1. Education and Employment

1.1. Biographical information

Name: Rizlan Bernier-Latmani

Address: Environmental Microbiology Laboratory
School of Architecture, Civil and Environmental Engineering
Bâtiment CH A1 375
Ecole Polytechnique Fédérale de Lausanne (EPFL)
CH-1015 Lausanne
Tel: +41 21 693 5001
Fax: +41 21 693 6205
Email: rizlan.bernier-latmani@epfl.ch
www: http://eml.epfl.ch/

1.2. Higher education

Summer course: Advances in Genome Technology and Bioinformatics Course at the Marine Biology Laboratory in Woods Hole, MA. October 2005.

Ph.D. 2001 Civil and Environmental Engineering, Stanford University, CA
(*Advisor*, Jim Leckie, 'Biodegradation of uranyl (UO_2^{2+})-complexed citrate and implications for uranyl mobility in the subsurface')
M.S. 1995 Civil and Environmental Engineering, Stanford University, CA
B.S. 1993 Natural Resources with Honors, Cornell University, Ithaca, NY

1.3. Professional employment

2022-present	***Full professor***, School of Architecture, Civil and Environmental Engineering, Swiss Federal Institute of Technology, Lausanne
2013- 2022	***Associate professor***, School of Architecture, Civil and Environmental Engineering, Swiss Federal Institute of Technology, Lausanne
2005-2013	***Assistant professor tenure-track***, School of Architecture, Civil and Environmental Engineering, Swiss Federal Institute of Technology, Lausanne
2001-2005	***Post-Graduate Researcher***, Scripps Institution of Oceanography, La Jolla, CA (PI: Brad Tebo)

1.4. Academic honors

Teaching award 'Prix SIE d'excellence dans l'enseignement', 2019.
Rotary Foundation University Professor grant, 2004.
Swiss National Science Foundation Post-Doctoral Fellowship, 2001.
Leon B. Reynolds Memorial Scholarship at Stanford University, 1995-96.
Graduated with Honors from Cornell University, 1993.

2. Publication list

ResearcherID: E-4398-2011
ORCID: 1-6547-722X

2.1. Original (peer reviewed) papers

2023

1. Miele, F., Benettin, P., Wang, S., Retti, I., Asadollahi, M., Frutschi, M., Mohanty, B., **Bernier-Latmani, R**., and A. Rinaldo. Spatially explicit linkages between redox potential cycles and soil moisture fluctuations. **Submitted**.

2. Qiao, J., Sallet, H., Lederballe Meibom, K., Jacquemin, N. and **R. Bernier-Latmani**. The effect of substrate availability on anaerobic arsenic methylation by *Paraclostridium bifermentans*, strain EML. **Submitted**.

3. Asdollahi, M., Wang, S., Miele, F., Frutschi, M., **R. Bernier-LAtmani**, A. Rinaldo, and P. Benettin. Nitrogen transformation Processes and Residence Time Distributions in a Forest Soil Column: Evaluation of a Multi-tracer Experiment. **Submitted**.

2022

4. Vico Oton, E., Volet, C., Jacquemin, N., Lederballe Meibom, K., and **R. Bernier-Latmani**. Strain-dependent induction of primary bile acid 7-dehydroxylation by cholic acid. **Submitted**. Preprint: doi 10.1101/2022.02.15.480494

5. Burzan, N., Murad Lima, R., Frutschi M., Janowczyk, A., Reddy, B., Rance, A., Diomidis, N., and **R. Bernier-Latmani**. (2022) Growth and persistence of an aerobic microbial community in Wyoming bentonite MX-80 anoxic in-situ conditions. **Frontiers in Microbiology**, doi: 10.3389/fmicb.2022.858324

6. Viacava, K., Qiao, J., Janowczyk, A., Poudel, S., Jacquemin, N., Meibom Lederballe K., Shrestha, H.K., Reid, M.C., Hettich, R.L., and **R. Bernier-Latmani** (2022) Meta-omics-aided isolation of an elusive anaerobic arsenic-methylating soil bacterium. **The ISME Journal,** doi: 10.1038/s41396-022-01220-z

7. Bell, E., Lamminmäki, T., Alneberg, J., Qian, C., Xiong, W., Hettich, R., Frutschi, M., and **R. Bernier-Latmani.** (2022) Active anaerobic methane oxidation and sulfur disproportionation in the deep terrestrial subsurface. **The ISME Journal**, doi: 10.1101/2021.08.21.457207

8. Coral, T., Placko, A-L., Beaufort, D., Tertre, E., **Bernier-Latmani, R.**, Descostes, M., de Boissezon, H., Guillon, S., and P. Rossi. (2022) **Science of the total environment**, doi: 10.1016/j.scitotenv.2022.153597

9. Chromiková, Z., Kalianková Chovanová, R., Tamindžija, D., Bártová, B., Radnović, D., **Bernier-Latmani, R.** and I. Barák. Implantation of *Bacillus pseudomycoides* chromate transporter increases chromate tolerance in *Bacillus subtilis*. (2021) **Frontiers in Microbiology**, doi: 10.3389/fmicb.2022.842623

10. Pan, Z., Roebbert, Y., Beck, A., Bartova, B., Vitova, T., Weyer, S., and **R. Bernier-Latmani** (2022) Persistence of the isotopic signature of pentavalent uranium in magnetite. **Environmental Science and Technology,** doi: 10.1021/acs.est.1c06865

