

Mike C. Rowley PhD., M.Sc. (Res), B.Sc. (Hons.) | SNSF Fellow and LBNL funded postdoc | Orcid ID: 0000-0002-2440-7855.

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Education

PhD. – Environmental Sciences, investigating the stabilisation of soil organic carbon by calcium at the Nant Valley, Switzerland

UNIL, Switzerland. Supervisor: Eric Verrecchia & Stephanie Grand 27 Jan, 2020

M.Sc. – Applied Sciences by Research, focused on biogeochemistry and Neotropical agroforestry

Distinction - Bournemouth University, UK Dec 2014

B.Sc. (Hons.) – Applied Geography, focused on physical geography

2:1 Upper Second Division - Bournemouth University, UK Sep 2010

Objective

To continue investigating the potential of carbon sequestration processes in soils at the Lawrence Berkeley National Laboratory.

Competencies

- Specialist in soil science, carbon cycle and biogeochemistry
- Competent independent researcher with effective interpersonal and communication skills.
- Knowledge of Neotropical botany, agroforestry, remote sensing, and laboratory / field work health & safety.
- Laboratory, statistics, field, coding, GIS and academic research based experience and technical skills.
- Matlab, SAS, R, ArcGIS, Microsoft packages. Adobe Photoshop and Illustrator,
- Demonstrating and management skills gained from a presenting and working in different work environments and countries.
- Competent teaching skills, working at University of Lausanne, Bournemouth University and University College London.
- French and basic Haitian Creole language skills,

Professional Experience

Postdoctoral researcher

Postdoc position investigating the complexation of carbon by calcium using an experimental and field-based approach. This postdoc is jointly funded by the Swiss National Science Foundation and the Lawrence Berkeley National Laboratory.

*Lawrence
Berkeley National
Laboratory, U.S.A.*

Oct. 2020 -
Present

Assistant Diplôme

PhD. candidate in soil science and biogeochemistry. Teaching master and bachelor students in biology, biogeochemistry, environmental chemistry and lab / field skills and techniques. Specialising in the interactions between soil organic carbon and calcium in the mountainous soils of the Nant Valley, Switzerland.

*University of
Lausanne,
Switzerland*

Aug 2015 -
Sept. 2020

Technical Officer

Laboratory technician and assistant demonstrator in analytical procedures and machinery, biology, chemistry and GIS.

*Bournemouth
University (BU),
U.K.*

Nov 2014 -
Aug 2015

Environment Support Officer

Working closely with Bournemouth University's Carbon Management team to reduce and mitigate the University's environmental impact.

BU.

July 2014 –
Oct 2014

Project Director & M.Sc. Student

Directed a community-based reforestation project in Haiti with up to 40 volunteers and workers, while completing scientific research on the oxalate-carbonate pathway.

*BU & Anse-a-
Pitres, Haiti*

Apr 2013 –
Dec 2014

Peer-reviewed scientific publications to date

For a more up-to-date list and updates on research projects please visit: https://www.researchgate.net/profile/Mike_Rowley

Rowley MC. **Investigating calcium mediated stabilisation of soil organic carbon at the Nant Valley alpage, Vaud Alps, Switzerland** [Doctoral thesis]. Lausanne, Switzerland: University of Lausanne; 2020.

Rowley, M.C., Grand, S., Adatte, T., Verrecchia, E.P., 2020. **A cascading influence of calcium carbonate on the biogeochemistry and pedogenic trajectories of subalpine soils, Switzerland.** *Geoderma* 361, 114065.

Matteodo, M., Grand, S., Sebag, D., Rowley, M.C., Vittoz, P., Verrecchia, E.P., 2018. **Decoupling of topsoil and subsoil controls on organic matter dynamics in the Swiss Alps.** *Geoderma*. 330, 41-51.

Rowley, M.C., Grand, S., Verrecchia, E.P., 2018. **Calcium-mediated stabilisation of soil organic carbon.** *Biogeochemistry*. 137(1), 27-49.

