. Blundy, **T. Plank**, G. Yirgu (2013) Melting during late-stage rifting in Afar is hot and deep. *Nature*, 499: 70-74. doi:10.1038/nature12292.
- * **Plank, T.**, Kelley, K.A., †Zimmer, M.M., Hauri, E.H. and Wallace, P.J. (2013) Why do mafic arc magmas contain ~4 wt% water on average? *Earth and Planetary Science Letters*, *Frontiers Article*, v. 364: 168-179.
- * †Cooper, L.B., Ruscitto, D., **Plank, T.**, Wallace, P.J., Syracuse, E. and Manning, C.E. (2012) Global Variations in H₂O/Ce I: Slab Surface Temperatures beneath Volcanic Arcs. *Geochem. Geophys. Geosyst.* 13, Q03024, 27 PP., doi:10.1029/2011GC003902
- ** Vervoort, J.D., **Plank, T.**, and Prytulak, J. (2011) The Hf-Nd isotopic composition of marine sediments. *Geochimica Cosmochimica Acta*, 75: 5903-5926.

Ten Other Significant Papers

- ** **Plank, T.**, †Cooper, L. and Manning, C.E. (2009) New geothermometers for estimating slab surface temperatures. *Nature Geoscience*, 2: 611-615.

- ** † Kelley, K.A., **Plank, T.**, Newman, S., Stolper, E. Grove, T.L. and Hauri, E. (2006) Mantle melting as a function of water content at subduction zones. I: Back-arc Basins. *J. Geophysical Research*, 111: B09208.
- ** **Plank, T.** (2005) Constraints from Th/La on sediment recycling at subduction zones and the evolution of the continents. *J. Petrology*, 46 (5), 921-44, doi:10.1093/petrology/egi005.
- ** Johnson, M. C., and **T. Plank** (1999) Dehydration and melting experiments constrain the fate of subducted sediments, *Geochem. Geophys. Geosyst.*, 1: doi:10.1029/1999GC000014.
- ** **Plank, T.** and Langmuir, C.H. (1998) The chemical composition of subducting sediment: implications for the crust and mantle. *Chemical Geology*, 145: 325-394.
- ** Elliott, T., **Plank, T.**, Zindler, A., White, W. and Bourdon, B. (1997) Element transport from subducted slab to volcanic front at the Mariana arc, *Journal of Geophysical Research*, 102: 14991-15019.
- ** **Plank, T.** and C.H. Langmuir (1993) Tracing trace elements from sediment input to volcanic output at subduction zones, *Nature*, 362, 739-743.
- ** Langmuir, C.H., E.M. Klein and **T. Plank** (1992) Petrological systematics of mid-ocean ridge basalts: Constraints on melt generation beneath ocean ridges. In *Mantle Flow and Melt Generation at Mid-Ocean Ridges*, J. Phipps-Morgan, D.K. Blackman and J. Sinton, eds., *AGU Geophysical Monograph*, 71, 183-280.
- ** **Plank, T.** and C.H. Langmuir (1992) Effects of the melting regime on the composition of the oceanic crust, *Journal of Geophysical Research*, 97, 19749-19770.
- ** **Plank, T.** and C.H. Langmuir (1988) An evaluation of global variations in the major element chemistry of arc basalts. *Earth and Planetary Science Letters*, 90, 349-370.