CURRICULUM VITAE

**Beatriz Díez Moreno**

P. Universidad Católica de Chile

Department of Molecular Genetics and Microbiology

Libertador Bernardo O´Higgings, 340

Santiago de Chile, Chile

+56 22-3542661, [bdiez@bio.puc.cl](mailto:bdiez@bio.puc.cl)

www.bdiezlab.com

**Academic information**

**2001** PhD Biological Sciences, Barcelona Autónoma University (UAB), Institute of Marine Sciences (CMIMA), CSIC, Barcelona, Spain.

**2002-2005** Postdoctoral Swedish Research Council. Botany Department, Stockholm University, Sweden.

**2006** (January-July) Postdoctoral National Institute of Agrarian Investigação e das Pescas (IPIMAR), Lisbon, Portugal.

**2007** (8 months) Postdoctoral Trygger Foundation, Botany Department, Stockholm University, Sweden.

**2008-2010** Postdoctoral Institute of Marine Sciences (CSIC CMIMA), Barcelona, Spain.

**Professional information**

**2003-2005** Assistant Professor (Teacher). University of Alicante, Faculty of Biological Sciences. Department Physiology, Genetics and Microbiology, Alicante, Spain.

**2006-2008** Assistant Professor. Department of Botany. Stockholm University. Stockholm, Sweden.

**2010-2016** Assistant Professor (Teacher). P. Catholic University of Chile, School of Biological Sciences, Department of Molecular Genetics and Microbiology, Santiago, Chile.

**2016-** Associate Professor (Teacher). P. Catholic University of Chile, School of Biological Sciences, Department of Molecular Genetics and Microbiology, Santiago, Chile.

**Research Projects** (15 as IP and 20 as Co-IP and Sponsor)

**(last 5 years)**

**2021-2025** Co-investigator Fondecyt n° 1210912, CONICYT. “Microbiomics in a Changing World: A focus on the Atacama Desert”. IP Jean-Baptiste Ramond (PUC).

**2021-2022** Co-investigator Center of Genome Regulation (CGR) ANID/FONDAP/15200002.

**2021-2022** Investigador Alterno Proyecto Investigación sobre el Coronavirus(COVID-19) COVID0184. “Relationship between atmospheric conditions and presence of COV-SARS-2 in atmospheric aerosols from different cities in Chile and its incidence in infectivity and lethality of COVID-19 disease”. IP Cristobal Galbán Malagón.

**2021-2023** Sponsor INACH; DG 06 20. Caracterización de comunidades de virus gigantes y su asociación a fltoplancton en aguas marinas Antárticas y Subantárticas. IP Marianne Buscaglia.

**2020-2023** Co-investigator CONICYT PIA- Antarctic Science Research Anillo (ACT192057). “Long-range transport of xenobiotics and microorganisms: Teleconnections and influence on terrestrial ecosystems”.

**2020-2023** Principal InvestigatorINACH; RT\_04\_19**. “**Identity and effect of RNA and DNA viruses on the dynamics of bacterio- and phytoplankton in Bahía Chile (Antarctica)”.

**2020-2022** Principal InvestigatorUC Interdisciplinary Research II190086. "Discovering the identity of the permafrost microbial and viral communities and their impact on water resources in the Aconcagua River basin."

**2019-2023** Principal Investigator Fondecyt 1190998 CONICYT. “El Tatio geysers field as a model system to study virus-host interactions and local adaptations”.

**2019-2022** Co-investigator INACH (RT\_05-18). “Temporal dynamics of nitrous oxide and methane in a coastal bay of the Western Antarctic Peninsula (PAO). IP Laura Farías (UdeC).

**2019-2022** Sponsor FONDECYT Postdoctoral nº 3190749 CONICYT. “Identity and activity of microbes involved in CH4 cycling in the seasonal upwelling system off the coast of Chile”. IP Christina Ridley (PUC).

**2019-2022** Sponsor FONDECYT Postdoctoral nº 3190464 CONICYT. “Soil phage ecology in the Atacama desert: an unexplored phenomenon”. IP Karen Jordaan (PUC).

