

Curriculum vitae

Personal information

Dr. Vuillemin, Aurèle	Swiss national
Helmholtz Centre Potsdam	ORCID ID: 0000-0002-772
GFZ German Research Centre for Geosciences	Publons ID: M-8251-2019
Section 3.7. Geomicrobiology	Phone (prof): +49 (0) 331 6264-28755
Telegrafenberg	
14473 Potsdam, DE	Email: aurele.vuillemin@gfz-potsdam.de

Education

08.2008-06.2013: Ph.D in Earth and environmental sciences, University of Geneva.
“Characterizing the subsurface biosphere in Laguna Potrok Aike sediments (Argentina) – a case study”
Public defense: 7th June 2013, Ph.D advisor: Prof. Daniel Ariztegui

09.2006-04.2008: Master’s in Earth and environmental sciences, University of Geneva

09.2003-06.2006: Bachelor’s in Earth and environmental sciences, University of Geneva

Employment history

02.2021-present: Project manager of the Horizon2020 FET Project PROSPECTOMICS, GFZ Potsdam.
Coordinator: Dr. Jens Kallmeyer

10.2017-12.2020: Postdoctoral investigator, Department of Earth and Environmental Sciences, Paleontology & Geobiology, Ludwig-Maximilians-Universität München. **Advisor:** Prof. William D. Orsi

10.2013-06.2017: Postdoctoral investigator, Section Geomicrobiology, GFZ German Research Centre for Geosciences, Helmholtz Institute Potsdam. **Advisors:** Dr. Jens Kallmeyer, Prof. Dirk Wagner

09.2008-06.2013: Graduate researcher, Department of Earth and Environmental Sciences, University of Geneva. **Advisor:** Prof. Daniel R. Ariztegui

Third-party funding

04.2015-06.2017: DFG grant no. VU 94/3-1 Basic Module including one Ph.D position: 257,479.- €

10.2019-12.2020: LMU Mentoring program: 25,000.- € upon request for consumables, publication costs, else

10.2017-09.2019: LMU Mentoring program: 25,000.- € upon request for consumables, publication costs, else

04.2015-06.2017: DFG grant no. VU 94/1-1 for Temporary Position as Principal Investigator: 190,700.- €

10.2014: SNSF travel subsidy for field work and pilot campaign: 2,867.- CHF

10.2013-03.2015: SNSF grant no. P2GEP2_148621 for an Early PostDoc.Mobility: 67,150.- CHF

06.2010: Marc Birkigt travel grant: 1,200.- CHF

11.2009: Ernst & Lucie Schmidheiny Foundation travel grant: 1,300.- CHF

Publications

19 publications in peer-reviewed scientific journals and 1 book chapter as first author, 13 publications as co-author, 2 monographs, (>1200 citations, h-index: 19, i10-index: 27). As a member of the PASADO Science Team (15 publications), Dead Sea Deep Drilling Scientific Party (3 publications), Towuti Drilling Project Science Team (2 publications) and IMG/M Data Consortium (1 publication). *See list of publications p. 5-11.*

Approved research projects

Deutsche Forschungsgemeinschaft (DFG)

Basic Module ***BioMetArchive – Subsurface biosphere metagenomics along the 1 Ma sedimentary archive of ferruginous Lake Towuti, Indonesia.*** The PhD candidate will implement sedimentary DNA to stratigraphic proxies along Lake Towuti's 1 Ma stratigraphy, and characterize the metabolic potential of the deep biosphere in ferruginous sediments. Funded through the DFG Priority Program SPP1006, International Continental Scientific Drilling Program (ICDP). Duration: 36 months
DFG VU 94/3-1 Total allowance: 257,479.- €

Eigene Stelle ***FAMAFED – Formation of authigenic minerals associated with microbial activity in ferruginous sediments, Lake Towuti.*** As temporary principal investigator, I inspected the neoformation of Fe-bearing mineral phases resulting from microbial processes in Lake Towuti sediments, Indonesia. Funded through the DFG Priority Program SPP1006, International Continental Scientific Drilling Program (ICDP). Duration: 24 months.
DFG VU 94/1-1 Total allowance: 190,700.- €

Swiss National Science Foundation (SNSF)

Early Postdoc. Mobility ***Microbial processes in iron-rich sediments of Lake Towuti, Indonesia: Disentangling the methane and iron cycles.*** My fellowship addressed the link between biogeochemistry and microbial populations in sediments of Lake Towuti, Indonesia. Duration: 18 months.
SNSF P2GEP2_148621 Total allowance: 70,017.- CHF

