



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 6162

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Dipartimento di Dipartimento di Scienze e Politiche Ambientali**.

Scientist- in - charge: **Prof. Francesco Gentile Ficetola**

ISABEL CANTERA

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Cantera
Name	Isabel

PRESENT OCCUPATION

Appointment	Structure
Postdoctoral researcher, type B fellowship	Dipartimento di Dipartimento di Dipartimento di Scienze e Politiche Ambientali. Università degli Studi di Milano.

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Bachelor's degree in Biology and Environment	Paul Sabatier, Toulouse	2014
Specialization			
PhD	Community Ecology	Paul Sabatier, Toulouse	2019
Master	Biodiversity, Ecology and Evolution	Paul Sabatier, Toulouse	2016
Degree of medical specialization			
Degree of European specialization			
Other			



REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
Spanish	Native
French	Native
English	Fluent
Italian	Intermediate

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2016-2019	PhD fellowship from the "Laboratoire d'excellence CEBA" (Centre d'étude de la biodiversité amazonienne, CNRS).

TRAINING OR RESEARCH ACTIVITY

2021-2023: Postdoctoral position at Dipartimento di Scienze e Politiche Ambientali. Università degli Studi di Milano. Successional patterns of soil communities after glacier retreat. A multi-taxa and global approach using environmental DNA to describe the taxonomic and functional diversity of communities in glacier forelands. <i>Reference: Prof. Francesco Ficetola (francesco.ficetola@unimi.it).</i>
2020: Postdoctoral position at EDB laboratory (Evolution et Diversité Biologique). Toulouse, France. Characterizing the spatial signal of environmental DNA (eDNA) in rivers using a community ecology approach. Beta-diversity patterns along upstream-downstream gradients in tropical rivers. <i>Reference: Prof. Sébastien Brosse (sebastien.brosse@univ-tlse3.fr).</i>
May 2017: 7th Metabarcoding School, Porto, Portugal, 2017. 70h of lectures and practical lessons (bioinformatic analyses, DNA extraction, DNA amplification).
2016 - 2019: Ph. D. in community ecology at EDB laboratory. Effects of human impacts on freshwater fish communities in French Guiana. • Sampling campaigns to filtrate water to collect environmental DNA. • Optimization of the eDNA sampling protocol to inventor species-rich rivers and streams. • Community ecology analyses statistics: null models, multivariate analyses to build functional spaces and functional indices (richness, divergence, evenness and identity). <i>Supervisor: Prof. Sébastien Brosse (sebastien.brosse@univ-tlse3.fr).</i>
2016: Master project at EDB laboratory. Biogeography of the Olive family (Oleaceae). • Phylogenetic reconstruction, molecular dating and inferences of ancestral geographic range. <i>Supervisor: Dr. Guillaume Besnard (guillaume.besnard@univ-tlse3.fr)</i>

**2015: Internship at Auckland University, New Zealand.**

*Genomic differentiation between wild and re-introduced populations of an endangered bird, the New Zealand Hihi (*Notiomystis cincta*).*

- Genome assembling (Rad sequencing), SNP detection and localisation analyses (Stacks pipeline).

Reference: Dr. Anna Santure (a.santure@auckland.ac.nz).

2014: Internship at Centro de Investigación en Biodiversidad y Conservación, Universidad Autónoma del Estado de Morelos, Mexico.

Forest restoration effects on the behaviour of bird communities in a dry forest reserve (Sierra de Huautla).

- Creation of the sampling design and video recording of birds.

Reference: Prof. Marcela Osorio (mosorio@uaem.mx).

2013: Internship at ECOLAB (Laboratory of Functional Ecology and Environment), Toulouse, France and the Angling Association of Tolmin, Slovenia.

*Diet characterization of the endangered marble trout (*Salmo marmoratus*).*

- Surber sampling, identification and biomass estimation of aquatic invertebrates.

References: Dr. Camille Musseau (camille.musseau@gmail.com) and Dr. Alain Crivelli (a.crivelli@tourduvalat.org).

