Xabier Vázquez-Campos, PhD

Computational biologist | Environmental microbiologist

EDUCATION

2015 2011

PhD in Environmental Engineering

The University of New South Wales

Sydney, Australia

- · Thesis: "Geomicrobiological aspects of the (bio)leaching of weathered low-grade uranium ore". 60
- · Supervisors: Prof. T. David Waite, Prof. Brett A. Neilan.
- · Co-supervisors: Dr. Richard N. Collins. Dr. Andrew S. Kinsela.

2008 2007

MSc in Microbiology

Autonomous University of Madrid

Madrid, Spain

- · Thesis: "Set-up of molecular ecology methodologies for the monitoring of microbial populations in an indirect reactor for the bioleaching of Zn from polymetallic sulfide concentrates" [in Spanishl.
- · Supervisor: Prof. Ricardo Amils.

2007 2002

Licenciate in Biology

University of Vigo

♥ Vigo, Spain

- · 5 years degree (300 ECTS).
- · Equivalent to BSc in Biology and MSc in Biotechnology.

RESEARCH EXPERIENCE

Current 2023

Visiting fellow

School of Biotechnology and Biomolecular Sciences

The University of New South Wales

2022

Senior research associate / Postdoctoral fellow

NSW Systems Biology Initiative. School of Biotechnology and Biomolecular Sciences

- The University of New South Wales
- · Bioinformatics support / consulting.
- · Consulting for the Ramaciotti Centre for Genomics, and its customers, esp. amplicon, metagenomics and Oxford Nanopore applications.

2021 2017

Research associate / Postdoctoral fellow

NSW Systems Biology Initiative. School of Biotechnology and Biomolecular Sciences

- The University of New South Wales
- · Consulting for the Ramaciotti Centre for Genomics.
- · Collaborative bioinformatics reasearch as part of a team including the users of the Ramaciotti Centre for genomics.

▲ Download a PDF of this CV

CONTACT

- **¥** XabiVC
- xvazquezc
- xvazquezc
- **in** LinkedIn
- R⁶ ResearchGate
- **8** Google Scholar
- **(D)** 0000-0003-1134-5058
- **R** E-4772-2013

▼COMPUTATIONAL **BIOLOGY**

- · Amplicon data analysis (16S, 18S and ITS).
- · Genome-based metagenomics.
- · Phylogenetics and phylogenomics with maximum likelihood methods.
- · Assembly and annotation of (meta)genomes, including eukaryotes.
- · Experience with short and long read data.
- · Structural modelling of proteins and protein complexes. Protein model evaluation.

>_ CODING SKILLS

- · Main languages: BASH and R. Some SQL and AWK.
- · Reproducible reporting with Rmarkdown.
- · Environment management with Conda.
- · Experienced HPC user.
- · Data visualisation and integration.

Made with the R package pagedown.

The source code is available on my datadrivencv-academic repository.

Last updated on 2023-03-08.

2017 2015

Research associate / Postdoctoral fellow

BioGEMS group. Water Research Centre and School of Civil and **Environmental Engineering**

The University of New South Wales

- · Study of microbial communities in a burial ground containing mixed radioactive waste (Pu, Am).
- · Metagenomics of and groundwater and soil. Reconstruction of microbial genomes from metagenomic data.
- · Management of the PC2 microbiology laboratory and management support for the Radiation laboratory.

2011

Research assistant (casual)

BioGEMS group, School of Civil and Environmental Engineering The University of New South Wales

2011 2010

Research assistant

Bioprocesses Group, Faculty of Chemistry

University of Vigo

- · DRACORE project: DRAgado + COnfinamiento + REvalorización (Dredging + Containment + Revaluation).
- · Testing of heavy metal resistance; testing of aliphatic and polycyclic hydrocarbons as sole carbon sources and biodegradation; HPLC operation; microorganism isolation;...

2007 2006

Research assistant

Bioprocesses Group, Faculty of Chemistry

University of Vigo

· Introduction to research grant from the Spanish Science and Education Ministry.

2006

Teaching assistant

Faculty of Biology

University of Vigo

- · Lecturer's support in the Bologna process.
- · Grant provider: University of Vigo.



