



Part A. PERSONAL INFORMATION		CV date		08/02/2023
First and Family name	ISABEL M. FERRERA CEADA			
Social Security, Passport, ID number	40448265M	Age	45	
Researcher numbers	Researcher ID	L-7200-2014		
	Author ID	6508130108		
	ORCID code	0000-0003-3484-516X		

A.1. Current position

Name of University/Institution	Spanish Institute of Oceanography, IEO-CSIC		
Department	Oceanographic Center of Málaga		
Address and Country	Puerto Pesquero, s/n		
Phone number	+34952197124	E-mail	isabel.ferrera@ieo.csic.es
Current position	Distinguished Investigator	From	01/01/2019
UNESCO code	241400; 251001; 241408		
Key words	Aquatic Ecology; Oceanography; Microbial Processes; Biodiversity; Genomics		

A.2. Education

Degree/PhD	University	Year
Microbiology (PhD)	Autonomous University of Barcelona	2004
Biology (BSc)	Autonomous University of Barcelona	1999

A.3. JCR articles, h Index, thesis supervised...

Publications in ISI: 62

Total publications (ISI papers, other papers, book chapters, reviews, etc): 72

Citations: 3857 (Scopus), 5020 (Google Scholar)

H index: 25 (Scopus), 27 (Google Scholar)

Percentage of publications in Q1: 71%

Master thesis supervised: 7

PhD thesis supervised: 1 + 2 ongoing

Part B. CV SUMMARY (max. 3500 characters, including spaces)

I am a microbial ecologist interested in understanding the diversity and function of microorganisms and the processes they carry out in the environment. I began my career at the **Universitat Autònoma de Barcelona** where I completed my PhD on the characterization of complex sulfide-oxidizing biofilms in 2004. After a short stay at the **Centre d'Estudis Avançats de Blanes** (CSIC), I joined an outstanding, internationally recognized laboratory in the field of microbial ecology at **Portland State University**. Initially hired as Postdoctoral Associate I was later awarded with a Fellowship (MEC-Fulbright Program). There, I worked on the physiology, diversity and phylogeny of thermophilic bacteria inhabiting hot springs and deep-sea hydrothermal vents. In 2008 I moved back to Spain through the **Juan de la Cierva** program and joined the Marine Microbial Ecology Group at the **Institut de Ciències del Mar** (CSIC) where I established a new research topic on the ecology of photoheterotrophic organisms. There, I actively participated in the organization and managing the circumnavigation expeditions **Malaspina** and **Tara Oceans**. Between 2011 and 2013, I held a full-time teaching position at the UAB, which I combined with my research on diversity of aquatic microorganisms at the ICM and at the **IGB-Leibniz Institute** in Berlin. Later on, I returned to the ICM as a Postdoctoral Researcher where I applied new sequencing methodologies to understand the function of microorganisms and their role in marine biogeochemical cycles. In 2019 I joined the **Spanish Institute of Oceanography in Malaga** as **Distinguished Investigator** and started research on microbial oceanography that did not exist in the center. I continue addressing unknowns about the ecology of marine photoheterotrophic bacteria, such as the strong coupling between phytoplankton and these bacteria. I am also still interested in studying ecosystem services from a microbial perspective. I work on investigating

whether microbial biodiversity can provide information about the ecological status of marine ecosystems. On the other hand, I work in one of the most vulnerable marine ecosystems in our environment, the **Mar Menor coastal lagoon**. In particular, I investigate the main biological processes involved in N transformations in the lagoon and their links in promoting phytoplankton growth. On the other hand, I collaborate in new research topics such as the study of the microbiome of echinoderms. The studies of these holobionts can help evaluating the ecosystem services provided by echinoderms, which could be key to mitigate eutrophication and alteration of coastal areas. In summary, I have participated in nearly 30 scientific projects, published 62 articles in peer-review journals, 3 review papers, 5 book chapters, 3 outreach papers and have been editor of a book. I have several contributions to international meetings and have participated in many international courses and oceanographic cruises. I have experience in teaching and supervising undergraduate and graduate students. I have performed several short stays in recognized research centers and have ongoing collaborations with national and international groups. I have been a reviewer for many specialized journals and a grant reviewer for ANEP, ANR, NASA and NSF among others, and have participated in different outreach activities, besides being a founding member and the current **Secretary** of the **Iberian Society of Ecology** (SIBECOL).