PROJECT ACTIVITY

Year	Project
2(2019). 020-2023	IceCommunities: Reconstructing community dynamics and ecosystem functioning after glacial retreat; Funded by the European Research Council (ERC; ID project: 772284). Owner of the project: Francesco Ficetola.
2020	eDNA-DistDet: Quantifying the Detection Distance of Fish by Environmental DNA in French Guiana Rivers; funded by the DEAL Guyane (Direction de l'environnement, de l'aménagement et du logement). Owner: Sébastien Brosse.
2017-2019	DEBIT: DEcoupling Biodiversity dimensions In Tropical ecosystems. Funded by the French National Research Agency (ANR). Owner: Jérôme Murienne.

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place
2016	Annual meeting of the LabEx CEBA	Cayenne, French Guyana
2017	10 th Symposium for European Freshwater Sciences (SEFS)	Olomouc, Czech Republic
2016	Annual meeting of the LabEx CEBA	Cayenne, French Guyana
2019	14 th Ecology and behaviour conference	Toulouse, France
2019	2 nd International Conference on Community Ecology	Bologna, Italy



2023	3 rd Global Soil Biodiversity Conference	Dublin, Ireland
2023	4 th International Conference on Community Ecology	Trieste, Italy

PUBLICATIONS

Books

Articles in reviews
Cantera✉, I., Carteron, A., Guerrieri, A., Marta, S., Bonin, A., Ambrosini, R., Anthelme, F., Azzoni, R., Almond, P., Gazitúa, P.A., Cauvy-fraunié, S., Lievano, J.C., Chand, P., Sarma, M.C., Clague, J., Rapre, J.A.C., Compostella, C., Encarnación, R.C., Dangles, O., Eger, A., Erokhin, S., Franzetti, A., Gielly, L., Gili, F., Gobbi, M., Hagvar, S., Khedim, N., Meneses, R., Peyre, G., Pittino, F., Rabatel, A., Urseitova, N., Yang, Y., Zaginaev, V., Zerboni, A., Zimmer, A., Taberlet, P., Diolaiuti, G., Poulenard, J., Thuiller, W., Caccianiga, M., & Ficetola, F. The importance of species addition versus replacement varies over succession in plant communities after glacier retreat. <i>In press at Nature Plants</i>. Preprint: https://doi.org/10.21203/rs.3.rs-2482972/v1
Guerrieri*, A., Cantera✉*, I., Marta*, S., Bonin*, A., Carteron, A., Ambrosini, R., Caccianiga, M., Anthelme, F., Azzoni, R.S., Almond, P., Alviz Gazitúa, P., Cauvy-Fraunié, S., Ceballos Lievano, J.L., Chand, P., Chand Sharma, M., Clague, J., Cochachin Rapre, J.A., Compostella, C., Cruz Encarnación, R., Dangles, O., Deline, P., Eger, A., Erokhin, S., Franzetti, A., Gielly, L., Gili, F., Gobbi, M., Hågvar, S., Khedim, N., Meneses, R.I., Peyre, G., Pittino, F., Proietto, A., Rabatel, A., Urseitova, N., Yang, Y., Zaginaev, V., Zerboni, A., Zimmer, A., Taberlet, P., Diolaiuti, G.A., Poulenard, J., Fontaneto*, D., Thuiller*, W., Ficetola*, G.F. (2024). Local climate modulates the development of soil nematode communities after glacier retreat. <i>Global Change Biology</i> 30, e17057. https://doi.org/10.1111/gcb.17057
Cantera✉, I., Jézéquel, C., Dejean, T., Muriénne, J., Vigouroux, R., Valentini, A., Brosse, S. (2023). Functional responses to deforestation in fish communities inhabiting Neotropical streams and rivers. <i>Ecol. processes</i> 12, 52. https://doi.org/10.1186/s13717-023-00463-8
Cantera✉, I., Jézéquel, C., Dejean, T., Muriénne, J., Vigouroux, R., Valentini, A., Brosse, S. (2023). Deforestation strengthens environmental filtering and competitive exclusion in Neotropical streams and rivers. <i>Proceedings of the Royal Society B: Biological Sciences</i> 290, 20231130. https://doi.org/10.1098/rspb.2023.1130
Giachello, S., Cantera, I., Carteron, A., Marta, S., Cipriano, C., Guerrieri, A., Bonin, A., Thuiller, W., Ficetola, G.F. (2023). Toward a common set of functional traits for soil protists. <i>Soil Biology and Biochemistry</i> 109207. https://doi.org/10.1016/j.soilbio.2023.109207
Ficetola, G.F., Guerrieri, A., Cantera, I., Bonin, A. (2023). In silico assessment of 18S rDNA metabarcoding markers for the characterization of nematode communities. Under revision at <i>PLoS One</i> Preprint: https://doi.org/10.1101/2023.08.01.551472
Coutant, O., Jézéquel, C., Mokany, K., Cantera, I., Covain, R., Valentini, A., Dejean, T., Brosse, S., Muriénne, J. (2023). Environmental DNA reveals a mismatch between diversity facets of Amazonian fishes in response to contrasting geographical, environmental and anthropogenic effects. <i>Global Change Biology</i> 29, 1741-1758. https://doi.org/10.1111/gcb.16533
Cantera*, I., Coutant*, O., Jézéquel, C., Decotte, J.-B., Dejean, T., Iribar, A., Vigouroux, R., Valentini, A., Muriénne, J., Brosse, S. (2022). Low level of anthropization linked to harsh vertebrate biodiversity declines in Amazonia. <i>Nature Communications</i> 13, 3290. https://doi.org/10.1038/s41467-022-30842-2
Guerrieri, A., Carteron, A., Bonin, A., Marta, S., Ambrosini, R., Caccianiga, M., Cantera, I., Compostella, C., Diolaiuti, G., Fontaneto, D., Gielly, L., Gili, F., Gobbi, M., Poulenard, J., Taberlet, P., Zerboni, A.,