Prizes, awards, fellowships

04.2022: Spotlight Selection, Applied and Environmental Microbiology
12.2020: Editor's Choice, FEMS Microbiology Ecology
10.2017-12.2020: LMU Mentoring awarded twice (2017, 2019)
02.2018: Editor's Choice, FEMS Microbiology Ecology
02.2017: Seal of Excellence, Marie Skłodowska-Curie Action 2016
04.2015-06.2017: Eigene Stelle DFG grant (VU 94/1-1) awarded
10.2013-03.2015: Early Postdoc Mobility SNSF grant (P2GEP2_148621) awarded
11.2013: CHGEOL Award 2013 for Ph.D dissertation
06.2010: Marc Birkigt travel grant
11.2009: Ernst & Lucie Schmidheiny Foundation travel grant
11.2008: ELSTE – Augustin Lombard Price 2008 for Master's thesis

Field work, training and field courses

International courses

10. 2021 Basic offshore safety instruction and emergency training – BOSIET, Rostok
07.2010 Geobiology, intensive training course on microbes/minerals, USA
09.2008 ECORD camp, study of the deep biosphere, Germany

Research expeditions, ICDP operations

01.2016	ICDP core splitting and processing at LacCore, University of Minnesota
06.2015	Field operations of the ICDP-funded Lake Towuti Drilling Project, Indonesia
11.2014	Pilot campaign of the Lake Towuti Drilling Project, Indonesia
12.2010	Field operations of the ICDP-funded Dead Sea Project, Israel
02.2009	ICDP core splitting and processing at the Geopolar, University of Bremen
11.2008	Field operations of the ICDP-funded PASADO Project, Argentina

Field courses

2013	Facies and structure of the Panthalassic Mino terrane, central Japan
2012	Tectonics and sedimentation along an active plate boundary, New Zealand
2011	Modern and Quaternary carbonate environments, Bahamas
2010	Tectonostratigraphy and plate tectonics of Crete, Greece
2009	Study of tidal deposits, flats of the Wadden Sea, Germany
2008	Study of the Late Glacial period, Norway
2007	Study of pelagic sediments, gorges of La Breggia, Switzerland
2007	Study of the continental and coastal deposits, Jeffara, Tunisia
2006	Study of continental and coastal deposits, Tremp basin, Spain

Teaching activities, institutional responsibilities**Teaching**

10.2017-12.2020:	Teaching assistant for lectures and lab practices of global cycles and geomicrobiology (LMU).
10.2013-06.2017:	Lab supervision: intra/extracellular DNA extractions, DGGE (GFZ).
09.2008-06.2013:	Teaching assistant for lectures and practices: general geology, cartography, geomorphology, glacial geology, limnology, calcareous algae. Lab supervision: geomicrobiology, elemental analyses (UNIGE).

Laboratory responsibilities

Munich	RNA/DNA clean laboratory, PCR, quantitative PCR, Illumina MiniSeq sequencing platform
Potsdam	intra/extracellular DNA extractions, denaturing gradient gel electrophoresis (DGGE)
Geneva	calcimeter, porosimeter, X-ray microfluorescence, cathodoluminescence, geomicrobiology

Supervision of junior researchers

PhD candidates	Ellen Schnabel, Fatima Ruiz Blas, André Friese in collaboration with Dr. J. Kallmeyer (GFZ), Ömer K. Coskun, in collaboration with Prof. W. D. Orsi (LMU).
MSc students	Tobias Magritsch, Paula Rodriguez, Zoé Mezière, Lekshmi Bhuvanendran Pillai Sreelatha, Ana-Sophia Ortega-Arbulù in collaboration with Prof. W. D. Orsi, André Friese in collaboration with Dr. J. Kallmeyer.
BSc students	Katherine Muschler in collaboration with Prof. W. D. Orsi.

Memberships and reviewing activities

Journal peer-reviews Frontiers in Microbiology, The ISME Journal, Geobiology, FEMS Microbiology Ecology, Microbial Ecology, Environmental Pollution, Geoderma, Science of the Total Environment, Environmental Earth Sciences, Scientific Reports, Molecular Ecology, Geochemistry Geophysics Geosystems, mSystems, Freshwater Biology.

Scientific staff Member of the International Continental scientific Drilling Program (ICDP) Science Team in three field operations: (2008) Potrok Aike Maar Lake Sediment Archive Drilling Project; (2010) Dead Sea Deep Drilling Project; and (2015) Towuti Drilling Project.

Memberships International Society for Microbial Ecology (ISME), American Society for Microbiology (ASM), American and European Geophysical Union (AGU, EGU), Swiss Association of Energy Geoscientists (SASEG), Alumni UNIGE.

Additional skills

Omics technologies DNA and RNA extractions from water and sediment samples, separate intracellular and extracellular DNA extractions, PCR and quantitative PCR assays, Sanger and next-generation sequencing techniques, e.g. DGGE, cloning, metabarcoded libraries, metagenomic and metatranscriptomic library preparation, BioAnalyzer, MiSeq and MiniSeq Illumina sequencing platforms.

Microscopy Scanning and transmission electron microscopy, optical cathodoluminescence, fluorescence microscopy (OM, DAPI), microthermometry of fluid inclusions, X-ray microfluorescence, Raman microprobe.

