

## Goldschmidt 2019 Barcelona

I was excited to attend the 29<sup>th</sup> V.M. Goldschmidt conference in Barcelona, the world's premier geochemistry conference. I was there to present results from my research on cobalt biogeochemistry, which should hopefully soon be published. My presentation was scheduled for Tuesday morning in Session 11e "Exploring biogeochemical cycles and life evolution through microbe-mineral-molecule interactions across space and time". It was difficult to decide which session to submit my abstract to with many relevant options, highlighting the diversity and depth of science to discover at the conference.

I really enjoyed talks on early life on Earth, looking at the role of microbes in oxygenating our atmosphere, observed via measurements of stable isotopes and biomarkers in ancient rocks. It was interesting to hear how lithium isotopes can be used to trace weathering, and about unusual cave environments that support unique microbial communities. It was exciting to hear suggestions for a new microbial metabolism - sulfur comproportionation - thermodynamically favourable, but yet to be identified in the environment. The paradigms of the redox tower were challenged, with micro-environments and co-existence of multiple metabolisms common, and fermentative metabolisms identified in permeable aerobic sediments.



*Presenting my research in Session 11e*

I attended a number of sessions covering the environmental impacts of mine wastes. Of particular note were presentations on submarine tailings disposal; seemingly controversial but apparently beneficial for limiting the mobilisation of toxic metals to the environment, as well as talks on using mine tailings as a sink for carbon dioxide, and on different management options to manage acid generation such as using waste materials (e.g. ash, paper pulp, sludge) or physical structures to minimise oxygen ingress.

The conference venue was located right next to the beach in the east of Barcelona, which I took advantage of on the final day and went for a lunchtime swim. Overall the conference was enjoyable and inspirational and I'm already looking forward to attending again in Lyon in 2021.

Laura Newsome



*View from the 2<sup>nd</sup> floor of the conference venue*