

Part A. PERSONAL INFORMATION

		CV date	13 March 2020
First and Family name	Miren Pilare Cajaraville Bereciartua		
Researcher numbers	Researcher ID	I-4757-2015	
	Orcid code	0000-0001-6527-6137	

A.1. Current position

Name of University/Institution	Universidad del País Vasco/Euskal Herriko Unibertsitatea UPV/EHU		
Department	Zoology and Animal Cell Biology Fac. of Science and Technology / Plentzia Marine Station (PIE)		
Address and Country	Barrio Sarriena s/n, Leioa 48940, Bizkaia		
Phone number	946012697	E-mail	mirenp.cajaraville@ehu.eus
Current position	Full Professor (Catedrática Univ)	From	19-10-2002
Espec. cód. UNESCO	2407, 2499 (Environmental Toxicology)		
Key Words	Cell and molecular biology, aquatic toxicology, biomarkers, histopathology and cell pathology, omics, human and environmental risk assessment, <i>in vitro</i> toxicity testing, PAHs and oil pollution, endocrine disruption, nanotoxicology, nano and microplastics		

A.2. Education

	University	Year
Licenciatura (BSc) Biology(Biochemistry)	UPV/EHU	1987
Degree (MSc) Biology	UPV/EHU	1987
PhD Biology	UPV/EHU	1991

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

- Positive evaluation of **5 research periods** (sexenios), 1988-2017.
- PhD supervision: **14 PhD Thesis** defended of which 12 were European or International Thesis and 1 received the extraordinary award. Actually she is supervising 3 PhD students.
- Quality indicators (Web of Science): Total listed publications: 192; most publications in Q1; total citations: 6.278 and without self citation 5.243; average citation per publication: 32,7; **h index 46**.
- Highly cited author award 2005-2009 in the journal Marine Pollution Bulletin and 2007-2010 in Environmental Pollution. 2013/2014 top cited article and top downloaded article in the journal Ecotoxicology. 2014-2017 highly cited article in the journal Aquatic Toxicology.

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

Full Professor in Cell Biology at the University of the Basque Country since 2002. PhD at the University of the Basque Country (1991) on the "Cytotoxic and histopathological effects of petroleum derived hydrocarbons on mussels". Her teaching and research activity has been developed both at the Science and Technology Faculty (1984-1990 and from 1996 up to now) and at the Faculty of Medicine and Dentistry (1990-1996) of the University of the Basque Country. She has carried out research stays at the University of Wales (Aberystwyth, UK, 1988), University of Heidelberg (Germany, 1992), King's College School of Medicine and Dentistry (London, UK, 1993), the University of California at San Diego (USA, 2000) and University of Hong Kong (China, 2013). She collaborates with a wide network of professors and researchers all around the world.

She has organized the international postgraduate courses "Cell Biology in Environmental Toxicology" (biannually from 1994 to 2006) and "Cellular and Molecular Biomarkers" since 2006. She teaches in the Masters Environmental Contamination and Toxicology (ECT), Erasmus Mundus in Marine Environment and Resources (MER+), Erasmus Mundus in Marine Biological Resources (IMBRSea) and Erasmus Mundus in Environmental Contamination and Toxicology (ECT+). Member of the Academic Commission of the Master ECT. Coordinator of the PhD programme in ECT. She has supervised 2 End of Degree Projects, 17 Licenciatura Thesis, 15 Master Thesis and 14 PhD Thesis of which 12 were European or International Thesis and 1 received the extraordinary award (A Katsumiti, 2014). Actually she is supervising 3 PhD students.

She is author of 2 text books and 8 divulgative articles. Editor of 1 book and 3 special issues, and has published 17 book chapters and 170 research articles and reviews in peer-reviewed international journals, in addition to several reports for the administration. Has presented 69 contributions to national congresses (12 invited) and about 315 contributions to international congresses (23 invited). Member of the Organizing Committee of 9 congresses and meetings, and

member of the Scientific Committee of 23 international congresses. Invited conferences at the University College of Wales (1988), King's College School of Medicine and Dentistry of London (1993), Universidade dos Açores (1994), University of Thessaloniki (1999), University of Maryland (2000), Universidade di Padova (2004), Universidade do Algarve (2005), IRIS Akvamiljo Marine Research Center, Stavanger, Norway (2006), Centro de Recursos Medioambientales, Donostia/San Sebastian (2009), University of Hong Kong and SKLMP-MEL Academic Committee, Shenzhen (2013).