Geochemistry Elemental analyzer, phosphorus speciation, pore water extraction, spectrophotometry, chromatography (methane, VFAs), calcimetry, stable isotope analyses, core scanning.

Languages French (native speaker), English (written, spoken), German (advanced), Spanish (basic).

Bioinformatics ARB, R Studio, ATLAS, SeaView, CLC Workbench, CodonCode Aligner, RAST.

Software Word, Excel, Statistica, Grapher, CorelDRAW, Photoshop.

Activities Diploma of naturopathy (2001), phytotherapy, reflexotherapy.

Oral presentations (since 2013)

Vuillemin A., et al. (2023). Isotope signatures of siderites spanning 1 Ma of depositional history in ferruginous Lake Towuti'. Goldschmidt Conference, Lyon, France, July 9th-14th, Session 8e, abstract no. 15839.

Vuillemin A., et al. (2022). Isotope signatures of diagenetic siderites from Lake Towuti' s 1 Ma ferruginous archive. IODP/ICDP Kolloquium, Potsdam, Germany, November 1st-3rd.

Vuillemin A., et al. (2022). Tracing the deep biosphere and its biosignatures in the 1 Ma ferruginous sequence of Lake Towuti, Indonesia. ISME18 18th International Symposium on Microbial Ecology, Lausanne, Switzerland, August 14th- 19th, Session AS21.

Vuillemin A., et al. (2019). Climatic archives are buried alive: Microbial recordings in aging sediments. SSTE Seminar, University of Geneva, Geneva, Switzerland, September 20th.

Vuillemin A., et al. (2019). Isotopic signatures of diagenetic siderite in ferruginous sediments: Lake Towuti as an Archean analogue. The Emergence of Life workshop, Regensburg, Germany, June 5th.

- Vuillemin A., et al. (2018). Diagenetic siderites and vivianites in ferruginous sediments from Lake Towuti, Indonesia. PICO talk, EGU General Assembly, Vienna, Austria, April 8th-13th, abstract EGU2018-4855.
- Vuillemin A., et al. (2018). Microbial diversity, abundance and metabolism in oxic and anoxic abyssal clays from the North Atlantic Ocean. PICO talk, EGU General Assembly, Vienna, Austria, April 8th-13th, abstract EGU2018-2937.
- Vuillemin A., et al. (2017). Geomicrobiology of ferruginous Lake Towuti, Indonesia: From water column to deep subsurface sediment. LMU Kolloquium, Ludwig-Maximilians Universität München, Germany, April 10th.
- Vuillemin A., et al. (2017). Iron minerals from source to sink, siderite and vivianite from Lake Towuti, Indonesia. SFB 754-A6 Isotope Geochemistry, GEOMAR Kiel, Germany, September 15th.
- Vuillemin A., et al. (2017). Isotopic record of diagenetic siderites from Lake Towuti's ferruginous sequence, Indonesia. IODP/ICDP Kolloquium, Brunschweig, Germany, March 14th-16th.
- Vuillemin A., et al. (2016). The microbiology and geochemistry of Lake Towuti in Sulawesi, Indonesia. Center for Geomicrobiology seminar, Aarhus University, Denmark, June 27th.
- Vuillemin A., et al. (2014). Inferring microbial processes in iron-rich sediments of Lake Towuti (Indonesia) from pore water biogeochemistry and intra/extracellular DNA – Perspectives for the ICDP deep drilling campaign 2015 – 3rd International Conference of Geobiology, Wuhan, China, June 16th-19th 2014, Abstract volume 187-188.
- Vuillemin A., et al. (2013). Characterizing the subsurface biosphere in Laguna Potrok Aike sediments (Argentina) – a case study. Thesis public defense, Geneva, Switzerland, June 7th.
- Vuillemin A., et al. (2013). Methanogenic populations in Holocene sediments- Tracing microbial diagenesis. Geomicrobiology Colloquium, GFZ German Research Center Potsdam, Germany, February 13th.

List of publications (*corresponding author)