Part C. RELEVANT MERITS

C.1. Publications (including books): 10 Selected Publications since 2011

1. Auladell A, Barberán A, Logares R, Garcés E, Gasol JM, **Ferrera I**. 2022. Seasonal niche differentiation among closely related marine bacteria. *The ISME Journal* 16, 178–189 (IF: 10.302, Q1)
2. **Ferrera I**, Reñé A, Funosas D, Camp J, Massana R, Gasol JM, Garcés E. 2020. Assessment of microbial plankton diversity as an ecological indicator in the NW Mediterranean coast. *Marine Pollution Bulletin*, 160, 111691. (IF= 3.750, Q1).
3. Auladell A, Sánchez P, Sánchez O, Gasol JM, **Ferrera I**. 2019. Long-term seasonal and interannual variability of marine aerobic anoxygenic photoheterotrophic bacteria. *The ISME Journal* 13, 1975–1987 (IF=9.664, Q1).
4. **Ferrera I**, Sánchez O, Kolářová E, Koblížek M, Gasol JM. 2017. Light enhances the growth rates of natural populations of aerobic anoxygenic phototrophic bacteria. *The ISME Journal* 11: 2391–2393 (IF=9.664, Q1).
5. **Ferrera I**, Sebastian M, Acinas SG, Gasol JM. 2015. Prokaryotic functional gene diversity in the sunlit ocean: stumbling in the dark. *Current Opinion in Microbiology* 25: 33–39 (IF= 6.635, Q1).
6. **Ferrera I**, Arístegui J, González JM, Montero MF, Fraile-Nuez E, Gasol JM. 2015. Transient changes in bacterioplankton communities induced by the submarine volcanic eruption of El Hierro (Canary Islands). *PLoS One* 10: e0118136 (IF=3.534, Q1).
7. Sunagawa S, Coelho LP, Chaffron S, Kultima JR, Labadie K, Salazar G, Djahanschiri B, Zeller G, Mende DR, Alberti A, Cornejo-Castillo FM, Costea PI, Cruaud C, d'Ovidio F, Engelen S, **Ferrera I**, Gasol JM, *et al.* 2015. Structure and function of the global ocean microbiome. *Science* 348: 6237, 1261359 (IF=31.477, Q1).
8. Lima-Mendez G, Faust K, Henry N, Decelle J, Colin S, Carcillo F, Chaffron S, Ignacio-Espinosa JC, Roux S, Vincent F, Bittner L, Darzi Y, Wang J, Audic S, Berline L, Bontempi G, Cabello AM, Coppola L, Cornejo-Castillo FM, d'Ovidio F, De Meester L, **Ferrera I**, Garet-Delmas MJ, *et al.* 2015. Determinants of community structure in the global plankton interactome. *Science* 348: 6237, 1262073. (IF=31.477, Q1).
9. **Ferrera I**, Borrego CM, Salazar G, Gasol JM. 2014. Marked seasonality of aerobic anoxygenic phototrophic bacteria in the coastal NW Mediterranean Sea as revealed by cell abundance, pigment concentration and pyrosequencing of *pufM* gene. *Environmental Microbiology*. 16: 2953–2965 (IF=6.240, Q1).
10. **Ferrera I**, Gasol JM, Sebastián M, Hojerová E, Koblížek M. 2011. Growth rates of aerobic anoxygenic phototrophic bacteria as compared to other bacterioplankton groups in coastal mediterranean

waters. *Applied and Environmental Microbiology* 77, 7451 – 7458 (IF=4.077, Q1).

C.2. Research projects and grants (since 2019)

NITRODEOX: Microbial network controls on N and N₂O cycling in an deoxygenating ocean. European Research Executive Agency. HORIZON-MSCA-2021-PF-01. Project number: 101066750. 2023-2026. PI: Isabel Ferrera (beneficiary Elizabeth León-Palmero)

NITROMAR: Role of nitrogen biogeochemical cycling in triggering ecosystem disruptive algal blooms: the case of the Mar Menor coastal lagoon. Agencia Estatal de Investigación, Proyectos Estratégicos Orientados a la Transición Ecológica y a la Transición Digital. Convocatoria 2021. TED2021-129873B-I00. 2022-2024. **PIs: Isabel Ferrera** (IP1), Jesús Mercado (IP2). IEO-CSIC.

ECLIPSE: ECoLogY of marIne Photoheterotrophic bacteria and its relationShip to phytoplankton communitiEs. Agencia Estatal de Investigación. Proyectos I+D+i 2019. PID2019-110128RB-I00. 2020-2023. **PI: Isabel Ferrera.** IEO-CSIC.

HOLOSYSTEMS: Holobiontes Equinodermos y Sus Servicios Ecosistémicos en Zonas Costeras. Junta de Andalucía, Ayudas Proyectos I+D+i. P20_00705. 2021-2022 PI: Isabel Reche, Universidad de Granada. Member of the Research Team.

MICROZOO-ID: Desarrollo de un protocolo molecular para facilitar el estudio de las comunidades de microzooplancton en el Mar de Alborán. Junta de Andalucía, Ayudas Proyectos I+D+i. P20_00743. 2021-2022. PI: Lidia Yebra, IEO-CSIC. Member of the Research Team.

DMMEM: Directiva Marco de las Estrategias Marinas: Mar Menor Eutrophication Monitoring. Instituto Español de Oceanografía. 2019-2023. PI: Juan Manuel Ruiz, IEO-CSIC. Member of the Research Team.

NEREO: Del océano a las NubEs: papel del plancton maRino en la Emisión de sustancias formadoras de aerosols. Fundación BBVA. 2019-2021. **PI: Isabel Ferrera**

ESMARES_C4A2: Asesoramiento científico-técnico para la protección del medio marino: evaluación y seguimiento de las estrategias marinas, seguimiento de los espacios marinos protegidos de competencia estatal (2018-2021). Capítulo 4.2. Seguimiento de la eutrofización. Ministerio para la Transición Ecológica y el Reto Demográfico. 2019-2024. PI: Jesús M. Mercado, IEO-CSIC. Member of the Research Team.

