

Nicolas Valiente Parra

Djerassiplatz 1 ▪ 1030 Vienna (Austria)

ORCID iD: 0000-0002-2775-4203

Email: nicolas.valiente@univie.ac.at

EDUCATION

2013 – 2018	PhD in Chemistry University of Castilla-La Mancha (UCLM) Thesis title: A multidisciplinary approach for assessing natural attenuation of pollutants in a highly saline lake-aquifer system: the case of Pétrola Lake, Spain Supervisor: Prof. Juan José Gómez-Alday (UCLM), Prof. Franz Jirsa (U. Vienna)
2011 – 2017	BSc Chemistry [First class honours] National Distance Education University (UNED)
2010 – 2011	MSc Agricultural Engineering University of Castilla-La Mancha (UCLM)
2007 – 2011	BSc Forestry Engineering [First class honours] University of Castilla-La Mancha (UCLM)

RESEARCH INTERESTS

- Nitrogen cycling in permafrost-affected soils and thermokarst landscapes.
- Biogeochemistry at the water-sediment interface.
- Limnology in extreme environments (i.e. arctic lakes, hypersaline environments).
- Environmental and human impacts on microbial diversity.

RESEARCH EXPERIENCE

2022 – present	Marie Skłodowska-Curie IF Postdoctoral Researcher, Division of Terrestrial Ecosystem Research, Centre for Microbiology and Environmental Systems Science, University of Vienna Project: NITROKARST - Effects of permafrost thaw on the global nitrogen cycle: the role of thermokarst systems – EU Horizon 2020 Supervisor: Prof. Andreas Richter
AUSTRIA	
2019 – 2021	Postdoctoral Fellow, Section of Aquatic Biology and Toxicology, Center for Biogeochemistry in the Anthropocene (Dep. of Biosciences), University of Oslo Project: ARCTIC-BIODIVER Scenarios of freshwater biodiversity and ecosystem services in a changing Arctic – Funded by BiodivERSA Horizon 2020 Supervisor: Prof. Dag O. Hessen and Prof. Alexander Eiler
NORWAY	
2012 – 2018	Predocctoral Researcher, Biotechnology & Natural Resources Section, UCLM Project: Natural and induced attenuation of pollution of agricultural and industrial origin in groundwater – Funded by Spanish Ministry of Economy Supervisor: Prof. Juan José Gómez-Alday
SPAIN	

2016	Visiting Researcher, Institute of Inorganic Chemistry, University of Vienna Research Fellow (1 st February - 5 th July)
AUSTRIA	Project: Trace metal characterization in lacustrine sediments: sequential extraction approach - Funded by Spanish Ministry of Economy Supervisor: Prof. Franz Jirsa
2014 – 2015	Visiting Researcher, Institute of Inorganic Chemistry, University of Vienna Research Fellow (1 st Oct. 2014 - 30 th May 2015; 21 st Sept. - 20 th Dec. 2015)
AUSTRIA	Project: Isotope pairing technique applied on mesocosms incubations of lacustrine sediments (Pétrola Lake) - Funded by UCLM and Erasmus+ Programme Supervisor: Prof. Franz Jirsa

TEACHING EXPERIENCE

2020 - 2021	Teaching Assistant, University of Oslo (UiO) 'Biogeochemistry' in BSc of Chemistry and Bioscience [20 h]
2020 - 2021	Teaching Assistant, University of Oslo (UiO) 'Human impact on the marine environment' in MSc of Bioscience [2 h]
2019	Teaching Assistant, Associated Centre of Cuenca (UNED) 'Geology II' and 'Meteorology & Climatology' in BSc of Environmental Sciences [24 h]
2018 – 2019	Teaching Assistant, Associated Centre of Cuenca (UNED) 'Geology I' and 'Environment and Society' in BSc of Environmental Sciences [24 h]
2013 – 2018	Student Supervisor, Biotechnology and Natural Resources Laboratory Supervision of Graduate and Undergraduate students.
2017	Teaching Assistant, UCLM and Industrial Organisation School Environmental Biotechnology [25 h]
2012 – 2014	Teaching Assistant, Associated Centre of Albacete (UNED) Mathematics in Social Sciences [48 h]

PUBLICATIONS ([Google Scholar profile](#))

[17.05.2022]

PUBLISHED

Valiente, N., Dountcheva, I., Sanz, D., Gómez-Alday, J.J. (2022) Using stable isotopes to assess groundwater recharge and solute transport in a density-driven flow dominated lake-aquifer system. *Water* (Accepted on 17.05.22).