Peer-reviewed scientific journals

- Vuillemin A.*** (2023). Nitrogen cycling activities during decreased stratification in the coastal oxygen minimum zone off Namibia. *Frontiers in Microbiology* 14, 1101902. doi: 10.3389/fmicb.2023.1101902.
<https://www.frontiersin.org/articles/10.3389/fmicb.2023.1101902/full>
- Vuillemin A***, Mayr C, Schuessler JA, Friese A, Bauer KW, Lücke A, Heuer VB, Glombitza C, Henny C, von Blanckenburg F, Russell JM, Bijaksana S, Vogel H, Crowe SA, and Kallmeyer J. (2023) A one-million-year isotope record from siderites formed in modern ferruginous sediments. *GSA Bulletin* 135, 504-522. doi: 10.1130/B36211.1.
<https://pubs.geoscienceworld.org/gsa/gsabulletin/article/doi/10.1130/B36211.1/614288/A-one-million-year-isotope-record-from-siderites>
- Vuillemin A***, Coskun OK, and Orsi WD (2022) Microbial activities and selection from surface ocean to subseafloor on the Namibian continental shelf. *Applied and Environmental Microbiology*, 88, e00216-22. doi: 0.1128/aem.00216-22. **Spotlight Selection 04.2022!**
<https://journals.asm.org/doi/10.1128/aem.00216-22>
- Ou Y-F, Dong H-P, McIlroy SJ, Crowe SA, Hallam SJ, Han P, Kallmeyer J, Simister RL, **Vuillemin A**, Leu AO, Liu Z, Zheng Y-L, Sun Q-L, Liu M, Tyson GW, and Hou L-J (2022) Expanding the phylogenetic distribution of cytochrome b-containing methanogenic archaea sheds light on the evolution of methanogenesis. *The ISME Journal*, 16, 2373-2387. doi: 10.1038/s41396-022-01281-0. **Contribution: Field campaign and sampling, fund raising, DNA extractions, ms review.**
<https://www.nature.com/articles/s41396-022-01281-0>
- Orsi WD*, **Vuillemin A**, Coskun ÖK, Rodriguez P, Oertel Y, Niggemann J, Mohrholz V, Gomez-Saez GV (2022) Carbon assimilating fungi from surface ocean to subseafloor reveal floor by coupled phylogenetic and stable isotope

- analysis. *The ISME Journal*, 16, 1245-1261. doi: 10.1038/s41396-021-01169-5. **Contribution:** DNA/RNA extractions, ITS1-2 libraries and qPCR assays, metatranscriptomic libraries, Illumina sequencing, bioinformatics analyses, ms review.
<https://www.nature.com/articles/s41396-021-01169-5>
- Coskun ÖK, **Vuillemin A**, Schubotz F, Klein F, Sichel SE, Eisenreich W, and Orsi WD* (2022) Quantifying the effects of hydrogen on carbon assimilation in a seafloor microbial community associated with ultramafic rocks. *The ISME Journal*, 16, 257-271. doi: 10.1038/s41396-021-01066-x. **Contribution:** Metagenomic libraries, Illumina sequencing, ms review.
<https://www.nature.com/articles/s41396-021-01066-x>
- Orsi WD*, Magritsch T, Vargas S, Coskun ÖK, **Vuillemin A**, Höhna S, Wörheide G, D'Hondt S, Shapiro SJ, and Carini P* (2021) Genome evolution in bacteria isolated from million-year-old seafloor sediments. *mBio*, 12, e01150-21. doi: 10.1128/mBio.01150-21. **Contribution:** Genome libraries, Illumina sequencing, bioinformatics, ms review.
<https://journals.asm.org/doi/10.1128/mBio.01150-21>
- Friese A, Bauer KW, Glombitza C, Ordoñez L, Ariztegui D, Heuer VB, **Vuillemin A**, Henny C, Nomosatryo S, Simister R, Wagner D, Bijaksana S, Vogel H, Melles M, Russell JM, Crowe SA*, Kallmeyer J*, and the Towuti Drilling Project Science Team (2021) Organic matter mineralization in modern and ancient ferruginous sediments. *Nature Communications*, 6, e2216. doi: 10.1038/s41467-021-22453-0. **Contribution:** Field campaign, field sampling, fund raising, geochemical analyses, figure design, ms review.
<https://www.nature.com/articles/s41467-021-22453-0>
- Capo E*, Giguet-Covex C*, Rouillard A*, Nota K*, Heintzman PD*, **Vuillemin A***, Ariztegui D, Arnaud F, Belle S, Bertilsson S, Bigler C, Bindler R, Brown AG, Clarke CL, Crump SE, Debroas D, Englund G, Ficetola GF, Garner RE, Gauthier J, Gregory-Eaves I, Heinecke L, Herzsuh U, Ibrahim A, Kisand V, Kjær KH, Lammers Y, Littlefair J, Messenger E, Monchamp M-E, Olajos F, Orsi WD, Pedersen MW, Rijal DP, Rydberg J, Spanbauer T, Stoof-Leichsenring KR, Taberlet P, Talas L, Thomas C, Walsh D, Wang Y, Willerslev E, van Woerkom A, Zimmermann HH, Coolen MJL, Epp LS, Domaizon I, Alsos IG, and Parducci L (2021) Lake sedimentary DNA research on past terrestrial and aquatic biodiversity: Overview and recommendations. *Quaternary*, 4. doi: 10.3390/quat4010006. **Contribution:** 16S rRNA gene libraries, Illumina sequencing, writing of part 3.3 and case study A2.
<https://www.mdpi.com/2571-550X/4/1/6>
- Vuillemin A***, Kerrigan Z, D'Hondt S, and Orsi WD (2020) Exploring the abundance, metabolic potential, and gene expression of seafloor Chloroflexi in million-year-old oxic and anoxic abyssal clay. *FEMS Microbiology Ecology*, 96, fiae223. doi: 10.1093/femsec/fiae223. **Editor's Choice 12.2020!**
<https://www.academic.oup.com/femsec/article/96/12/fiae223/5956488>
- Vuillemin A**, Vargas S, Coskun ÖK, Pockalny R, Murray RW, Smith DC, D'Hondt S, and Orsi WD* (2020) Atribacteria reproducing over millions of years in the Atlantic abyssal seafloor. *mBio*, 11, e01937-20. doi: 10.1128/mBio.01937-20.
<https://mbio.asm.org/content/11/5/e01937-20>
- Vuillemin A***, Friese A, Wirth R, Schuessler JA, Schleicher AM, Kemnitz A, Lücke A, Bauer KW, Nomosatryo S, von Blanckenburg F, Simister R, Ordoñez LG, Ariztegui D, Henny C, Russell JM, Bijaksana S, Vogel H, Crowe SA, Kallmeyer J, and the Towuti Drilling Project Science Team (2020) Vivianite formation in ferruginous sediments from Lake Towuti, Indonesia. *Biogeosciences*, 17, 1955-1973. doi: 10.5194/bg-2019-426.
<https://www.biogeosciences.net/17/1955/2020/bg-17-1955-2020.html>
- Orsi WD*, Morard R, **Vuillemin A**, Eitel M, Wörheide G, Milucka J, Kucera M., and Ferdelman TG (2020) Anaerobic metabolism of Foraminifera thriving below the seafloor. *The ISME Journal*, 14, 2580-2594. doi: 10.1038/s41396-

