Universidad del País Vasco Euskal Herriko Unibertsitatea

PiE Plentziako Itsas Estazioa Estación Marina de Plentzia

PLENTZIAKO ITSAS ESTAZIOA (PIE) www.ehu.es/PIE

Urteko Txostena
Informe Anual

Annual Report

PLENTZIAKO ITSAS ESTAZIOA (PiE-UPV/EHU)

ITSAS BIOLOGIA ETA BIOTEKNOLOGIA ESPERIMENTALETARAKO IKERKETA-ZENTRUA
CENTRO DE INVESTIGACION EB BIOLOGIA Y BIOTECNOLOGIA MARINAS EXPERIMENTALES
RESEARCH CENTRE FOR EXPERIMENTAL MARINE BIOLOGY & BIOTECHNOLOGY

2015ko URTARRILA- ABENDUA
ENERO-DICIEMBRE 2015
JANUARY -DECEMBER 2015

UPV/EHUko Gobernu-Kontseiluak, "*Itsas Biologia eta Bioteknologia Esperimentalen ikerketa-zentrua, Plentziako Itsas Estazioa (PiE-UPV/EHU)***" zentruaren sorrera onetsi zuen, 2012ko abenduaren 20aren sesioan.**

El Consejo de Gobierno de la UPV/EHU en su sesión de 20 de diciembre de 2012 aprobó la creación del "*Centro de investigación en Biología y Biotecnología Marina Experimentales, Plentziako Itsas Estazioa (PiE-UPV/EHU)***".**

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Estructura organizativa / *Antolakuntza* / Organization

PDI

Director: Ionan Marigómez.
Deputy Director: Manu Soto

PiE- EMBRC: Ibon Cancio
Experimental Aquaria: Urtzi Izagirre
Biscay Bay Environmental Biospecimen Bank: Larraitz Garmendia
Research Laboratories: Eider Bilbao

Research Groups
Cell Biology in Environmental Toxicology Consolidated Research Grp: Miren P Cajaraville
Analytical Research and Innovation Consolidated Research Grp: Nestor Etxebarria
Tuna Research Lab: Iciar Martínez
Cell Biophysics: Banafshe Larijani (Biophysics Unit)
Global Observatory: Jon Saenz
Estuarine and Coastal Phytoplankton Ecology: Emma Orive
Marine Benthos: Iñaki Saiz-Salinas
Marine Microbes: Juan Iriberri
Marine and Estuarine Zooplankton: Fernando Villate
Ecology and Molecular Biology of Vibrio species: Ines Arana

PAS

Secretariat: Iñigo Legarreta
Master/Doctorate MER & CTA Secretariat: Sonia Monreal
Maintainance: Asier Arruti
Laboratory Technician: Irune Valenciano / Oihana Berasaluze

	STAFF	SAILA/ DEPT
PDI DOCTOR	1) I Marigómez	ZBCA
	2) M Soto	ZBCA
	3) MP Cajaraville	ZBCA
	4) I Cancio	ZBCA
	5) M Ortiz-Zarragoitia	ZBCA
	6) U Izagirre	ZBCA
	7) A Orbea	ZBCA
	8) B Zaldibar	ZBCA
	9) E Bilbao	ZBCA
	10) L Garmendia	ZBCA
	11) O Diaz de Cerio	ZBCA Postdoc GV
	12) A Katsumiti	ZBCA Postdoc GV
	13) JI Saiz-Salinas	ZBCA
	14) I Martinez	ZBCA/ Ikerbasque
	15) M Collins	ZBCA/Bizkaia Xede
	16) JM Gorostiaga	BVE
	17) I Diez	BVE
	18) F Villate	BVE
	19) A Iriarte	BVE
	20) I Uriarte	BVE

	21) E Orive	BVE
	22) S Seoane	BVE
	23) A Laza	BVE
	24) N Etxebarria	QA
	25) M Olivares	QA
	26) O Zuloaga	QA
	27) LA Fernandez	QA
	28) A De Diego	QA
	29) A Usobiaga	QA
	30) A Prieto	QA
	31) J Saenz	FAII
	32) G Ibarra-Berastegi	INMF
	33) G Esnaola	INMF
	34) H Egiraun Martinez	TE
	35) J Iriberri	IMP
	36) B Ayo	IMP
	37) I Arana	IMP
	38) M Orruño	IMP
	39) V Kaberdin	IMP / Ikerbasque
	40) C Garcia Soto	IEO / Convenio
PAS	1) I Legarreta	PiE-UPV/EHU
	2) I Valenciano	PiE-UPV/EHU
	3) A Arruti	PiE-UPV/EHU
	4) E Celaya	VRI - UFI
	5) S Monreal	MDe
ASSOCIATES	1) B Larijani	U Biofisica / Ikerbasque
	2) MG Lete	U Biofisica
	3) K Arkill	U Biofisica
	4) C Applebee	U Biofisica
PIF / PIC	1) A Rementeria	CoTutela UBx
	2) J Hevia	PIC Proyecto
	3) A Fanjul	PIC Proyecto
	4) E Blanco-Rayón	GV
	5) J Aguirre-Rubí	PIC Proyecto
	6) T Briaudeau	MINECO
	7) JM Lacave	PIC Proyecto
	8) I Rojo	GV
	9) N García-Velasco	PIC Proyecto
	10) E Gil-Uriarte	GV
	11) A Urrutia	GV
	12) N Duroudier	UPV/EHU
	13) A Valencia	UPV/EHU
	14) E Urionabarrenetxea	PIC Proyecto
	15) R Dazzoni	CoTutela UBx

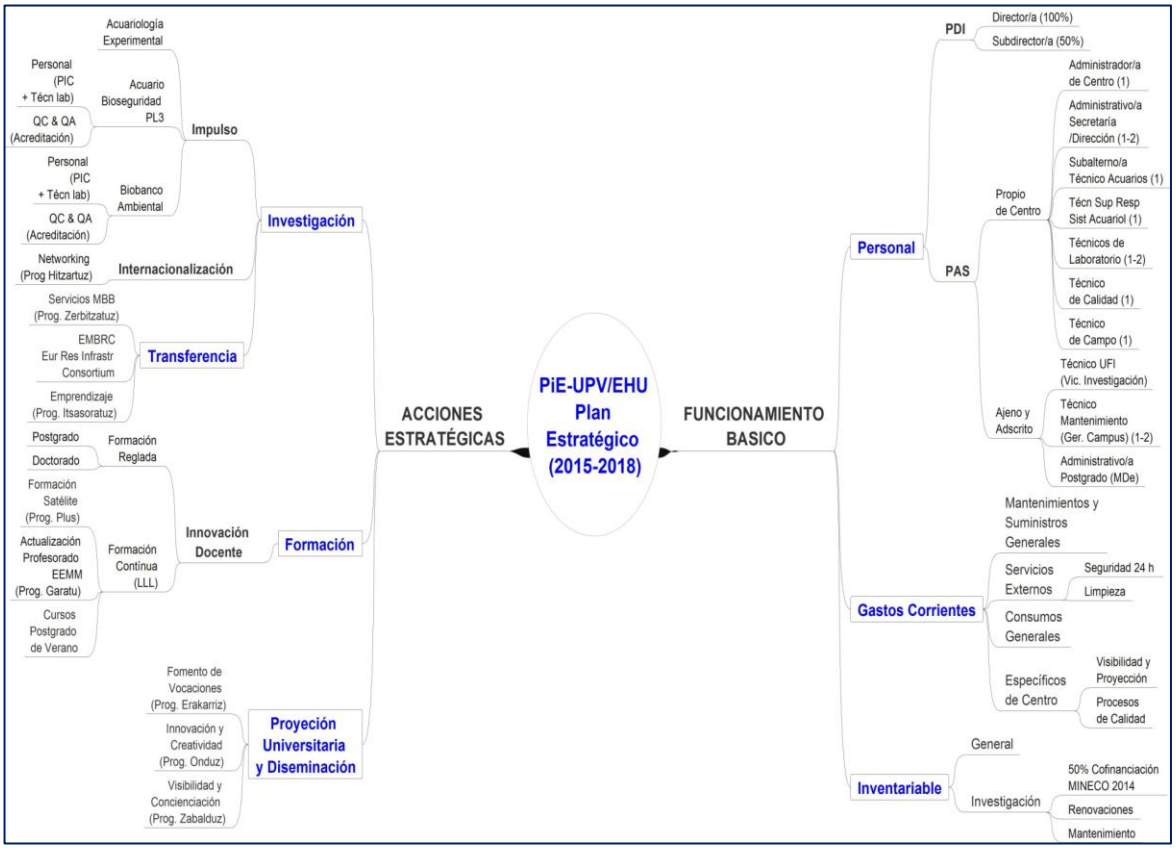
ZBCA: Dto Zool & Biol Cel Anim; BVE: Dto Biol Veg & Ecol; IMP: Dto Inmunol Microb & Parasitol; QA: Dto Quim Anal; FAII; Dto Fis Aplic II; INMF: Dto Ing Nucl & Mec Fluid; TE: Dto Tecnol Electron; IEO: Inst Español Oceanogr.

Plan Estratégico 2015-2018

El Centro de Investigación en Biología y Biotecnología Marinas Experimentales, Plentziako Itsas Estazioa (PIE-UPV/EHU), es una estructura sin personalidad jurídica creada en diciembre de 2012 por la Universidad del País Vasco/Euskal Herriko Unibertsitatea según el Artículo 148 de sus Estatutos, pionera y única en la UPV/EHU. El equipo de dirección del PIE-UPV/EHU ha elaborado el plan estratégico del centro de acuerdo con las condiciones y compromisos de creación y reglamento del centro. El PiE-UPV/EHU, como centro propio de I+D+i de la UPV/EHU, responde a los objetivos de excelencia y relevancia internacional, y fortalecimiento del liderazgo científico que persigue la UPV/EHU en sus planes estratégicos. Estos recogen la necesidad de Centros Propios de I+D+i UPV/EHU que sean reconocidos dentro del sistema universitario vasco ("Modelo UPV/EHU de gestión y financiación de Centros de Investigación Intensiva Propios (CIIPs)").

A día de hoy, el PiE-UPV/EHU es el único Centro Propio de I+D+i de la UPV/EHU en funcionamiento. Como tal, y a diferencia de los departamentos universitarios, el PiE-UPV/EHU proporciona el lugar de encuentro para (a) promover la integración de la actividad investigadora de la plantilla de PDI y PI permanente de la UPV/EHU y de la plantilla de Investigadores de la Fundación Ikerbasque y/o de otros programas competitivos adscrita a la UPV/EHU, (b) estimular sinergias entre Grupos de Investigación Consolidados, Unidades de Formación e Investigación, Institutos de Investigación y SGiKER, y (c) optimizar el uso de recursos compartidos acordes con los objetivos estratégicos de investigación de la UPV/EHU.

Creado, de acuerdo con el Art. 212 de los Estatutos de la UPV/EHU como estructura sin personalidad jurídica, el PiE-UPV/EHU se ha concebido como una oportunidad única para desarrollar y ensayar un modelo UPV/EHU eficaz y excelente de gestión y financiación de Centros Propios de I+D+i; tanto en lo relativo a su organización y a la gestión de la excelencia de la actividad investigadora, como en lo referente a la implantación de instrumentos financieros e incentivos que lo doten de eficacia y competitividad, equiparables a los de otros centros de investigación de la RVCT (p.e., centros mixtos UPV/EHU-CSIC, BERCs, etc).



INVESTIGACION: ACCIONES ESTRATEGICAS
IKERKUNTZA: EKIMEN ESTRATEGIKOAK
RESEARCH: STRATEGIC ACTIONS

INVESTIGACIÓN EN BIOLOGÍA Y BIOTECNOLOGÍA MARINAS
IKERKETA ITSAS BIOLOGIA ETA BIOTEKNOLOGIA EXPERIMENTALETAN
RESEARCH IN MARINE BIOLOGY AND BIOTECHNOLOGY

SERVICIOS EXPERIMENTALES EN BIOLOGÍA Y BIOTECNOLOGÍA MARINAS
SERBITZU EXPERIMENTALAK ITSAS BIOLOGIA ETA BIOTEKNOLOGIAN
EXPERIMENTAL SERVICES IN MARINE BIOLOGY AND BIOTECHNOLOGY

INTERNACIONALIZACIÓN
NAZIOARTEKOTASUNA
INTERNATIONALIZATION

Nuevas Iniciativas / Ekimen Berriak / New initiatives

- **Structuring an Euskampus network of Marine research stations.** SOTO M & GRÉMARE A.
- **Integration in NORMAN - Association-Network of reference laboratories, research centres and related organisations for monitoring of emerging environmental substances.** ETXEBARRIA N
- **Ocean Sampling Day.** Organization of Ocean Sampling Day (21st of june 2015). IRIBERRI J, CANCIO I.
- **.- 10TH EMBRC IMPLEMENTATION BOARD MEETING y 2nd CoN "COMMITTEE OF NODES" MEETING** (Bizkaia Aretoa UPV/EHU, PiE-UPV/EHU: 16/11/2015 - 18/11/2015). CANCIO I.

Iniciativas Activas / Ekimenak indarrean / Ongoing initiatives

- **EMBRC. European Marine Biological Resource Centre. http://www.embrc.eu/**
- **IESB - International Environmental Specimen Bank Group.**
- **MARS/WAMS - European & World Networks of Marine Research Stations and Institutes.**
- **AQUA-TNET - European Thematic Network in the field of aquaculture, fisheries and aquatic resources management.**
- **Consortium ERASMUS MUNDUS MER**. Coordination; website: http://www.merconsortium.eu
- **Board of Directors of the European Aquaculture Technology Platform. April 2014- up to date.** MARTINEZ I
- **Editorial Board. "International Microbiology", Juan Iriberri.**
- **Editorial Board. "Continental Shelf Research". Michael Collins & Jon Saenz**

EMBRC EUROPEAN MARINE BIOLOGICAL RESOURCE CENTRE

IESB Group International Environmental Specimen Bank Group

AQUA EXCEL

RESULTADOS ESPERADOS / *AURRIKUSITRAKO EMAITZAK* /EXPECTED RESULTS		GRADO DE CONSECUCION / *LORPENAK* / OUTREACH 31/12/2015
Reconocimiento internacional:		
Consejo Editorial Revistas ISI	2	3 (Michael Collins, Jon Saenz, Juan Iriberri)
Comité Soc Cient Internac	2	Miren P Cajaraville (ESCPB), Manu Soto (SICTA)
Grupos Expertos	3 (2016)	2 (Norman, IESB)
Número publicaciones/PDI:	1.5	46/34= 1.35
IF (80% de las publicaciones)	>1.7	>1.7
Q1 (% de las publicaciones)	80	Q1&2: 89%
Unidades de Investigación Cooperativa:		
AZTI-TECNALIA	2016	60% - En fase de discusión.
IEO	2015	100% - Acuerdo definido. En aprobación Consejo Gobierno (2015)
AQUARIUM SS	2015	40% - Participación conjunta en Proyectos Investigación (2015)
Centro de Calidad y Excelencia:		
Bikaintasun Zentrua BFA	2015	75% Acuerdo 2015-2016 lanzamiento EMBRC
Cooperación Institucional Ikerbasque	2016	25% - En fase de discusión.
ISO	2016	Previsto 2017
Participación proyectos Inv. Eur		
INFRADEV 03-04	2015	1 (100%)
BBEBB - B4 INFRADEV 01	2015	1 (100%)
Solicitudes H2020	2	100% - 2 Conseguidas (GRACE, INFRAIA). 2 en evaluación (segunda fase)
Solicitud INTERREG	1	
Otros	1	100 % (+ 2 en preparación 2016)
		100%
Captación Investigadores		
Ikerbasque	3	3 Solicitudes (2016)
Bizkaia Xede	2	-
Ramon y Cajal	1	-
Juan de la Cierva	1	1 solicitado (Formación), 1 solicitado (incorporación).
AXA	1	1 solicitado y en evaluación
Dotación de equipamiento e infraestructura de investigación (cofinanciación -50%- MINECO)	Cofinanc CP EJ/GV (50%)	50% de la cofinanciación esperada (700.000 €)
Programa ***HITZARTZUZ***		
AQtNET & EATIP	Cont.	100% - Continuación
MARS	Socio -15	100% - Continuación
NORMAN	Comt.	100%- Incorporados a la red NORMAN (2015)
IESB	Socio -16	100%- Miembros. Organización IESB meeting (2017).
EMBRC[2]	-	100% - Representantes Nodo español con U. Vigo (2015).
EUROMARINE	Socio -16	-
EFSA & ELIKA	2015	100%
NEAREA	2016	-
Convenios Bilaterales Internac	UNJ	-

TRANSFERENCIA: ACCIONES ESTRATEGICAS
TRANSFERENTZIA: EKIMEN ESTRATEGIKOAK
TRANSFER: STRATEGIC ACTIONS

Nuevas Iniciativas / *Ekimen Berriak* / New initiatives

ZERBITZATUZ

- Experimental and field Services EMBRC.

HITZARTUZ

- Agreement: UPV/EHU and *Universidad de Vigo* (Nodo español EMBRC). I Cancio
- Agreement: *Instituto Español de Oceanografía* (IEO) to create a Joint Research Unit (BEGIK). M. Soto.

ITSASORATUZ (Emprendizaje)

- OECD. Joint organization Workshop "The long -term potential of marine biotechnology" Plentzia. 29-30 September 2015. organizers: TORGEIR EDVARDSEN, ØYSTEIN LIE Y IONAN MARIGÓMEZ.

Iniciativas Activas / *Ekimenak indarrean* / Ongoing initiatives

ZERBITZATUZ

- MBB Experimental Services Unit: Biscay Bay Environmental Biospecimen Bank
- Services and contracts: SMDE and local autorities.
  - ✓ General services and installations
  - ✓ Contracts (Petronor, Swedish Museum, De Sangosse)

HITZARTUZ

- Excelence Campus (Euskampus): Creation of Knowledge Pole i-BLUE – Euskampus sobre "Salud y Valorización Sostenible de los Océanos"
- Bilateral agreements:
  - ✓ IESB - International Environmental Specimen Bank Group.
  - ✓ Aqua-t-Net. http://www.aquatnet.com/
  - ✓ Board of Directors of the European Aquaculture Technology Platform. April 2014- up to date.