TEACHING EXPERIENCE



Courses

2020

CVEN9855 - Water & Wastewater Analysis

School of Civil and Environmental Engineering.

The University of New South Wales

· Term 1. Section on microbiology of wastewater



Invited Lectures

2012

Uranium heap leaching: Microbiological aspects

School of Civil and Environmental Engineering.

The University of New South Wales

Workshops

2019

EMBL-ABR: Phylogenetic trees for beginners

EMBL-ABR (Sydney node).

- The University of New South Wales
- · Node organiser and facilitator.

EMBL-ABR: Implementing Scalable Bioinformatic Workflows in Snakemake & Nextflow

EMBL-ABR (Sydney node).

The University of New South Wales

· Facilitator.

2018

EMBL-ABR: 16S Metagenomics with Galaxy Australia

EMBL-ABR (Sydney node).

University of Sydney

· Facilitator.

Long-read Data Analysis Workshop

NSW Systems Biology Initiative.

The University of New South Wales

· Organiser, trainer, facilitator.

2011

Hands on Zotero, a free alternative to EndNote

Bioprocesses group.

University of Vigo

- · Organiser, sole trainer.
- · Group's internal workshop.



Supervision

Current 2019

Kevin Yonathan

PhD. Role: External supervisor.

University of Technology, Sydney

Study of the response of microbial communities to silver nanoparticles through metagenomics.

I have also informally supervised, supported, mentored, or collaborated with a total of 21 students across multiple levels (1 Course project, 7 Honours, 12 PhD, and 1 Practicum).



🕹 GRANTS

2021 2020

Bioplatforms Australia / NSW Department of Industry RAAP -NCRIS NSW Co-investment Support Shared Grant

School of Biotechnology and Biomolecular Sciences / Ramaciotti Centre for Genomics at The University of New South Wales

- · Total amount: AU\$600,000
- · Role: investigator. Cl: Prof. Marc Wilkins

2020

BABS sequencing grant

Investigation of a phage capable of species cross-infection

School of Biotechnology and Biomolecular Sciences / Ramaciotti Centre for Genomics at The University of New South Wales

- · AU\$5,000 for sequencing
- · Role: co-Cl with Dr. Dragica Damnjanović and Dr. Melissa Harvey

2020 2019	 ResTech Support Scheme OTUreporter pipeline coding project The University of New South Wales AU\$15,000 Role: project lead. CI: Prof. Marc Wilkins 	
2015	Postdoctoral writing Fellowship Grant School of Civil and Environmental Engineering at The University of New South Wales	
	· 0.4 FTE salary for 12 weeks	
2015 2011	● UNSW Tuition fee scholarship ● Graduate Research School at The University of New South Wales	
	 Tuition fees for PhD program Supervisors: Prof. T. David Waite and Prof. Brett A. Neilan 	
2015	Australian Postgraduate Award (Industry)	
2011	 AU\$27,651.00 per year for 3.5 years Supervisors: Prof. T. David Waite and Prof. Brett A. Neilan 	
	• AWARDS	
2020	● SRAP Laureate 2020 ◆ Spanish Researchers in Australia-Pacific	
	+ TRAINING AND PROFESSIONAL DEVELOPMENT	
	* Courses	I have completed about 110 h of training in courses and workshops in the last two years
2022	 Differential Expression Analysis with limma in R DataCamp. ♥ Online	alone.
	 R Programming - Skill Track (updated) DataCamp. ♥ Online	
	■ Importing & Cleaning Data with R - Skill Track DataCamp. Online	
	 Data manipulation with R - Skill Track DataCamp. ♥ Online 	
	 Data Visualization with R - Skill Track DataCamp. ♥ Online 	
2021	 Intermediate Tidyverse Toolbox Track - Skill Track DataCamp. ♥ Online 	
2020	● SQL Fundamentals – Skill Track DataCamp. ◆ Online	