020-0708-1. **Contribution:** RNA extractions, metatranscriptomic libraries, Illumina sequencing, bioinformatics analyses, ms review.

<https://www.nature.com/articles/s41396-020-0708-1>

Orsi WD*, **Vuillemin A**, Rodriguez P, Coskun ÖK, Gomez-Saez GV, Morholz V, and Ferdelman TG (2020) Metabolic activity analyses demonstrate that Lokiarchaeon exhibits homoacetogenesis in sulfidic marine sediments. *Nature Microbiology*, 5, 248-255. doi: 10.1038/s41564-019-0630-3. **Contribution:** DNA/RNA extractions, metagenomic and metatranscriptomic libraries, 16S rRNA genes, Illumina sequencing, bioinformatics analyses, ms review.

<https://www.nature.com/articles/s41564-019-0630-3>

Bauer KW, Byrne J, Kenward P, Simister R, Michiels C, Friese A, **Vuillemin A**, Henny C, Nomosatryo S, Kallmeyer J, Kappler A, Smit M, Francois R, Crowe SA (2020) Magnetite biomineralization in ferruginous waters and early Earth evolution. *Earth and Planetary Science Letters*, 545, 116495. doi: 10.1016/j.epsl.2020.116495. **Contribution:** Field campaigns 2014 and 2015, field sampling, fund raising, ms review.

<https://www.sciencedirect.com/science/article/abs/pii/S0012821X20304398?via%3Dihub>

Vuillemin A, Wankel SD, Coskun ÖK, Magritsch T, Vargas S, Estes ER, Spivack AJ, Smith DC, Pockalny R, Murray RW, D'Hondt S, and Orsi WD* (2019) Archaea dominate oxic seafloor communities over multi-million year timescales. *Science Advances*, 5, eaaw4108. doi: 10.1126/sciadv.aaw4108.

<https://advances.sciencemag.org/content/5/6/eaaw4108>

Vuillemin A*, Wirth R, Kemnitz H, Schleicher AM, Friese A, Bauer KW, Simister R, Nomosatryo S, Ordoñez L, Ariztegui D, Henny C, Crowe SA, Benning LG, Kallmeyer J, Russell JM, Bijaksana S, Vogel H, and the Towuti Drilling Project Science Team (2019) Formation of diagenetic siderite in modern ferruginous sediments. *Geology*, 47, 540-544. doi: 10.1130/G46100.1.

<https://pubs.geoscienceworld.org/gsa/geology/article/47/6/540/569984/Formation-of-diagenetic-siderite-in-modern>

Ordoñez L*, Vogel H, Sebag D, Ariztegui D, Adatte T, Russell JM, Kallmeyer J, **Vuillemin A**, Friese A, Crowe SA, Bauer KW, Simister R, Henny C, Nomosatryo S, Bijaksana S, and the Towuti Drilling Project Scientific Team (2019) Empowering conventional Rock-Eval pyrolysis for organic matter characterization of the siderite-rich sediments of Lake Towuti (Indonesia) using End-Member Analysis. *Organic Geochemistry*, 134, 32-44. doi: 10.1016/j.orggeochem.2019.05.002. **Contribution:** Field operations and sampling, mineral extraction, fund raising, ms review.

<https://www.sciencedirect.com/science/article/pii/S0146638019300865>

Ortega-Arbúlu A-S, Pichler M, **Vuillemin A**, and Orsi WD* (2019) Effect of organic matter and low oxygen on the mycobenthos in a coastal lagoon. *Environmental Microbiology*, 21, 374-388. doi:10.1111/1462-2920.14469. **Contribution:** RNA extraction, metatranscriptomic libraries, Illumina sequencing, bioinformatics analyses, ms review.