She has participated in 7 contracts with companies (3 as principal investigator) and in 68 competitive research projects (29 as principal investigator) funded by the University of the Basque Country, Basque Government, Spanish Ministries of Education and Science, Science and Technology, Environment, and Economy and Competitiveness (MINECO), and EU FPs. She has participated in the EU projects XENOFISH (IV FP, FAIR, 1998-2000), BEEP (V FP, Environmental Programme-Marine Ecosystems, 2001-2004), PRAGMA (VI FP, Environment DG, 2006-2007) and NANORETOX (VII FP, NMP-Nanosciences, Nanotechnologies, Materials and new Production Technologies, 2008-2012). In the last years, she led a project of the MINECO (NANOSILVEROMICS, 2013-2015) on the mechanisms of action and toxicity of silver nanoparticles in model aquatic and terrestrial organisms using omics technologies. She also participated in the project NANOGUNE EHS ADVANCE (2014-2015) on the toxicity of graphene nanomaterials, funded by the Basque Government ETORTEK programme; and the project POLARISATION (2013-2015) on polar cod, lipid metabolism and disruption by polycyclic aromatic hydrocarbons, funded by the Research Council of Norway. Participated in the EU COST Action ES1205 ENTER (2013-2017) on the transfer of engineered nanomaterials from wastewater treatment and stormwater to rivers. She also participated in the PLASTOX project (JPI Oceans, 2016-2019) on the direct and indirect ecotoxicological impacts of microplastics on marine organisms and the GRACE project (H2020, 2016-2019) on integrated oil spill response actions and environmental effects. Member of the MINECO funded National Network of Excellence in Nanotechnology and Food (2017-2019). Actually she is leading a MINECO-Retos2016 project on nanomaterials as carriers of persistent organic pollutants in the aquatic environment: development of tools for risk assessment based on alternative methods and model organisms. Last, she leads the collaborative NANOPHOTOTOX project on novel nanodrugs for photodynamic therapy of cancer: physico-chemical and toxicological characterization. Participates in 2 national patents.

Has evaluated manuscripts for more than 30 journals. Referee for the Spanish, French, Portuguese, Italian, Belgian, UK, USA and Argentinian Agencies for Evaluation of Research Projects. 4D Expert for the evaluation of R+D+i projects. Member of European Research Council ERC evaluation panel (LS9-Applied Life Sciences and Non-Medical Biotechnology, later LS9-Biotechnology and Biosystems Engineering) since 2016 up to now.

Part C. RELEVANT MERITS

C.1. Publications (including books): a selection of most recent

Bioaccumulation, cellular and molecular effects in adult zebrafish under exposure to cadmium sulphide nanoparticles and to ionic cadmium. LACAVE, JM; BILBAO, E; GILLILAND, D; MURA, F; DINI, L; CAJARAVILLE, MP; ORBEA, A. *Chemosphere*, 238: 124588 (1-12) (2020).

Impacts of dietary exposure to different sized polystyrene microplastics alone and with sorbed benzo[a]pyrene on biomarkers and whole organism responses in mussels *Mytilus galloprovincialis*. GONZÁLEZ-SOTO, N; HATFIELD, J; KATSUMITI, A; DUROUDIER, N; LACAVE, JM; BILBAO, E; ORBEA, A; NAVARRO, E; CAJARAVILLE, MP. *Science of the Total Environment*, 684: 548-566 (2019).

Chapter 3: *In vitro* toxicity testing with bivalve mollusc and fish cells for the risk assessment of nanoparticles in the aquatic environment. KATSUMITI, A; CAJARAVILLE, MP. In: *Ecotoxicology of Nanoparticles in Aquatic Systems*. J BLASCO, I CORSI (eds), Science Publishers CRC Press/ Taylor & Francis Group, Boca Raton, London, New York, pp 62-98, ISBN 9781138067264 (2019).

Changes in protein expression in mussels *Mytilus galloprovincialis* dietarily exposed to PVP/PEI coated silver nanoparticles at different seasons. DUROUDIER, N; CARDOSO, C; MEHENNAOUI, K; MIKOLACZYK, M; SCHÄFER, J; GUTLEB, AC; GIAMBERINI, L; BEBIANNO, MJ, BILBAO, E; CAJARAVILLE, MP. *Aquatic Toxicology*, 210: 56-68 (2019).

Effects of dietary crude oil exposure on molecular and physiological parameters related to lipid homeostasis in polar cod (*Boreogadus saida*). VIEWEG, I; BILBAO, E; MEADOR, J; CANCIO, I; BENDER, ML; CAJARAVILLE, MP; NAHRGANG, J. *Comparative Biochemistry and Physiology, Ser C*, 206-207: 54-64 (2018).