**2019-2020** Principal Investigator CIMAR25-Fiordos (SHOA-CONA). Identidad y cambios en la estructura de la comunidad viral en respuesta a gradientes ambientales en el canal Trinidad y boca oriental del Estrecho de Magallanes.

**2017-2020** Principal Investigator ECOS-CONICYT (ECOS160025). “The bacteriophages infecting thermophilic (cyano)bacterialiving  in  the  Porcelana  hot  spring  (Northern  Patagonia, Chile).

**2018-2022** Co-investigator Fondecyt 1181656, CONICYT. “Metagenomic analysis of the wastewater virome; an approach to the detection of viral diversity and its impact on public health”. IP Aldo Gaggero (U de Chile).

**2018-2022** Co-investigator Fondecyt 1181745, CONICYT. “The influence of penguin colonies on the development of tundra communities in the Antarctic Peninsula”. IP M. Angélica Casanova (U Católica de Temuco).

**2018-2019** Co-investigator CIMAR24-Fiordos (SHOA-CONA). “Nitrification and recycling of nutrients and nitrous oxide in superficial marine waters”. IP Laura Farías (UdeC).

**2018-2022** Research Associate FONDAP 15110009, CONICYT. "Center for Climate and Resilience Research (CR) 2". IP Maisa Rojas (U de Chile).

**2017-2019** Co-investigator INACH (RT31-16). “Phylogenetic diversity of microorganisms involved in the iron cycle in Antarctic environments”. IP Gloria Levicán (USACH).

**2017-2020** Sponsor INACH (RG\_09-17). “The rare biosphere´s ecosystem services in the ever-changing Antarctic environments”. IP Sebastián Fuentes (PUC).

**2017-2020** Co-investigator INACH (RT34-17). “Dynamics of sponge-associated microbial photosynthetic eukaryotes during seasonal transitions in Antarctica”. IP Nicole Trefault (UMayor).

**2017-2018** Principal Investigator CIMAR23-Fiordos (SHOA-CONA). “Changes in the marine microbial community structure in response to deglaciation in Campo de Hielo Sur, Chile”.

**2016-2020** Co-investigator FONDECYT 1161232. "Cell growth strategy in filamentous cyanobacteria, Anabaena sp. PCC7120 as a model ". IP Mónica Vásquez (PUC).

**2015-2019** Principal Investigator FONDECYT 1150171. "Metaspring: Genomics, Metagenomics and metaviromics of hot spring microorganisms".

**2015-2018** Sponsor Postdoctoral FONDECYT 3160424. "Anthropogenic pressure over the Antarctic microbial world: Stability of soil disturbance Communities facing hydrocarbon pollution." IP Sebastián Fuentes (PUC).

**2015-2018** Principal Investigator CONICYT-NSF International Cooperation Programme DPI20140044. "Shifts in Antarctic marine microbial community in response to deglaciation and ice melting."

**2016** Co-investigator CIMAR22-Islas Oceánicas (SHOA-CONA).“Biogeochemical implications of the biological fixation of N and C as molecular nitrogen, nitrous oxide and methane at the eastern edge of the subtropical Pacific Ocean”. IP Laura Farías (UdeC).

**2016** Co-investigator CIMAR22-Islas Oceánicas (SHOA-CONA).”Diversity and distribution of the phytoplanktonic and microbial community with diazotrophic potential in subtropical waters of the South Pacific”.IP I. Masotti (UV).

**2013-2015** Sponsor Postdoctoral FONDECYT 3140422. The metagenomes and metatranscriptomes of microbial communities at the Arctic and Antarctic Ocean surfaces. IP Beatriz Fernández (PUC).

**2013-2016** Co-IP FONDECYT 1131037. Cell division and cellular communication in multicellular cyanobacterium, Anabaena sp. PCC7120. IP Mónica Vásquez (PUC).

**2013-2015** Co-IP The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS; 2012-7719-23450-70). Sweden. “Microbial metabolic processes at Arctic and Antarctic ocean surfaces”. IP Pauline Snoeijs (Stockolm University).