RESULTADOS ESPERADOS / *AURRIKUSITRAKO EMAITZAK* /EXPECTED RESULTS		GRADO DE CONSECUCION / *LORPENAK* / OUTREACH 31/12/2015
Programa Zerbitzatuz (MBB		
Experimental Services Unit)	2015	*50%. Participación en EMBRC. Actualización prevista: Fins 2016.*
Instalaciones y locales	2015	*50%. Participación en EMBRC Actualización prevista: Fins 2016.*
EMBRC - ERIC:		*EMBRC - ERIC:*
MoU	2015	100%. MoU firmado y reconocido por el MINECO.
Infradev 2-3 H2020	2015	100%. Infradev 4 H2020
Fase operacional	2016	50%. Oferta Servicios durante 2016.
Programa HITZARTUZ		*Programa HITZARTUZ*
Polo Conoc -BLUE Euskampus	2012	100%. Foro Euskampus
Acuerdos estratégicos	AZTI-15	25%. Acuerdos bilaterales estratégicos a realizar 2016.
	BC3-15	2017
UNIMAR - creación	2016	-
Ikerbasque	MoU-15	-
Programa ITSASORATUZ (Emprendizaje):		
Patentes	3	2
Convenios empresas y clusters empresariales del sector		-
Spin offs	-	1
Premios Albia de Emprendizaje	-	-

FORMACION: ACCIONES ESTRATEGICAS
PRESTAKUNTZA: EKIMEN ESTRATEGIKOAK
FORMATION: STRATEGIC ACTIONS

Doctorate & Postgraduate Studies

- ***DOCTORATE***
  - ✓ MEDIO AMBIENTE Y RECURSOS MARINOS (2009-) MhE (antes MDC)
  - ✓ CONTAMINACIÓN TOXICOLOGÍA AMBIENTALES (2005-) MhE (antes MDC)
  - ✓ WORKSHOP AND CONFERENCES FOR PHD CANDIDATES in Environmental Sustainability Inguru-Dok 2015

- ***MASTER***
  - ✓ MER MUNDUS CONSORTIUM (2012-). (Coord. UPV/EHU; Sede: PiE-UPV/EHU). EUROPEAN MSC IN MARINE ENVIRONMENT & RESOURCES (2006-) Erasmus Mundus (2012-2020)- www.merconsortium.eu
  - ✓ CONTAMINACIÓN Y TOXICOLOGÍA AMBIENTALES (2005-)
  - ✓ INTERNATIONAL POSTGRADUATE COURSES

Other Teaching Activities

- ✓ COURSES
  - SCIENTIFIC DIVING (international postgraduate course)
  - Language courses
- ✓ Internships and Placements
- ✓ Seminars
- ✓ Postgraduate Summer Courses

RESULTADOS ESPERADOS / *AURRIKUSITRAKO EMAITZAK* /EXPECTED RESULTS		GRADO DE CONSECUCION / *LORPENAK* / OUTREACH 31/12/2015
Número anual de estudiantes extranjeros de máster	30	30 (100%)
Número anual de estudiantes en los cursos de formación continua	10	10 (100%)
Número de doctorandos extranjeros /año	2	2
Tesis de máster/año Tesis doctorales por año	24 7	10 6
MER EMMC MUNDUS (COORD) MASTER ERASMUS PLUS ITN-ETN Preparación e inicio ITN-RISE Preparación e inicio	2013-2020 2016-2021 2017- 2022	100% 100% 2017 2022
PiE Internat Postgraduate Courses: RiMER INCyTA Cell & Mol Biomarkers Histol Histopathol Aq Animals Eval Riesgo Ambiental Introd Reglamento Reach Sensors & Biosensors Mar Env Env Specimen Banking Technol	 2006-2015 2012-2015 1994-2015 2007-2015 2007-2015 2010 2014 2015	 2015 - 100% 2015 - 100% 2015 - 100% 2015 - 100% 2015 - 100% 2015 - 100% - -
Programa PLUS Language courses License sport boat Sea scientific diving Aquariology training Research training internship	 2015 - 2015 - 2015	 2015 - 100% - 2015 - 100% - 2015 - 100%
Cursos de verano anuales orientados a estudiantes de doctorado	2015 (2) 2016 (2)	2015 - 2016 (Univ. Bordeaux)
Número de profesores visitantes en el conjunto de estas actividades (por año)	36	30 (83%)

DISEMINACION: ACCIONES ESTRATEGICAS
EMAN ETA ZABALZAZU
DISEMINATION: STRATEGIC ACTIONS

Nuevas Iniciativas / *Ekimen Berriak* / New initiatives

ERAKARRIZ

- ✓ Practicum 2015. Internships
  - UNDERGRADUATES
    - UPV/EHU
    - OTHER INSTITUTIONS
  - PRACTICAL FORMATION (FP)

ZABALDUZ

- ✓ Ateak Zabalduz
- ✓ Onean Initiatives 2015.colaboración con Surfrider Fundation, COBE, Torremadariaga
- ✓ Convenio de Colaboración con la Asociación AMBAR.
- ✓ Garatu (EJ/GV) ACTUALIZACION PROFESORADO

ONDUZ

- ✓ Seminars
- ✓ Postgraduate Summer Courses

Iniciativas Activas / *Ekimenak indarrean* / Ongoing initiatives

ERAKARRIZ

- ✓ Garatu 2013-
- ✓ Internships
  - UNDERGRADUATES
    - UPV/EHU
    - OTHER INSTITUTIONS
  - PRACTICAL FORMATION (FP)

ONDUZ

- *PiE MBB SEMINARS2013-*

ZABALDUZ

- *OCEAN SAMPLING DAY (2014, 2015)*

RESULTADOS ESPERADOS / *AURRIKUSITRAKO EMAITZAK* /EXPECTED RESULTS		GRADO DE CONSECUCION / *LORPENAK* / OUTREACH 31/12/2015
Programa ERAKARRIZ (Fomento de vocaciones):		
HIK-GERTU! (Open Lab Tour)	2016-17	2017
GARATU (véase - LLL)	Cont.	100%
SUMMER MARINE SCIENCE CAMP	2016	2016. Colaboración Univ.
PRACTICUM	Cont.	Bordeaux
		100%
Programa ONDUZ (Innovación & Creatividad):		
PiE MBB SEMINARS	Cont.	100%
SCIENCE PHORUM	2015	2017
GLOBAL ENVIRONMENT CHAIRS (AXA CHAIR IN LONG-TERM TRENDS)	Preparat.	2018
FORE-SEA GET-TOGETHER	-	2017
SLOW SCIENCE	-	2018
Programa ZABALDUZ (Visibilidad & Concienciación):		
PiE ZABALDUZ (+CCC-EHU)	Cont.	100%
WORLD OCEAN DAY (+CCC & UNESCO)	Cont.	100%
ATEAK ZABALDUZ - CONSOLIDACION	2015	100%
PiE AURRERA	2016	2017
Cinema-Club ITSASOZ EGINAK	-	2017
HSGS Hitzaldiak	2016-17	2017

Universidad del País Vasco Euskal Herriko Unibertsitatea

PiE Plentziako Itsas Estazioa Estación Marina de Plentzia

2015

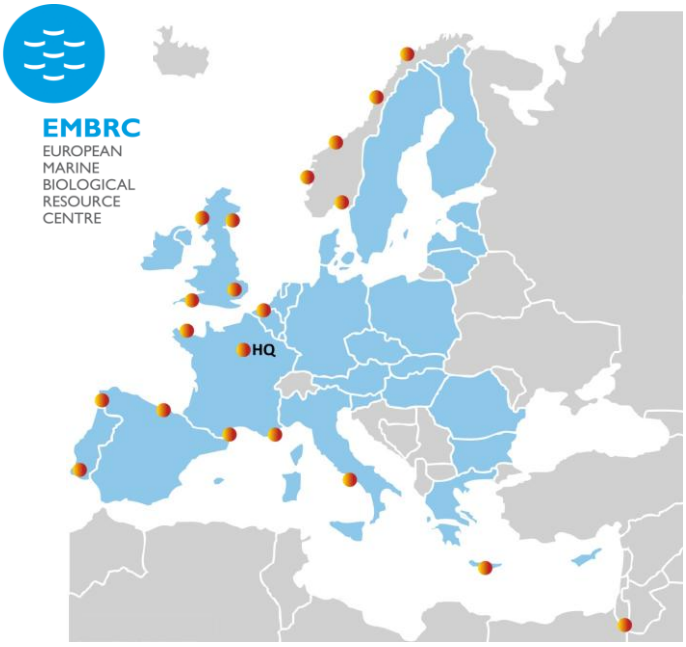
Memoria de Actividades
Jardueren Txostena
Activities Report

Investigación / *Ikerkuntza* / Research

EMBRC European Marine Biological Resource Centre

EMBRC (www.embrc.eu) es una infraestructura de investigación europea formada por estaciones biológicas marinas, distribuida en varios países, dentro del mapa de grandes infraestructuras científicas europeas (ESFRI: European Strategy Forum on Research Infrastructures) desde 2008, que pretende servir como punto de entrada único para acceder a los ecosistemas marinos europeos y a sus recursos biológicos, e implementar técnicas modernas de análisis molecular y de microscopía avanzadas. EMBRC se posiciona dentro del grupo de Infraestructuras en Ciencias Biológicas y Médicas del proceso ESFRI, con un componente de investigación y transferencia tecnologica en Biotecnología azul para la salud. Las instalaciones, equipamiento y servicios que se harán disponibles por parte de las diferentes estaciones marinas, centralizadas en el EMBRC, son de interés para las administraciones con responsabilidad en la conservación del medio marino y sus recursos, para pequeñas y medianas empresas, industria y académicos con necesidades de I+D+i o formación en acuicultura, pesquerías, medio ambiente, recursos biológicos marinos en general y biotecnología azul. El EMBRC se encuentra en su fase de implementación desde enero de 2014, y desea constituirse legalmente en un ERIC, European Research Infrastructure Consortium, convirtiéndose en una Infraestructura de Investigación Europea en 2017 (fase operativa). Los estatutos para tal materialización han sido presentados ya en marzo del 2016 por el estado francés (sede central en Francia) ante la comisión europea.

El 10 de diciembre de 2013 se preparó un Memorando de Entendimiento (MoU) para formalizar los estatutos recién presentados, que permitirán la obtención de una estructura legal para operar EMBRC. Con la firma del estado español en 2014 (22/09/2014), este memorando quedó ratificado por 9 países (Bélgica, España, Francia, Grecia, Israel, Italia, Noruega y Reino Unido). Dichos estados miembros manifestaron su intención de dar pasos hacia el establecimiento de EMBRC en forma de un Consorcio de Infraestructuras de Investigación Europeas (ERIC) (http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=eric). El PiE-UPV/EHU conforma junto al ECIMAT (Estación de Ciencias Mariñas de Toralla, Univ. de Vigo) el nodo español (EMBRCes) como aceptó MINECO a la firma del MoU.



La incorporación del PiE-UPV/EHU a esta infraestructura Europea proporciona gran visibilidad y conectividad internacional a nivel académico, científico y empresarial; y grandes posibilidades de networking y lobbying que requieren de una cuidada coordinación entre las instituciones involucradas. Para garantizar la participación del PiE-UPV/EHU en EMBRC como operador local del nodo EMBRCes, y para promover su excelencia y competitividad en este contexto, se precisa una financiación estable, para lo que se negoció y se obtuvo financiación por parte de la Diputación Foral de Bizkaia.

Atmospheric-oceanic interactions and climate.

One of PIE's research areas deals with the physical characteristics of the environment where biological processes are happening, since the sea surface salinity, temperature or currents are very important for the Marine Environment. Over coastal areas, several key interactions appear between the ocean and the atmosphere. Rivers' discharge depend on the precipitation over land areas and affects salinity and also sediment transport into the ocean. Sea Surface Temperature depends on energy fluxes (radiation, sensible or latent heat flux) between the ocean and the atmosphere. Surface current is to a great extent dependent on surface wind. Therefore, the study of atmospheric and oceanic coupling leads to an improved understanding of processes in the Marine Environment.

During 2015, one of the main activities has been the development of statistical downscaling models applied to the forecast of wave energy flux and the comparison of the results by these models to the ones that can be obtained by numerical wave forecast systems such as the one used by ECMWF (WAM). A paper was submitted during 2015 and the revisions were carried out during that time, and it was finally accepted in the journal Ocean Engineering. A second one was also submitted on the same issue addressing the behavior of waves in coastal waters. These two publications gather (see below) the results of a research project funded by the Basque Government (ELKARTEK 2015) regarding the short-term forecasting of wave energy for the Bay of Biscay. Finally, a third paper was written about the efficiency of a new method developed to calculate multidimensional kernel-based density estimators:

- G. Ibarra-Berastegi, J. Sáenz, G. Esnaola, A. Ezcurra, A. Ulazia (2015) Short-term forecasting of the wave energy flux: Analogues, random forests, and physics-based models Ocean Engineering, 104:530-539, doi: 10.1016/j.oceaneng.2015.05.038
- Gabriel Ibarra-Berastegi, Jon Sáenz, Ganix Esnaola, Agustin Ezcurra, Alain Ulazia, Naiara Rojo, and Gorka Gallastegui. Wave Energy Forecasting at Three Coastal Buoys in the Bay of Biscay. IEEE JOURNAL OF OCEANIC ENGINEERING. DOI: 10.1109/JOE.2016.2529400 (In press)
- U. López-Novoa, J. Sáenz, A. Mendiburu, J. M. Alonso (2015) An efficient implementation of kernel density estimation for multi-core and many-core architectures. International Journal of High Performance Computing Applications, 29:331-347, doi: 10.1177/1094342015576813

The other main activity during 2015 has been the preparation of four high-resolution integrations over the Iberian Peninsula with the WRF atmospheric model covering the period 2010-2014 (2009 is used for spin up of the model). One of the integrations (N experiment) is run at a high resolution (15 km) with 55 vertical levels with ERA Interim providing initial and boundary conditions and using the Noah land surface model. The second one (D) is run as the N experiment but, additionally, 3DVAR data assimilation of observations at 00Z, 06Z, 12Z and 18Z is performed. The third one (C experiment) is the same as the D experiment, it uses 3DVAR but the soil model is strictly diffusive. Finally, the last one (S experiment) uses no data assimilation and a diffusive soil model. The main objectives of these four runs is to analyze both the atmospheric branch of the hydrological cycle (precipitation, evaporation, moisture transport and moisture transport divergence) and also the ability of the output fields to act as a forcing of a model of surface currents over the Bay of Biscay. These two objectives constitute the main aim in a project funded by the Spanish Ministry of Economy inside the National I+D+i Plan. The use of the four combinations (soil model and data assimilation) will allow us to analyze the impact of these parts of the model in the quality of the simulations.

Project: "C*iclo hidrológico y viento superficial en la Península Ibérica. Predicción de lluvia y corriente superficial en zonas costeras del Golfo de Bizkaia*", MINECO CGL2013-45198-C2-1R
Partners: UPV/EHU and AZTI.
Research Group: Jon Sáenz, PI, members of EOLO UPV/EHU group and researchers from AZTI.
January 2014-December 2016. 52.030 €
Project: "*Investigacion Colaborativa En Energias Renovables Marinas (ICERMAR-I)*", ELKARTEK 2015-KK-2015/00097
Partners: UPV/EHU in the frame of a consortium led by Tecnalia
Research Group: Mikel Lezaun (PI), Jon Sáenz, Gabriel Ibarra-Berastegi and Ganix Esnaola. Other members of EOLO UPV/EHU group and researchers from TECNALIA and partners
January 2015-December 2016 . 36873€ (2015) + 39216€ (2016)=76089 €

Calibration and laboratory test of the Polar Organic Chemical Integrative and Polyethersulfone tubes samplers for the determination of 21 priority and emerging compounds in seawater

Passive sampling devices offer the possibility to obtain more representative samples and analysis in natural waters during a given period of time. According to the polarity of the studied compounds, different types of passive samplers (PS) should be employed. Polar organic chemical integrative sampler (POCIS) are designed to concentrate polar organic chemicals (log Kow<4) and two commercially configurations are available: pesticides-POCIS (a triphasic mixture) and pharmaceutical-POCIS (Oasis-HLB). Though the pharmaceutical configuration is the most widely used they are not suitable to retain acid analytes so the development of a mixed-mode mixture including an anion exchanger and the Oasis-HLB sorbent was prepared and studied. In addition to this, the use of polyethersulfone (PES) polymer was also studied.

The uptake in POCIS and the PES tubes were calibrated in the laboratory for the simultaneous determination of 21 compounds, including herbicides, hormones, life style products (stimulants and artificial sweeteners), industrial chemicals (corrosion inhibitor, personal care products and fluorinated compounds), and pharmaceuticals (antibiotics, tricyclic antidepressant, antihypertensive, antiinflammatory, β-blocker cardiovascular drugs, lipid-regulating and anticonvulsant). The use of different performance reference compounds (PRCs) was considered in order to correct the hydrodynamical differences between the lab and field samplings. Finally, the accumulation of amitriptylin in those PSs and in different tissues of gilthead seabream (Sparus Aurata) was compared.

The experimental set up for the PS calibration and fish exposure experiments was a dynamic flow system with a continuous supply of fresh seawater and pollutant mixture. The tanks had two feeding inputs, one with fresh water/seawater (5 L·h-1) and the other with the mixture of contaminants (20 ml/h). The nominal concentration in the tank was 800 ng/L for passive samplers calibration and 1 µg/L for amitriptyline exposure. For the calibration experiment, preconditioned PES tubes and POCIS-mixture phase were placed in a stainless steel carrousel, which was stirred at a constant rate of 50 rpm for 14 day. Every two days 3 POCIS and 3 PES tubes and 250 mL of water were removed for analysis of the target compounds.

Our preliminary results confirm that the sampling rates (Rs, ml·day-1) of PES tubes and POCIS-mixture were statistically different. Further research should be carried out in order to assess the suitability of PRCs as a good approach to correct differences between controlled and field conditions. Moreover, the results suggest that the concentration of PS is not comparable with the bioconcentration profiles of all fish tissues.

