

Barbara C. Ratschbacher | Curriculum Vitae

Researcher
Polar Research Group
German Federal Institute for Geosciences and Natural Resources
Hannover, Germany

ACADEMIC APPOINTMENTS

Federal Institute for Geosciences and Natural Resources | (March 2025 – present)
University of California, Davis, USA | Assistant Professor (Jan 2021 – Dezember 2024)
California Institute of Technology, USA | Postdoctoral Scholar (Oct 2017 – Oct 2020)

EDUCATION

University of Southern California, USA | Ph.D in Geological Sciences (2017)
Advisor: Prof. Scott R. Paterson
Eberhard-Karls Universität Tübingen, Germany | Diplom in Mineralogy (2012)
Advisors: Prof. Dr. Gregor Markl and Dr. Michael Marks

PUBLICATIONS

- 2024 **Ratschbacher, B.C.**, Keller, C.B. and Cooper, K.M.: Insights into magma reservoir dynamics from a global comparison of volcanic and plutonic zircon trace element variability in individual hand samples. *Geochemistry, Geophysics, Geosystems*, 25(11). <https://doi.org/10.1029/2024GC011681>
- 2024 Sosa, E.S., Bucholz, C.E., Hernández-Montenegro, J.D., Kipp, M.A., Tissot, F.L., **Ratschbacher, B.C.**, Jackson, J.M., Kay, S.M. and Kay, R.W.: Lower crustal control in the iron isotope systematics of plutonic xenoliths from Adak Island, Central Aleutians, with implications for arc magma geochemistry. *Geochimica et Cosmochimica Acta*, 377, pp.1-18. <https://doi.org/10.1016/j.gca.2024.05.026>
- 2024 **Ratschbacher, B. C.**, Ardill, K., Keller B., Schoene, B., Paterson, S., Putirka, K., Lackey, J.S., Paige, M.: Multi-scale magmatic and sub-solidus processes contribute to the chemical and isotopic characteristics of the Jurassic bimodal Guadalupe Igneous Complex, Sierra Nevada, California, *Geosphere*, 20(4), 1005-1029. <https://doi.org/10.1130/GES02689.1>
- 2023 **Ratschbacher, B. C.**, Jackson, J.M., Toellner T.S., Bucholz, C.E., Sturhahn, W., Solomatova N.V.: Fe³⁺/Fe^T ratios of amphiboles determined by high-spatial resolution single-crystal synchrotron Mössbauer spectroscopy, *American Mineralogist*, v. 108.1, p. 70-86. <https://doi.org/10.2138/am-2022-8115>.
- 2021 **Ratschbacher, B.C.**, Cawood, T., Larrovere, M.A., Alasino, P.H., Memeti V.: The ≥ 6-km Cuesta de Randolph mylonite zone in Ordovician Famatinian

peraluminous granites, NW Argentina: strain-localization as a function of protolith composition. *Journal of South American Earth Sciences*, v. 112, p. 103561. <https://doi.org/10.1016/j.jsames.2021.103561>.

- 2021 Delph, J. R., Shimizu, K., **Ratschbacher, B. C.**: The architecture of the southern Puna magmatic system: integrating seismic and petrologic observations with geochemical modeling. *Journal of Geophysical Research: Solid Earth*, v.126, p. 1-21. <https://doi.org/10.1029/2020JB021550>.
- 2021 Lusk, A. D., **Ratschbacher, B.C.**, Larrovere, M. A., Alasino, P. H., Memeti, V., Paterson, S. R.: Upper-crustal architecture and record of Famatinian arc activity in the Sierra de Narváez and Sierra de Las Planchadas, NW Argentina. *Journal of South American Earth Sciences*, v. 105, p. 102895. <https://doi.org/10.1016/j.jsames.2020.102895>.
- 2020 Werts, K., Barnes, C. G., Memeti, V., **Ratschbacher, B.C.**, Williams, D., Paterson, S. R.: Hornblende as a tool for assessing mineral-melt equilibrium and recognition of crystal accumulation. *American Mineralogist*, v. 105.1, p. 77-91. <https://doi.org/10.2138/am-2020-6972>.
- 2019 **Ratschbacher B.C.**, Paterson, S., Fischer, T.: Spatial and depth-dependent variations in magma volume addition and addition rates to continental arcs: Application to global CO₂ fluxes since 750 Ma. *Geochemistry, Geophysics, Geosystems*, v. 20, p. 2997-3018. <https://doi.org/10.1029/2018GC008031>.
- 2018 **Ratschbacher, B.**, Keller, C. B., Schoene, B., Paterson, S. R., Anderson, J. L., Okaya, D., Putirka, K., Lippoldt, R.: A new workflow to assess emplacement duration and melt residence time of compositionally diverse magmas emplaced in a sub-volcanic reservoir. *Journal of Petrology*, v. 59, p. 1787-1809. <https://doi.org/10.1093/petrology/egy079>.
- 2017 Larrovere, M.A., Suzaño, N., **Ratschbacher, B.C.**, Sola, A., Alasino, P.H., Fuentes, M.G., Weinberg, R.F., Paterson, S.R., Becchio, R., Finch, M.A.: Las fajas de cizalla dúctil del basamento ígneo-metamórfico del NOA. In: *Muruaga, C.M. y Grosse, P. (Eds.), Ciencias de la Tierra y Recursos Naturales del NOA. Relatorio del XX Congreso Geológico Argentino, San Miguel de Tucumán: 579-601. ISBN 9789874266668*.
- 2015 **Ratschbacher, B.C.**, Marks, M., Bons, P. and Markl, G.: Emplacement and geochemical evolution of highly evolved syenites investigated by a combined structural and geochemical field study: The Iujavrites of the Ilímaussaq complex, SW Greenland. *Lithos*, v. 231, p. 62-76. <https://doi.org/10.1016/j.lithos.2015.06.004>.