2021

11. Mehrshad, M., Lopez-Fernandez, M., Sundh, J., Bell, E., Simone, D., Buck, M., **Bernier-Latmani, R**., Bertilsson, S., and M. Dopson. (2021). Energy efficiency and biological interactions define the core microbiome of deep oligotrophic groundwater. **Nature Communications**, doi: 10.1038/s41467-021-24549-z

12. Sato, A., **Bernier-Latmani, R**., Masahiko, H. and M. Abe. (2021) Ab initio and steady-state models for uranium isotope fractionation in multi-step biotic and abiotic reduction. **Geochimica et Cosmochimica Acta**, doi: 10.1016/j.gca.2021.05.044

13. Roebbert, Y., Rosendahl, C.D., Brown, A., Schippers, A., **Bernier-Latmani, R**., and S. Weyer. (2021) Uranium isotope fractionation during the anoxic mobilization of noncrystaline U(IV) by ligand complexation. **Environmental Science and Technology,** doi: 10.1021/acs.est.0c08623

14. Molinas, M., Faizova, R., Brown, A. Galanzew, J., Schacherl, B., Bartova, B., Meibom, K.L., Vitova, T., Mazzanti, M., and **R. Bernier-Latmani**. (2021) Biological reduction of a U(V)-organic ligand complex. **Environmental Science and Technology,** doi: 10.1021/acs.est.0c06633

15. Reid, M.C., Asta, M.P., Falks, L., Maguffin, S.C., Con Pham, V.H., Le H.A., **Bernier-Latmani, R**., and P. Le Vo. (2021) Associations between inorganic arsenic in rice and groundwater arsenic in the Mekong Delta. **Chemosphere**. doi: 10.1016/j.chemosphere.2020.129092

2020

16. Viacava, K., Lederballe Meibom, K., Ortega, D., Dyer, S., Gelb, A., Falquet, L., Minton, N.P., Mestrot, A., and **R. Bernier-Latmani**. (2020) Variability in arsenic methylation efficiency across aerobic and anaerobic microorganisms. **Environmental Science and Technology,** v54, 14343-14351, doi: 10.1021/acs.est.0c03908

17. Nazarova, T., Alessi, D.S., Janssen, D.J., **Bernier-Latmani, R**., and C. Wanner. (2020) In situ biostimulation of Cr(VI) reduction in a fast-flowing oxic aquifer. **ACS Earth&Space Chemistry**, doi: 10.1021/acsearthspaceschem.0c00200

18. Pan, Z., Bartova, B., LaGrange, T., Butorin, S.M., Hyatt, N.C., Stennett, M.C., Kvashinina, K.O., and **R. Bernier-Latmani**. (2020) Nanoscale mechanism of UO_2 formation through uranium reduction by magnetite. **Nature Communications**, v11, 4001 doi: 10.1038/s41467-020-17795-0

19. Marion, S., Desharnais, L., Studer, N., Dong, Y., Notter, M.D., Poudel, S., Menin, L., Janowczyk, A. Hettich, R.L., Hapfelmeier, S., and **R. Bernier-Latmani**. (2020) Biogeography of microbial bile acid transformation along the murine gut. **Journal of Lipid Research**, v61 (9), doi: 10.1194/jlr.RA120001021

20. Faisova, R., Fadaei-Tirani, F., **Bernier-Latmani, R**., and M. Mazzanti. (2020) Ligand supported facile conversion of uranyl(V) to uranium(IV) in organic and aqueous media. **Angewandte Chemie International Edition** v59, 1-6. doi: 10.1002/anie.201916334

21. Loreggian, L., Sorwat, J., Byrne, J.M., Kappler, A., and **R. Bernier-Latmani**. (2020) Role of iron sulfide phases in the stability of noncrystalline tetravalent uranium in sediments. **Environmental Science and Technology,** v54, 4840-4846. doi: 10.1021/acs.est.9b07186

22. Bell, E., Lamminmäki, T., Alneberg, J., Andersson, A.F., Qian, C., Xiong, W., Hettich, R.L., Frutschi, M., and **R. Bernier-Latmani**. (2020) Active sulfur cycling in the terrestrial deep subsurface. **The ISME Journal** v14, 1260-1272. doi: 10.1038/s41396-020-0602-x

2019

23. Loreggian, L., Novotny, A., Bretagne, S., Bartova, B., Wang, Y., and **R. Bernier-Latmani**. (2019) The effect of aging on the stability of microbially-reduced uranium in natural sediments. **Environmental Science and Technology,** doi:10.1021/acs.est.8b07023.

24. Asta, M.P., Wang, Y., Frutschi, M., Viacava, K., Loreggian, L., Le Pape, P., Vo, P.L., Fernández, A.M., Morin, G., and **R. Bernier-Latmani**. (2019) Microbially mediated release of As from Mekong Delta peat sediments. **Environmental Science and Technology**, v53, 10208-10217, doi: 10.1021/acs.est.9b02887.

25. Dublet, G., Worms, I.A.M., Frutschi, M., Brown, A., Zünd, G.C., Bartova, B., Slaveykova, V.I., and **R. Bernier-Latmani**. (2019) Colloidal size and redox state of uranium species in the porewater of a pristine mountain wetland. **Environmental Science and Technology**, v53, 9361-9369, doi:10.1021/acs.est.9b01417.

26. List, C., Hosseini, Z., Meibom, K.L., Hatzimanikatis, V., and **R. Bernier-Latmani**. (2019) Impact of iron reduction on the metabolism of *Clostridium acetobutylicum*. **Environmental Microbiology**, 14640, doi:10.1111/1462-2920.14640.