**Publications** (49 in total and 26 as first author or corresponding author)

**(25 last 5 years)**

- Marco A. Molina-Montenegro\*, Carolina Galleguillos, Rómulo Oses, Ian S. Acuña-Rodríguez, Paris Lavín, Jorge Gallardo-Cerda, Cristian Torres-Díaz, **Beatriz Díez**, Gonzalo E. Pizarro, Cristian Atala. 2016. Adaptive phenotypic plasticity and competitive ability deployed under a climate change scenario may promote the invasion of *Poa annua* in Antarctica. Biological Invasions. 1-16. doi: 10.1007/s10530-015-1033-x. IP: 2.586 Citations:19

-Moreno-Pino,  Mario,  De  la  Iglesia,  Rodrigo;  Valdivia, Nelson;  Henríquez, Carlos; Galán,  Alex;  **Díez,  Beatriz**;  Trefault,  Nicole. 2016. Variation  in  coastal Antarctic microbial  community  composition  at  sub-mesoscale:  spatial  distance  or environmental  filtering? FEMS Microbiology Ecology. doi:10.1093/femsec/fiw088. IP:3.568 Citations:21

-Dinka Mandakovic, Carla Trigo, Derly Andrade, Brenda Riquelme, Gabriela Gómez-Lillo, Katia Soto-Liebe, **Beatriz Díez**, Mónica Vásquez. 2016. CyDiv, a conserved and novel filamentous Cyanobacteria cell division protein, is involved in septum localization and cell tagging. Frontiers in Microbiology. doi: 10.3389/fmicb.2016.00094. IP: 3.989 Citations:8

**-Beatriz Díez\***, Johan A. A. Nylander, Karolina Ininbergs, Christopher L. Dupont, Andrew E. Allen, Shibu Yooseph, Douglas B. Rusch, Birgitta Bergman. 2016. Metagenomic analysis of the Indian Ocean picocyanobacterial community: structure, potential function and evolution. PLOS ONE. [doi.org/10.1371/journal.pone.0155757](http://dx.doi.org/10.1371/journal.pone.0155757). IP: 3.234 Citations:13

-Josefa Verdugo, Ellen Damm, Pauline Snoeijs, **Beatriz Díez** and Laura Farías\*. Climate relevant trace gases (N2O and CH4) in the Eurasian Basin (Arctic Ocean). 2016. Deep-Sea  Research  Part  I. 117:84-94. <http://dx.doi.org/10.1016/j.dsr.2016.08.016>. IP:2.384 Citations:5

-M. Estrella Alcamán, Jaime Alcorta, Birgitta Bergman, Mónica Vásquez, Martin Polz, **Beatriz Díez**\*. 2017. Physiological and gene expression responses to nitrogen regimes and temperatures in Mastigocladus sp. strain CHP1, a predominant thermotolerant cyanobacterium of hot Springs. Systematic and Applied Microbiology. 40:102-113. doi: 10.1016/j.syapm.2016.11.007. IF:3.899 Citations:10

-Mariam I. Hamisi\*, Charles Lugomela, Thomas J. Lyimo, Birgitta Bergman and **Beatriz Díez.** 2017. Plankton composition, biomass, phylogeny and toxin genes in Lake Big Momela, Tanzania. African Journal of Aquatic Science. 42:109-121. [doi.org/10.2989/16085914.2017.1334621](https://doi.org/10.2989/16085914.2017.1334621). IP:0.670 Citations: 3

-M. Estrella Alcamán-Arias, laura Farías, Josefa Verdugo, Tomás Alarcón-Schumacher, **Beatriz Díez**\*. 2018. Microbial activity during a coastal summer phytoplankton Bloom on the Western Antarctic Peninsula in late summer. FEMS Microbiology Letters. 365 (10): fny090. [doi.org/10.1093/femsle/fny090](https://doi.org/10.1093/femsle/fny090). IF: 1.735 Citations: 5

-Jaime Alcorta, Sebastián Espinoza, Tomeu Viver, María Estrella Alcamán, Nicole Trefault, Ramon Rosselló-Móra, **Beatriz Díez**\*. 2018. Temperature modulates *Fischerella thermalis* ecotypes in Porcelana hot spring. Systematic and Applied Microbiology. 44 (6): 531-543. [doi.org/10.1016/j.syapm.2018.05.006](https://doi.org/10.1016/j.syapm.2018.05.006). IF:3.899 Citations: 6