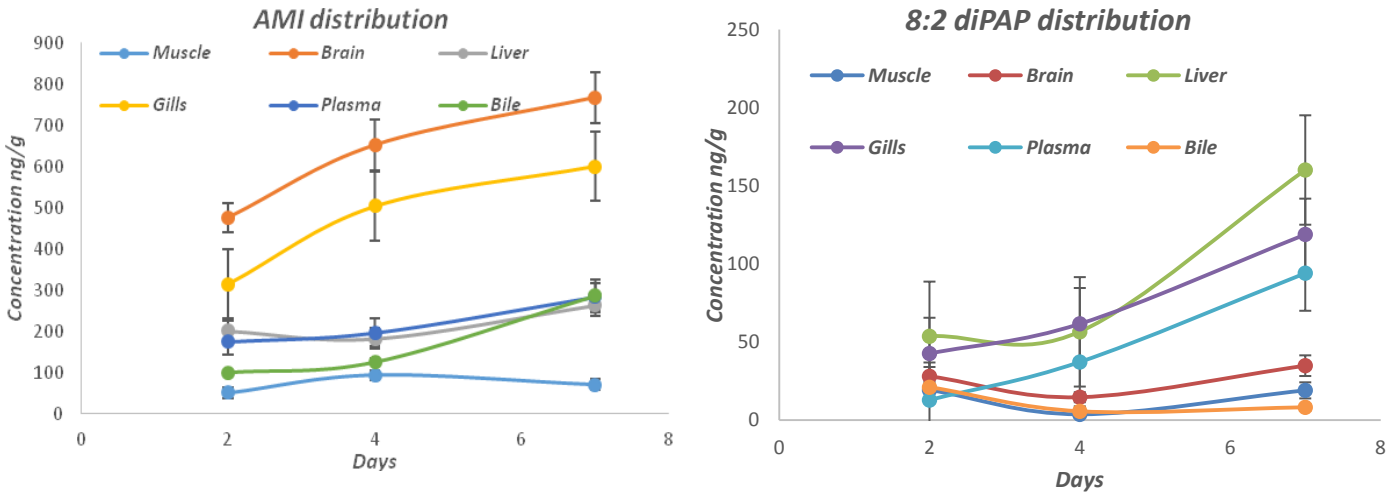
L. Mijangos, H.Ziarrusta, I. Zabaleta, O. Zuazua, M. Olivares, O. Zuloaga, U. Izaguirre, A. Vallejo, A. Prieto, N. Etxebarria. Funded: MICINN through the CTM2014-56628-C3-1-R project. I. Zabaleta is grateful to the University of the Basque Country (UPV/EHU), H. Ziarrusta is grateful to the Spanish Ministry and L. Mijangos is grateful to the Basque Government for their pre-doctoral fellowships.

The study of metabolism and accumulation of diferent emerging pollutants in gilthead seabream (*Sparus aurata*)

The aim of the present work was to study the uptake and the toxic effects of two emerging contaminants in different tissues of gilthead seabream (*Sparus aurata*). The selected contaminants were amitriptyline, a tricyclic antidepressant, and 8:2 diPAP, a polyfluoroalkyl phosphate which is mainly used as grease and water repellent coating for food packaging.

The exposure was performed in a dynamic flow system provided with a continuous supply of fresh seawater for 7 days. In the exposure to amitriptyline, the tank had two feeding inputs: one with fresh seawater (8.5 l/h) and the second one with the pollutant in water (20 ml/h). In order to assure the steady state of the nominal concentration (10 ng/mL) both inputs were mixed 72 h before the fishes were exposed. In the case of 8:2 diPAP, the uptake was included in the food instead than in the water supply. Fishes were fed once a day at 1.5 % of the average initial body weight per feeding (29 µg/g). In both cases, independent control experiments were carried out.

Fishes were collected after 2, 4 and 7 days of exposure in order to analyze the accumulated contaminant in liver, bile, muscle, plasma, brain and gills. As can be observed in Figure 1, amitriptyline was mainly accumulated in brain and gills whereas 8:2 diPAP was mostly accumulated in protein rich compartments (liver and plasma) and in gills. Moreover, it is worth mentioning that degradation products of both contaminants were also detected. When fishes were exposed to amytriptiline Nortriptyline was found in all the analyzed tissues and in the other experiments 8:2 diPAP metabolites were only detected in plasma. According to the results obtained, it can be concluded that amitriptyline and 8:2 diPAP can be accumulated and metabolized in different tissues of gilthead seabream; therefore, further efforts should be carried out in order to both identify metabolites as well as the effects on the metabolism.



Amitriptilyne and 8:2 diPAP distribution in different tissues of gilthead seabream.

Itsaso Zabaleta, Haizea Ziarrusta, Leire Mijangos, Ekhine Bizkarguenaga, Urtzi Izaguirre, Maren Ortiz-Zarragoitia, Beñat Zaldibar, Maitane Olivares, Ailette Prieto, Olatz Zuloaga and Nestor Etxebarria.
Funded: MICINN through the CTM2014-56628-C3-1-R project. I. Zabaleta is grateful to the University of the Basque Country (UPV/EHU), H. Ziarrusta is grateful to the Spanish Ministry and L. Mijangos is grateful to the Basque Government for their pre-doctoral fellowships. E. Bizkarguenaga is grateful to the University of the Basque Country (UPV/EHU) for its economical support.

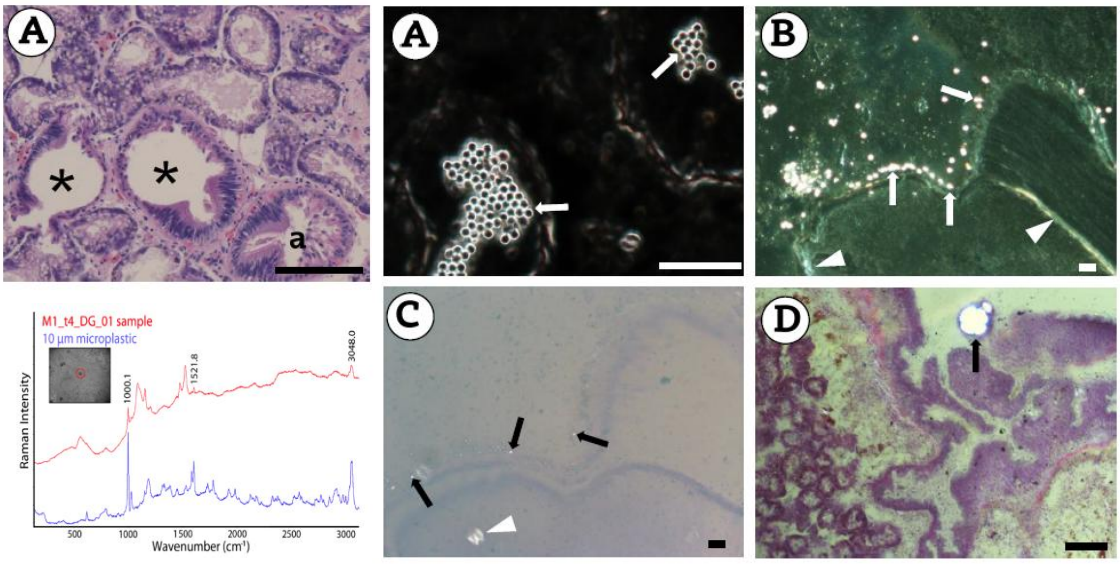
Tissue distribution and biological effects of microplastics in marine mussels

Global plastic production has increased from 5 million tonnes in the 1950s to over 310 million tonnes in 2014. This relevant production volume together with their high durability has led to widespread accumulation of plastic debris in the environment. Although in most developed countries the recycling and waste management politics are of increasing importance, still it is estimated that 10% of the plastic debris end in the rivers and seas. The growing concern due to the presence of these plastics, especially micro and nanoplastics, in the aquatic environment requires the development of new methodologies to study the distribution of these particles and the effects that might cause in many organisms.

In this work two experiments have been carried out exposing mussels (*Mytilus galloprovincialis*) to synthetic polystyrene (PE) microplastics (6-90 µm diameter) and to polymethyl methacrylate (PMMA) microsplastic (4-190 µm diameter). The distribution of these particles in mussels' tissue was studied by different techniques including FT-IR and Raman spectroscopy, and light and polarized light microscopy after mussels being exposed to different periods of time (5 min-72 h).

Results of the work demonstrated that polarized light and darkfield illumination techniques are able to detect PE microplastics in the mussel's tissue. However, the suitability of these techniques on PMMA microplastics is more limited. In addition, a fine tune of the preparation of the samples, from conservation to image and spectra analysis, was optimized and it was concluded that it was better to freeze the samples and to prepare the cryosections instead of embedding them in paraffin. Raman spectroscopy allowed the characterization of the particles better than FT-IR allowing the development of image analysis techniques.

Regarding with tissue distribution of microplastics, it was observed that the larger microplastics are mainly located in the stomach and primary ducts of the digestive gland, while the smallest ones (<20 µm diameter) are more frequent in the epithelium of the digestive tubules and the interstitial connective tissue.



Project: Tissue distribution and biological effects of microplastics in marine mussels (PLASTinMUSS).
Partners: Swedish Museum of Natural History
Research Group: Ionan Marigómez, Manu Soto, Urtzi Izagirre, Beñat Zaldibar, Eider Bilbao and Larraitz Garmendia.
December 2014-December 2015
Budget: 75.000€

Polar cod, lipid metabolism and disruption by polycyclic aromatic hydrocarbons (*Polarisation*)

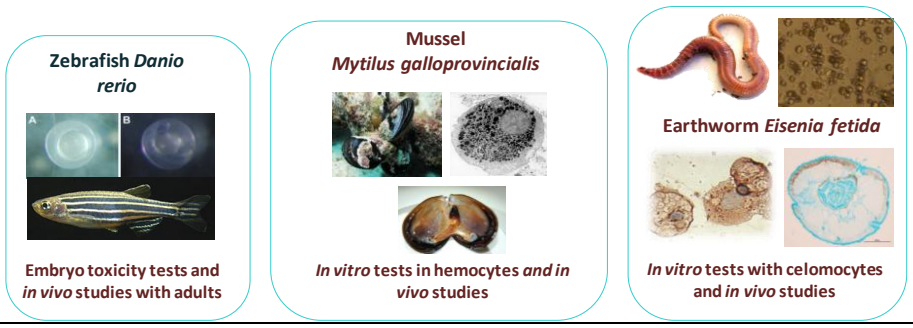
Polar cod is an abundant Arctic key-stone species, inhabiting an ecosystem that is subjected to rapid climate change and imminent oil and gas activities. No studies have thus far investigated biological effects of crude oil on lipid metabolism in this species, which is crucial for polar cod with regard to reproduction in winter. This study examined how crude oil exposure influences lipid metabolism and reproduction as well as the potential implication of peroxisome proliferator-activated receptors (PPARs). In a 4-week dietary exposure experiment, polar cod (n=170) were force-fed twice a week, using different doses of crude oil (mean (±SD): 0 [control], 3.9 ± 0.9, 15.5 ± 3.0 and 26.3 ± 6.0 µg crude oil/ g fish/day). Additional fish (n=80) were exposed to a potent mammalian peroxisome proliferator (11.8 ± 2.3 µg WY-14,643/g fish/ day) and its vehicle acetone.

We determined transcriptional levels of genes related to lipid catabolism (ppar-α, retinoic X receptor [rxr-β], palmitoyl-CoA oxidase [aox1], cytochrome P4507A1 [cyp7α1]), lipogenesis (ppar-), reproduction (vitellogenin [vtg-β], gonadal aromatase [cyp19a1]), and biotransformation pathway of polycyclic aromatic hydrocarbons (PAHs) (cytochrome P4501A1 [cyp1a1], aryl hydrocarbon receptor [ahr2]). Alterations in plasma parameters (albumin, alanine transaminase, calcium, cholesterol, creatinine, total globulins, glucose, inorganic phosphate, total protein, and triacylglycerols) were measured at day 0 and 32. Furthermore, gonadal maturation stages were determined based on histological analysis of the gonads. The dose-dependent up-regulation of cyp1a1 reflected the activation of PAH biotransformation in the liver upon crude oil exposure. The rest of the genes analyzed showed high variation in transcription levels, which was primarily related to fish sex (ahr2, ppar-α, ppar-γ, rxr-β, vtg-β, cyp19a1) and duration of exposure time (ppar-γ, rxr-β, cyp19a1), rather than to crude oil treatment (cyp1a1, cyp7α1). The dose-related increase in plasma cholesterol indicated the mobilization of stored lipids in response to high crude oil doses compared to control fish at day 32. In contrast to data reported in other species, WY-14,643 exposure caused a down-regulation of ppar-α in polar cod, which could be explained by differences in the receptor structure of PPAR-α in polar cod compared to other fish species and mammals. In conclusion, crude oil exposure did not up-regulate polar cod PPARs but effects on cyp7α1 suggested an inhibiting effect on bile acid synthesis in polar cod.

FUNDING BODY: Research Council of Norway. 2011 Call. REFERENCE: 214184. DURATION: 01-01-2012/31-12-2015
PRINCIPAL RESEARCHER: Jasmine Narhang (Univ Tromso)
BCTA group UPV/EHU: Miren P. Cajaraville (IP), Eider Bilbao, Maren Ortiz, Ibon Cancio
COLLABORATIONS: Univ Tromso, Univ Ancona, NOAA Fisheries

Mechanisms of action and toxicity of silver nanoparticles in model aquatic and terrestrial organisms using omics technologies (Nanosilveromics)

Manufactured nanoparticles (NPs) are already incorporated in many consumer products, with domestic, medical, cosmetic, industrial and military uses. Concomitantly with the increasing applications for nanosized materials, concerns are growing because the properties of nanostructured materials and their potential input in ecosystems could lead to unknown health or environmental hazards. Silver NPs are the most widely used metal NPs due to their unique optical and catalytical properties and potent antimicrobial activity. The results obtained in the present project have greatly advanced knowledge on the mechanisms of action and toxicity of Ag NPs in both aquatic and terrestrial environments. For this integrated approach, three model organisms were employed: 1) mussels *Mytilus galloprovincialis*, filter-feeding bivalves which are important targets of nanomaterials entering the water column and suitable sentinels to monitor NP impact into the marine environment, 2) zebrafish *Danio rerio*, a consolidated experimental model in biomedicine, at embryo and juvenile-adult developmental stages, and 3) earthworms *Eisenia fetida*, terrestrial model organisms widely used as bioindicators of soil pollution and as test organisms for standard toxicity tests. Toxic effects of Ag NPs have been studied generally at concentrations orders of magnitude higher than those expected in the environment, whereas in this work experiments included environmentally relevant Ag NP concentrations. Mussels and zebrafish were exposed through water and through the diet (algae *Isochrysis galbana* and the crustacean Artemia sp, respectively), whereas earthworms were exposed to artificially contaminated soils. ICP-MS and autometallography demonstrated Ag accumulation, mainly in digestive organs for the three species, in agreement with Ag NP dietary exposure. Ag accumulation in mussels was higher in the resting period than in the reproductive period and season-dependent changes were also evidenced in the biological responses measured. Ag NP exposure elicited changes in gene and protein expression profiles and responses at cell and tissue levels, including lysosomal membrane destabilization and genotoxicity, even at environmentally relevant concentrations, in the three model species. Further, in vitro experiments in mussel cells confirmed that size and surface coating are important driving factors to explain Ag NP behavior and toxicity Main mechanisms of action of Ag NPs involved oxidative stress, DNA damage, alterations in membrane transport functions and disruption of actin cytoskeleton whereas lysosomal activation and stimulation of phagocytosis could represent defensive responses. Oxidative stress and DNA damage were also important mechanisms of Ag NP toxicity in earthworm coelomocytes in vitro. As to higher level effects, water-borne exposure of zebrafish to an environmentally relevant Ag NP concentration caused significant impairment in zebrafish reproduction (reduction in the number of spawned and viable eggs). Similarly, embryo development was impaired after parental exposure of mussels to low Ag NP concentrations and a severe reduction in juveniles and cocoon numbers was recorded in earthworms, suggesting a severe affection in the reproductive output at increasing Ag NPs concentrations. Overall, results obtained suppose a step forward in environmental risk assessment of Ag NPs in both aquatic and terrestrial environments.



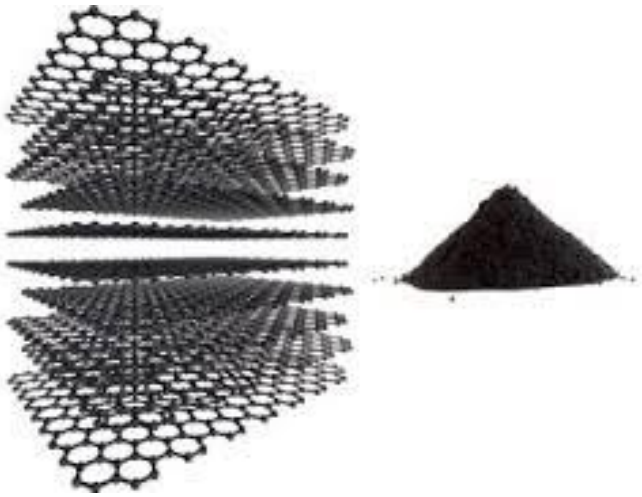
Ministerio de Economía y Competitividad. Plan Nacional de I+D+I 2008-2011, Proyectos de Investigación Fundamental no orientada. Programa Materiales, Nanociencia y Nanotecnología. REFERENCE: MAT2012-39372. DURATION: 01-01-2013/31-12-2015. Miren P. Cajaraville (IP), Nerea Duroudier, Nerea García-Velasco, José María Lacave, Alberto Katsumiti, Eider Bilbao, Manu Soto, Amaia Orbea. COLLABORATIONS: Univ Bordeaux, Univ Algarve, Univ Salento, Univ Rome, Univ Naples, Univ Aarhus, NANOGAP, ACLIMA, IHOBE

Consolidación de los grupos de nanobiomecánica, teoría, nanomateriales y nanoimagen del CIC Nanogune y desarrollo de actividades de investigación y desarrollo tecnológico en el ámbito de la corrosión y la incrustación (NANOGUNE 2014)

The use of graphene nanomaterials, such as graphene oxide (GO) and reduced GO (rGO), is in exponential increase. Thus, graphene-based wastes are expected to end up in the marine environment. Here we used in vitro assays with mussel (Mytilus galloprovincialis) hemocytes to assess the potential toxic effects of GO and rGO to marine organisms. Nanomaterials were characterized by atomic force microscopy AFM. Hemocytes were exposed to a wide range of concentrations of GO and rGO (with and without polyvinylpyrrolidone-PVP as stabilizing agent) to assess cytotoxicity. Then, cells were exposed to sublethal concentrations to assess intracellular localization through transmission electron microscopy TEM and to evaluate their effects on plasma membrane integrity and reactive oxygen species (ROS) production. GO and rGO showed low and dose-dependent cytotoxicity, being rGO slightly more toxic than GO. PVP was not toxic to hemocytes but increased bioavailability of nanoplatelets.

