

Winner of the 2018 IAG Young Scientist Award

Alicia Cruz-Uribe



Alicia is the Edward Sturgis Grew Assistant Professor of Petrology and Mineralogy at the University of Maine. One of the primary focuses of her research is the geochemical connection between the metamorphism that occurs in subducted oceanic crust and the geochemistry of arc volcanoes, i.e., understanding the geochemical fingerprint of subduction. She is particularly interested in single element thermometry and quantifying the spatial and temporal scales of equilibrium in metamorphic rocks.

Alicia has developed a new technique for analyzing Ti in quartz by laser ablation ICP-MS, and has published papers about a wide variety of analytical techniques. Her recent work includes combining LA-ICP-MS analyses of trace elements with SIMS analyses of sulphur and oxygen isotopes in silicates and sulfides. In doing so, she hopes to constrain the composition and evolution of fluids produced during devolatilisation of subducting slabs. She is the head of the new MicroAnalytical Geochemistry and Isotope Centre (MAGIC Lab) at the University of Maine, which houses an Agilent 8900 triple quadrupole mass spectrometer and NWR193 laser ablation system. She also oversees the Experimental Petrology Laboratory.

When she is not in the lab, Alicia enjoys Nordic skiing, cycling, and going out in the field to collect rocks with her colleagues, students and baby girl.

Alicia has recently been co-opted onto the Council of the IAG with special responsibility for liaison with *Elements* journal.

Cruz-Uribe, A.M., Feineman, M.D., Zack, T., Jacob, D., in press, Invited Review Article: Assessing trace element (dis)equilibrium and the application of single element thermometers in metamorphic rocks: Lithos.

*Cruz-Uribe, A. M., Mertz-Kraus, R., Zack, T., Feineman, M. D., Woods, G., & Jacob, D. E. (2016). A New LA-ICP-MS Method for Ti in Quartz: Implications and Application to High Pressure Rutile-Quartz Veins from the Czech Erzgebirge. *Geostandards and Geoanalytical Research*, 1–12. <http://doi.org/10.1111/ggr.12132>*

*Cruz-Uribe, A. M., Hoisch, T. D., Wells, M. L., Vervoort, J. D., & Mazdab, F. K. (2015). Linking thermodynamic modelling, Lu-Hf geochronology and trace elements in garnet: new P-T-t paths from the Sevier hinterland. *Journal of Metamorphic Geology*, 33(7), 763–781. <http://doi.org/10.1111/jmg.12151>*

*Cruz-Uribe, A. M., Feineman, M. D., Zack, T., & Barth, M. (2014). Metamorphic reaction rates at ~650–800 °C from diffusion of niobium in rutile. *Geochimica et Cosmochimica Acta*, 130, 63–77. <http://doi.org/10.1016/j.gca.2013.12.015>*

J.B. Walters, A.M. Cruz-Urbe, H.R. Marschall (2020). Sulfur loss from subducted altered oceanic crust and implications for mantle oxidation. Geochemical Perspectives Letters 13, 36-41