27. Boylan, A.A., Perez-Mon. C., Guillard, L., Burzan, N., Loreggian, L., Maisch, M., Kappler, A., Byrne, J.M., and **R. Bernier-Latmani**. (2019) H_2-fuelled microbial metabolism in Opalinus Clay. **Applied Clay Science**, v174, 69-76. doi:10.1016/j.clay.2019.03.020

28. Tamindžija, D., Chromikova, Z., Spaić, A., Barak, I., **Bernier-Latmani, R**., and D. Radnović. (2019) Chromate tolerance and removal of bacterial strains isolated from uncontaminated and chromium-polluted environments. **World Journal of Microbiology and Biotechnology**, v35, 56. doi: 10.1007/s11274-019-2638-5

29. Phan, V.T.H., Bardelli, F., Le Pape, P., Couture, R.-M., Fernandez-Martinez, A., Tisserand, D., **Bernier-Latmani, R**., and L. Charlet. (2019) Interplay of S and As in Mekong Delta sediments during redox oscillations. **Geosciences Frontiers**, v10, 5, 1715-1729. doi: 10.1016/j.gsf.2018.03.008

30. Phan, V.T.H., **Bernier-Latmani, R**., Tisserand, D., Bardelli, F., Le Pape. P., Frutschi, M., Gehin, A., Couture, R.-M., and L. Charlet. (2019) As release under the microbial sulfate reduction during redox oscillations in the upper Mekong delta aquifers, Vietnam: A mechanistic study. **Science of the Total Environment**, v663, 718-730. doi:10.1016//j.scitotenv.2019.01.219

2018

31. Marion, S., Studer, N., Desharnais, L., Menin, L., Escrig, S., Meibom, A., Hapfelmeier, S., and **R. Bernier-Latmani**. (2018) *In vitro* and *in vivo* characterization of *Clostridium scindens* bile acid transformations. **Gut Microbes**. doi: 10.1080/19490976.2018.1549420.

32. Bell, E., Lamminmäki, T., Alneberg. J., Andersson, A.F., Qian, C., Xiong, W., Hettich, R.L., Balmer, L., Frutschi, M., Sommer, G., and **R. Bernier-Latmani**. (2018) Biogeochemical cycling by a low-diversity microbial community in deep groundwater. **Frontiers in Microbiology**, v9, p 2129. doi:10.3389/fmicb.2018.02129

33. Meibom, K.L., Cabello, E., and **R. Bernier-Latmani.** (2018) The Small RNA RyhB is a regulator of cytochrome expression in *Shewanella oneidensis*. **Frontiers in Microbiology**, v9, p 268. doi: 10.3389/fmicb.2018.00268

34. Wang, Y., Le Pape, P., Moring, G., Asta, M.P., King, G., Bartova, B., Suvorova, E., Frutschi, M., Ikogou, M., Pham, V.H.C., Vo, P.L., Herman, F., Charlet, L. and **R. Bernier-Latmani.** (2018) Arsenic speciation in Mekong Delta sediments depends on their depositional environment. **Environmental Science and Technology**, v52, 3431-3439. doi: 10.1021/acs.est.7b05177

35. Coral, T., Descostes, M., De Boissezon, H., **Bernier-Latmani, R**., de Alencastro, L.F., and P. Rossi. (2018) Microbial communities associated with uranium in-situ recovery mining process are related to acid mine drainage assemblages. **Science of the Total Environment**, v628-629, p26-35. doi: 10.1016/j.scitotenv.2018.01.321

36. Sturm, G., Brunner, S., Suvorova, E., Dempwolff, F., Renier, J., Graumann, P., **Bernier-Latmani, R**., Majzlan, J., and J. Gescher. (2018) Chromate resistance mechanisms in *Leucobacter chromiiresistens*. **Applied and Environmental Microbiology**, V84, 23, e2208-18. doi: 10.1128/AEM.02208-18

2017

37. Reid, M., Maillard, J., Bagnoud, A., Falquet, L., Le Vo P., and **R. Bernier-Latmani**. (2017) Arsenic methylation dynamics in a rice paddy soil anaerobic enrichment culture. **Environmental Science and Technology**, v 51, 10546-10554. doi: 10.1021/acs.est.7b02970

38. Smart, N. R., Reddy, B., Rance, A. P., Nixon, D. J., Frutschi, M., **Bernier-Latmani, R.,** and N. Diomidis (2017) The anaerobic corrosion of carbon steel in compacted bentonite exposed to natural Opalinus Clay porewater containing native microbial populations. **Corrosion Engineering, Science and Technology**., v52:sup1, p101-112. doi:10.1080/1478422X.2017.1316088

39. Bhattacharyya, A., Campbell. K., Kelly, S., Roebbert, Y., Weyer, S., **Bernier-Latmani, R**. and T. Borch (2017) Biogenic non-crystalline U(IV) revealed as major component in uranium ore deposits. **Nature Communications**, v8, 15538. doi:10.1038/ncomms15538

40. Leupin, O.X., **Bernier-Latmani**, **R.**, Bagnoud, A., Moors, H., Leys, N., Wouters, K, and S. Stroes-Gascoyne (2017) Fifteen years of microbiological investigation in Opalinus Clay: a potential host rock for geologic radioactive waste depository. **Swiss Journal of Geosciences**, v110, p. 343-354. doi:10.1007/s00015-016-0255-y

2016

41. Studer, N., Desharnais, L., Beutler, M., Brurigoux, S., Terrazos, M., Menin, L., Schurch, C.M., McCoy, K.D., Kuehe, S., Minton, N.P., Stecher, B., **Bernier-Latmani, R**., and S. Hapfelmeier (2016) Functional intestinal bile acid 7alpha-dehydroxylation by *Clostridium scindens* associated with protection from *C. difficile* infection in a gnotobiotic mouse model. **Frontiers in Microbiology,** v6, 191.