<https://sfamjournals.onlinelibrary.wiley.com/doi/10.1111/1462-2920.14469>

Vuillemin A*, Horn F, Friese A, Winkel M, Alawi M, Wagner D, Henny C, Orsi WD, Crowe SA, and Kallmeyer J (2018) Metabolic potential of microbial communities from ferruginous sediments. *Environmental Microbiology*, 20, 4297-4313. doi: 10.1111/1462-2920.1443.

<https://sfamjournals.onlinelibrary.wiley.com/doi/full/10.1111/1462-2920.14343>

Vuillemin A*, Ariztegui D, Horn F, Kallmeyer J, Orsi WD, and the PASADO Science Team (2018) Microbial community composition along a 50,000 year lacustrine sequence. *FEMS Microbiology Ecology*, 94, fiy029. doi: 10.1093/femsec/fiy029/4880442. **Editor's Choice 02.2018!**

<https://academic.oup.com/femsec/article/94/4/fiy029/4880442>

- Vuillemin A**, Horn F, Alawi M, Henny C, Wagner D, Crowe SA, and Kallmeyer J* (2017) Preservation and significance of extracellular DNA in ferruginous sediments from Lake Towuti, Indonesia. *Frontiers in Microbiology*, 8, e1440. doi: 10.3389/fmicb.2017.01440.
<https://www.frontiersin.org/articles/10.3389/fmicb.2017.01440/full>
- Vuillemin A**, Friese A, Alawi M, Henny C, Nomosatryo S, Wagner D, Crowe SA, and Kallmeyer J* (2016) Geomicrobiological features of ferruginous sediments from Lake Towuti, Indonesia. *Frontiers in Microbiology*, 7, e1007. doi: 10.3389/fmicb.2016.01007.
<https://www.frontiersin.org/articles/10.3389/fmicb.2016.01007/full>
- Vuillemin A***, Ariztegui D, Leavitt PR, Bunting L, and the PASADO Science Team (2016) Recording of climate and diagenesis through sedimentary DNA and fossil pigments at Laguna Potrok Aike, Argentina. *Biogeosciences*, 13, 2475-2492. doi: 10.5194/bg-13-2475-2016.
<https://www.biogeosciences.net/13/2475/2016/bg-13-2475-2016.html>
- Russell JM*, Bijaksana S, Vogel H, Melles M, Kallmeyer J, Ariztegui D, Crowe SA, Fajar S, Hafidz A, Haffner D, Hasberg A, Ivory S, Kelly C, King J, Kirana K, Morlock M, Noren A, O'Grady R, Ordonez L, Stevenson J, von Rintelen T, **Vuillemin A**, Watkinson I, Wattrus N, Wicaksono S, Wonik T, Bauer KW, Deino A, Friese A, Henny C, Imran, Marwoto R, Ngkoimani LO, Nomosatryo S, Safiuddin LO, Simister R, and Tamuntuan G (2016) The Towuti Drilling Project: Paleoenvironments, biological evolution, and geomicrobiology of a tropical Pacific lake. *Scientific Drilling*, 21, 29-40. doi: 10.5194/sd-21-29-2016. **Contribution:** field work, field sampling, core processing, fund raising.
<https://sd.copernicus.org/articles/21/29/2016/>
- Ariztegui D*, Thomas C, and **Vuillemin A** (2015) Present and future of subsurface biosphere studies in lacustrine sediments through scientific drilling. *International Journal of Earth Sciences*, 104, 1655-1665. doi: 10.1007/s00531-015-1148-4. **Contribution:** data production, figure design, co-writing of the ms.
<https://link.springer.com/article/10.1007/s00531-015-1148-4>
- Vuillemin A***, Ariztegui D, Lücke A, Mayr C, and the PASADO Science Team (2014) Paleoenvironmental conditions define current sustainability of microbial populations in Laguna Potrok Aike sediments, Argentina. *Aquatic Sciences*, 76, 101-114. doi: 10.1007/s00027-013-0317-4.
<https://link.springer.com/article/10.1007/s00027-013-0317-4>
- Vuillemin A***, Ariztegui D, Nobbe G, Schubert CJ, and the PASADO Science Team (2014) Influence of methanogenic populations in Holocene lacustrine sediments revealed by clone libraries and fatty acid biogeochemistry. *Geomicrobiology Journal*, 31, 285-296. doi: 10.1080/01490451.2013.824050.
<https://www.tandfonline.com/eprint/CQxIGHj2d5cgGMA7C9hj/full#.UiXphH9S1ak>
- Vuillemin A***, Ariztegui D, De Coninck AS, Lücke A, Mayr C, Schubert CJ, and the PASADO Science Team (2013) Origin and significance of diagenetic concretions in sediments of Laguna Potrok Aike, southern Argentina. *Journal of Paleolimnology*, 50, 275-291. doi: 10.1007/s10933-013-9723-9.
<https://link.springer.com/article/10.1007%2Fs10933-013-9723-9>
- Vuillemin A***, Ariztegui D, and the PASADO Science Team (2013) Geomicrobiological investigations in subsaline maar lake sediments over the last 1500 years. *Quaternary Science Reviews*, 71, 119-130. doi:10.1016/j.quascirev.2012.04.011.
<https://www.sciencedirect.com/science/article/abs/pii/S0277379112001527?via%3Dihub>
- Vuillemin A***, Ndiaye M, Martini R, and Davaud E (2011) Cement stratigraphy: Image probes of cathodoluminescent facies. *Swiss Journal of Geosciences*, 104, 55-66. doi: 10.1007/sd00015-10-0047-8.
<https://link.springer.com/article/10.1007/s00015-10-0047-8>