Valiente, N., Jirsa, F., Hein, T., Wanek, W., Prommer, J., Bonin, P., Gómez-Alday, J.J. (2022). The role of coupled DNRA-Anammox during nitrate removal in a highly saline lake. *Science of the Total Environment*, 806 (3), 150726. doi: 10.1016/j.scitotenv.2021.150726

Valiente, N., Jirsa, F., Gómez-Alday, J. J. (2022). Saline lakes as barriers against pollution: a multidisciplinary overview. *Limnetica*, 41(2), 000-000. doi: 10.23818/limn.41.17

Company, J., **Valiente, N.**, Fortesa, J., García-Comendador, J., Lucas-Borja, M. E., Ortega, R., Miralles, I., Estrany, J. (2022). Secondary succession and parent material drive soil bacterial community composition in terraced abandoned olive groves from a Mediterranean hyper-humid mountainous area. *Agriculture, Ecosystems & Environment*, 332, 107932. doi: 10.1016/j.agee.2022.107932

- Sanz, D., **Valiente, N.**, Dountcheva, I., Muñoz-Martín, A., Cassiraga, E., Gómez-Alday, J. J. (2022). Geometry of the modelled freshwater/salt-water interface under variable-density-driven flow (Pétrola Lake, SE Spain). *Hydrogeology Journal*, 30(3), 975-988. doi: 10.1007/s10040-022-02456-x
- Figuerola, B., **Valiente, N.**, Barbosa, A., Brasier, M.J., Colominas-Ciuró, R., Convey, P., Liggett, D., Fernández-Martínez, M.A., Gonzalez, S., Griffiths, H.J., Jawak, S.D., Merican, F., Noll, D., Prudencio, J., Quaglio, F., Pertierra, L.R. (2021). Shifting Perspectives in Polar Research: Global Lessons on the Barriers and Drivers for Securing Academic Careers in Natural Sciences. *Frontiers in Ecology and Evolution*, 9, 815. doi: 10.3389/fevo.2021.777009
- Crapart, C., Andersen, T., Hessen, D., **Valiente, N.**, Vogt, R. (2021). Factors Governing Biodegradability of Dissolved Natural Organic Matter in Lake Water. *Water*, 13(16), 2210. doi: 10.3390/w13162210
- Valiente, N.**, Gil-Márquez, J.M., Gómez-Alday, J.J., Andreo, B. (2020). Unraveling groundwater functioning and nitrate attenuation in evaporitic karst systems from southern Spain: an isotopic approach. *Applied Geochemistry*, 104820. doi: 10.1016/j.apgeochem.2020.104820
- Menchén, A., Espín, Y., **Valiente, N.**, Toledo, B., Álvarez-Ortí, M., Gómez-Alday, J.J. (2020). Distribution of Endocrine Disruptor Chemicals and Bacteria in Saline Pétrola Lake (Albacete, SE Spain) Protected Area is Strongly Linked to Land Use. *Applied Sciences*, 10, 4017. doi: 10.3390/app10114017
- Valiente, N.**, Gómez-Alday, J.J., Jirsa, F. (2019). Spectrophotometric determination of nitrate in hypersaline waters: a comparative study after optimization based on Box-Behnken design. *Microchemical Journal*, 145, 951-958. doi: 10.1016/j.microc.2018.12.007
- Valiente, N.**, Carrey, R., Otero, N., Soler, A., Sanz, D., Muñoz-Martín, A., Jirsa, F., Wanek, W., Gómez-Alday, J.J. (2018). A multi-isotopic approach to investigate the influence of land use on nitrate removal in a highly saline lake-aquifer system. *Science of the Total Environment*, 631, 649-659. doi: 10.1016/j.scitotenv.2018.03.059
- Valiente, N.**, Carrey, R., Otero, N., Gutiérrez-Villanueva, M.A., Soler, A., Sanz, D., Castaño, S., Gómez-Alday, J.J. (2017). Tracing sulfate recycling in the hypersaline Pétrola Lake (SE Spain): A combined isotopic and microbiological approach. *Chemical Geology*, 473, 74-89. doi: 10.1016/j.chemgeo.2017.10.024
- Valiente, N.**, Menchén, A., Carrey, R., Otero, N., Soler, A., Sanz, D., Gómez-Alday, J.J. (2017). Sulfur recycling processes in a eutrophic hypersaline system: Pétrola Lake (SE, Spain). *Procedia Earth and Planetary Science*, 17, 201-204. doi: 10.1016/j.proeps.2016.12.071
- Gómez-Alday, J.J., Carrey, R., **Valiente, N.**, Otero, N., Soler, A., Ayora, C., Sanz, D., Muñoz-Martín, A., Castaño, S., Recio, C., Carnicero, A., Cortijo, A. (2014). Denitrification in a hypersaline lake-aquifer system (Pétrola Basin, Central Spain): The role of recent organic matter and Cretaceous organic rich sediments. *Science of the Total Environment*, 497, 594-606. doi: 10.1016/j.scitotenv.2014.07.129