Assessment of the effects of discontinuous sources of contamination through biomarker analyses on caged mussels. DE LOS RÍOS, A; ECHAVARRI-ERASUN, B; DÉVIER, MH; LE MENACH, K; BUDZINSKI, H; ORTIZ-ZARRAGOITIA, M; ORBEA, A; JUANES, JA; CAJARAVILLE, MP. *Science of the Total Environment*, 634: 116-126 (2018).

Digestive cell lysosomes as main targets for Ag accumulation and toxicity in marine mussels, *Mytilus galloprovincialis*, exposed to maltose-stabilised Ag nanoparticles of different sizes. JIMENO-ROMERO, A; BILBAO, E; IZAGIRRE, U; CAJARAVILLE, MP; MARIGÓMEZ, I; SOTO, M. *Nanotoxicology*, 11: 168-183 (2017).

Hepatic gene transcription profiles in turbot (*Scophthalmus maximus*) experimentally exposed to heavy fuel oil n° 6 and to styrene. DIAZ DE CERIO, O; BILBAO, E; RUIZ, P; PARDO, BG; MARTÍNEZ, P; CAJARAVILLE, MP; CANCIO, I. *Marine Environmental Research*, 123: 14-24 (2017).

Health status of the Bilbao estuary: a review of data from a multidisciplinary approach. CAJARAVILLE, MP; ORIVE, E; VILLATE, F; LAZA-MARTÍNEZ, A; URIARTE, I; GARMENDIA, L; ORTIZ-ZARRAGOITIA, M; SEOANE, S; IRIARTE, A; MARIGÓMEZ, I. *Estuarine, Coastal and Shelf Science*, 179: 124-134 (2016).

Mechanisms of toxicity of Ag nanoparticles in comparison to bulk and ionic Ag on mussel hemocytes and gill cells. KATSUMITI, A; GILLILAND, D; AROSTEGUI, I; CAJARAVILLE, MP. *PLOS ONE*, 10(6): e0129039. doi: 10.1371/journal.pone.0129039, pages 1-30 (2015).

Steroidogenesis and phase II conjugation during the gametogenesis of thicklip grey mullet (*Chelon labrosus*) from a population showing intersex condition. SARDI, AE; BIZARRO, C; CAJARAVILLE, MP; ORTIZ-ZARRAGOITIA, M. *General and Comparative Endocrinology*, 221: 144-155 (2015).

C.2. Research projects and grants: a selection of most recent

Novel nanodrugs for photodynamic therapy of cancer: physico-chemical and toxicological characterization - NANOPHOTOTOX. Participation: Principal Researcher. Funding organization: UPV/EHU. Ref: COLAB19/01. Duration: 01/01/2020 to 31/12/2021. Funding: 21.300 €.

Cell Biology in Environmental Toxicology, grant to consolidated research group. Participation: Principal Researcher. Funding organization: Basque Government Education Department. Ref: GIC19/IT-1302-19. Duration: 01/01/2019 to 31/12/2021. Funding: 347.000 €.

Nanomaterials as carriers of persistent organic pollutants in the aquatic environment: development of tools for risk assessment based on alternative methods and model organisms – NACE. Participation: Principal Researcher. Funding organization: MINECO, Retos 2016, Ref: CTM2016-81130-R. Duration: 30/12/2016 to 29/12/2020. Funding: 237.160 € + predoctoral contract.

National Network of Excellence in Nanotechnology and Food – (Food)E-9. Participation: Researcher. Funding organization: MINECO, Redes, Ref: AGL2016-81993-REDT. Duration: 01/07/2017 to 30/06/2019. Funding: 20.000 €

Integrated oil spill response actions and environmental effects – GRACE. Participation: Researcher. Funding organization: European Commission H2020. Work programme topic BG-07-2015. Duration: 01/01/2016 to 31/12/2018. Funding: 325.000,00 €

Direct and indirect ecotoxicological impacts of microplastics on marine organisms – PLASTOX, Participation: Researcher. Funding organization: JPI Oceans. Duration: 01/01/2016 to 31/12/2018. Funding: in kind contribution and Grant from Research Vicerectorate 12.000 €

The transfer of engineered NanoMaterials (ENMs) from wastewater treatment and stormwater to rivers – ENTER. Ref: COST Action ES1205. Participation: Researcher. Funding organization: European Cooperation in Science and Technology COST, EU RTD Framework Programme. Duration: 05/04/2013 to 04/04/2017. Funding: mobility.