Vuillemin A*, Ariztegui D, Vasconcelos C, and the PASADO Scientific drilling party (2010) Establishing sampling procedures in lake cores for subsurface studies: Assessing *in situ* microbial activity. *Scientific Drilling*, 10, 35-39. doi: 10.2204/iodp.sd.10.04.2010.

<https://sd.copernicus.org/articles/10/35/2010/>

Book chapter

Vuillemin A*, Coolen MJL, Kallmeyer J, Liebner S, and Bertilsson S (2023). Chapter 4 - Bacterial and archaeal DNA from lake sediments. In: Tracking Environmental Change Using Lake Sediments Volume 6 - Sedimentary DNA (Springer, eds. E. Capo, C. Barouillet, J.P. Smol). In press.

Monographs

Vuillemin A* (2013) Characterizing the Subsurface Biosphere in Laguna Potrok Aike Sediments (Argentina): A Case Study. in "Terre & Environnement" 119, 153 pp. ISBN 978-2-940472-20-8, doi: 10.13097/archive-ouverte/unige:28953. – Ph.D Thesis, **CHGEOL Award 2013!** <https://archive-ouverte.unige.ch/unige:28953>

Vuillemin A* (2008) Apport à la stratigraphie des ciments: cathodoluminescence, microfluorescence X, inclusions fluides, imagerie. doi: 10.13097/archive-ouverte/unige:28975. – Master's Thesis, **Auguste Lombard ELSTE Price 2008!** <https://archive-ouverte.unige.ch/unige:28975>

Public datasets

Vuillemin A*, Mayr C, Friese A, Bauer KW, Lücke A, Heuer V, Glombitza C, Henny C, von Blanckenburg F, Russell JM, Bijaksana S, Vogel H, Crowe SA, and Kallmeyer J (2022) Siderite C-O-Fe isotope compositions, pore water geochemistry and bulk sediment parameters from the 100-m-long core TDP-1A of the ICDP Towuti Drilling Project, Lake Towuti, Indonesia. Dataset #934401.

<https://doi.pangaea.de/10.1594/PANGAEA.934401>

Vuillemin A*, Friese A, Lücke A, Bauer KW, Nomosatryo S, Simister R, Ordoñez LG, Ariztegui D, Russel JM, Bijaksana S, Vogel H, Crowe SA, Kallmeyer J and the Towuti Drilling Project Science Team (2019) Downcore profiles from site TDP-1A of the ICDP Towuti Drilling Project, Lake Towuti, Indonesia. Dataset #908080.

<https://doi.pangaea.de/10.1594/PANGAEA.908080>

Vuillemin A*, Horn F, Alawi M, Henny C, Wagner D, Crowe SA, and Kallmeyer J (2017) Illumina MiSeq sequencing data of intra- and extracellular DNA extracted from Lake Towuti iron-rich sediments. European Nucleotide Archive accession number #PRJEB14484.

<https://www.ebi.ac.uk/ena/browser/view/PRJEB14484>

Vuillemin A*, Alawi M, Kallmeyer J, and Wagner D (2017) Partial 16S ribosomal DNA sequences from DGGE fragments of environmental *Bacteria* and *Archaea* retrieved from Lake Towuti iron-rich sediments. GenBank accession numbers KR091588-KR091718.

<https://www.ncbi.nlm.nih.gov/nuccore/KR091588>

Vuillemin A*, Friese A, Alawi M, Henny C, Nomosatryo S, Wagner D, Crowe SA, and Kallmeyer J (2016) Geochemistry and geomicrobiology profiles of ferruginous sediment, Lake Towuti, Indonesia. Dataset #861437.

<https://doi.pangaea.de/10.1594/PANGAEA.861437>

Vuillemin A*, and Ariztegui D (2013) Bulk sediment characteristics and geomicrobiology of sediment core 5022-1J from Laguna Potrok Aike, southern Patagonia. Dataset #811523.

<https://doi.pangaea.de/10.1594/PANGAEA.811523>

Vuillemin A*, Ariztegui D, De Coninck AS, Lücke A, Mayr C, Schubert CJ, and the PASADO Science Team (2013) Geomicrobiology, bulk sediment characteristics and pore water chemistry of sediment cores from Laguna Potrok Aike, southern Patagonia. Dataset #811524.