	•	R Programming - Skill Track DataCamp.	♥ Online
	•	Python Fundamentals - Skill Track DataCamp.	♥ Online
	•	Tidyverse Fundamentals with R - Skill Track DataCamp.	♀ Online
2018		Introduction to Git for Data Science DataCamp.	♥ Online
	•	Jekyll: make fast, secure static sites and blogs with Jekyll Udemy.	♀ Online
2016	•	Introduction to Python for Data Science (DAT208x) Microsoft.	♀ Online
	•	Introduction to R for Data Science (DAT204x) Microsoft.	♀ Online
2015	•	Astrobiology and the Search for Extraterrestrial Life The University of Edinburgh.	♀ Online
	•	HTML & CSS Codecademy.	♀ Online
	•	Introduction to Genomic Technologies Johns Hopkins University.	♀ Online
	•	Workshops	
2021		Viral metagenomics with Hecatomb ABACBS2021 Conference.	• Remote
	•	Using containers in bioinformatics Australia BioCommons.	♀ Remote
		Path Forward for Naming the Uncultivated SeqCode2021 committee.	♀ Remote
2018		JAMS 2018 TOAST Workshop Joint Academic Microbiology Seminars.	Strain as CALIC
	•	Resolving Microbial Communities At Strain-Level Resolution A. Murat Eren et al Quantity of Technology, Survey of Technology, Sur	ıtion
2017	•	Genome annotation using Apollo Monica Munoz-Torres / EMBL-ABR.	♀ Remote

2016

The Omics Analysis Sydney Tutorial (TOAST)

Joint Academic Microbiology Seminars.

• Australian Museum, Sydney, AUS

Anvi'o workshop

A. Murat Eren et al..

University of Montreal, CAN

2015

Bioinformatics for microbial ecology and genomics

Australian Society for Microbiology.

Australia National University, Canberra, AUS



PUBLICATIONS

Rx Pre-Prints

2022

Evidence for a putative isoprene reductase in *Acetobacterium* wieringae

bioRxiv, 2022.11.16.516518.

M. Kronen*, X. Vázquez-Campos*, M. R. Wilkins, M. Lee & M. J. Manefield [* co-first authors].

Cross-linking mass spectrometry discovers, evaluates, and validates the experimental and predicted structural proteome

bioRxiv, 2022.11.16.516813.

T. K. Bartolec, X. Vázquez-Campos, A. Norman, C. Luong, R. J. Payne, M. R. Wilkins, J. P. Mackay & J. K. Low.



Under Review

2022

Effect of standardized ginger root powder on gastrointestinal bacteria composition, gastrointestinal symptoms, mental health, fatigue, and quality of life: A double-blind placebo-controlled trial

Journal of the Academy of Nutrition and Dietetics, JANDJRL-S-22-00854.

M. Crichton, S. Marshall, W. Marx, E. Isenring, X. Vázquez-Campos, S. L. Dawson & A. Lohning.



I Journal Articles

2022

Contaminant release, mixing and microbial fluctuations initiated by infiltrating water within a replica field-scale legacy radioactive waste trench

Science of The Total Environment 851(Part 1), 158241.

A. S. Kinsela, T. E. Payne, M. W. Bligh, X. Vázquez-Campos, M. R. Wilkins, M. J. Comarmond, B. Rowling & T. D. Waite.

Metaproteomics reveals methyltransferases implicated in dichloromethane and glycine betaine fermentation by 'Candidatus Formimonas warabiya' strain DCMF

Frontiers in Microbiology 13, 1035247.

S. I. Holland, X. Vázquez-Campos, E. Haluk, R. J. Edwards, M. J. Manefield & M. Lee.

• The interplay between use of biological therapies, psychological state, and the microbiome in IBD

Frontiers in Medicine 9, 788992.

P. Tavakoli, U. Vollmer-Conna, D. Hadzi-Pavlovic, **X. Vázquez-Campos** & M. C. Grimm.

• Characterisation of bacteriophage vB_SmaM_Ps15 infective to Stenotrophomonas maltophilia clinical ocular isolates

Viruses 14(4), 709.

D. Damnjanović, **X. Vázquez-Campos**, L. Elliot, M. Willcox & W. J. Bridge.

• Genomic insights into the *Archaea* inhabiting an Australian radioactive legacy site

Frontiers in Microbiology 12, 732575.