GO and rGO nanoplatelets were found in the cytosol and in endolysosomal vesicles. Nanoplatelets produced invaginations and perforations of the plasma membrane, causing a decrease in membrane integrity. Both GO and rGO increased ROS production at the highest sublethal concentration. In conclusion, GO and rGO cause damage to hemocytes plasma membrane and their toxicity is ROS-mediated. Chemical reduction of GO increases its bioreactivity, likely due to restoration of the unique electronic structure of the carbon atoms at the zigzag edges of platelets after reduction. On the other hand, lixiviates obtained by stirring from test tubes painted with polymer containing 1% wt rGO did not provoke toxicity to mussel cells when tested at different dilutions. We also tested lixiviates obtained by the washability test ISO 11998:2006 (at 50.000 and 100.000 cycles) from PVC plates painted with a hybrid epoxy silicone resin with or without 0.25% graphene. At 50.000 cycles lixiviates from graphene containing resin was more toxic to mussel hemocytes than lixiviates from control resins whereas at 100.000 cycles both materials exerted toxicity to hemocytes. Overall, in vitro assays with mussel hemocytes are sensitive tools to detect toxic effects of graphene-based nanomaterials.

FUNDING BODY: Gobierno Vasco. Departamento de Industria, Proyectos de Investigación Estratégica ETORTEK, Área de Nanociencias. REFERENCE: IE14-393. DURATION: 1-1-2014/31-12-2015
PRINCIPAL RESEARCHER: José María Pitarke (CIC Nanogune)
BCTA group: Miren P. Cajaraville (IP), Alberto Katsumiti, Eider Bilbao
COLLABORATIONS: POLYMAT, NANOBASQUE, GAIKER-IK4, IK4-TEKNIKER, TECNALIA

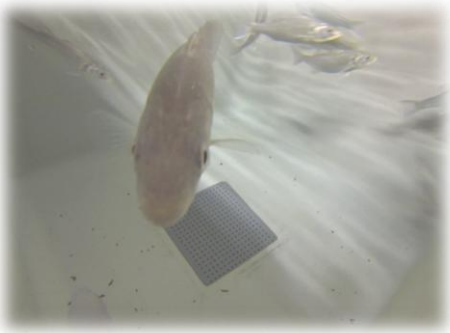


Application of biological warning systems to monitor fish welfare in aquaculture

Selenium is a naturally occurring metal, of relevance for human health and ecological risk assessments, whose effects vary according to the selenium compound and on whether it is present alone or in mixtures. As a consequence, Se is considered both, an environmental contaminant and a bioremediation agent, the latter particularly in cases of Hg and Cd poisoning. Organic Se compounds are used as an effective source of selenium in nutritional dietary supplements for "all animal species and categories" and the inorganic sodium selenite and sodium selenate (<0.5 mg/kg) are both authorized additives in feeds in Europe. Indeed, sodium selenite - Na_2SeO_3 (hereafter SS) has been shown by other authors to counteract MeHg toxicity in fish, but its use and optimal dose is still subject to some controversy. In humans for example, there is a very narrow range between the optimal daily ingestion of Se and a toxic dose, and the toxicity is dependent on the Se compound.

Our research group is developing early biological warning systems, using artificial vision to monitorize fish, intended for environmental monitoring and in aquaculture. Such a methodology should, optimally, be non-invasive, user-friendly, and inexpensive. Once implemented, its application might allow the early identification of a contamination and the initiation of a set of pre-established corrective actions to control it, thus contributing to ensure environmental protection, fish welfare and seafood safety. We have developed a tool for this purpose, based on the measurement of the Shannon entropy (hereafter SE) of the fish system that has proved useful to identify MeHg contaminated fish.

Given the interaction between Se and Hg (& Cd) and the uncertain role of Se alone, we decided to test the above-mentioned tool on a fish system exposed to SS for a short period of time. The effect of the exposure to SS on the SE of the fish system was important because: i) if exposure to SS did affect the SE value of the fish system, then the use of the monitoring tool to identify the presence of Hg or Cd in the system might be compromised; but ii) if, on the other hand, the SE of the system did not react to the presence of SS in the water, then the tool would be adequate to monitor Hg or Cd-toxicity but not a spillage of SS (and possibly also other Se compounds) at the conditions tested. The results indicate that exposure for 6 days to 10 µg/l SS did not seem to affect the protein expression, nor the degree of protein oxidation or ubiquitination in the muscle. Autometallography did not show differences between the groups either. However, the activity of the selenoenzyme thioredoxin reductase was, as expected, higher (albeit not significantly) in the Se-treated group than in the control. Supporting the biochemical results, the SE of the European seabass system was not apparently different from that of the control. In conclusion, the non-invasive estimation of the European seabass systems´ SE confirms the studies that indicate the lack of toxicity of the used level of Se dissolved in the water postulated by previous researchers and corroborated by the biochemical parameters examined in the fish. SE-based biological warning system fulfilled satisfactorily its role and may not be adequate to detect Se-spillages in the environment that do not have an effect on the fish.

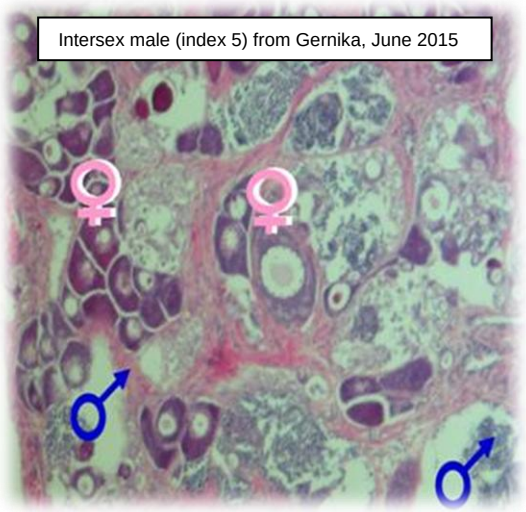


.- Ωcean biΩmics: bioprospección de microorganismos marinos en busca de fuentes alternativas de ácidos grasos omega-3. Elkartek, Basque Government. KK-2015/0000086 Coordinator: AZTI. IP: Iciar Martinez. Budget PiE: 49,910€. Total budget: 811,141€; UPV/EHU: 260,917€.

.- Minimización de la problemática del mercurio del atún y valorización del atún como alimento saludable. selatun. Spanish MINECO. Retos 2014. RTC-2014-2837-2. Coordinator (IP): Conservas Selectas de Galicia S.L. Budget 544.403€. Iciar Martinez: Leader for WP 3: Evaluation of the effects of tuna products in vitro and in alive animals. Effects on health. Budget for WP3: 86.793€

.- Biomarcadores estándar de base científica en mejillón, para diagnosticar y monitorizar los efectos biológicos de la polución en el golfo de bizkaia: implementación de la deme. BMW. MINECO. CTM2012-40203-C02-01. From 01.01.2013 to 31.12.2015. Budget: 180,000 €. Project leader: Ionan Marigomez..

Sex differentiation in fish: molecular markers of reproductive capacity in female fish (SEXOVUM)



Intersex male (index 5) from Gernika, June 2015

Studies carried out in thicklip grey mullets *Chelon labrosus* that it is used as pollution sentinel species in the Basque coast allowed identification of a series of novel oocyte molecular markers in 2010. During the project SEXOVUM it has been proved that oocytes in all teleost fish studied express high levels of genes involved in ribosomal assembly (5S rRNA, transcription factor IIIA responsible, 42sp43, importins, rpl5 and 11). The use of 5S rRNA to molecularly sex fish gonads has been patented; Spanish patent ES 2 398 811 and international patent PCT/ES2012/070343. As oocyte markers such transcripts are also very potent markers of intersex condition, where male fish develop oocytes in the testis as a consequence of environmental exposure to xenoestrogenic compounds. During 2015 we continued the sapling of different Basque estuaries (notably those of Pasaia, Gernika & Bilbao), constantly identifying intersex individuals with different intersex severity index, ranging from low (1) and moderate (2) to severe (index 5 in a scale of 7, (Rojo-Bartolomé et al, in prep a). During 2015, we have studied the expression pattern of several hypophisis-pituitary-gonadal axis genes coding for neuropeptides and hormones important in gametogenesis regulation, identifying disruption of the HPG-axis signaling (Valencia, 2016; Valencia et al., submitted; Valencia et al., in prep, and MScThesis Josu Andrieu). We have also in incorporating mullet tissue (liver and gonads) explants culture techniques to our toolbox in order to be able to prove the action of different xenohormones in gene expression and cell proliferation (Master Thesis of A. Torcello and of A. Workiye Worie). The levels of expression of 5S rRNA and TFIIIA can be used to identify the gametogenic stage in females, as 5S rRNA and TFIIIA transcription levels peak during previtellogenesis. An easily measurable 5S/18S rRNA index has been developed that allows identifying female reproductive stage in any fish species, just by running a total RNA electrophoresis (Rojo-Bartolomé et al., 2016). The index can also been used to identify the severity of the intersex condition in mullets exposed to xenoestrogens in a quantitative non-subjective way (Rojo-Bartolomé et al., in prep b). This index has multiple applications in fisheries research, fish stock management, aquaculture and environmental health monitoring. We have proved that TFIIIA gene has been duplicated in the genome of teleost fish, resulting in the presence of 2 paralog genes; TFIIIAa and Ab. We have proved that TFIIIAb one is exclusively expressed in ovary (oocytes) in zebrafish and tilapia and TFIIIAa in the rest of cell types. In zebrafish feminized through exposure to estradiol TFIIIAb is expressed as a consequence of oocyte generation, and not as a consequence of estradiol exposure. In zebrafish masculinized through exposure to methyl-testosterone no TFIIIAb expression could be detected. TFIIIAb expression is thus a consequence of oocyte differentiation and not the cause. This has been corroborated though the analysis of other sex markers such as the female exclusive cyp10a1 and the male exclusive amh (Rojo-Bartolmé et al, in prep c). We have been studying the usefulness of these molecular markers, more specifically of the 5S/18S rRNA index in the identification of the quality of spawned eggs in turbots. Turbot is an aquaculture relevant fish species, and we have fertilized independently the eggs of 10 reproducing females (stripped though hand massage) with the sperm obtained from a single male. The hatchability, survival and developmental characteristics of the resulting embryos and fries was monitored and correlations were established with the 5S/18S rRNA index originally measured. High 5S rRNA levels in spawned oocytes is highly and positively correlated with the survival of fry.

Identificación molecular del sexo, del estadio reproductor y de la fecundidad en peces de interés comercial: mecanismos, aplicaciones y explotación (SEXOVUM)" REF: AGL2012-33477 MINECO. 2013/2015. Ibon Cancio (IP), Maren Ortiz-Zarragoitia, Teresa Serrano, Mª Carmen Barbero, Cristina Bizarro, Josue Martos, Iratxe-Rojo-Bartolomé, Ainara Valencia, Guzman Diez (AZTI-Tecnalia). 93.600 €.

Highlights and productivity. Papers: 2 (Mar Drugs and PLOS One) + 2 sub (Gen. Comp. Endocrinol., Aquat. Toxicol.). In prep: 7. Science didactics: 1. Patents: 2. Nucleotide sequences published in databases: 16. Presentation in congresses: 26. Invited conferences: 7. Int. PhD thesis: 2 and 2 ongoing. MScr thesis: 7 (5 in "Environmental Contamination and Toxicology" and 2 in "Marine Environment and Resources")

Experimental Aquaria

The Experimental Aquaria is nowadays an essential infrastructure of the Plentzia Marine Station where a wide range of experiment can be performed with the highest quality required. All kind of experiments related to marine algae's, invertebrates or vertebrates can be carried out with the maximum healthcare for experimental individuals and operators. Indeed, the Station is partner of the EMBRC and fulfills the compromise with the ethics and animal healthcare in experimentation normative. Moreover, the facility is completely modular which allow a perfect design and the development of any experiment. Especially useful in toxicological experiment since the experimental aquaria unit is equipped with its own depuration plant organized in three depurations lines (organic material, hydrocarbons, metals) covering a huge ranges of contaminants that can be employed. Apart of that a specific filtration stations could be installed in specific experiments if it is required. The unit integrates a large dissection room and 10 different experimentation rooms. It is also in complete coordination with the field sampling unit and with the Environmental Specimen Bank and store unit for the management of the samples obtained. In the last year besides the mentioned infrastructure the experimentation unit had incorporated new and modern equipment that improves the **quality and control of sea water**. A marine water temperature control system based in **titanium plates interchanger**, has been installed to allow the regulation of temperature, in continuous for 12 m^3/h, of the incoming water between 14-22 ºC. Another important device is the advanced **water quality monitoring platform**. This platform is monitoring 24 h the input water with several sensors (pH, conductivity, salinity, oxygen, turbidity, chlorophyll levels) and a data logger is installed for the continuous registration. This platform has the capacity of detect baseline limits and send award notifications. For the maintenance and field sampling another extra identical platform is acquired and is available for the researchers. More than 45 experiments have been performed, including basic biology and toxicological experiments. Different species such as algae, mollusks, crustaceans and fish have been a matter of experimentation.

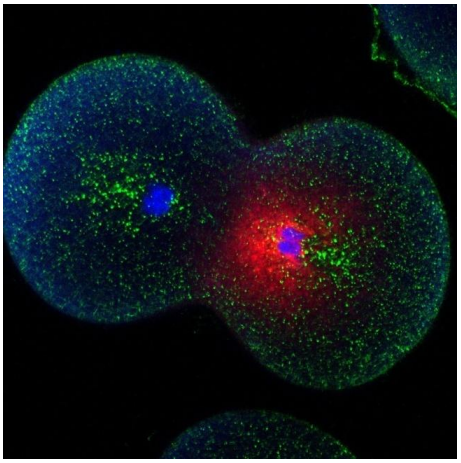
As an example of the researches carried out, it is remarkable the experiments performed by the *Cell Biology in Environmental Toxicology research group*, with a new promising sentinel species the flatfish, sole (*Solea* sp.). Flatfish are worldwide use and recognized as a sentinel species for the assessment of the ecosystem heath status. In our Coast there is no a flatfish as sentinel species complete established. With the aim to determine the suitability of *Solea senegalensis* as sentinel species, juveniles were exposed to organic and metallic model compounds for 21 d. Due to the big size of animals (more than 150 g) this experiment was carried out in tank of 600L. A total of 8 tanks were used for the different experimentation groups and water and contaminants were changed every two days. It is remarkable that is the biggest experiment ever carried out by this research group and also for the research centre. Samples for biochemistry, molecular biology, histology physiological analysis and chemistry were obtained in the dissection room and stores in the storage unit. The completion of experiments of this size and complexity could not be carried out without these experimentation aquaria and the biological responses observed in this kind of experiment are crucial for the correct understanding of the changes and responses observed in relation to the environmental health status in pollution monitoring programs.

To show the diversity of experiments that could be carried out; there is another example of a complex experiment performed with *Dicentrarchus labrax* sea bass by the *Analytical Chemistry research group*. Sea bass were exposed to a mixture of emergent contaminants in open flow system. The mixture of contaminants after it homogenization in a tank with passive samplers was continuously added to the tank of sea bass with a flow of 8 L/h during 21 days. The respective control sample was also used without the addition of contaminants. This experiment was designed to observed changes at chemical, metabolomical and bio/histochemical levels in the sea bass, which could help in understanding of the dynamics of emergent pollutants in the biota and consequently in the environment.

Other experiment employing *Dicentrarchus labrax* showed the wide use in toxicology that this animal could have. An experiment to analyse the behavior patterns of this animal to feed with different food contaminated to Hg was carried out. Under-water camera records were used to analyse the entropy of animal's movement to normal exposed and event situations. These assays are promising in the implementation of biological warning systems in aquaculture plants or environmental health status surveillance. It is also remarkable the continuous maintenance of a diversity of animals for experimentation such as the sea urchin. The sea urchin is very used species for embryological research, as well as for toxicological assays. Particularly there is a group involve in the research of cellular membranes using sea urchin embryos as a model for cancer research. Finally it is worth to mention that several researches has been performed with marine mollucs such experiments with periwinkles exposed to Cd, nanoparticle exposure experiments in mussels, or growth assessment of mussels at different natural conditions.

Responsible & Contact for experimental design assessment and use of experimental unit:
Dr. Urtzi Izagirre, urtzi.izagirre@ehu.eus

Use of echinoderms for the detailed understanding of the membrane fusion and dynamics



Banafshé Larijani is Head of Cell Biophysics Laboratory since 2002 at Cancer Research UK, was appointed Senior Scientist in 2012 and in 2014 was awarded an Ikerbasque Research Professorship where she moved her laboratory to the Research Centre for Experimental Marine Biology and Biotechnology (PiE-UPV/EHU) and the Biophysics Institute-Bilbao, Spain. She holds adjunct professorships with University of Bath (UK), University of Bristol, Stony Brooks University NY and University of Massachusetts, Amherst MA, USA.

Prof Larijani's laboratory is a cutting edge cross-disciplinary platform, which draws upon the physical sciences to develop novel avenues for investigation of biological processes in signaling both in marine model organisms and mammalian models. Her laboratory has led to paving a unique path by investigating the role of phosphoinositides and their metabolites, both as second messengers and as modulators of membrane morphology. The outcomes of her fundamental research involving the application of quantitative imaging (FRET-FLIM) for investigating molecular mechanisms of phosphoinositide-modifying and phosphoinositide-dependant enzymes have resulted in their application to various clinical objectives. Since 2002 she has more than published 90 primary research articles in the area of nuclear envelope biogenesis, lipid signalling and cancer biology and has over 2000 citations.