42. Jamroskovic, J., Chromikova, Z., List, C., Bartova, B., Barak, I., and **R. Bernier-Latmani**. (2016) Variability in DPA and calcium content in the spores of Clostridium species. **Frontiers in Microbiology**, v7, p. 1791.

43. Wang, Y., von Gunten, K., Bartova, B., Meisser, N., Astner. M., Burger, M., and **R. Bernier-Latmani**. (2016) Products of in situ corrosion of depleted uranium ammunition in Bosnia and Herzegovina soils. **Environmental Science and Technology**, v50, 12266-12274.

44. Visser, M., Stams, A. J. M., Frutschi, M. and **R. Bernier-Latmani**. (2016) Phylogenetic comparison of Desulfotomaculum species of subgroup 1a and description of Desulfotomaculum reducens sp.nov. **International Journal of Systematic and Evolutionary Microbiology,** v66, p. 762-767.

45. Bagnoud, A., Chourey, K., Hettich, R.L., de Bruijn, I., Andersson, A.F., Leupin, O.X., Schwyn, B., and **R. Bernier-Latmani.** (2016a) Reconstructing a hydrogen-driven microbial metabolic network in Opalinus Clay rock. **Nature Communications**, v7, p12770.

46. Bagnoud, A., Leupin O.X., Schwynn, B., and **R. Bernier-Latmani.** (2016b) Rates of microbial hydrogen oxidation and sulfate reduction in Opalinus Clay rock. **Applied Geochemistry**, v72, 42-50.

47. Bi, Y., Stylo, M., **Bernier-Latmani, R.,** and K. F. Hayes. (2016) Rapid mobilization of noncrystalline U(IV) coupled with FeS oxidation. **Environmental Science and Technology**, v 50, 3, 1403-1411.

48. Terzis, D., Bernier-Latmani, R., and L. Laloui. (2016) Fabric characteristics and mechanical response of bio-improved sand to various treatment conditions. Géotechnique Letters, v 6, 1.

49. Bagnoud, A., I. De Bruijn, I., Andersson, A. F., Diomidis, N., Leupin, O. X. Schwyn, B., and **R. Bernier-Latmani** (2016c) A minimalistic microbial food web in an excavated deep subsurface clay rock. FEMS Microbiology Ecology, v 92, 1, p. fiv138.

2015

50. Stylo, M., Neubert, N., Wang, Y., Monga, N., Romaniello, S.J., Weyer, S., and **R. Bernier-Latmani**. (2015b) Uranium isotopes fingerprint biotic reduction. **Proceedings of the National Academy of Sciences of the United States of America**, v112, 18, 5619-5624.

51. Lezama Pacheco, J., Cerrato, J., Veeramani, H., Alessi,D., Suvorova, E., **Bernier-Latmani, R.**, Giammar, D. Long, P., Williams, K., and J. Bargar. (2015) Long-term in-situ oxidation of biogenic uraninite in an alluvial aquifer: impact of dissolved oxygen and calcium. **Environmental Science and Technology**, v49, 7340-7347.

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2014

53. Alessi, D.S., Lezama-Pacheco, J.S., Janot, N., Suvorova, E.I., Cerrato, J.M., Giammar, D.E., Davis, J.A., Fox, P.M., Williams, K.H., Long, P.E., Handley, K.M., Wrighton, K.W., Banfield, J.F., **Bernier-Latmani, R**. and J.R. Bargar. (2014) Speciation and reactivity of uranium products formed during *in situ* bioremediation in the Old Rifle, CO aquifer. **Environmental Science and Technology**, v48, 12842-12850. doi:10.1021/es502701u.

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55. Dalla Vecchia, E.C., Visser, M., Stams, A. and **R. Bernier-Latmani**. (2014) Investigation of sporulation in the Desulfotomaculum genus: a genomic comparison with the genera Bacillus and Clostridium. **Environmental Microbiology Reports,** doi: 10.1111/1758-2229.12200.

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57. *Jamroskovic, J., Shao, P. P., Suvorova Buffat, E., Barak, I. and **R. Bernier-Latmani**. (2014) Combined scanning transmission X-ray and electron microscopy for the characterization of bacterial endospores. **FEMS Microbiology Letters,** v358, 188-193. doi: 10.1111/1574-6968.12539. *on the cover

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66. Plathe, K., Lee, S., Tebo, B.M., Bargar, J.R. and **R. Bernier-Latmani**. (2013) Impact of microbial Mn oxidation on the remobilization of bioreduced U(IV). **Environmental Science and Technology,** v47, 8, 3606-3613.

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2012

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2011

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72. Campbell, K.M., Veeramani, H., Ulrich, K., Blue, L., Giammar, D., **Bernier-Latmani, R**., Stubbs, J., Suvorova, E., Long, P.E., and J. R. Bargar. (2011) Oxidative dissolution of biogenic uraninite in groundwater at Old Rifle, CO. **Environmental Science and Technology**, v45, 20, 8748-8754.

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[this article was selected for inclusion in the '2011 Highlights' collection of Nanotechnology]

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98. Redden, G.D., Bargar, J.R., **Bencheikh-Latmani** R. (2001) Citrate enhanced adsorption of U(VI) on goethite: characterization of uranyl speciation using EXAFS. **Journal of Colloid and Interface Science** v244, 211-220.