-Beatriz Fernández-Gómez, **Beatriz Díez\***, Martin Polz, José Ignacio Arroyo, Fernando D. Alfaro, Germán Marchandon, Cynthia Sanhueza, Laura Farías, Nicole Trefault, Pablo A. Marquet, Marco A. Molina-Montenegro, Peter Sylvander, Pauline Snoeijs-Leijonmalm. 2018. Bacterial community structure in a sympagic habitat expanding with global warming: brackish ice brine at 85-90 ºN. ISME J. 13(2):316-333. DOI:[10.1038/s41396-018-0268-9](https://doi.org/10.1038/s41396-018-0268-9). IF: 9.6 Citations: 5

-Sergio Guajardo-Leiva, Carlos Pedrós-Alió, Oscar Salgado, Fabián Pinto, Beatriz Díez\*. Active Crossfire Between Cyanobacteria and Cyanophages in Phototrophic Mat Communities Within Hot Springs. Frontiers Microbiology. 2018. Frontiers Microbiology. 9: 2039. Doi: 10.3389/fmicb.2018.02039. IF:4.019 Citations: 4

-M.E. Alcamán-Arias, C. Pedrós-Alió, J. Tamames, C. Fernández, D. Pérez-Pantoja, M. Vásquez and **B. Díez\*.** Diurnal changes in active carbon and nitrogen pathways along the temperature gradient in Porcelana hot spring microbial mat. 2018. Frontiers in Microbiology. 9:2353. D[oi.org/10.3389/fmicb.2018.02353](https://doi.org/10.3389/fmicb.2018.02353). IF:4.019 Citations: 8

-S. Fuentes, J. I. Arroyo, S. Rodríguez-Marconi, I. Masotti, T. Alarcón-Schumacher, M. F. Polz, N. Trefault, R. de la Iglesia, **B. Díez**\*. 2018. Summer phyto- and bacterioplankton communities during low and high productivity scenarios in the Western Antarctic Peninsula. Polar Biology. 1-11. doi.org/10.1007/s00300-018-2411-5. IF:1.954 Citations: 2

-C. Urrejola, J. Alcorta, L. Salas, M. Vásquez, M. F Polz, R.Vicuña, **B. Díez**\*. 2019. Genomic Mechanisms for Desiccation Tolerance and EPS Biosynthesis in the Atacama’s Cyanobacterium Gloeocapsopsis sp. 1H9. Frontiers in Microbiology, section Evolutionary and Genomic Microbiology. [doi.org/10.3389/fmicb.2019.00950](https://doi.org/10.3389/fmicb.2019.00950). IF: 4.019 Citations: 4

-T. Alarcón-Schumacher, S. Guajardo-Leiva, J. Antón, B. Díez\*. Elucidating Viral Communities During a Phytoplankton Bloom on the West Antarctic Peninsula. 2019. Frontiers in Microbiology, Extreme Microbiology. doi: 10.3389/fmicb.2019.01014. IF: 4.019 Citations: 6

- Uribe-Lorio, Lorena; Brenes, Laura; Hernández-Ascencio, Walter; Mora-Amador, Raúl; González, Gino; Ramírez-Umaña, Carlos; **Díez, Beatriz**; Pedrós-Alió, Carlos. 2019. The influence of temperature and pH on community composition of microbial mats in hot springs from Costa Rica. MicrobiologyOpen. 00:e893. DOI: 10.1002/mbo3.893. IF:2.682 Citations: 4

- Jaime Alcorta, Pablo Vergara, Laura A. Antonaru, María E. Alcamán-Arias, Dennis J. Nürnberg, **Beatriz Díez\***. 2019. *Fischerella thermalis*: a model organism to study thermophilic diazotrophy, photosynthesis and multicellularity in Cyanobacteria. Extremophiles. 23(6):635-647. <https://doi.org/10.1007/s00792-019-01125-4>. IF:2.046 Citations: 2

- Paulina B. Ramírez, Sebastián Fuentes, **Beatriz Díez**, Ignacio Vargas, Carlos A. Bonilla. 2020. Climate and labile organic carbon fractions drive specific microbial community patterns under different soil types and land uses. Soil Biology & Biochemistry. 141: 107692 doi.org/10.1016/j.soilbio.2019.107692 IF:5.290 Citations: 8