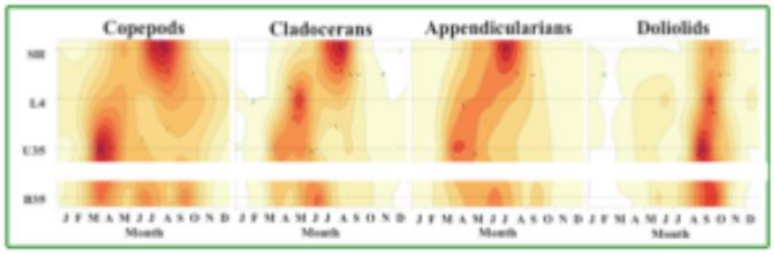
Banafshe Larijani, Regine Dazzoni (Co-tutelle PhD student with University of Bordeaux (Erick J Dufourc), Marta G. Lete (Post doctoral fellow with Alicia Alonso in Biofisica- UPV/EHU), Christopher Applebee (Consultant Engineer), Sonia López Fernández (Cell Biophysics Technical Staff with Biofisica), Kenton Arkill (Bizkaia Talent), James Miles (University of Bath Placement Student)

Achievements 2015:

1- Larijani Laboratory (Cell Biophysics) is an integrated part of Insituto Biofisika and Research Centre for Experimental Marine Biology and Biotechnology (PiE-UPV/EHU).
2. Created an official **student placement programme** between PiE-UPV/EHU/ Insituto Biofisika and Universities of Bath and Bristol (UK) - 8 new students with Erasmus grants will attend Inisituto Biofisika and PiE in Sept 2016 for one year placement in Dr. Larijani's laboratory as well as labs in PiE-UPV/EHU. The projects will be working on Membrane dynamics in early embryogenesis using sea urchins as model organisms. They will also work on Cancer Signalling related projects.
3- **FASTBASE SOLUTIONS** -now officially a diagnostic cancer company in The Basque Country. FASTBASE SOLUTIONS Ltd (http://www.fastbasesolutions.com) provides a fast and efficient platform technology to measure drug target function in various pathologies such as cancer, diseases related to ageing and inflammatory diseases. It was created The Limited Company was created on 24th November in Bilbao– NIF B95827903 with 8 shareholders.
4. Set-up of an **Online Course** (Introduction to Interdisciplinary Science) with the University of Massachusetts at Amherst USA and UPV/EHU- The course (NATSCI 590B) will commence September 5th 2016.
5. Organised the **Imaging session** for a joint conference in San Sebastian between U Bordeaux and UPV/EHU.

Plankton ecosystem responses to climate variability in relation to latitude and human eutrophication of coastal waters

There is scientific evidence that climate change is occurring, and that it entails a series of environmental risks at local to global scales that need an urgent response. Warming has been observed in all compartments of the biosphere, but it has been estimated that during the last 40 years 84% of the global warming has taken place in the oceans and coastal ecosystems, where warming and related environmental changes are having a significant effect on the plankton ecosystem, these being more evident in coastal than in oceanic zones. In one of the present projects, we are analyzing the effects of climate change on the plankton ecosystem, with emphasis on the zooplankton and the effect of temperature, both at the community level, and at the level of groups and key species, at different latitudes within the Northeast Atlantic Shelves Province, and under different levels of trophic state at the same latitude. To that purpose, we are usinge zooplankton abundance, chlorophyll a concentration and abiotic environmental data from time-series of the marine zones of the estuaries of Urdaibai and Bilbao (mesotrophic) (southeastern Bay of Biscay), of the L4 station, off Plymouth (English Channel), and of the Stonehaven station (North Sea), for the period 1999-2013. We are comparing the main components of zooplankton variability (i.e. seasonal, inter-annual and residual) of the main groups and key species of zooplankton, and their tendencies, discontinuities and phenological changes over the 15 years under study at the four study sites. This approach is useful to understand the range of climatederived changes in plankton ecosystems of the North Atlantic in the last decades as a function of latitude and eutrophication, which are little studied matters when the response of plankton to climate variations in coastal environments is analyzed. The specific objectives are (1) to compare the response of zooplankton communities, and key groups and species to climate changes in three sites that cover the entire latitudinal range within the Northeast Atlantic Shelves Province, (2) to determine if latitude can explain differences in the patterns and scales of plankton variability within the study region, and (3) to determine if human-eutrophication can explain differences in the patterns and scales of plankton variability within the same climate regime. The projects also aims to add value to the comparative studies of local time series and to generate synergies among research institutions to lead to more integrative approaches to the study of plankton responses to climate change, which should be promoted in order to make the most of the numerous on-going plankton series in the North Atlantic.



Variation of the standard annual cycle of some zooplankton taxa with latitude and trophic state.

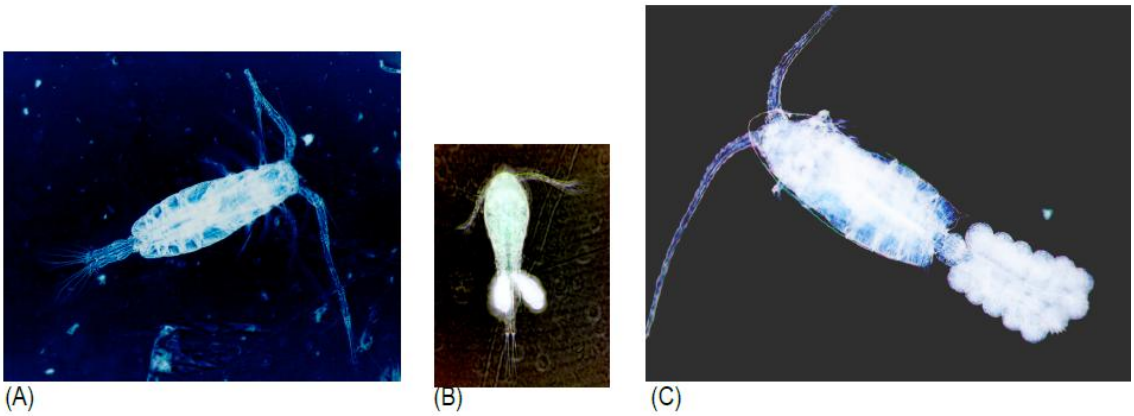
Doliodid

"Respuesta del zooplancton a las variaciones climáticas en la provincia de plataformas del noreste atlántico en relación a la latitud y la eutrofia" (CGL2013- 47607-R). MINECOR13/P31. 2014/2016. Funding: Ministerio Español de Economía y Competitividad. 163.350 €- Research Group: Fernando Villate, Ibon Uriarte, Arantza Iriarte and Alvaro Fanjul. Collaborations: Angus Atkinson (Plymouth Marine Laboratory, UK) and Kathryn Cook (Marine Scotland Science, Aberdeen, UK)

Impact of non-indigenous plankton species in estuaries

Biological invasions are a challenge for the conservation of biodiversity and natural resources, because they are one of the main sources of biodiversity loss and they can cause strong ecological and economic impact on ecosystems. When non-indigenous species become invasive, they can take the place of indigenous species, and perturb the community structure, food web properties, habitats and processes in the ecosystems. Biological invasions in marine ecosystems, and more evidently in estuaries, have increased in the last decades, due to the rapid growth of the maritime transport and commerce in the present-day globalized world., The scientific community has thus recognized the need to compile and share the information about non-indigenous species, and to promote research works aimed to assess the impact of non-indigenous species on indigenous ones, on biodiversity and ecosystem functions and resources. In fact, the Marine Strategy Framework Directive of the European Union considers nonindigenous marine species as a major threat for biodiversity and ecosystem health in Europe. The ongoing analysis of the zooplankton time series initiated in 1997 in the estuaries of Bilbao and Urdaibay has allowed to confirm the arrival and settlement of non-indigenous zooplankton species in the estuaries of the Basque coast over the last two decades, with the latest record for a non-indigenous species in the estuary of Bilbao in 2010, as reported in the following publication: Uriarte I, Villate F, Iriarte A. Zooplankton recolonization of the inner estuary of Bilbao: influence of pollution abatement, climate and non-indigenous species. Journal of Plankton Research, doi: 10.1093/plankt/fbv060 (2015).

The main goal in this line of research is to investigate more deeply into this topic (1) by assessing the impact of non-indigenous species of zooplankton on the biodiversity of zooplankton communities and ecosystem services in the estuaries of Bilbao and Urdaibai, which are representative of strongly and weakly human-perturbed estuaries respectively, and (2) by checking the presence and spread of nonindigenous zooplankton in all of the estuaries of the Basque coast. Results from these studies are makinga valuable contribution to the knowledge of the impact of non-indigenous species in European estuaries.



Non-indigenous species in the estuary of Bilbao: (A) Acartia tonsa, (B) Oithona davisae, (C) Pseudodiaptomus marinus

Project: “Bioindicación de cambios ambientales a largo plazo a partir del plancton (IT778-13)” CGL2013. 2013/2015.
Funding: Gobierno Vasco. 43.600 €
Research Group: Fernando Villate, Ibon Uriarte and Arantza Iriarte

Proyectos / *Ikerkuntz Proiektuak* / Research Projects

Grupo consolidado "A" BCTA (Biología Celular en Toxicología Ambiental).
Ayudas para apoyar las actividades de grupos de investigación del Sistema Universitario Vasco. Departamento de Educación, Política Lingüística y Cultura del Gobierno Vasco, convocatoria 2012. Referencia: IT810-13.
Investigador principal: Miren P. Cajaraville Bereziartua
Duración: 01-01-2013/31-12-2018 Importe: 491.998 €

Grupo Consolidado "A" IBeA (Investigación e Innovación Analítica).
Ayudas para apoyar las actividades de grupos de investigación del Sistema Universitario Vasco. Departamento de Educación, Política Lingüística y Cultura del Gobierno Vasco, convocatoria 2012. Referencia: IT742-13
Investigador principal: Juan Manuel Madariaga Mota
Duración: 01-01-2013/31-12-2018 Importe: 601.798 €

Grupos Consolidados: Ecología del fitoplancton de estuarios y aguas costeras
Departamento de Educación, Política Lingüística y Cultura del Gobierno Vasco, convocatoria 2012.
Entidades participantes: Dpto. Biología Vegetal y Ecología UPV/EHU
Investigador Principal: Emma Orive
Duración: 01-01-2013/31-12-2015 Importe: 40.000 €

Unidad de Formación e Investigación UFI "Protección de la Salud de los Ecosistemas".
Ayudas a las Unidades de Formación e Investigación en la UPV/EHU (UFI). Convocatoria del Vicerrectorado de Investigación de la UPV/EHU 2011. Referencia: UFI 11/37.
Coordinadora: Miren P. Cajaraville Bereziartua
Duración: 01-01-2011/31-12-2015 Importe: 49.467,63 €

Unidad de Formación e Investigación UFI "Global Change & Heritage"
Ayudas a las Unidades de Formación e Investigación en la UPV/EHU (UFI). Convocatoria del Vicerrectorado de Investigación de la UPV/EHU 2011. Referencia: UFI 11/XX.
Investigador Principal: Juan Manuel Madariaga
Duración: 01-01-2011/31-12-2014

Grupos de Investigación UPV-EHU. Plan Plurianual. 2014. Microbios Marinos. Universidad del País Vasco Ref. GIU 14/24.
Investigador Principal: Juan Iriberri.
Duración: 2015 – 2017 Importe: 52.000 €

Grupos de Investigación UPV-EHU. Plan Plurianual. Respuesta bacteriana al estrés Universidad del País Vasco Ref. GIU14/22).
Investigador Principal: Inés Arana
Duración: 2015 – 2017. Importe: 45.000 €

Protección de los ecosistemas costero y edáfico: efectos de los contaminantes sobre la salud de los ecosistemas y mecanismos de adaptación en un medio ambiente cambiante –PES ProPiE. Referencia: PES 10/01. Universidad del País Vasco/Euskal Herriko Unibertsitatea
Investigador principal: Ionan Marigómez Allende
Duración: 08-07-2010/08-07-2016 Importe: 132.278,37 €

Resistencia bacteriana al estrés (PES13/09).
Universidad del País Vasco. 2013-2016.
Investigador Principal: Inés Arana.

Continuación IMPRES: Impacto medioambiental de la marea negra procedente del hundimiento del buque petrolero Prestige en la costa vasca-PES IMPRES.
Universidad del País Vasco/Euskal Herriko Unibertsitatea
Referencia: PES 06/01
Investigador principal: Miren P. Cajaraville Bereziartua
Duración: 30-05-2010/30-05-2014 Importe: 123.146,97 €

Polar cod, lipid metabolism and disruption by polycyclic aromatic hydrocarbons (Polarisation).
Research Council of Norway. 2011 Call.
Referencia: 214184
Investigadora principal subproyecto UPV/EHU: Miren P. Cajaraville Bereziartua
Duración: 01-01-2012/31-12-2015 Importe: 12.000.000 NOK

Assessing and improving the quality of aquatic animal gametes to enhance aquatic resources – The need to harmonize and standardize evolving methodologies, and improve transfer from academia to industry-AQUAGAMETE"
Investigador principal: Juan F. Asturiano
Investigador principal: BCTA: Ibon Cancio y Maren Ortiz Zarragoitia
European Cooperation in Science and Technology COST, EU RTD Framework Programme
Referencia: COST Action FA1205.
Duración: 2012/2016 Importe: becas movilidad, estancias

Mecanismos de acción y toxicidad de nanopartículas de plata en organismos modelo acuáticos y terrestres utilizando técnicas ómicas-NANOSILVEROMICS.
Ministerio de Economía y Competitividad. Plan Nacional de I+D+I 2008-2011, Proyectos de Investigación Fundamental no orientada. Programa Materiales, Nanociencia y Nanotecnología.
Referencia: MAT2012-39372
Investigador principal: Miren P. Cajaraville Bereziartua.
Duración: 01-01-2013/31-12-2015 Importe: 52650 €

The transfer of engineered NanoMaterials (ENMs) from wastewater treatment and stormwater to rivers-ENTER
IP: Lars Duester (Federal Institute of Hydrology, Koblenz).
Investigador Principal: BCTA: Miren P Cajaraville
European Cooperation in Science and Technology COST, EU RTD Framework Programme
Referencia: COST Action ES1205.
Duración: 05-04-2013/04-04-2017 Importe: becas movilidad, estancias

Biomarcadores estándar de base científica en mejillón, para diagnosticar y monitorizar los efectos biológicos de la polución en el G. de Bizkaia: implementación de la DEME- BMW.
Ministerio de Economía y Competitividad. Plan Nacional de I+D+I 2008-2011, Proyectos de Investigación Fundamental no orientada. Programa Ciencias y Tecnologías Marinas (CTM-MAR)
Referencia: CTM2012-40203-C02-01
Investigador principal: Ionan Marigómez Allende
Duración: 1-01-2013/ 31-12-2015 Importe: 180.000 €
Influencia de la temperatura en el ciclo de vida del género Vibrio en los sistemas acuáticos. CGL2011-26252.
Ministerio de Ciencia e Innovación.
Investigador principal: Inés Arana.
Duración 2011-2015. Importe: 68.244,00 €.

Estudio del estado ecológico del entorno de la descarga en Punta Lucero. Campaña 2015.
José María Gorostiaga. IP
Investigador principa BCTA: Manu Soto.
Contrato con la empresa Petronor. Nº de Contrato C2002/0165.

Duración: 2015 Importe Total: 29.082 € (BCTA: 8.395,88 €).

Identificación molecular del sexo, del estadio reproductor y de la fecundidad en peces de interés comercial: Mecanismos, aplicaciones y explotación- SEXOVUM. Referencia: AGL2012-33477
Ministerio de Economía y Competitividad. Plan Nacional de I+D+I 2008-2011, Proyectos de Investigación Fundamental no orientada. Programa Acuicultura y Pesca (AGL-ACU)
Investigador principal: Ibon Cancio
Duración: 1-01-2013/ 31-12-2015 Importe: 80.000 €

Consolidación de los grupos de nanobiomecánica, teoría, nanomateriales y nanoimagen del CIC Nanogune y desarrollo de actividades de investigación y desarrollo tecnológico en el ámbito de la corrosión y la incrustación (NANOGUNE 2014)
IP: José María Pitarke (CIC-Nanogune). IP BCTA: Miren P. Cajaraville.
Gobierno Vasco. Departamento de Industria, Proyectos de Investigación Estratégica ETORTEK, Área de Nanociencias. Referencia: IE14-393.
Duración: 1-1-2014/31-12-2015 Importe: 2.503,2 € (subproy BCTA-UPV/EHU)

Minimización de la problemática del mercurio del atún y valorización del atún como alimento saludable. SELATUN
Spanish Ministry of Economy and Competitivy. Programa Retos-Colaboración 2014. Reference: RTC-2014-2837-2. Coordinator (IP): Conservas Selectas de Galicia S.L. Total budget 544.403€.
Iciar Martinez: Leader for WP 3: Evaluation of the effects of tuna products in vitro and in alive animals. Effects on health. Budget for WP3: 86.793€.

Tissue distribution and biological effects of microplastics in marine mussels (PLASTinMUSS)
Investigador Principal: Ionan Marigómez
Swedish Museum of Natural History (SMNH), Department of Environmental Research and Monitoring.
Duración: 04-12-2014/03-12-2015 Importe: 75.000 €

European Marine Biology Resource Centre preparatory phase 2-pp2-EMBRC. REF: INFRADEV -2-201515/01.
Entidad financiadora: EU-H2020 (H2020-INFRADEV -2-201515/01)
Investigador principal UPV/EHU, Ibon Cancio, Co-ordinador A. Canario (CCMAR, University of Algarve)
Duración: 01/10/2015-30/09/2016 Importe: 71.000 € (UPV/EHU); Total: 980.00 €

Direct and indirect ecotoxicological impacts of microplastics on marine organisms-PLASTOX"
IP. Andy Booth (SINTEF, Trondheim).
Investigador Principal: BCTA: Amaia Orbea.
EU JPI Oceans MarinERA Call on "Ecological aspects of microplastics in the marine environment". Referencia: PLASTOX.
Duración: 01-01-2016/31-12-2018 Importe: In-kind contribution

Integrated oil spill response actions and environmental effects. Project reference: 679266-H2020-EU.3.2.
Entidad financiadora: BG-07-2015 - Response capacities to oil spills and marine pollutions, H2020-BG-2015-2
Investigador principal UPV/EHU, Ionan Marigómez, Co-ordinador: Kirsten Jorgenesen (SYKE, Finland).
Duración: 2016/03/01 – 2019/08/31 Importe: 340.000 € (UPV/EHU); Total: 5.513.252,5 €

Spatio-temporal regulation and activation dynamics of oncoproteins in a 3D environment. Project reference: BFU2015-65625-P.
Entidad financiadora: MINECO Projects of Excellence.
Investigador Principal: Banafshe Larijani.