2.2. Book chapters

B1. **Bernier-Latmani, R**. and B.M. Tebo, B.M. (**2011**) Direct and indirect processed leading to Uranium (IV) oxidation. In Microbial metal and metalloid metabolism: advances and applications. John F. Stolz and Ronald S. Oremland Eds. Chapter 8, pp 139-156. ASM Press, Washington. D.C.

2.3. Reviews

R1. Bargar, J. R., **Bernier-Latmani, R.**, Giammar, D.E. and B. M. Tebo (**2008**) Biogenic uraninite nanoparticles and their importance for uranium remediation. **Elements**, v4, 6, 407-412.

R2. Calas, G., McMillan, P. F., and **R. Bernier-Latmani.** (**2015**) Environmental Mineralogy: New challenges, new materials. **Elements**, v11, 4, 247-252.

3. Funding record

3.1. Current funding

2017-2023 ERC Consolidator grant. UNEARTH: Uranium Isotope Fractionation: a Novel Biosignature to Identify Microbial Metabolism on Early Earth. Sole PI. September 1st 2017-February 28th 2023.

2020-2024 Swiss National Science Foundation: NCCR program 'Microbiomes' led by Jan van der Meer (UNIL) and Julia Vorholt (ETHZ). Co-PI. July 1st 2020-June 30th 2024.

2022-2025 Swiss National Science Foundation: Vietnamese-Swiss Joint Research Program: 'Role of microbial C, S and N cycling in the fate of As in aquifers in the Vietnamese Mekong Delta'. Lead PI. May 1st 2022-April 28th 2025.

2022-2026 Swiss National Science Foundation: 'Crystalline and non-crystalline products of uranium (VI) reduction: formation, characterization and role of pentavalent U'. Only PI. May 1st 2022-April 28th 2026.

2022-2023 Novartis Foundation for medical-biological research: 'Uncovering the hidden diversity of human gut bile acid 7-dehydroxylating bacteria'. Only PI. May 1st, 2022-April 28th, 2023

8.2. Previous funding

2018-2022 Swiss National Science Foundation: Sinergia program: 'Bile acid 7-dehydroxylating bacteria in the gut and their link to health and disease.' Co-PI. September 1st 2018-December 31st 2022.

2016-2020 Swiss National Science Foundation: 'Designing pentavalent uranium species to uncover the mechanism(s) of environmental uranium reduction'. Co-PI. October 1st 2016- August 31st 2020.

2017-2020 Swiss National Science Foundation: 'Microbial iron reduction: mechanism, regulation, and environmental implications.' Lead and only PI. October 1st 2014 – 28h February 2020.

2016-2019 National Cooperative for the Disposal of Radioactive Waste: 'Optimized design of backfill materials to allow in situ microbial gas oxidation'**.** Lead and sole PI. June 1st 2016 **–** May 31st 2019.

2015-2019 EU Euratom program and SERI: 'MIND: microbes in nuclear disposal'. Co-PI. 1st June, 2015-31st May, 2019.

2016-2018 H2020 EU Marie Sklodowska-Curie Individual Fellowship: 'UMIC: Association of uranium with organic matter and iron bearing colloids in wetland environments. Awardee: Gabrielle Dublet. October 1st 2016-September 31st 2018.

2016-2019 Swiss National Science Foundation DACH program: 'Fate of tetravalent uranium under reducing conditions.' Co-PI. February 1st, 2016- January 31st, 2019.

2016-2018 Swiss National Science Foundation Div. II: 'Novel source of Arsenic in the Mekong Delta.' PI. October 1st, 2016- September 30th, 2018.

2015-2017 Posiva Oy (Finland): 'Reconstructing a microbial metabolic web using the microbial metagenome and proteome in Olkiluoto drillholes'. Lead and only PI. December 1st 2015 – 30th November 2017.

2014-2017 Swiss National Science Foundation: 'Extracellular electron transfer by *Clostridium actobutylicum* and *Shewanella oneidensis'*. Lead and only PI. October 1st 2014 – 30th September 2017.

2014-2017 Swiss National Science Foundation: SCOPES program: 'The role of metal homeostasis, reduction and sporulation in the metal resistance of Gram-positive bacteria' Lead PI. April 1st 2014 – 31st March 2017.

2014-2018 Swiss Federal Office of Civil Protection: 'Potential for mobilization of uranium from DU penetrators.' December 1st 2013– 30th November 2017. Lead PI..

2015-2018 Swiss National Science Foundation: 'Deconvoluting the role of biotic vs. abiotic processes in U(VI) reduction'. Lead and only PI. October 1st 2015 – 30th September 2018.

2013-2016 Swiss National Science Foundation: Sinergia program: 'In vivo germination of *Clostridium difficile* endospores: where, when and how?' Lead PI. September 1st 2013 – 31st August 2016.

2014-2016 Swiss National Science Foundation: 'Role of sulfur cycling in the release of arsenic from Mekong River Delta sediments.' Lead and only PI. November 1st 2014 – 31st October 2016.

2014-2016 7th European Research Framework Program, Marie Curie CoFUND program: 'Microbial cycling of arsenic in rice paddies: environmental controls on arsenic methylation and implications for uptake into rice plants. Awardee: Matthew Reid. June 1st 2014-May 31st 2016.

2014-2015 National Cooperative for the Disposal of Radioactive Waste: 'Microbial sampling for the IC-A experiment at the Mt Terri rock Laboratory: first phase'**.** Lead and sole PI. June 1st 2014 **–** May 31st 2015.