Rowley, M.C., Estrada-Medina, H., Tzec-Gamboa, M., Rozin, A., Cailleau, G., Verrecchia, E.P., Green, I., 2017. **Moving carbon between spheres, the potential oxalate-carbonate pathway of *Brosimum alicastrum* Sw.; Moraceae.** *Plant and Soil*. 412(1), 465-479.

In review:

Rowley, M. C., Grand, S., Verrecchia, E.P., In prep. **The influence of calcium on SOC dynamics and pools at the Nant valley, Switzerland.**

Presentation & Conference Experience

57th annual meeting of the Clay Minerals Society, Pacific Northwest National Laboratory, Richland, USA. (Oct. 2020)

Confirmed invited speaker for the *stability of mineral-organic matter interactions under varying biogeochemical conditions* session.

American geosciences conference, San Francisco, USA. (Dec, 2019)

Poster presentation on the effects of Ca on SOC dynamics.

(<https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/492104>)

17th Swiss Geosciences Meeting, Fribourg, Switzerland (Nov, 2019)

Oral presentation on the effects of CaCO₃ on the pedogenic trajectories and biogeochemistry of Swiss soils.

(https://geoscience-meeting.ch/sgm2019/wp-content/uploads/abstract_volumes/SGM_2019_Symposium_10.pdf)

European geosciences conference, Venice, Austria (April, 2019)

Poster presentation on the interactions between soil organic carbon and calcium

(<https://meetingorganizer.copernicus.org/EGU2019/EGU2019-13252.pdf>)

Goldschmidt International Conference, Paris (Aug, 2017)

Presented about the oxalate carbonate pathway in Haiti and Mexico in the soil-plant interactions session

(<https://goldschmidt.info/2017/abstracts/abstractView?id=2017001258>)

Vaudoise conference, University of Lausanne, Lausanne, Switzerland (Nov, 2015)

Poster presentation.

Specific Lab, Statistics and Technical Experience

- Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES).
- Density fractionation.
- $\delta^{13}\text{C}$ analysis.
- X-ray photoelectron spectroscopy.
- Enzymatic oxalate quantification.
- Linear mixed models.
- Multivariate statistics.
- Coding and statistical modelling.
- CHNS Elemental analyser.
- Laser diffraction granulometry.
- X-ray fluorescence.
- X-ray diffraction.
- Scanning Electron Microscopy (SEM) and in-situ Energy Dispersive Spectrometry.
- Ion chromatography (ICS) and basic Gas Chromatography-Mass Spectrometry (GC-MS).
- Fourier Transform Infrared Spectroscopy (FTIR).
- UV/VIS Spectrophotometry.
- Microwave digestion.
- Optical microscopy.
- Basic lab equipment and techniques; pH meters, autoclaves, centrifuges, fume cupboards, titrations, extractions, etc...
- Safe lab practice courses completed at several universities on gas cylinders, COSHH, DSEAR, acid handling, pressure systems (autoclaves), first aid.

Interests

- Science (Environmental, Geospatial, Biology, Physics and Chemistry / Biogeochemistry).
- Learning, teaching and education.
- Computing, mathematics, music of all genres.
- Various sports and different forms of physical exercise (skiing, team sports, mountaineering, climbing), and traveling to discover different cultural paradigms.

References

Prof. Dr. Eric P. Verrecchia: Professor at the Institute of Earth Surface Dynamics (IDYST), University of Lausanne and co-director of my thesis,

Eric.Verrecchia@unil.ch, 0041 2169 24450,

Bât. Geopolis, Université de Lausanne, 1015 Lausanne - Switzerland

Dr. Stephanie Grand: Lecturer at the Institute of Earth Surface Dynamics (IDYST), University of Lausanne and co-director of my thesis,

Stephanie.grand@unil.ch, 0041 2169 23517,

Bât. Geopolis, Université de Lausanne, 1015 Lausanne – Switzerland

Dr. Iain Green: Associate Lecturer Biological Sciences MSc. Tutor,

igreen@bournemouth.ac.uk, 0044 1202-961598,

Bournemouth University, Christchurch House, Talbot Campus, Fern Barrow, Poole, UK BH12 5BB