Duración: 2016-2019. Importe118.000 €

Bioprospección de microorganismos marinos en busca de fuentes alternativas de ácidos grasos Omega-3 (Ωcean BiΩmics)
Entidad financiadora: GV. Programa Elkartek
Investigador Principal: Laura Alonso (AZTI). Participantes: AZTI-TECNALIA, PIE-UPV/EHU (IP. Iciar Martínez), U Biofisica UPV/EHU y Aquarium SS.
Duración: 2015-2016. Importe100.000 €

Estudio de la toxicidad derivada de la deposición de fangos de depuradora en suelos del vertedero 17 (Gernika-Lumo): efectos biológicos en flora y fauna
Ayuntamiento de Gernika
Investigador Principal: Manu Soto
Duración2015 Importe: 30.000 €

Implementación de la infraestructura de investigación europea European Marine Biological Resources Centre-EMBRC en la estación marina de Plentzia.
IP: Ibon Cancio
Referencia: PIE EMBRC DFB15/01
Diputación Foral de Bizkaia (DFB)
Duración: 1-1-2015/31-12-2016 Importe: 227.000 €.

Toxic action of molluscicides: the effect of formulation 2015.
IP: Beñat Zaldibar
Referencia: 2015.0550.
De Sangosse
Duración: 01/11/2015-15/04/2016 Importe: 26.000 €

Ciclo hidrológico y viento superficial en la Península Ibérica. Predicción de lluvia y corriente superficial en zonas costeras del Golfo de Bizkaia", MINECO CGL2013-45198-C2-1R
Partners: UPV/EHU and AZTI.
Research Group: Jon Sáenz, PI, members of EOLO UPV/EHU group and researchers from AZTI.
January 2014-December 2016. Importe: 52.030 €

Investigacion Colaborativa en Energias Renovables Marinas (ICERMAR-I)", ELKARTEK 2015-KK-2015/00097
Partners: UPV/EHU in the frame of a consortium led by Tecnalia
Research Group: Mikel Lezaun (PI), Jon Sáenz, Gabriel Ibarra-Berastegi and Ganix Esnaola. Other members of EOLO UPV/EHU group and researchers from TECNALIA and partners
January 2015-December 2016 . Importe: 36873€ (2015)+ 39216€ (2016)=76089 €

Ayudas a infraestructuras y equipamiento científico-técnico, correspondientes al Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia, en el marco del Plan Estatal de Investigación Científica y Técnica y de Innovación- CENTRO DE INVESTIGACION EN BIOLOGIA Y BIOTECNOLOGIA MARINAS EXPERIMENTALES –PLENTZIAKO ITSAS ESTAZIOA (PIE-UPV/EHU) 2013-2016. Reference: UNPV13-4E-1785.
Investigador principal: Ionan Marigómez Importe: 1.400.000 € (50% Feder, 50% Contrato Programa)

Convocatoria de Adquisición y Renovación de Infraestructura Científica y Fondos Bibliográficos de la UPV/EHU (2015). Unidad de ultracentrifugacion diferencial para tratamiento de muestras biologicas y quimicas.
Investigador principal: Manu Soto.
Duración: 2015 Importe: 56.984,79 €.

Biological monitoring of the port of Bilbao.
Bilbao Port Authority.
Investigador principal: José María Gorostiaga Gara
Duración: 1994 - 2016 . Importe: 2015: 47.631,06 €.

Estudio del estado ecológico de la zona costera próxima a la EDAR de Galindo. Campaña Bentos de sustrato duro 2015.
Azti-Tecnalia
Investigador principal: José María Gorostiaga Garai.
Duración: 2015 Importe: 55.745,73 €

Evaluation and monitoring of the ecological status of benthic communities in the immediate surroundings of the Barna S.A. (Mundaka) effluent.
Barna S.A. -6.
Investigador principal: José María Gorostiaga Garai.
Duración: 2012 – 2016 Importe: 2015: 5.000 €

Study of the ecological state of the coastal environments close to Gorliz, Bakio, Lekeitio and Ondarroa Wastewater Treatment Plants. Hard substrate benthos.
Investigador principal: José María Gorostiaga Garai.
AZTI-Tecnalia.
Duración: 2013 - 2016 Importe: 69.568,82 €

Profundización en el estudio del género Prymnesium (Haptophyta), con especial referencia a su carácter tóxico
Entidad financiadora: UPV/EHU
Investigador Principal: Sergio Seoane
Duración: 11/2015 -11/2017 Importe: 2880 €

Análisis del Fitoplancton del estuario del Nervión y zona costera próxima a las EDAR de Gorliz, Bakio, Lekeitio y Ondarroa. Campana 2014
Entidad financiadora: Fundación AZTI
Investigador Principal: Aitor Laza Martínez
Duración : 13/06/2014 - 30/04/2015 Importe: 10186 €

Análisis de Fitoplancton en los estuarios y en la zona costera del País Vasco durante el 2014
Entidad financiadora: Fundación AZTI
Investigador Principal: Aitor Laza Martínez
Duración 13/06/2014 - 31/03/2015 Importe: 21656 €

Análisis del Fitoplancton del estuario del Nervión y zona costera próxima a las EDAR de Gorliz, Bakio, Lekeitio y Ondarroa. Campaña 2015
Entidad financiadora: Fundación AZTI
Investigador Principal: Aitor Laza Martínez
Duración 14/01/2015- 30/04/2016 Importe: 10227 €

Análisis de Fitoplancton en estuarios y en la zona costera del País Vasco durante 2015
Entidad financiadora: Fundación AZTI
Investigador Principal: Aitor Laza Martínez
Duración 12/06/2015 - 31/03/2016 Importe: 21699 €

Análisis del fitoplancton en muestras tomadas en la zona de Mendexa entre noviembre de 2014 y junio de 2015
Entidad financiadora: Fundación AZTI
Investigador Principal: Aitor Laza Martínez

Duración: 1/07/2015 - 15/12/2015 Importe: 4144 €

Análisis del fitoplancton en 6 muestras del Abra de Bilbao
Entidad financiadora: Fundación AZTI
Investigador Principal: Aitor Laza Martínez
Duración 29/09/2015 - 1/12/2015 Importe: 995 €

Respuesta del zooplancton a las variaciones climáticas en la provincia de plataformas del noreste atlántico en relación a la latitud y la eutrofia (CGL2013- 47607-R)
Entidad financiadora: Ministerio Español de Economía y Competitividad. MINECOR13/P31
Investigador principal: Fernando Villate
Duración: 01/01/2014 - 31/12/2016 Importe: 163.350 €

Bioindicación de cambios ambientales a largo plazo a partir del plancton (IT778-13)
Entidad financiadora: Gobierno Vasco. Referencia: GIC12/03
Investigador principal: Fernando Villate
Duración: 01/01/2013 - 31/12/2015 Importe: 43.600 €

Análisis del zooplancton en cuatro muestras del Abra de Bilbao
Entidad financiadora: AZTI-Tecnalia. Referencia: TR40572
Investigador principal: Ibon Uriarte
Duración: 01/08/2015 - 31/12/2015 Importe: 1.497,55 €

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66. ZIARRUSTA, H., OLIVARES, M., DELGADO, A., POSADA-URETA, O., ZULOAGA, O., ETXEBARRIA, N. 2015. Multiscreening determination of organic pollutants in molluscs using matrix solid phase dispersion. JOURNAL OF CHROMATOGRAPHY A, 1391 (1): 18-30.

67. ZULOAGA, O., OLIVARES, M., NAVARRO, P., VALLEJO, A., PRIETO, A. 2015. Dispersive liquid-liquid microextraction: Trends in the analysis of biological samples. BIOANALYSIS, 7 (17): 2211-2225.

PhD Grants 2015

1. **Endika Gil Uriarte**
   Gobierno Vasco
   Supervisores: Ionan Marigómez, Manu Soto.
   Duración: 2015/2018

2. **Ainara Valencia**
   Gobierno Vasco
   Supervisor: Ibon Cancio
   Duración: 2015/2018

3. **Regine Dazzoni**
   Co-Tutelle U Bordeaux- UPV/EHU
   Supervisora: Banafshe Larijani
   Duración: 2015/2018

Conferencias / *Hitzaldiak* / Conferences

CANCIO I. REPRODUCTIVE ENDOCRINE DISRUPTION IN THE BASQUE COAST AND NETWORKING THROUGH EMBRC" Universidad de Helsinki en (Finlandia). 19 Marzo.

CANCIO I. "EMBRC: AN EUROPEAN RESEARCH INFRASTRUCTURE TO SUSTAIN MARINE BLUE BIOTECHNOLOGY" Ibon Cancio. Curso RIMER en el Máster Internacional (UPV/EHU, Universidades de Lieja, Southampton y Burdeos) Erasmus Mundus "Marine Environment and Resources" Plentzia 25-06-2015.

CANCIO I. "EMBRC A EUROPEAN RESEARCH INFRASTRUCTURE FOR THE SUSTAINABLE USE OF MARINE BIOLOGICAL RESOURCES IN PiE-UPV/EHU" Ibon Cancio. Curso INCyTA en el Máster Oficial del UPV/EHU "Contaminación y Toxicología Ambientales" Plentzia 19-10-2015.

CANCIO I. "EMBRC (EUROPEAN MARINE BIOLOGICAL RESOURCE CENTRE)" Antonio Villanueva e Ibon Cancio, Mesa redonda: "Casos de éxito de participación en el Programa de Infraestructuras", Madrid, sede central de MINECO: (24-11-2015). Jornadas informativas para la presentación del nuevo programa de proyectos H2020 sobre infraestructuras científicas.

LARIJANI B. University of Bordeaux Joint Symposium-Organiser and Speaker. Biochemical Society Meeting- Edinburgh - Invited Speaker. University of Bristol- Seminar Speaker. University of Cardiff- Seminar Speaker. University of Bath- Seminar Speaker. Biophysical Society Meeting -Madrid - Invited Speaker. Kropf Symposium Amherst College Amherst- Plenary Speaker. University of Miguel Hernandez, Institute of Molecular and Cell Biology- Elche- Seminar Speaker. University of Bordeaux - Seminar Speaker

MARIGOMEZ I. "SALUD DEL OCÉANO Y BIENESTAR: DOS CARAS DE LA MISMA MONEDA" Ionan Marigómez. Se presentó EMBRC en la ceremonia pública de incorporación como amigo de número de la "Real Sociedad Vascongada de Amigos del País", dentro de la lección de ingreso. La lección que debía ser impartida en Noviembre de 2015, finalmente se retrasó por motivos de salud al 7 de Marzo de 2016, en Juntas Generales de Bizkaia, Hurtado de Amezaga 6, Bilbao.

SOTO M. He acabado Biociencias…¿y ahora qué?. Facultad de Ciencia y Tecnología. UPV&/EHU. Jornadas de Inserción Laboral (COBE). 15 Octubre 2015.

SOTO M. Cell Biology in Environmental Toxicology. Thematic Session: OCEANS. Bordeaux-Euskampus Symposium. 26 November 2015. San Sebastián.

SOTO M. Main Conclusions of Thematic Session: OCEANS. Bordeaux-Euskampus Symposium. 27 November 2015. San Sebastián. Plenary Session

SOTO M. Microplásticos en el océano. OCEAN INITIATIVES 2015 - UNA INICIATIVA MEDIOAMBIENTAL CIUDADANA SOBRE LA CONTAMINACIÓN POR BASURAS MARINAS. COBE, SURFRIDER, Torremadariaga, PiE-UPVEHU. ZTF-FCT. 11 Marzo 2015.

SOTO M. El problema de la contaminación por las basuras marinas. Encuentro Surfrider – Ayto. Orereta "Charlando sobre buenos hábitos y soluciones en la lucha frente las basuras marinas". 19 septiembre 2015. MIKELAZULO KULTUR ELKARTEA.

SOTO M. New highlights for soil health assessment using earthworms: in vitro and molecular tools. INCyTA – Master CTA. Estación Marina de Plentzia (PiE-UPV/EHU). Octubre 2015.

VILLATE F. "ANTHROPOGENIC IMPACT IN THE ZOOPLANCTON OF THE BILBAO ESTUARY: 30 YEARS OF STUDY" Fernando Villate. Curso INCyTA en el Máster Oficial del UPV/EHU "Contaminación y Toxicología Ambientales" Plentzia 19-10-2015.

Infraestructuras / Azpiegiturak / Equipment

Equipamiento Científico Estratégico

Las instalaciones del PiE-UPV/EHU se dotaron para su arranque con el equipamiento básico para aquellos laboratorios e instalaciones experimentales de mayor urgencia. A pesar del esfuerzo realizado se requería de una nueva dotación de Instrumentación general y auxiliar de laboratorio y accesorios para completar la dotación básica del centro y adquirir material relevante y/o singular para poder desarrollar el plan Estratégico del PiE-UPV/EHU.

Así, se consiguió con éxito financiación en dos convocatorias. En primer lugar se consiguió financiación en la Convocatoria de Ayudas a infraestructuras y equipamiento científico-técnico, correspondientes al Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia, en el marco del Plan Estatal de Investigación Científica y Técnica y de Innovación. Como esta ayuda confinancia el 50% de lo solicitado, la UPV/EHU con cargo al Contrato Programa y fondos propios logró un aportación superior a los 700.000 €. En segundo lugar se consiguió financiación a cargo de la Convocatoria de Adquisición y Renovación de Infraestructura Científica y Fondos Bibliográficos de la UPV/EHU (2015). Esta segunda ayuda sirvió para complemntar el 50% de la ayuda del MINECO. El valor del total de equipamiento adquirido fue de aproximadamente 1.400.000 €. A continuación se resumen el equipamiento más relevante adquirido:

BIOBANCO

- **CONGELADORES Y SISTEMAS DE FRIO.** Adquisición de Congeladores -20ºC, - 40ºC, Ultracongeladores -80ºC, neveras y arcones y sistema para transporte. Instalación de un sistema de control automatizado del Nivel de Nitrógeno líquido en la sala criogénica del Banco de Especímenes, extracción de aire forzado y sensores de seguridad
- **ARMARIOS Y ARCHIVADORES PARA EL ALMACENAMIENTO DE MUESTRAS HISTOLOGICAS** Archivadores para casetes histologicos (>1.300), Archivos Móviles para biopsias y otro tipo de muestras biológicas.

SISTEMAS DE MICROSCOPIA AVANZADA Y ADQUISICION DE IMAGENES DE ALTA RESOLUCION

- Microscopios de campo claro con accesorios de dibujo y análisis de imagen
- Microscopio de Luz Polarizada.
- Microscopio invertido con fluorescencia y cámara de alta resolución.
- Escáner compacto de alto rendimiento para la digitalización en alta resolución de preparaciones histológicas y su envio a un sistema de almacenamiento masivo (EHUstorage).

INSTALACIÓN DE UN SISTEMA DE CONDUCCIONES DE NITRÓGENO GAS

Abastecimento a la futura instalación de la plataforma metabolómca y otros equipamientos

UNIDAD DE ULTRACENTRIFUGACION DIFERENCIAL PARA TRATAMIENTO DE MUESTRAS BIOLOGICAS Y QUIMICAS

- Centrífuga preparativa (refrigerada, control de temperatura desde -10 a 40ºC), 4500 rpm.
- Ultracentrífuga refrigerada. Velocidad máxima hasta 90.000 ppmara tubos de 10-15 ml y otro para tubos de 25-30 ml.
- Varias centrífugas de sobremesa, refrigeradas, citospin, etc.

SISTEMAS EXPERIMENTACION ACUAROLOGICA

- **SISTEMA DE CONTROL DE TEMPERATURA DE AGUA DE MAR MEDIANTE UN INTERCAMBIADOR DE PLACAS DE TITANIO.** Conexión al sistema de captación de agua marina del PiE. Trabajo en continuo (caudal máximo de 12m3/h), Temperaturas de trabajo 16 ±2ºC.

- **SISTEMA DE AUTOMATIZACION Y MONITORIZACION DE MESOSCOSMOS Y SIST ACUARIOLOGICOS.** Este sistema es necesario para la medida de nivel, ph, potencial redox, conductividad, temperatura, oxigeno disuelto, turbidez, algas totales (clorofila + ficoeritrina), fdom y parámetros asociados a estas medidas.
- **VEHICULO DE APOYO A MUESTREOS DE CAMPO**
- **ZODIAC con REMOLQUE.** Embarcación semirígida de 4.5 m.
- **SISTEMAS DE DOSIFICACION**. Dosificadores monocanal, multicanal y bombas peristálticas

LECTOR DE MICROPLACAS MULTIMODO (ABSORBANCIA, FLUORESCENCIA, LUMINISCENCIA) INTEGRADO CON UN SISTEMA DE ADQUISICIÓN DE IMÁGENES MEDIANTE MICROSCOPIA.

- Absorbancia: por monocromador, 230-990 nm (en incrementos de 1 nm)
- Fluorescencia: por monocromador. Sensibilidad en lectura top: 2.5 pM fluoresceína (0.25 fmol/pocillo en placas de 384 pocillos). Sensibilidad en lectura bottom: 4 pM fluoresceína (0.4 fmol/pocillo en placas de 384 pocillos). Rango dinámico: 7 décadas.
- Luminiscencia: por monocromador. Sensibilidad: 20 amol ATP. Rango dinámico: 6 décadas.