2012-2015 Swiss National Science Foundation Ambizione project led by Daniel Alessi: '*In situ* Cr(VI) remediation in biostimulated natural sediments: mechanisms of formation, characterization, and long-term stability of reduced Cr(III) products.' April 1st 2012 – March 31st 2015.

2012-2015 Swiss National Science Foundation: 'Geo-mechanical investigations of bio-improved soils'. Co-PI with Lyesse Laloui. April 2012- October 2015.

2012-2015 Swiss National Science Foundation: Division of Mathematics, Natural Sciences and Engineering: 'Characterization and mechanism of formation of monomeric U(IV)'. Lead and sole PI. October 1st 2012 – 31st September 2015.

2013-2014 Swiss National Science Foundation: Division of Biology and Medicine: 'Environmental relevance of solid-phase iron reduction by Firmicutes'. Lead and sole PI. April 1st 2013- September 30th 2014.

2011-2014 US Department of Energy: 'Stanford Synchrotron Radiation Laboratory Scientific Focus Area'. Co-PI. April 1st 2012 – 31st October 2014.

2011-2013 Areva (French nuclear company): Biogeochemical characterization of the fate of U and Ra in an acidic peat bog impacted by mine tailings. Lead and sole PI. January 1st 2011-Dec 31st 2013.

2010-2013 National Cooperative for the Disposal of Radioactive Waste: 'Characterization of the metabolic capabilities of the microbial community in the Opalinus clay at the Mt Terri Rock Laboratory'. Lead and sole PI. June 1st 2010-May 31st 2013.

2010-2013 US Department of Energy: Subsurface Biogeochemical Research (SBR). 'Manganese redox mediation of UO_2 stability and uranium fate in the subsurface: molecular and metal scale dynamics.' Co-PI. June 1st 2010- May 31st 2013.

2006-2008 US Department of Energy: Environmental Remediation Science Program (ERSP). 'Coupled Biogeochemical processes governing the stability of bacteriogenic uraninite and release of U(VI) in heterogeneous media: molecular to meter scales.' Co-PI. April 1st 2006 – 30th November 2008.

2006-2009 Swiss National Science Foundation: Biology and Medicine Division: 'Microarray Investigation of U(VI) reduction by the novel sulfate-reducing bacterium *Desulfotomaculum reducens* MI-1.' Lead and sole PI. 1st April 2006 – 31st October 2009.

2006-2009 Swiss National Science Foundation: Division of Mathematics, Natural Sciences and Engineering: 'Biogeochemical processes governing the stability of bacteriogenic uraninite with respect to oxidative dissolution'. 1st October 2006 – 31st September 2009.

2008-2009 Swiss Federal Institute of Aquatic Science and Technology: Strategic collaboration grant: '**M**echanisms of **I**nteraction of **S**ilver Nanoparticles with ***E***. *coli (*MIS*E)*'. 1st July 2008 – 31st June 2009.

2009-2009 National Cooperative for the Disposal of Radioactive Waste: Characterization of microbial growth with glycerol in Opalinus clay porewater. February 1st 2009-July 31st 2009.

2008-2011 US Department of Energy: 'Stanford Synchrotron Radiation Laboratory**:** Scientific Focus Area'. Co-PI. November 1st 2008 – 31st October 2011.

2010-2012 7th European Research Framework Program, Marie Curie Incoming International Postdoctoral Fellowship (IIF): 'Microbial and geochemical factors influencing the speciation of uranium in the subsurface'. Awardee: Daniel S. Alessi. June 1st 2010-May 31st 2012.

2009-2012 Swiss National Science Foundation: Biology and Medicine Division: 'Metal reduction by the sulfate-reducing bacterium *Desulfotomaculum reducens*.' Lead and sole PI. November 1st 2009 – 31st October 2012.

5.3. Competitive, non-monetary awards
Synchrotron beamtime awarded

- **Advanced Light Source, US:**
  STXM beamline (BL 11.0.2): May 17-25, 2012 (9 shifts)
  Oct 10-19, 2012 (12 shifts)
  June 11-17, 2013 (9 shifts)
  Dec 4-8, 2013 (6 shifts)

- **Canadian Light Source, Canada:**
  STXM beamline (BL 10ID-1): Aug 26-Sept 1, 2011 (7 shifts)
  February 22-26, 2012 (7 shifts)
  July 11-16, 2012 (7 shifts)
  May 8-12, 2013 (8 shifts)
  Dec 10-14, 2013 (8 shifts)
  May 28-Jun 2, 2014 (8 shifts)
  Sept 3-7, 2014 (8 shifts)

- **Stanford Synchrotron Radiation Lightsource, US:**
  XAS beamline (BL 4-1): Jan 14-20, 2012 (17 shifts)
  May 20-23, 2012 (9 shifts)
  Aug 8-10, 2012 (5 shifts)
  Dec 12-17, 2012 (15 shifts)
  Mar 6-8, 2013 (6 shifts)
  July 26-29, 2013 (7 shifts)
  Dec 2-4, 2013 (6 shifts)
  March 6-8, 2014 (6 shifts)
  July 28-30, 2014 (6 shifts)
  Jan 20-23, 2015 (5 shifts)
  Jul 20-22, 2015 (6 shifts)
  Dec 4-7, 2015 (8 shifts)
  July 12-19, 2017 (21 shifts)
  Jan 14-16, 2020 (6 shifts)
  Mar 25-27, 2020 (6 shifts)