UNDER REVIEW

- Valiente, N.**, Eiler, A., Allesson, L., Andersen, T., Clayer, F., Crapart, C., Dörsch, P., Fontaine, L., Heuschele, J., Vogt, R., Wei, J., de Wit, H.A., Hessen, D.O. (2022) Catchment properties as predictors of greenhouse gas concentrations across a gradient of boreal lakes. *Under review* in *Frontiers in Environmental Science*.
- Valiente, N.**, Pangerl, A., Gómez-Alday, J.J., Jirsa, F. (2022) Heavy metals in sediments and greater flamingo tissues from a protected saline wetland in Central Spain. *Under review* in *Applied Sciences*.
- Rodríguez-Sánchez, S., **Valiente, N.**, Seseña, S., Cabrera-Pinto, M., Rodríguez, A., Aranda, A., Palop, L., Fernández-Martos, C.M. (2022). Could ozone become a complementary therapeutic approach to improve metabolic and endocrine response of ALS patients? *Under review* in *Scientific Reports*.

ORAL PRESENTATIONS

- 2021 **Invited talk given at International Workshop: Ecohydrology to face future environmental and societal challenges, Jaen (Spain)**
Title: Eutrophication in extreme environments: from saline to Arctic lakes
- 2020 **Invited talk given at XX Congress of the Iberian Association of Limnology (AIL-2020), Murcia (Spain)**
Title: Saline lakes as barriers against pollution: the case of Pétrola Lake
- 2021 **Talk given at ASLO 2021 Aquatic Sciences Virtual Meeting**
Title: Linking catchment properties to greenhouse gas emissions of boreal lakes
- 2021 **Talk given at Arctic Science Summit Week 2021, Lisbon (Portugal)**
Title: Using bacterial diversity to predict greenhouse gas emissions from boreal lakes
- 2020 **Talk given at XX Congress of the Iberian Association of Limnology (AIL-2020), Murcia (Spain)**
Title: Can oxygen and light modify diversity of nitrogen-recycling bacteria in eutrophic saline lakes?
- 2019 **Talk given at XXVII Congress of the Spanish Society of Microbiology, Málaga (Spain)**
Title: Nuevas evidencias sobre la presencia de procesos de anammox en sistemas hipersalinos
- 2016 **Talk given at 33rd International Society of Limnology (SIL) Congress, Turin (Italy)**
Title: Biogeochemical processes of nitrate in Pétrola Basin: a saline lake-aquifer system
- 2016 **Talk given at 15th Water-Rock Interaction International Symposium, Evora (Portugal)**
Title: Sulfur recycling processes in a eutrophic hypersaline system: Pétrola Lake (SE, Spain)
- 2016 **Talk given at E2KW 2016 Congress–Energy and Environment Knowledge Week, Paris (France)**
Title: Spectrophotometric determination of nitrate in high saline water: effect of masking agents
- 2016 **Talk given at III Jornadas del Medio Natural Albacetense, Albacete (Spain)**
Title: Ciclos del N y S en humedales eutrofizados. El caso de la laguna de Pétrola

SCIENCE COMMUNICATION

- 2021 **Outreach talk given at Café con Hielo, Spanish National Research Council (CSIC)**
Title: El Cambio Climático en los Polos
- 2021 **Outreach talk given at Science Tapas (15.11.2021), Oslo (Norway)**
Title: Arctic (shit) matters
- 2021 **Outreach talk given at Center for Biogeochemistry in the Anthropocene, Oslo (Norway)**
Title: The role of lakes in a changing Arctic
- 2021 **Article published in Naturen, Vol. 145(5), 259-264 (in Norwegian)**
Title: Innsjøer og klima: Koblinger mellom land, vann, bakteriesamfunn og klimagassutslipp
- 2021 **Interview in Radio Exterior de España (27.04.2021) (in Spanish)**
Title: Nicolás Valiente Parra, científico manchego en Noruega
- 2020 **Interview in Investigadores por el Mundo, num. 68 (26.02.2020) (in Spanish)**
Title: Proyecto Arctic – Biodiver
- 2019 **Outreach talk given at Center for Biogeochemistry in the Anthropocene, Oslo (Norway)**
Title: Biogeochemistry in extreme environments: from saline to glacial lakes
- 2019 **Article published in Ecomandanga blog (25.04.2019) (in Spanish)**
Title: ¿Qué esconden los humedales salinos bajo nuestros pies?