Thuiller, W., Ficetola, G.F. (2022). Metabarcoding data reveal vertical multitaxa variation in topsoil communities during the colonization of deglaciated forelands. <i>Molecular Ecology</i> . https://doi.org/10.1111/mec.16669
Cantera✉, I., Decotte, J., Dejean, T., Muriene, J., Vigouroux, R., Valentini, A., Brosse, S. (2022). Characterizing the spatial signal of environmental DNA in river systems using a community ecology approach. <i>Molecular Ecology Resources</i> 22, 1274-1283. https://doi.org/10.1111/1755-0998.13544
Coutant, O., Cantera, I., Cilleros, K., Dejean, T., Valentini, A., Muriene, J., Brosse, S. (2021). Detecting fish assemblages with environmental DNA: Does protocol matter? Testing eDNA metabarcoding method robustness. <i>Environmental DNA</i> 3, 619-630. https://doi.org/10.1002/edn3.158
Cantera✉, I., Cilleros, K., Valentini, A., Cerdan, A., Dejean, T., Iribar, A., Taberlet, P., Vigouroux, R., Brosse, S. (2019). Optimizing environmental DNA sampling effort for fish inventories in tropical streams and rivers. <i>Scientific Reports</i> 9. https://doi.org/10.1038/s41598-019-39399-5
Olofsson, J.K., Cantera, I., Van de Paer, C., Hong-Wa, C., Zedane, L., Dunning, L.T., Alberti, A., Christin, P.-A., Besnard, G. (2019). Phylogenomics using low-depth whole genome sequencing: A case study with the olive tribe. <i>Molecular Ecology Resources</i> 19, 877-892. https://doi.org/10.1111/1755-0998.13016
Muriene, J., Cantera, I., Cerdan, A., Cilleros, K., Decotte, J.-B., Dejean, T., Vigouroux, R., Brosse, S. (2019). Aquatic eDNA for monitoring French Guiana biodiversity. <i>BDJ</i> 7, e37518. https://doi.org/10.3897/BDJ.7.e37518
Musseau C., Vincenzi S., Jesensek D., Cantera I., Boulêtreau S., Santoul F., Crivelli A.J. Direct and indirect effects of environmental factors on dietary niches in size-structured populations of a wild salmonid. (2015). <i>Ecosphere</i> 6, 1-15. https://doi.org/10.1890/ES15-00109.1

Congress proceedings
[title, structure, place, year]

OTHER INFORMATION

Teaching experience in Multivariate analyses. Master level (Ecology degree), Paul Sabatier University (2017-2018).
Computer skills: Statistical analyses (R language), Phylogenetic and biogeographic analyses (BEAST, RAxML, BioGeoBEARS), Unix language. Basic use of Geographic Information Systems (QGIS) and LaTeX.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

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Place and date: Milano, 31/12/2023