  XAS beamline (BL 4-3): Dec 2-4, 2013 (6 shifts)
  March 3-5, 2014 (6 shifts)
  July 28-30, 2014 (6 shifts)
  Jan 23-25, 2015 (7 shifts)
  Jul 22-23, 2015 (3 shifts)
  Dec 2-4, 2015 (5 shifts)
  June 14-19, 2017 (15 shifts)
  Nov 21-22, 2017 (4 shifts)
  Nov 24-26, 2017 (8 shifts)

  XAS beamline (BL 11-2): Jan 16-18, 2013 (5 shifts)
  Jan 28-30 2015 (5 shifts)
  July 17-19, 2015 (7 shifts)
  Dec 7-9, 2015 (8 shifts)
  Apr 27-29, 2016 (5 shifts)
  Apr 7-10, 2017 (8 shifts)
  Jun 12-14, 2017 (6 shifts)
  Jun 16-19, 2017 (9 shifts)

	Jun 23-26, 2017 (9 shifts) Nov 17-21, 2017 (12 shifts)
microXAS beamline (BL 2-3):	Feb 7-11, 2013 (12 shifts) Mar 30-April 1, 2020 (5 shifts)

- **Swiss Light Source, Switzerland:**

XAS beamline (Phoenix):	Feb 9-10, 2011 (4 shifts)
XAS beamline (SuperXAS):	Jul 27-Aug 1, 2008 (9 shifts) Apr 26-27 2010 (3 shifts)
μXAS beamline (MicroXAS):	Aug 6-9, 2009 (9 shifts) June 17-23, 2011 (12 shifts) March 16-20, 2015 (8 shifts)
STXM beamline (PolLux):	April 12-14, 2011(3 shifts) May 17-20, 2011 (6 shifts)

- **Diamond Light Source, UK:**

XAS beamline (B18):	Aug 1-3, 2012 (9 shifts) Oct 15-16, 2015 (3 shifts) Aug 3-8, 2016 (9 shifts) Oct 27-30, 2017 (12 shifts)
microXAS beamline (I18):	Jun 27-28, 2016 (3 shifts) July 28-Aug 1, 2017 (12 shifts) May 4-8, 2018 (12 shifts) April 8-10, 2020 (6 shifts)
scanning XR (I20):	Dec 15-18, 2017 (9 shifts) Dec 7-10, 2018 (9 shifts) Jan 17-21, 2019 (9 shifts)

- **ESRF, France:**

XAS beamline (BM20):	Oct 26-29, 2012 (9 shifts) Apr 18-24, 2018 (18 shifts)

- **ANKA, Germany:**

XAS beamline (INE)	Nov 11-13, 2014 (8 shifts) Oct 11-18, 2018 (10 shifts) Feb 27-March 2, 2019 (7 shifts) Aug 14-18, 2019 (10 shifts) Sept 21-25, 2020 (10 shifts)

- **SOLEIL, France:**

MARS beamline	Feb 5-10, 2020 (15 shifts) Sept 30-Oct 5, 2020 (15 shifts)

4. Other professional activities

4.1. Meetings organized

1. **2022-2023**: Theme co-chair for Theme 11 for Goldschmidt 2023, Lyon, France.

2. **June 20-26, 2020**: Theme chair for Theme 11 for Goldschmidt 2020, Virtual (originally to take place in Hawaii).

3. **October 21-16, 2018**: Workshop on 'Uranium biogeochemistry: transformations, isotopes and applications' at Monte Verita in Ascona, Ticino (Switzerland) with Stefan Weyer, and Stephan Kraemer (http://uranium-biogeo.epfl.ch).

4. **May 7-9, 2018**: MIND (Microbes in Nuclear Disposal) meeting in Lausanne, Switzerland.

5. **August 13-18, 2017:** Help organize a session at Goldschmidt 2017 (session 3j: isotopic approaches to unravel the early evolution of oceans, the atmosphere, and life on Earth).

6. **July 16-20, 2017**: National Scientific Organizing Committee for ICOBTE 2017 (14th International Conference on the Biogeochemistry of Trace Elements) in Zurich.

7. **August 25-30, 2013**: Co-theme chair (with Thomas Borch) for Theme 16 'Geochemical impacts of human activity' for Goldschmidt 2013.

8. **November 17, 2012**: Symposium at the 2012 Swiss Geosciences Meeting in Bern, Switzerland with Jasquelin Peña from University of Lausanne.

9. **June 24-29, 2012**: Symposium at the 2012 Goldschmidt meting in Montreal, Canada: 'Microbial transformations of radionuclides' with Jon Lloyd.

10. **March 25-29, 2012**: Symposium at the 243rd American Chemical Society meeting in San Diego, CA, on 'Coupled microbial-chemical processes and their impact on mineral formation and metal transformation' with Danielle Fortin.

11. **March 11-16, 2012**: Workshop on 'Uranium biogeochemistry: transformations and applications' at Monte Verita in Ascona, Ticino with Stephan Kraemer (http://www.univie.ac.at/uranium_biogeochemistry/home.html).

12. **June 23-28, 2010**: Symposium at the 2010 Goldschmidt meeting in Knoxville, TN, 'Microbial Biominerals: Structure, Formation and Applications' with Danielle Fortin and Vernon Phoenix.

13. **May 20-21, 2010**: COST conference for working group 2 of Action D43 'Colloid and Interface Chemistry for Nanotechnology' in Lausanne.

14. **July 13-18, 2008**: Symposium at the 2008 Goldschmidt meeting in Vancouver, Canada: 'Molecular-Scale Chemical and Biogeochemical Processes Affecting the Mobility of Metal and Radionuclide Contaminants in the Subsurface' with John Bargar, Dan Giammar and Brad Tebo.