SISTEMA DE MICRODISECCIÓN LASER PARA SECCIONES DE TEJIDO Y CELULAS EN CULTIVO.
El equipo realiza microdisección de cortes histológicos, captura pequeñas regiones o incluso células o partes de células aisladas mediante laser de estado sólido (UV, IR). Microscopio binocular, campo claro, iluminación estandar LED para microdisección de rutina, sistema de control de contraste e iluminación automatizada, objetivos (2-4x, 10x, 20x, 40x, 60x), sistema de revolver automático, autoenfoque y autoiluminación de campo, recogida de muestras automatizada y con capacidad para varios portas y soporte para placas Petri o para frames de cultivo. Sistema de control para la verificación de la muestra recogida.

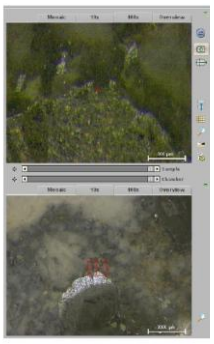
MICROESPECTÓMETRO DE FLUORESCENCIA DE RAYOS X

PEQUEÑO EQUIPAMIENTO
Bloques térmicos, agitadores (vibrador, termo, placas), (mini)bombas de vacío, conductimetro digital, sistemas de filtracion, *commet assay electrophoresis system*, electroporadores y homogeneizadores, termostatos, ultrasonidos, bombas de perfusion, estufas, hornos, incubadores, phmetros, dosificadores, etc.

EXPERIMENTACION ACUÁTICA EN SALA DE SEGURIDAD BIOLOGICA
Se ha complemnetado la sala de seguridad biológica (Nivel de Contención 3), que alberga la zona de experimentación con patógenos de animales acuçaticos, con un autoclave de doble puerta.

.- Ayudas a infraestructuras y equipamiento científico-técnico, correspondientes al Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia, en el marco del Plan Estatal de Investigación Científica y Técnica y de Innovación- CENTRO DE INVESTIGACION EN BIOLOGIA Y BIOTECNOLOGIA MARINAS EXPERIMENTALES –PLENTZIAKO ITSAS ESTAZIOA (PIE-UPV/EHU) 2013-2016. Reference: UNPV13-4E-1785. IP: Ionan Marigómez.

.- Convocatoria de Adquisición y Renovación de Infraestructura Científica y Fondos Bibliográficos de la UPV/EHU (2015). Unidad de ultracentrifugacion diferencial para tratamiento de muestras biologicas y quimicas. 56.984,79 €. IP. Manu Soto.





Actividades Docentes / *Irakaskuntz Jarduerak* / Teaching Activities

Doctorate

PhD Dissertations
On Going PhDs
Doctoral Program CTA (Mención hacia la Excelencia)
Doctoral Program MER (Mención hacia la Excelencia)
Workshop and conferences for PhD candidates in *Environmental Sustainability Inguru-Dok* 2015

Masters

Master MER (MDC, ERASMUS-MUNDUS). Master Thesis - MER (30 ECTS)
Master CTA (MDC) Master Thesis - CTA (20 ECTS)

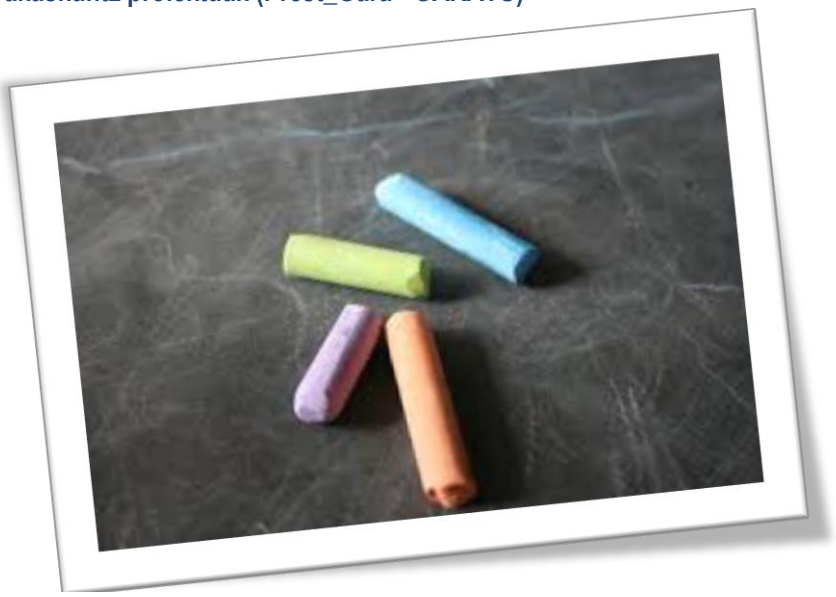
University Projection

Master Internships
Research placements
Undergraduate Internships
Compulsory practicals (FP)

International posgraduate courses

Seminars

Irakaskuntz proiektuak (Prest_Gara - GARATU)



Doctorate

PhD Dissertations

PhD Candidate	SUPERVISOR	DATE	TITTLE
Cristina Bizarro	Maren Ortiz-Zarragoitia	15/03/2015	Intersex, xenoestrogenicity and multiorgan metabolic disruption in fish following exposure to environmental mixtures of emerging pollutants
Jon Lopez	Gala Moreno, Laurent Dagorn	15/04/2015	Behaviour of tuna and non-tuna species at fish aggregating devices (FADs), ascertained through fishers' echo-sounder buoys: implications for conservation and management
Nagore Cuevas	Izaskun Zorita, Joana Larreta	30/10/2015	Integrated assessment of environmental pollution using diverse sentinel organisms within Basque marine environments

Ongoing PhDs

NAME	ENTITY	START	FINISH	TUTOR
Harkaitz Eguiraun	UPV/EHU	2013	2016	Iciar Martinez
Oihane Erdaide	DFB ZABALDUZ	2013	2017	Iciar Martinez
Ane Rementeria	CO-TUTELLE UPV/EHU-UBX	2013	2016	Beñat Zaldibar & Jörg Schaffer
Cristina Bizarro	UPV/EHU	2012	2015	Maren Ortiz
Javier Aguirre	UPV/EHU	2012	2016	Ionan Marigómez
Tifanie Briaudeau	UPV/EHU	2014	2017	Ionan Marigómez & Urtzi Izagirre
Nerea Durodier	UPV/EHU	2014	2017	Miren P. Cajaraville & Eider Bilbao
Esther Blanco	UPV/EHU	2014	2017	Ionan Marigómez & Urtzi Izagirre
Endika Gil Uriarte	UPV/EHU	2015	2018	Manu Soto & Ionan Marigómez
Nerea García-Velasco	UPV/EHU	2014	2017	Manu Soto
Reginne Dazzoni	CO-TUTELLE UPV/EHU-UBX	2015	2018	Banafshe Larijani
Joana Hevia	UPV/EHU	2014	2017	Emma Orive, Aitor Laza
Lander Intxausti	UPV/EHU	2003	2016	Fernando Villate & Lorenzo Motos
Álvaro Fanjul	UPV/EHU	2014	2017	Fernando Villate & Arantza Iriarte

WORKSHOP AND CONFERENCES FOR PHD CANDIDATES IN ENVIRONMENTAL SUSTAINABILITY *INGURU-DOK* 2015

Contaminación y Toxicología Ambientales/Environmental Contamination and Toxicology (CTA)
Medio Ambiente y Recursos Marinos (MER)
Estrategias científicas interdisciplinarias en Patrimonio y Paisaje (ECIPP)

	**Angel DEL VALLS** **February 5** Universidad de Cádiz. Environmental Quality in Marine Sediments
	**Mikel BECERRO** **February 5** CSIC, CBM, Blanes. "Biodiversity Challenges out of the Blue"
	**Jesús M ARRIETA** **February 6** CSIC, IMEDEA, Baleares. "Microbial Diversity in the Ocean"
	**Felipe CRIADO BOADO** **October 1** Director del Instituto de Ciencias del Patrimonio INCIPIT-CSIC, Santiago de Compostela, y Presidente de la Asociación Europea de Arqueología
	**Jone OMAR** **May 22** **May 25** Joint Research Centre, Institute of Reference Materials and Measurements Scientific/Technical Project Officer *World Café on Feed Additive* *Food nanomaterials*
	**Luisa CARVALHO** **November 24** Universidad Nova de Lisboa, Directora del Grupo de Investigación en Patrimonio y Medio Ambiente

Masters

Master Thesis - MER (30 ECTS)- September 2015

Student	Supervisor	Tittle
Teba Gil	Jörg Schäfer	Spatio-temporal distribution and behaviour of antimony in the Gironde Estuary: a preliminary approach to regional nuclear accident scenarios
Mine Tekman	Melanie Bergmann	Increase of marine litter at two stations of the Arctic deep-sea observatory Hausgarten
Gulce Kurtay	Shannon L. Meseck	Differences on phyoplankton community responses to acidification and nutrient input'
Sitti Whoallia Annu Noor	Angel Borja, Marina Chifflet	Some hydrological characteristics of the Nervion estuary (Northern Spain) using MOHID-water modelling system
Nelly Brugerolle de Fraissinette	Thomas Goreau, Denis Schneider	Settlement, maintenance and monitoring of Biorock reefs in Bora Bora (French Polynesia): Focus on the comparison of healing and growth of coral colonies from diverse species and origins
Marcela Uchoa	C O'Connell, Tom Goreau	The effects of weak direct current electric fields on 3 species of sharks
Cassandre Aimon	Rick Bruintjes, Maurizio Urbina	Behavioural and physiological impacts of anthropogenic noise vibrations of two marine invertebrates, *Mytilus edulis* and *Carcinus maenas*
Nikola Matovic	Ana Sanz Aguilar, Daniel Oro de Rivas	Modeling the relationship between European storm petrel survival and environmental factors
Manon Auguste	Maria Bebianno	Ecotoxicological risk assessment (accumulation of metals and biomarkers responses) using the hydrothermal vent shrimp *Rimicaris exoculata*, *in situ* and after copper exposure
Assefa Workiyie Worie *	Ibon Cancio	In vitro culture of gonad explants in thicklip grey mullet (Chelon labrosus) in different gametogenic stages; a tool for the assessment of the effects of reproductive Endocrine Disrupting Chemicals
Katarina Giamalaki	Stephanie Henson	Effects of sparse sampling on determining long-term trend of global chlorophyll
Caroline Jacques	Judith Hauck, Christoph Völker.	Comparing Chl:C ratios of diatoms and nanophytoplankton in eight different ecosystem models (MAREMIP, CMIP)
Beatriz Recinos	Ursula Schauer	Upper Arctic Ocean velocity structure from in-situ observations
Ricardo Kiyoshi Sepulveda Hirose	Manuel Gonzalez-Rivero	Drivers of lionfish spatial distribution in shallow fore-reef environments in the Caribbean
Liu Gang *	Jon Saenz, Ganix Esnaola	Analysis of sea surface salinity over northern Atlantic
Pauline Guilloteau	Robert Poulin	Impact of ocean acidification on multiplication and caste organization of parasitic trematodes in their marine gastropod hosts
Fouzia Haider	Inna Sokolova	Mitochondrial response to pH and bicarbonate in marine mollusks
Tamer Hafez *	Fernando Villate, Maren Ortiz-Zarragoitia	Assessment of the Sex Ratio Oscillations in Two Populations of Acartia clausi and Acartia tonsa and Responses to a Model Xenoestrogenic Compound.
Marina Arregui	Yara Bernaldo Quirós	Concentration of myoglobin in different functional muscles groups of stranded marine mammals
Liam Dickson	Tristan Guttridge, Samuel Gruber	Does spatial distribution of lemon sharks (*Negaprion brevirostris*) in the wild correlate with temperament in semi-captivity?
Jacob Bishop	Marc Rius	The effects of relatedness and developmental temperature across the life history stages of a marine invertebrate.
Axelle Amstutz	Marc Rius	Early life-history stages competition of two native solitary ascidians *Ciona intestinalis* and *Ascidiella aspersa*
Clement Benoit	Jean Francois Marailhac	Restoration plan in Padre Burgos, Philippines
Anna Maria Frouws	Mark Huxham	The impact of seagrass canopy removal on infaunal macrobenthic communities.
Shahinur Islam	Dylan Fraser	A test of genetic adaptation to captivity in diet after one generation
Ahmed Alrefaey	Jonathan McQuillan	Development of isothermal nucleic acid amplification assay for toxicity studies on harmful algae
Christian Fischer	Craig Stevens	BiOscillator - Approach and Experimental Methodology for a novel Type of Wave Energy Converter.
Veronica Relaño	Craig Stevens	BiOscillator - Biological and Regulatory Issues for a novel Type of Wave Energy Converter.

** Realizadas en el PiE (todo o parte),*
PiEn eginda (partzialki edo osorik,
Carried out in PiE (total or partial)

Masters

Master Thesis - CTA (20 ECTS)- September 2015

Student	Supervisor	Tittle
Inmaculada Fuertes	Maria Elizalde, Sonia Gomez	Analysis of perfluoroalkyl substances (PFASs) in landfill leachate by HPLC-MS/MS
Pablo Espina	Maria Elizalde	Influence of temperature in the migration of Bisphenol A, Benzophenone and Phenylbezophenone from recycled cardboard to a food simulant
Soraya Salinas	Irantzu Martinez	Mineral characterization and leaching processes of beachrock outcrops located in Getxo (Biscay)
Lorea Rivera	Ainara Gredilla, Silvia Fernandez Ortiz De Vallejuelo	Determination of background values and contamination assessment for trace metals in a sediment core from Lake Redo (Central Pyrenees): the evidence of human impact in a remote mountain lake
Iker Marcaida	Maite Maguregui	Portable SERS analysis assisted with additional techniques to characterize the ancient recipe used to prepare Pompeian pink and purple lake pigments
Iratxe Zarandona	Nestor Etxebarria, Aresatz Usobiaga	MiniVAPR lurrungailu eramangarriaren toxikotasun-azterketa
Gorka Lorenzo*	Eider Bilbao	Interspecifical comparison of responsiveness in five teleost fish exposed in vivo to 17α-ethinylestradiol
Ignacio Martinez*	Amaia Orbea	Evaluacion de la toxicidad aguda y reproductiva de las nanoparticulas de plata en el crustaceo Artemia
Sergio Torres*	Iciar Martínez, Nestor Etxebarria	Elemental fingerprinting in mussel (Mytilus galloprovincialis) shells as a tool for origin identification
Edurne Huerga*	Urtzi Izagirre, Izaskun Zorita	Histopathological alterations in liver and gills of Solea senegalensis exposed to contaminated sediments
Josu Andrieu*	Maren Ortiz-Zarragoitia, Ibon Cancio	Brain transcriptional profiles of neuroendocrine genes relevant in the control of gametogenesis during the reproductive cycle of thicklip grey mullets (Chelon labrosus) of Pasaia harbour
Alberto Torcello*	Maren Ortiz-Zarragoitia	Development of a methodology based on mullet liver-explant cultures to assess the effects of xenoestrogens

** Realizadas en el PiE (todo o parte),*
PiEn eginda (partzialki edo osorik,
Carried out in PiE (total or partial)

University Projection

Master Internships

NAME	MASTER	PERIOD		TITTLE	TUTOR
Doan Thi Que	MER	May- September	300 h	Algal cultivation, maintaining mussels, histopathology.	Manu Soto, Endika Gil
Alizée Lopez	MER	March June	100 h	Geochronology	Nestor Etxebarria
Svetlana Vasic	MER	May June	100 h	Microalgae	Sergio Seoane, Aitor Laza

Research Placements

NAME	ENTITY	PERIOD	TUTOR
Ariadna Szczybelski	Univ. Wageningen	May - September	Manu Soto, Eider Bilbao
Michael Niederwanger	Univ. Innsbruck	October - November	Manu Soto, Urtzi Izagirre
Maria Bighiu	Unni. Stockholm	April - May	Larraitz Garmendia

Undergraduate Internships

NAME	DEGREE	PERIOD		TUTOR
Ines Martin	UPV/EHU Biotechnology	December – January	150 h	Manu Soto
Idoia Meaza	UPV/EHU Biology	July - September	150 h	Urtzi Izagirre
Irati Ranero	UPV/EHU Biology	July - September	150 h	Urtzi Izagirre
Marina de Diego	UPV/EHU Biology	July - September	150 h	Beñat Zaldibar
Leire Aparicio	UPV/EHU Biology	July - September	150 h	Urtzi Izagirre, Beñat Zaldibar
Lorea Velasco	UPV/EHU Biology	July- August	150 h	Beñat Zaldibar
Izaskun Marcos	UPV/EHU Biology	July -August	150 h	Maren Ortiz
Adrian García	UPV/EHU Biology	July - August	150 h	Urtzi Izagirre
Xabier Davila	Univ. Vigo. Biology	June - July	150 h	Manu Soto, Urtzi Izagirre

Compulsory Practicals (FP)

NAME	ENTITY	START	FINISH	H	TUTOR
Alexander Colina	IEFPS Elorrieta	25/02/2015	20/05/2015	364 h	Urtzi Izagirre
Carmen Corraleche	IEFPS Elorrieta	25/02/2015	20/05/2015	364 h	Urtzi Izagirre
Irati García	IEFPS Tartanga	06/03/2015	26/05/2015	385 h	Miren P. Cajaraville
Iker Nuño	IEFPS Somorrostro	09/03/2015	03/06/2015	364 h	Manu Soto
Amaia Padilla	BHI Mutriku	05/03/2015	22/05/2015	365 h	Urtzi Izagirre
Endika Mota	BHI Mutriku	05/03/2015	22/05/2015	365 h	Urtzi Izagirre

International Posgraduate Courses

RESEARCH in MARINE ENVIRONMENT &RESOURCES (RiMER)

FEBRUARY (2-6) San Sebastian - Aquarium

GLOBAL CLIMATE CRISIS (PAST CLIMATE)

Vicente Zaragueta (Aquarium SS-FOG), Adolfo Uriarte (AZTI-Tecnalia), Manu Soto (Univ. Basque Country), Ionan Marigómez (MER Consortium), M Collins (Bizkaia Xede, PIE-UPV/EHU), Amalia Martínez de Murgia (Aqurium SS), Maria Fernanda Sánchez-Goñi (Univ. Bordeaux 1), Thierry Correge (Univ. Bordeaux).