<https://doi.pangaea.de/10.1594/PANGAEA.811524>

Vuillemin A*, and Ariztegui D (2013) 16S ribosomal DNA sequences for environmental Bacteria and Archaea retrieved from Laguna Potrok Aike sediments. GenBank accession number JX272064-JX272122, JX472282-JX472399, KT381303-KT381433.

<https://www.ncbi.nlm.nih.gov/nuccore/JX272064>

As member of the ICDP Science Team (*drilling operations, field sampling, core processing*)

Buylaert et al. (2013) Luminescence dating of the PASADO core 5022-1D from Laguna Potrok Aike (Argentina) using IRSL signals from feldspar. *Quaternary Science Reviews* 71, 70-80.

Fortin et al. (2013) Destructive and non-destructive density determination: method comparison and evaluation from the Laguna Potrok Aike sedimentary record. *Quaternary Science Reviews* 71, 147-153.

Friese et al. (2017) A simple and inexpensive technique for assessing contamination during drilling operations. *Limnology and Oceanography Methods*, 15, 200-211.

Hahn et al. (2011) Comparative study of infrared techniques for fast biogeochemical sediment analyses. *Geochemistry, Geophysics, Geosystems* 12, Q10003.

Hahn et al. (2013) Climate induced changes in the content of carbonaceous and organic matter of sediments from Laguna Potrok Aike (Argentina) during the past 50 ka inferred from infrared spectroscopy. *Quaternary Science Reviews* 71, 154-166.

Hahn et al. (2014) Elemental composition of the Laguna Potrok Aike sediment sequence reveals paleoclimatic changes over the past 51 ka in southern Patagonia, Argentina. *Journal of Paleolimnology* 52, 349-366.

Jouve et al. (2013) Microsedimentological characterization using image analysis and μ -XRF as indicators of sedimentary processes and climatic changes during the Late Glacial at Laguna Potrok Aike, Santa Cruz, Argentina. *Quaternary Science Reviews* 71, 191-204.

Kliem et al. (2013) Lithology, radiocarbon chronology and sedimentological interpretation of the lacustrine record from Laguna Potrok Aike, southern Patagonia. *Quaternary Science Reviews* 71, 54-69.

Kliem et al. (2013) Magnitude, geomorphologic response and climate links of lake level oscillations at Laguna Potrok Aike, Patagonian steppe (Argentina). *Quaternary Science Reviews* 71, 131-146.

Lisé-Pronovost et al. (2013) High-resolution paleomagnetic secular variations and relative paleointensity since the Late Pleistocene in Southern South America. *Quaternary Science Reviews* 71, 91-108.

Lisé-Pronovost et al. (2014) Rock-magnetic signature of precipitation and extreme runoff events in south-eastern Patagonia since 51,200 cal BP from the sediments of Laguna Potrok Aike. *Quaternary Science Reviews* 98, 110-125.

Lisé-Pronovost et al. (2015) Rock-magnetic proxy of wind intensity since 51,200 cal BP from the sediments of Laguna Potrok Aike in southern Patagonia. *Earth Planetary and Science Letters* 411, 72-86.

Morlock et al. (2019) Climatic and tectonic controls on source-to-sink processes in the tropical, ultramafic catchment of Lake Towuti, Indonesia. *Journal of Paleolimnology* 61, 279-295.

Neugebauer et al. (2015) Evidences for centennial dry periods at ~3300 and ~2800 cal. Yr BP from micro-facies analyses of the Dead Sea sediments. *The Holocene* 25, 1358-1371.

Ohlendorf et al. (2011) The PASADO core processing strategy - Sediment core treatment in an interdisciplinary deep lake drilling project. *Sedimentary Geology* 239, 104-115.

- Recasens et al. (2012) New insights into paleoenvironmental changes in Laguna Potrok Aike, Southern Patagonia, since the Late Pleistocene: the PASADO multiproxy record. *The Holocene* 22, 1322-1335.
- Thomas et al. (2015) Impact of paleoclimate on the distribution of microbial communities in the subsurface sediment of the Dead Sea. *Geobiology* 13, 546-561.
- Thomas et al. (2016) Microbial sedimentary imprint on the deep Deep Sea sediment. *The Depositional Record* 2, 118-138.
- Wastegård et al. (2013) Towards a late Quaternary tephrochronological framework for the southernmost part of South America – the Laguna Potrok Aike tephra record. *Quaternary Science Reviews* 71, 81-90.
- Zolitschka et al. (2009) The Laguna Potrok Aike Scientific Drilling Project PASADO (ICDP Expedition 5022). *Scientific Drilling* 8, 29-33.

As member of the IMG/M Data Consortium

- Nayfach et al. (2021) A genomic catalogue of Earth's microbiomes. *Nature Biotechnology* 39, 499-509.