15. **Since 2008:** help to organize a bi-annual a joint EPFL-UNIL seminar in microbiology geared to allowing Ph.D. students and post-docs an opportunity to present their work.

4.2. Positions of trust

Since 2006, I have refereed papers for the following journals:

- Proceedings of the National Academy of Science of the USA
- Science
- Environmental Science and Technology
- Geochimica et Cosmochimica Acta
- Geobiology
- Geomicrobiology Journal
- Canadian Journal of Microbiology
- Microbial Biotechnology
- Journal of Environmental Quality
- Chemical Geology
- Journal of Synchrotron Radiation
- Applied and Environmental Microbiology
- Aquatic Microbial Ecology
- Chemosphere
- Environmental Science and Pollution Research
- Biodegradation
- Microbiology
- ISME Journal
- Applied Microbiology
- Applied Geochemistry
- Ecotoxicology
- Gut Microbes
- ACS Sustainable Chemistry Review
- Computational and Structural Biotechnology Journal
- Nature Communications
- ACS Earth and Space Chemistry
- Journal of Water Process Engineering

Since 2006, I have referred grant applications from:

- Swiss National Science Foundation
- US National Science Foundation
- Stanford Synchrotron Radiation Laboratory beamtime
- The AXA research Fund
- The French Nuclear Safety and Radioprotection Institute (IRSN)
- Lawrence Berkeley Laboratory

I serve as an editor for the following journals:

- Frontiers in Microbiological Chemistry (associate editor) since 2010
- Journal of Hydrology (associate editor) since 2013 (May 2013- Dec 2015)

Since 2012, I was invited to:

- Serve on a review board for U.S. DOE review of a National Laboratory's Subsurface Biogeochemical Research Scientific Focus Area (I was unable to participate due to prior commitments).
- Serve on a Faculty search committee at the University of Vienna as an external referee (in 2012)
- Serve as a reviewer for the Helmholtz Young Investigator Award (in 2012).

- Review a tenure package at ETHZ (2017 and 2019)

External committee membership:

- Sserved on the Diamond Light Source Peer Review Panel from Sept 2014-May 2018.
- Served on the Swedish Vetenskapsrådet (i.e., the Swedish Research Council) panel NT-8 (Soil, Air and Water Processes) in 2015.

Participation to scientific workshops on specific topics:

- ThermoChimie "redox' workshop: October 16th, 2019 in Manchester, UK.
- NAGRA workshop April 2019 on "The limits of life in bentonite" at EPFL.
- NAGRA workshop June 2017 on "Near-field microbial activity and the implications for canister corrosion" in Villigen, Switzerland.
- NAGRA workshop November 2012 on "The long-term degradation of organic polymers in a cement-based repository for low and intermediate level waste" in Villigen, Switzerland.
- NAGRA workshop August 2012 on "The assessment of potential adverse effects of fungal growth in a repository" in Villigen, Switzerland.
- Presentation at the Federal Nuclear Safety Commission (NSC), June 2021 in Brugg, Switzerland.

Oversight Committees

- Research Oversight Committee for Alliance Grant from Natural Sciences and Engineering Research Council of Canada (NSERC) for Josh Neufeld, Myrna Simpson and Greg Slater (Canada)- 2.8 million CAN $.

Search Committees (external)

- University of Vienna, Faculty position in Environmental Contaminants
- ETHZ, Faculty position in Environmental Microbiology

5. Administrative activities

- *Ad hoc* member of the Evaluation Commission STEM-N for the Postdoc.Mobility program (SNSF): February 2022-present
- Member of the Harassment A-Z task Force (2021-2022)
- CLIMACT Executive Committee: 2021-present
- Chair of the ENAC Diversity Office: April 2021-present
- School of Life Science Dean search committee, 2020
- School of Basic Sciences Dean search committee, 2020
- Commission on the Status of Women professors at EPFL: January 2019-July 2020 (report)
- President of the ETH WPF (Women Professors Forum): March 2020-March 2021 (report)
- CLIMACT Center *ad hoc* committee: 2019-2021
- School of Architecture, Civil and Environmental Engineering Dean search committee: 2019
- Extreme Environments Faculty Search Committee: 2018
- Terrestrial Ecology Faculty Search Committee: 2018
- European Association of Geochemistry (EAG) Councillor: 2017-2020
- Environmental Engineering Faculty Search Committee: 2017
- Co-vice chair for the ETH WPF (women professors forum): March 2016-March 2020
- Member of the CIME Executive Committee: 2016- present
- Member of the Advisory Committee for EPFL's Gender Equality Office: 2015-present
- Mobiliére Chair Faculty Search Committee: 2015
- Chair of ENAC Gender Equality Working group (ENGW): 2014-present
- Member of the Bureau of the EPFL WISH foundation: 2014-2019
- Advisory board to the CUSO Microbiology Doctoral School: 2011-2016.
- PATT initiative committee at EPFL: October 2009-2013 (report)
- EDCE doctoral committee: April 2009-present
- CEAL (Central Environmental Laboratory) committee: March 2007-present.
- SSIE teaching committee: April 2006-2014
- Swiss representative for COST action CM0902: November 2009-2013
- Workgroup 4 leader for COST action CM0902: November 2009-2013
- Geo-engineering search committee: June 2010-July 2010.
- Soil complexity search committee: September-November 2009
- Oversight of the design and implementation of the IIE website (along with A. Berne): January 2008-April 2009.
- ENAC media commission. March 2006-Dec 2007
- ISTE faculty search committee. April 2007-June 2007
- ENAC Dean search committee. April 2007-Sept 2007