CYCLOVENT: Comportamiento termohalino cíclico y enriquecimiento de la productividad biológica asociados a un sistema hidrotermal somero de nueva generación. Caja Canarias. Convocatoria Proyectos Investigación 2019. 2019-2021. PI: Francisco José Machín Jiménez, ULPGC. Member of the Research Team

TIMBAL: Taxonomía y Metabolismo del Bacterioplancton marino. Instituto Español de Oceanografía. 2019. **PI: Isabel Ferrera.**

C.3. Contracts and Fellowships

Postdoctoral Researcher. Dpt. of Biology, Portland State University. Nov 2004 - Nov 2005 & Nov 2007 - Apr 2008, hired on NSF grants funded to Dr. Anna-Louise Reysenbach.

Postdoctoral Fellowship, Spanish Ministry of Education – Fulbright Program. Dpt. of Biology, Portland State University. Supervisor: Dr. Anna-Louise Reysenbach. Dec 2005 – Nov 2007.

Travel Grant. MEC – Fulbright. Dpt. Biología Marina i Oceanografía, Institut de Ciències del Mar. Supervisor: Dr. Josep M. Gasol. Sep – Oct 2007.

Postdoctoral Award ‘Juan de la Cierva’ Program, Spanish Ministry of Science and Innovation. Dpt. Marine Biology & Oceanography. Marine Sciences Institute. Supervisor: Dr. Josep M. Gasol. May 2008 – May 2011.

IGB Postdoctoral Fellowship Program in Freshwater Science. Leibniz-Institute of Freshwater Ecology and Inland Fisheries. Supervisor: Dr. Hans-Peter Grossart. 2013

C.4. Patents

C.5. Teaching and Supervising experience

Master Supervision of Marta Royo-Llonch (UB, 2013), Adrià Auladell (UPF, 2017), Sergio Estruch (UB, 2017), Daniel Romano (2017, UB), Daniel Baños (2018, UB), David Funosas (2018, UPF), Silke Martínez Moreno (2021, UGR), Rocio Blanca Sújara (2022, UGR).

PhD Supervisor of Adrià Auladell. Regulation of the prokaryotic metagenome: effect and quantification of biological and oceanographic factors. Defended 18 Feb 2022.

PhD Supervisor of Carlota Ruiz Gazulla (Ongoing). Ecology of marine photoheterotrophic bacteria (defense expected in 2023).

PhD Supervisor of Silke Martínez Moreno (Ongoing). Holobiontes equinodermos y sus servicios ecosistémicos en zonas costeras (defense expected in 2025).

Teaching Accreditation for the Spanish (ANECA) and Catalan (AQU) University System.

Two years (2011-2013) of teaching (400h) at undergraduate and master level (Universitat Autònoma de Barcelona).

One year (2014-2015) of teaching (70h) at undergraduate level at Universitat Internacional de Catalunya.

Lecturer at the Erasmus Mundus Master of Science in Marine Environment and Resources at the University of the Basque Country (Since 2019)

C.6. Laboratories where I have worked:

Dpt. Genètica i Microbiologia, Universitat Autònoma de Barcelona, Spain (5 years, 1999-2004). PI: Jordi Mas.

Universidad Católica del Norte, Antofagasta, Chile (1 month, 2003) PI: Cecilia Demergaso.

Centre d'Estudis Avançats de Blanes, CEAB-CSIC, Blanes, Spain (5 months, 2004) PI: Emilio O. Casamayor.

Biology Department. Portland State University. Portland, OR, USA (3.5 years, 2004-2008) PI: Anna-Louise Reysenbach.

Institute of Microbiology, Czech Academy of Sciences. Trebon, Czechia (1 month, 2009) PI: Michal Koblizek.

Dpt. Marine Biology & Oceanography. Institut de Ciències del Mar, ICM-CSIC, Barcelona, Spain (8 years between 2008-2018). PIs: Josep M. Gasol and Esther Garcés

College of Earth, Ocean and Environment, University of Delaware. Lewes, DE, USA (1 month, 2010). PI: David L. Kirchman

Leibniz Institute of Freshwater Ecology and Inland Fisheries. Neuglobsow, Germany (5 months, 2012-2013). PI: Hans-Peter Grossart

C.7. Other relevant information:

Best PhD Thesis award. Universitat Autònoma de Barcelona.

Member of 7 PhD Comities

Founding member and current Secretary of the Iberian Society of Ecology (SIBECOL)

Journal reviewer for *Biogeosciences*, *Environmental Microbiology*, *ISME J*, *mBio*, *Aquatic Microbial Ecology*, *PLOS One*, *Microbial Ecology*, *Extremophiles*, *Geobiology* and others.

Grant Reviewer for NASA (USA), NSF (USA), ANEP (Spain), La Caixa (Spain), INACH (Chile), Minerva Foundation (Israel), ANR (France).

Review panel member for AEI (Spain) and ANR (France).