The reactivity and toxicity of engineered nanoparticles: risks to the environment and human health – NanoReTox. Ref: CP-FP 214478-2. Participation: Principal Researcher (Subproject UPV/EHU). Funding organization: EU VII Framework Programme, FP7-NMP-2007-SMALL-1, NMP-Nanosciences, Nanotechnologies, Materials and new Production Technologies, Collaborative project. Duration: 01/12/2008 to 31-11-2012. Funding: 278.629 € (Subproject UPV/EHU)

C.3. Contracts

Estudio del estado ecológico del entorno de la descarga en Punta Lucero. Contractor: Petronor. Contract ref: C2002/0165. Participation: Researcher. Duration: 2002 up to date. Funding: 160.000 €

Utilización de biomarcadores para el establecimiento de criterios para la valoración de la vulnerabilidad de las masas de agua sometidas a vertidos urbanos e industriales- BIOVULMA. Contractor: Instituto de Hidráulica Ambiental IH-Cantabria. Participation: Principal Researcher. Duration: 2011-2012. Funding: 18.009,57 €

Pollution monitoring and ecological impact assessment following accidental oil and other chemical spills in marine waters. Contractor: Cedre (Centre de documentation de Recherche et d'experimentations sur les pollutions accidentelles des eaux) for EU grant agreement n°07.030900/2006/448297/SUB/A3. Participation: Principal Researcher. Duration: 2007. Funding: 2.000 €

Seguimiento de los efectos del vertido del "Prestige" en las islas Cíes y Ons mediante el uso de biomarcadores tempranos de contaminación. Contractor: Centro de Investigaciones Submarinas CIS, s.l. Contract ref: P229. Participation: Principal Researcher. Duration: 2004-2006. Funding: 58.464 €

Water column monitoring in the North sea-WCM2004. Contractor: Norwegian Institute for Water Research (NIVA), Norway. Participation: Researcher. Duration: 2004. Funding: 7.725,39 €

Water column monitoring in the North sea-WCM2003. Contractor: Norskhydro, RF Rogaland Research, Norway. Participation: Researcher. Duration: 2003. Funding: 28.503,29 €

C.4. Patents

Método para la identificación del sexo en peces. CANCIO, I; DIAZ DE CERIO, O; ROJO, I; BILBAO, E; IZAGUIRRE, U; ORBEA, A; SOTO, M; MARIGÓMEZ, JA; CAJARAVILLE, MP; ORTIZ-ZARRAGOITIA, M. Spanish patent ES 2 392 604 B1. Date 17/09/2013.

Método para la identificación del sexo en peces II. CANCIO, I; DIAZ DE CERIO, O; ROJO, I; BILBAO, E; IZAGUIRRE, U; ORBEA, A; SOTO, M; MARIGÓMEZ, JA; CAJARAVILLE, MP; ORTIZ-ZARRAGOITIA, M. Spanish patent ES 2 398 811 B1. Date 28/04/2014.

C.5. Other merits (e. g., Institutional responsibilities, memberships of sci societies...)

Founding member (2012) and member of the Government Council, Research Commission and Academic Commission of the Research Center for Marine Experimental Biology and Biotechnology, Plentziako Itsas Estazioa PiE-UPV/EHU since 2017 up to now.

Director of the Unit of Formation and Research UFI "Protection of Ecosystem Health" since 2012 up to now.

Coordinator of the PhD programme in Environmental Contamination and Toxicology since 2012 up to now.

Director of the consolidated research group BCTA "Cell Biology in Environmental Toxicology" recognized by the University of the Basque Country and Basque Government after evaluation at the national level, since 2001 up to now.

Director of the Department of Zoology and Animal Cell Biology in the period 2013-2017.

Director of Postgraduate Studies and Life Long Learning (2010-2011) and Director of the first Masters and Doctoral School (2012) of the University of the Basque Country.

Member of the steering Committee (2007-2009) and Executive board (since 2009) of the European Society for Comparative Physiology and Biochemistry ESCPB and president of ESCPB in the period 2011-2012.

Expert of the Experimental Sciences Committee of the Basque Quality Evaluation Agency UNIQUAL-UNIBASQ (2010-2011).

Member of the Editorial Committee of Acta Histochemica (Gustav Fischer Verlag, Jena, Germany) in the period 1998-2002.

Founding Council member of the Iberoamerican Society on Environmental Contamination and Toxicology SICTA, the Spanish working group on Endocrine Disruption, and the Spanish DareNet network for the promotion of zebrafish in research.