- 2018 **Outreach talk given at Institute for Regional Development, Albacete (Spain)**
Title: Descontaminación en ambientes extremos.
- 2015 **Outreach talk given at WasserCluster Lunz, Lunz am See (Austria)**
Title: Natural attenuation processes in a mediterranean hypersaline system: hydrochemical and multi-isotopic approach
- 2015 **Outreach talk given at Institute of Inorganic Chemistry, Vienna (Austria)**
Title: Petrola Lake, Spain: geochemical aspects

GRANTS AND AWARDS

- 2020 **Best Doctoral Thesis Award 2018 – 2019**
Iberian Association of Limnology (AIL)
- 2020 **Arctic Field Grant (ID 310631) - Response to nutrient enrichment of freshwaters in a changing Arctic, RiS ID 11396**
Research Council of Norway (RCN) and Svalbard Science Forum (SSF)
- 2018 **Social Council Award for the best academic record in BSc in Chemistry 2016 – 2017**
National Distance Education University (UNED)
- 2013,14 **National Award for Excellence in Academic Performance 2010 – 2011, 2009 – 2010**
Spanish Ministry of Education
- 2012 **FPI National Scholarship for 4-year Doctoral Training**
Spanish Ministry of Economy
- 2011 **5th Ramon de Zubiaur Zarate Award, for distinction in Bachelor final thesis**
Spanish Association of Forestry Engineering

OTHER RELEVANT SKILLS AND CERTIFICATIONS

- **Laboratory techniques:** chemical analysis (GC-MS, IC, TXRF, GF-AAS), molecular biology (FCM, DNA isolation) and microbial ecology (16S amplicon sequencing, metagenomics, FISH).
- **Software skills:** R programming, Bash programming, bioinformatics, ArcGIS, Design (Illustrator).
- **Languages:** English (Proficient user), German (Basic user), Spanish (Native).
- **Peer-review activities:** reviewer for *Microbial Ecology*, *Isotopes in Environmental and Health Studies*, *Limnetica*.
- **Academic ranks** issued by National Agency for Quality Assessment and Accreditation of Spain:
 - 2022 Profesor Contratado Doctor (*Associate Professor*)
 - 2019 Profesor Ayudante Doctor (*Assistant Professor*)
- **Additional education:**
 - 2021 EMBO course 'Microbial metagenomics: A 360° approach' (64 h, EMBO)
 - 2019 Postgraduate course 'Molecular biology tools applied to environmental toxicology' (15 ECTS | 375 h, UNED)

COLLABORATION PARTNERS

- **Prof. Dag O. Hessen and Prof. Alexander Eiler:** Department of Biosciences, University of Oslo, Norway
- **Prof. Peter Dörsch:** Faculty of Environmental Sciences and Natural Resource Management, Norwegian University of Life Sciences, Norway
- **Dr. Andrea L. Popp and Dr. Andreas Alexander:** Department of Geosciences, University of Oslo, Norway
- **Prof. Franz Jirsa:** Department of Inorganic Chemistry, University of Vienna, Murcia, Austria
- **Prof. Susana Seseña and Dr. Carmen Fernandez-Martos:** Department of Analytical Chemistry and Food Technology, UCLM, Spain
- **Prof. Juan José Gómez-Alday and Prof. David Sanz:** Biotechnology & Natural Resources Section, UCLM, Spain
- **Prof. Isabelle Laurion:** Centre for Northern Studies, Université Laval, Canada
- **Prof. Dirk Wagner:** German Research Centre for Geosciences, Section Geomicrobiology, Germany
- **Dr. Jordan L. Musetta-Lambert:** Environment and Climate Change Canada, Canada
- **Dr. Oriol Grau:** Department of Biology, University of Antwerp, Belgium
- **Prof. Rosa Gómez and Dr. Maria Isabel Arce:** Department of Ecology and Hydrology, University of Murcia, Spain
- **Dr. Ada Pastor:** Faculty of Environmental Sciences and Natural Resource Management
- **Dr. Núria Catalán:** Laboratoire des Sciences du Climat et de l'Environnement, CNRS, France
- **Prof. Manuel Esteban Lucas-Borja:** Department of Agroforestry Technology and Science and Genetics, UCLM, Spain
- **Prof. Joan Estrany:** Department of Geography, University of the Balearic Islands, Spain

MEMBERSHIPS

2020 - Present	Spanish Association of Polar Early Career Scientists (APECS - SPAIN)
2019 - Present	Iberian Association of Limnology (AIL)
2018 - Present	International Association of GeoChemistry (IAGC)
2018 - Present	European Geosciences Union (EGU)
2018 - Present	Spanish Society of Microbiology (SEM)
2019 - 2021	Society of Spanish Researchers in Norway (SFNO)