- Juan Carlos Fernández Cadena, Paula Ruíz-Fernández, Telmo Eduardo Fernández-Ronquillo, **Beatríz Díez**, Nicole Trefault, Santiago Andrade, Rodrigo de la Iglesia\*. 2020. Detection of sentinel bacteria in mangrove sediments contaminated with heavy metals. Marine Pollution Bolletin. 150: 110701 doi 10.1016/j.marpolbul.2019.110701. IF:3.782. Citations: 5

-Carlos Galarce, Diego Fischer, **Beatriz Díez**, Ignacio T. Vargas,  
Gonzalo E. Pizarro\*. 2020. Dynamics of biocorrosion in copper pipes under actual drinking water conditions. Water*.* 12*(4):* 1036. <https://doi.org/10.3390/w12041036>. IF:2.524. Citations: 0

-Sergio Guajardo-Leiva, Jonas Chnaiderman, Aldo Gaggero\*, Beatriz  
Díez\*. 2020. Metagenomic insights into the sewage RNA virosphere of a large city. Viruses. 12, 1050; doi:10.3390/v12091050. IF: 3.816

-Jaime Alcorta, Tomás Alarcón-Schumacher, Oscar Salgado, Beatriz Díez\*. 2020. Taxonomic novelty and distinctive genomic features of hot spring cyanobacteria. Frontiers in Genetics, section Evolutionary and Population Genetics. <https://doi.org/10.3389/fgene.2020.568223>. IF: 4.019

-Manuel Ampuero, Santiago Valenzuela, Fernando Valiente-Echeverría, Ricardo Soto Rifo, Gonzalo P. Barriga, Jonás Chnaiderman, Cecilia Rojas, Sergio Guajardo-Leiva, **Beatriz Díez** and Aldo Gaggero\*. 2020. SARS-CoV-2 Detection in Sewage in Santiago, Chile - Preliminary results. medRxiv preprint. doi.org/10.1101/2020.07.02.20145177

-Jaime Alcorta, Beatriz Díez\*. Las cianobacterias y el cambio climático. Capítulo Libro Francisco Bozinovic. El cambio climático y la biología funcional de los organismos. 2020. Ediciones UC.

-Maria Estrella Alcamán-Arias, Sebastián Fuentes-Alburquenque,  
Pablo Vergara-Barros, Jerónimo Cifuentes-Anticevic, Josefa Verdugo, Martin  
Polz, Laura Farías, Carlos Pedrós-Alío, Beatriz Díez\*. 2021. Coastal bacterial community response to glacier melting in the Western  
Antarctic Peninsula. Microorganisms. 9: 88. doi.org/10.3390/microorganisms9010088. IF: 4.167

**Conferences and congress (most relevant in the last 3 years)**

-Unveiling Microbial Functional Capacities and Activities in the N Cycle at the Antarctic Summer Coastal Waters. Oral presentation. Alcamán M.E., Marchandon G., Farías L. and **Díez B.** FEMS 2017. 7th Congress of European Microbiologista. 9-13 Julio 2017. Valencia, España.

-Viral fraction changes during a late summer phytoplankton bloom on West Antarctic Peninsula (WAP). Oral presentation. Alarcón-Schumacher T, Guajardo-Leiva S, **Díez B**. IX Latin American Congress on Antarctic Science 2017.

-Unveiling new viral-host associations in thermophilic photoautotrophic microbial mats. **Beatriz Díez** and Sergio Guajardo-Leiva. Oral presentation. 14th International meeting on thermophile biology. Thermophiles 2017. August 27-September 1. Skakuza Conference Centre, Kruger National Park, South Africa.

-Marine observatory of Chile Bay: a model study of coastal microbial ecology and biogeochemistry in Antarctica. **Díez B**, Alcamán ME, Guajardo S, Alarcón-Schumacher T, Cifuentes J, Fuentes Alburquenque S, Farías L. Oral presentation. SOMICH XXXIX Congreso Chileno de Microbiología. La Serena. Chile. 14-17 Noviembre 2017.