X. Vázquez-Campos, A. S. Kinsela, M. W. Bligh, T. E. Payne, M. R. Wilkins & T. D. Waite.

Biogeochemical mobility of contaminants from a replica radioactive waste trench in response to rainfall-induced redox oscillations

Environmental Science & Technology 55(13), 8793-8805.

A. S. Kinsela, M. W. Bligh, **X. Vázquez-Campos**, Y. Sun, M. R. Wilkins, M. J. Comarmond, B. Rowling, T. E. Payne & T. D. Waite.

Biocrust cyanobacterial composition, diversity, and environmental drivers in two contrasting climatic regions in Brazil

Geoderma 386, 114914. 💩

N. M. Machado de Lima, M. Muñoz-Rojas, **X. Vázquez-Campos** & L. H. Branco.

• Community-led, integrated, reproducible multi-omics with anvi'o

Nature Microbiology 6(1), 3-6.

A. M. Eren, E. Kiefl, A. Shaiber, I. Veseli, S. E. Miller, M. S. Schechter, I. Fink, J. N. Pan, M. Yousef, E. C. Fogarty, F. Trigodet, A. R. Watson, Ö. C. Esen, R. M. Moore, Q. Clayssen, M. D. Lee, V. Kivenson, E. D. Graham, B. D. Merrill, A. Karkman, D. Blankenberg, J. M. Eppley, A. Sjödin, J. J. Scott, X. Vázquez-Campos, L. J. McKay, E. A. McDaniel, S. L. Stevens, R. E. Anderson, J. Fuessel, A. Fernandez-Guerra, L. Maignien, T. O. Delmont & A. D. Willis.

2021

2020 • Shed Light in the DaRk LineagES of the Fungal Tree of Life—STRES

2018

2015

Life 10(12), 362.

L. Selbmann, Z. Benkő, C. Coleine, S. de Hoog, C. Donati, I. Druzhinina, T. Emri, C. L. Ettinger, A. S. Gladfelter, A. A. Gorbushina, I. V. Grigoriev, M. Grube, N. Gunde-Cimerman, Z. Á. Karányi, B. Kocsis, T. Kubressoian, I. Miklós, M. Miskei, L. Muggia, T. Northen, M. Novak-Babič, C. Pennacchio, W. P. Pfliegler, I. Pòcsi, V. Prigione, M. Riquelme, N. Segata, J. Schumacher, E. Shelest, K. Sterflinger, D. Tesei, J. M. U'Ren, G. C. Varese, X. Vázquez-Campos, V. A. Vicente, E. M. Souza, P. Zalar, A. K. Walker & J. E. Stajich.

Bacteriophage genotyping using BOXA repetitive-PCR

BMC Microbiology 20, 154.

D. Damnjanovic, **X. Vázquez-Campos**, D. L. Winter, M. Harvey & W. J. Bridge.

 Disentangling the drivers of functional complexity at the metagenomic level in Shark Bay microbial mat microbiomes

The ISME Journal 12, 2619-2639.

H. L. Wong, R. A. White III, P. T. Visscher, J. C. Charlesworth, **X. Vázquez-Campos** & B. P. Burns.

• Response of microbial community function to fluctuating geochemical conditions within a legacy radioactive waste trench environment

Applied and Environmental Microbiology 83(17), e00729.

X. Vázquez-Campos, A. S. Kinsela, M. Bligh, J. J. Harrison, T. E. Payne & T. D. Waite.

Uranium extraction from a low-grade, stockpiled, non-sulfidic ore:
 Impact of added iron and the native microbial consortia

Hydrometallurgy 167, 81-91.

X. Vázquez-Campos, A. S. Kinsela, R. N. Collins, B. A. Neilan & T. D. Waite.

• Uranium binding mechanisms of the acid-tolerant fungus *Coniochaeta fodinicola*

Environmental Science & Technology 49(14), 8487-8496.

X. Vázquez-Campos, A. S. Kinsela, R. N. Collins, B. A. Neilan, N. Aoyagi & T. D. Waite.

• Acidotolerant genus *Fodinomyces* (Ascomycota: *Capnodiales*) is a synonym of *Acidiella*

Czech Mycology 67(1), 37-38.

M. Kolařík, M. Hujslová & X. Vázquez-Campos.

Fodinomyces uranophilus gen. nov. sp. nov. and Coniochaeta 2014 fodinicola sp. nov., two uranium mine inhabiting Ascomycota fungi from northern Australia Mycologia 106(6), 1073-1089. X. Vázquez-Campos, A. S. Kinsela, T. D. Waite, R. N. Collins & B. A. Neilan. Isolation of novel benzo[a]anthracene-degrading microorganisms 2012 and continuous bioremediation in an expanded-bed bioreactor Bioprocess and Biosystems Engineering 35(5), 851-855. E. Rosales, A. Pérez-Paz, X. Vázquez, M. Pazos & M. Sanromán. Technical Reports Biogeochemical controls of uranium heap leaching 2015 A. Kinsela, X. Vázquez-Campos, R. Collins, B. Neilan & T. Waite. Project Completion Report to ERA, p. 87. CONFERENCE CONTRIBUTIONS **P** Oral Presentations Unusual DPANN Archaea from a radioactive legacy site 2019 Australian Microbial Ecology Conference (AusME 2019). 💩 Perth, WA, Australia X. Vázquez-Campos, A. S. Kinsela, M. W. Bligh, M. R. Wilkins, T. E. Payne & T. D. Waite. Metagenomic and geochemical changes following rainfall at a legacy 2017 radionuclide waste disposal site Australian Microbial Ecology Conference (AusME 2017). Melbourne, VIC, Australia X. Vázquez-Campos, A. S. Kinsela, T. E. Payne & T. D. Waite. The isolation of fungi from low-pH, high ionic strength uranium 2012 mine process water 6th International Symposium on Biohydrometallurgy. 💩 Falmouth, UK X. Vázquez-Campos, A. Kinsela, B. Neilan, R. Collins & T. Waite. **P**osters OTUreporter: amplicon to report in a single command 2019 Joint 30th International Conference on Genome Informatics (GIW) & Australian Bioinformatics and Computational Biology Society (ABACBS) Annual Conference (GIW/ABACBS 2019). 💩 Sydney, NSW, Australia

X. Vázquez-Campos, D. McFarlane, A. M. Chilton, J. R. Koval & M. R.

Wilkins.

OTUreporter: an automated pipeline for the analysis and report of 2018 amplicon sequencing data

ABACBS-2018 National Conference.

Melbourne, VIC, Australia

X. Vázquez-Campos, A. Chilton, J. Koval, J. J. Tree & M. R. Wilkins.

New Archaea lineages from a radioactive legacy site

Molecular biology of archaea: From mechanisms to ecology (MoBA6). 🎂

Vienna, Austria

X. Vázquez-Campos, A. S. Kinsela, M. W. Bligh, M. R. Wilkins, T. E. Payne & T. D. Waite.

OTUreporter: a modular automated pipeline for the analysis and report of amplicon data

Sydney Bioinformatics Research Symposium 2018. 💩

Sydney, NSW, Australia

X. Vázquez-Campos, A. Chilton, J. Koval, J. J. Tree & M. R. Wilkins.

Phylogenomics of a radioactive legacy site reveals new Archaea 2017 phyla of unknown function

Sydney Bioinformatics Research Symposium 2017. 60

Sydney, NSW, Australia

X. Vázquez-Campos, A. S. Kinsela, M. R. Wilkins, T. E. Payne & T. D. Waite.

Rainfall-mediated biogeochemical changes at a legacy radionuclide 2016 waste disposal site

> 16th International Symposium on Microbial Ecology (ISME16). 💩 Montreal, Canada

X. Vázquez-Campos, A. S. Kinsela, J. J. Harrison, K. Wilsher, S. Thiruvoth, B. Rowling, T. E. Payne & T. D. Waite.

Biogeochemical changes during experimental column leaching of a weathered uranium composite

15th International Symposium on Microbial Ecology (ISME15). Seoul, South Korea

X. Vázquez-Campos, A. Kinsela, T. Waite, R. Collins & B. Neilan.

Co-Authored Contributions

Exploring the human structural proteome, complexome and interactome with deep, large-scale crosslinking mass spectrometry

27th Annual Lorne Proteomics Symposium.