-Primary production and inorganic nitrogen uptake by active microbial community in the central Arctic Ocean (4-89.5°S). Oral presentation. Alcamán M.E., Farías L. and **Díez B.** SOMICH XXXIX Congreso Chileno de Microbiología. La Serena. Chile. 14-17 Noviembre 2017.

-Identity and expression of Proteorhodopsin genes in Chile Bay, Antarctica. Oral presentation. Jerónimo Cifuentes, Alcamán M.E. and **Díez B**. SOMICH XXXIX Congreso Chileno de Microbiología. La Serena. Chile. 14-17 November 2017.

-Effect of temperature on the ecology and biogeochemistry of photoautotrophic microbial mat communities in termal systems. **Beatriz Díez,** Carlos Pedrós-Alió, Estrella Alcamán, Jaime Alcorta, Sergio Guajardo. Oral presentation. Astrobioogy 2017. 26 Noviembre -1 Diciembre. Coyhaique, Chile.

-Microbial ecology and biogeochemistry of hot springs and marine polar environments. **Beatriz Díez \***Invited speaker**.** EMBO Workshop “Exploring genomic landscapes”. 10 - 12 January 2019. San Pedro de Atacama, Chile.

-Microbial communities in extreme environments. **Beatriz Díez\*** Invited speaker**.** EMBO Workshop “Integrative Biology: From molecules to ecocystems in extreme environments”. 22 - 25 April 2019. Santiago, Chile.

- Revisiting the taxonomy of Cyanobacteria by wide genomic analyses. Jaime Alcorta & **Beatriz Díez.** Genomic Standards Consortium meeting. Advances in sequence and function. Vienna. May 22-24. 2019.

- Identidad y variabilidad temporal de la actividad amonio-oxidante in Bahía Chile, Antártica. María Estrella Alcamán Arias, Laura Farías, **Beatriz Díez**. Isme Latinoamerican Valparaiso, Chile. 11-13 September 2019.

- Respuesta consistente de las comunidades microbianas frente a hidrocarburos en suelos antárticos. Sebastián Fuentes, **Beatriz Díez**. Isme Latinoamerican Valparaiso, Chile. 11-13 September 2019.

- Microorganismos de ambientes extremos: rol ecológico y potencial Biotecnológico. **Beatriz Díez.** Seminario internacional Biotecnología para la salud. 4-6 March. Lima, Perú. 2020.

Sergio Guajardo, **Beatriz Díez.** Wastewater viruses in a big city. ASM Microbe online. July 22. 2020

**Doctorate and Master Thesis supervised (last 5 years)**

* María Estrella Alcamán PhD. Effects of temperature on carbon and nitrogen metabolism of thermophilic cyanobacteria: rates, strategies and gene expression. P. Universidad Católica de Chile. 2016
* Sergio Guajardo PhD. Viral communities associated with thermophilic cyanobacteria in the Porcelain hydrothermal system. P. Universidad Católica de Chile. 2019
* José Ignacio Arroyo PhD. Thermodynamics, metabolic ecology, and microbial community genomics. P. Universidad Católica de Chile. 2020
* Jerónimo Cifuentes Master Thesis. Dynamics and identity of proteorodopsin-bearing bacteria in coastal waters of Bahía Chile, Antarctica. U de Chile. 2019
* Diego Segura Master Thesis. Determination of the role of *Pygoscelis antarctica* pinguins on the community of diazotrophic bacteria in soils of Decepción Island, Antarctica. U de Chile. 2020

**Postdoctoral supervised (last 5 years)**

2014-2016 Beatriz Fernández Gómez. FONDECYT Postdoctorado. nº 3140422.

2015-2018 Sebastián Fuentes Alburquenque. FONDECYT Postdoctorado. nº3160424.

2019-2022 Christina Ridley. FONDECYT Postdoctorado. nº3190749.

2019-2022 Karen Jordaan. FONDECYT Postdoctorado. nº3190464.

Personal Web: <http://bdiezlab.com>

Google Scholar: <https://scholar.google.com/citations?user=NXrEAO4AAAAJ&hl=es>

<https://orcid.org/0000-0002-9371-8083>

<https://www.researchgate.net/profile/Beatriz_Diez>

**Total citations: 3164**

**H index: 21**