• Lorne, VIC, Australia

T. K. Bartolec, M. Johnson, A. Hawken, A. Norman, R. J. Payne, X. Vázquez-Campos, M. R. Wilkins, J. P. Mackay & J. K. Low.

Contributed abstracts presented by co-authors at conferences. Showing selected 5 out of 21.

10

2014

2022

Nanosilver in the aquatic environment: impact on microbial communities

22nd EMBL PhD Symposium "The Roaring 20s: A New Decade for Life Sciences".

♥ EMBL Heidelberg, Germany

K. Yonathan, **X. Vázquez-Campos**, R. Mann, K. R. Mahbub & C. Gunawan

The impact of repeated redox cycling events on the biogeochemistry of a simulated legacy radioactive waste trench

17th International Conference on the Chemistry and Migration Behaviour of Actinides and Fission Products in the Geosphere.

♀ Kyoto, Japan

A. S. Kinsela, M. W. Bligh, **X. Vázquez-Campos**, T. D. Waite, T. E. Payne, M. J. Comarmond & B. Rowling.

Microbial profiling of the Himalayan Puga geothermal system: towards an astrobiological model

Astrobiology Australasia Conference 2018.

• Rotorua, New Zealand

A. M. Chilton, **X. Vázquez-Campos**, L. Steller, T. Djokic & M. J. Van Kranendonk.

Understanding oat stem rust pathogen genome by PacBio sequencing

Sydney Bioinformatics Research Symposium 2017.

Sydney, NSW, Australia

C. Dong, X. Vázquez-Campos, N. Deshpande, P. Zhang, M. R. Wilkins & R. F. Park.

INVITED TALKS

2018

2019

2017

Current trends in academia: online presence, community service and openness

Water Research Centre research seminar series. 🙋

♥ Water Research Centre, Kensington, Australia

• Assembly and annotation of *Puccinia graminis* f. sp. *avenae*, 'oat stem rust'. Lessons about the process and some results

Invited talk at the Plant Breeding Institute.

Plant Breeding Institute, Cobbitty, Australia

Metagenomic and geochemical changes following rainfall at a legacy radionuclide waste disposal site

Joint Academic Microbiology Seminars (JAMS). 🛷

Sydney, Australia

SERVICE

Institutional Service

- · University of New South Wales
- Postgraduate student representative at the OH&S Committee of the School of Civil and Environmental Engineering (2013–2015).

Professional Affiliations

- · American Society for Microbiology
- · Regular member (2015-Current).
- · Australian Bioinformatics and Computational Biology Society
- · Regular member (2018-Current).
- · Australian Society for Microbiology
- · Regular member (2015–Current).
- · International Society for Microbial Ecology
- · Regular member (2014–Current).
- · Spanish Researchers in Australia-Pacific
- · Co-founder (2014).
- · Board member and web/IT coordinator (2014–2020).
- · Regular member (2021–Current).

Conferences

- · Australian Microbial Ecology conference 2022 (AusME2022)
- · Plenary chair and poster judge (2022).
- · 6th Australia-Spain Research Forum: Big Data
- · Event registration (2020).
- · 5th Australia-Spain Research Forum: 5 years Bridging Australia and Spain in Research and Academia
- · Website (2019).
- · 4th Australia-Spain Research Forum: Earth
- · Website (2018).
- · 3rd Australia-Spain Research Forum: Air
- · Website and event registration (2017).
- · 2nd Australia-Spain Research Forum: Light
- · Website (2016).
- · Australia-Spain Water Forum
- · Website and event photography (2015).

Peer Reviews

Reviewer for >10 different journals since 2016, including leading journals in their own fields, e.g., *Astrobiology, Environmental Science and Technology*, or *Microbiome*.

For a full record as reviewer, consult my public ResearcherID profile.