GLOBAL CLIMATE CRISIS (TODAYS'S STATUS)

Thierry Correge (Univ. Bordeaux), Guillem Chust (AZTI-Tecnalia), Vladimir Kaberdin (Ikerbasque, UPV/EHU) J Sáenz (Univ. Basque Country), I Galarraga (BC3, Basque Country) .

MARINE RESOURCES AND FISHERIES

Jean-Christophe Pereau (Univ Bordeaux), Unai Cotano (AZTI-Tecnalia), Andrés Uriarte (AZTI-Tecnalia), Hilario Murua (AZTI-Tecnalia), Alberto Ansuategi (Univ. Basque Country).

BIODIVERSITY CONSERVATION & MANAGEMENT

Emma Orive (Univ. Basque Country), María C Uyarra (AZTI-Tecnalia), Xavier de Montaudouin (Univ. Bordeaux), A Borja (AZTI-Tecnalia), Antoine Gremare (Univ. Bordeaux).

BIODIVERSITY CONSERVATION & MANAGEMENT

A Del Valls (Univ. Cadiz), Mikel Becerro (CSIC Tenerife), Ibone Ametzaga (Univ. Basque Country), Jesús María Arrieta (IMEDEA-CSIC),

JUNE (22-26) PiE-UPV/EHU

COASTAL MANAGEMENT

Ionan Marigómez (PiE-UPV/EHU; MER Consortium), Manu Soto (PiE-UPV/EHU), Adolfo Uriarte (AZTI-Tecnalia), Regina Asariotis (United Nations Conference on Trade and Development, UNCTAD, Geneve), Iñigo Losada (Univ. Cantabria, Santander), Aldo Sottolichio (Univ. Bordeaux), Ibon Galparsoro (AZTI-Tecnalia, Pasaia), Thomas Goreau (Global Coral Reef Alliance, Jamaica).

COASTAL AND SEDIMENT DYNAMICS

Mike Collins (Bizkaia Xede, PiE-UPV/EHU), Adonis F Velegrakis (U Aegean, Greece), Alex Bastos (U F Espírito Santo, Vitoria, Brazil), Jörg Schafer (Univ. Bordeaux), Regina Asariotis (United Nations Conference on Trade and Development, UNCTAD, Geneve.

MARINE ECOSYSTEM HEALTH

Nestor Etxebarria (PiE-UPV/EHU), Miren P Cajaraville (PiE-UPV/EHU), Ibon Cancio (PiE-UPV/EHU), Mikel Becerro (CSIC, Blanes), Mathieu Poulicek (Univ Liége).

MARINE BIOTECHNOLOGY & BLUE GROWTH

Ionan Marigomez (PiE-UPV/EHU), Fernando de la Calle (I+D Pharmamar, Madrid), Aitor Cayero (Albia CP, Bilbao), Ibon Cancio (PiE-UPV/EHU), Banafshe Larijani (Ikerbasque, UPV/EHU-CSIC).

A SEA OF PROBLEMS AND HOPES

Eduardo Angulo (PiE-UPV/EHU), Mike Collins (Bizkaia Xede, PiE-UPV/EHU)

INVESTIGACIÓN en CONTAMINACIÓN y TOXICOLOGÍA AMBIENTALES (INCyTA)

19-27 OCTOBER 2015. PiE-UPV/EHU

ENVIRONMENT POLLUTION AND HEALTH

Ionan Marigómez (UPV/EHU), Iciar Martínez (Ikerbasque-PIE-UPV/EHU), Maren Ortiz-Zarragoitia (UPV/EHU), bon Cancio (UPV/EHU)

POLLUTED SOILS

Beñat Zaldibar (UPV/EHU), Ane Zabaleta (UPV/EHU), Manu Soto (UPV/EHU), Luis Angel Fernandez Cuadrado (UPV/EHU), Txema Becerril (UPV/EHU), Carlos Garbisu (NEIKER)

CHEMICALS EVERYWHERE IN A CHEMICAL WORLD

Asier Vallejo, (UPV/EHU), Nestor Etxebarria (UPV/EHU), Fernando Benito-López. (UPV/EHU), Miren P. Cajaraville (UPV/EHU), Amaia Orbea (UPV/EHU).

POLLUTED WATERSHEDS

Miren Bego Urrutia (UPV/EHU), Alberto de Diego (UPV/EHU), Iñaki Saiz Salinas (UPV/EHU), Fernando Villate (UPV/EHU), Emma Orive (UPV/EHU), Juan Manuel Madariaga (UPV/EHU), Iñaki Susaeta (IHOBE)

HISTOLOGY AND HISTOPATHOLOGY OF AQUATIC ANIMALS (HHAA)

PiE-UPV/EHU

APRIL 24th FRIDAY: INTRODUCTORY REMARKS AND MOLLUSC HISTOLOGY

09:30-10:20; "Introduction to comparative histology of aquatic animals." M. Soto
10:30-11:20; "Introduction to comparative histology of aquatic animals." (cont.) M Soto
11:40-12:30; "Introduction to comparative histology of aquatic animals." (cont.) M Soto
12:40-13:30; "Normal histology of molluscs." I. Marigómez
15:00-16:00; "Normal histology of molluscs." (cont.) I Marigómez
16:20-18:00; "Practical session 1: Microscopical observation of molluscan tissues." M Soto & U Izagirre

APRIL 27th MONDAY: MOLLUSC HISTOPATHOLOGY

09:30-10:20; "Biopathology and histopathology: basic concepts." I Marigómez
10:30-11:20; "General histopathology of molluscs." A. Villalba
11:40-12:30; "General histopathology of molluscs." (cont.) A. Villalba
12:40-13:30; "General histopathology of molluscs." (cont.) I. Villalba
15:00-16:00;"Toxicopathology in molluscs." MP Cajaraville
16:20-18:00; "Practical session 2: Microscopical observations on general molluscan histopathology."
A. Villalba & MP Cajaraville

APRIL 28th TUESDAY: MOLLUSC HISTOPATHOLOGY & FISH HISTOLOGY

09:30-10:20; "Neoplastic lesions in molluscs" A. Villalba
10:30-11:20; "Natural variability and temporal trends in histopathological lesions in molluscs." I Marigómez
11:40-12:30; "General normal histology of fishes." M Soto
12:40-13:30; "General normal histology of fishes." (cont.) M Soto
15:00-16:00; "Practical session 3: Microscopical observations on general molluscan histopathology (cont.) and identification of neoplastic lesions." A. Villalba
16:20-18:00; "Practical session 4:" Microscopical observation of fish tissues." M Soto & S Feist

APRIL 29th WEDNESDAY: FISH HISTOPATHOLOGY

09:30-10:20; "Introduction of general histopathology in fish." S Feist
10:30-11:20; "Introduction of general histopathology in fish." (cont.) S Feist
11:40-12:30; "Mechanisms of chemical carcinogenesis in fish liver." MP Cajaraville
12:40-13:30; "Carcinogenic lesions in fish." S Feist
15:00-16:00; "Quantitative fish and shellfish histopathology." I Marigómez
16:20-18:00; "Practical session 5: Microscopical observations on fish histopathology." S Feist & M Soto

APRIL 30th THURSDAY: MOLLUSC AND FISH HISTOPATHOLOGY IN ECOSYSTEM HEALTH ASSESSMENT

09:30-10:20; "Fish and bivalve pathology in relation to pollution: quality assurance." S Feist
10:30-11:20; "Histopathology in marine ecosystem health assessment: Mussel Watch and Fish Disease Monitoring programmes. " I Marigómez
11:40-13:30; "Practical session 6:" Navigating through the web searching databases and images on histopathology of aquatic animals." M Soto

ADVANCED SEMINARS IN ENVIRONMENTAL ETHICS AND ETHICAL PERSPECTIVES OF CLIMATE CHANGE

PiE-UPV/EHU

JUNE 16-20TH 2015

HEYD, Thomas
Prof. Environmental Ethics
Dept Philosophy
University of Victoria, Canada

PiE MBB SEMINARS – 2015

Dominic L. POCCIA

March 17

Amherst College, MA (USA)

Cell Biology of Gametes and Embryos: Insights from Marine Invertebrates

Oreina ORRANTIA

May 8

AMBAR. www.ambarcetaceos.com

Stranded cetaceans in the Biscay Bay Coast.

David PÉREZ-PASCUAL

May 26

Institut Micalis, Combac team. Institut Nationale de la Recherche Agronomique (INRA). Jouy en Josas, France

Peptide-based conversations in pathogenic bacteria for social behaviour

Roberto ALVARO

May 28

MAREFONDUM. http://www.marefondum.com/

Scientific diving

Thomas HEYD

June 6.

Prof. Environmental Ethics Dept Philosophy, University of Victoria, Canada

Multicultural Perspectives On Ethics And Environment

Evan P GALLAGHER

July 2

UW Superfund ReS Prog Depf Environ & Occ Health Sci, Un Washington.

"Mechanisms and biomarkers of metal olfactory injury in fish"

Antonio VILLALBA

April 28

Xunta Galicia

Neoplastic lesions in molluscs

Stephen W FEIST

April 29

CEFAS (Weymouth, UK)

Carcinogenic lesions in fish

IRAKASKUNTZ PROIEKTUAK (Irakasleen prestakuntza)

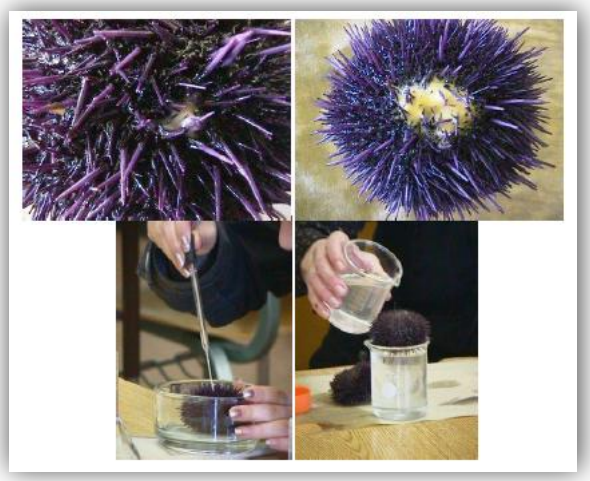
Unibertsitateaz kanpoko irakasleen etengabeko prestakuntzarako 2014-2017 aldirako Prest Gara Planaren barruan lehentasuneko jardun-ildotzat jo da, honexegatik: irakasleen prestakuntza eta eguneratzea funtsezkoa bada hezkuntza-sisteman berrikuntza eta hobekuntza eragiteko. halere, etengabeko prestakuntza irakasle guztien eskubidea eta betebeharra da, baita, ondorioz, hezkuntza-administrazioen, hezkuntza-komunitatearen eta ikasleei kalitatezko hezkuntza eskaini nahi dieten profesionalen erantzukizuna. PiEko instalazioetan 2014/15 ikasturtean zehar "Zientzia Ikasgelan: Zelulen Zatiketa, Ernalketa eta Kutsadura" izeneko proiektua gauzatu da Eider Bilbao irakaslearen gidaritzapean eta Beñat Zaldibar, Urtzi Izagirre, Maren Ortiz-Zarragoitia eta Manu Sotoren laguntzarekin.

Zientzia Ikasgelan: Zelulen Zatiketa, Ernalketa eta Kutsadura

Plentziako Itsas Estazioak helburu gisa dituen ildoen artean formazioa egonik, arreta berezia eskaintzen diegu lehenengo eta bigarren hezkuntzan egun diharduten irakasleei. Hori dela eta, aurreko ikasturteetako ildoa jarraituz, Eusko Jaurlaritzako Hezkuntza, Hizkuntza Politika eta Kultura Sailak ateratzen duen PREST-GARA deialdian 30 h-tako ikastaro bat eskaini dugu 2015/2016 ikasturtean ere.

2015eko urrian hasi eta 2016ko maiatzean amaituta, bigarren hezkuntzako zientzietako 9 irakaslek,"zientzia ikasgelan: zelulen zatiketa, ernalketa eta kutsadura" izeneko ikastaroan hartu dute parte. Ikastaro honek helburu ezberdinak ditu:

(1) ikaslea ikerketa zientifikora hurbiltzea, horretarako laborategian burututako esperientzia praktikoa gauzatuz, hasieratik amaierara,
(2) Zelulen zatiketa mota ezberdinetan sakontzea,
(3) Itsas-trikuen morfologia eta biologia ezagutzea,
(4) luparen eta eremu argiko argi mikroskopioaren erabilpenean trebatzea,
(5) Itsas-trikuaren oozito eta espermatozoideen morfologia ezagutzea,
(6) Ernalketa-saiakera in vitro egitea,
(7) Itsas-trikuaren ernalketaren fase ezberdinak eta enbrioien garapenaren lehenengo urratsak bereizten ikastea,
(8) Gure bizitzan ohikoak diren sustantzia ezberdinek eta inguruneko baldintzek, lixiba/xaboien isurketek eta tenperaturak esaterako, itsas-trikuen enbrioien garapenean eragin ditzaketen malformazioak aztertzea, eta
(9) Emaitzen interpretazioa, antolaketa, aurkezpena eta eztabaidarako gaitasunak lantzea.



Helburuok betetzeko, ikastaroa hiru atal nagusitan banatu da: lehenengo atalean (2015eko urriak 1 eta 2), zelulen zatiketaren gainean sakontze ariketa bat burutu da, mitosia eta meiosia ezberdinduz eta organismo ezberdinetan ematen diren adibideak behatuz mikroskopioan. Bigarren atalean (2016ko maiatzak 2, 3, 4 eta 5), besteak beste, itsas-trikuen morfologia eta biologia ezagutuko dira eta laborategiko baldintzetan oozito eta espermatozoideak ezagutu eta isolatu ondoren, ernalketa in vitro burutuko da. Lortutako enbrioien garapenaren jarraipena burutuko da, malformazio ezberdinak eragin ditzaketen baldintzak esperimentalki ezarriz. Azkenik, hirugarren atalean, parte-hartzaileek burututako ikerketa lanaren gaineko aurkezpena prestatuko dute (9 h ez presentzial), ikaskideen aurrean aurkezteko (maiatzak 20).

Proiektua: "Zientzia ikasgelan: Zelulen zatiketa, ernalketa eta kutsadura". PREST-GARA deialdia.
Taldea: Eider Bilbao (arduraduna), Beñat Zaldibar, Urtzi Izagirre, Maren Ortiz-Zarragoitia, Manu Soto.

Otras actividades / *Bestelako jarduerak* / Other Activities

JORNADAS DE ACUACULTURA.
PiE-UPV/EHU & Colegio Oficlal de Biólogos de Esuskadi.

27 de noviembre de 2015

- **Inauguración de las Jornada**. *Manu Soto* (PIE-UPV/EHU)
- **"Intentsitate baxuko Korronte Zuzenaren erabilera itsas ornogabeen hazkuntza bizkortzeko "**, *Endika Gil* (EHU).
- **"Utilización de subproductos alimentarios en dietas para lenguado"**, *Iñigo Goitia* (AZTI).
- **"Pentsuen erabilera metabolikoa aztertzeko indikatzileen ikerketa mihi-arrainean"**, *Nagore Guerra* (AZTI)
- **"Acuaponía, hacia una acuicultura sostenible"**, *Beatríz Díaz* (BREEN)
- **"Nuevos retos y avances en la nutrición de lenguado de cultivo "**, *Leire Arantzamendi* (AZTI).
- **"Seguridad Alimentaria en Acuicultura "**, *Amaia de Ariño* (ELIKA)
- **"Akuakultura eskolatik hausnarketa"**, *Imanol Garate* (IES Mutriku BHI)

Ocean Initiatives

21 Marzo

Actividad realizada en colaboración con Surfrider Foundation, Colegio de Biólogos de Euskadi y Torremadariaga – Centro de Biodiversidad de Euskadi

Programa de Surfrider Fundation que tiene como objetivo reducir las basuras marinas desde el origen. Mediante actividades de recogida de residuos en playas, lagos, ríos y fondos marinos, el programa persigue un cambio en la sociedad a través de una campaña educativa. La información recabada durante las actividades permite realizar un balance general, a fin de mejorar el marco legislativo europeo.

Dia de puertas abiertas / Ate Irekien Eguna / Open Day

20 junio

En colaboración con la Oficina de Turismo de PLENTZIA, ha organizado la Jornada de Puertas Abiertas. Los alumnos del Master MER e investigadores de la estación realizaron visitas guiadas a las instalaciones del centro (acuarios experimentales, mesocosmos, laboratorios de investigación y docencia, etc.) y se dió información de los proyectos de investigación que se realizan en el centro. Las visitas se realizaron entre las 10:00 y las 14:30 en inglés, castellano y euskera en colaboración con la Oficina de Turismo de PLENTZIA.

Itsas Jardunaldiak

20 junio

Los alumnos del Master ERASMUS MUNDUS *Marine Environment and Resources,* impartido en el PiE, han organizado unas *Jornadas Marinas* en las que participan diferentes entidades y asociaciones que colaboran con el PiE mostraron sus actividades de difusión y concienciación ambiental en relación a los Océanos (Marefondum, Ambar, Surfrider Foundation, LSEB).

Ocean Sampling Day

21 junio

Organización del Día del Muestreo Marino-**Ocean Sampling Day**, coincidiendo con el Solsticio de verano el 21 de Junio de 2015 y en el marco del proyecto europeo MicroB3, recogiendo una muestra de agua para análisis metagenómico en Armintza (junto con toras 190 muestras de agua en diferentes puntos del planeta).

Noche de las Perseidas

12 Agosto

En colaboración con Itxartu Taldea (Plentzia)

Kantauri meeting 2015

30-31 Octubre.

Colaboración en el Kantauri meeting 2015 organizado por Marefondum

el mar al alcance de tod@s

CMD LA BOLSA - C/Pelota 10, (PALACIO YOHN - Casco Viejo) BILBAO

www.marefondum.com

Viernes 30 de octubre

18:00 - 19:30 LA CARTOGRAFÍA DE LOS FONDOS MARINOS: DESVELANDO SUS SECRETOS Y APLICACIONES A LA GESTIÓN INTEGRADA
Dr. Ibon Galparsoro. INVESTIGADOR PRINCIPAL DEL ÁREA DE GESTIÓN AMBIENTAL DE MARES Y COSTAS. UNIDAD DE INVESTIGACIÓN MARINA AZTI

Sábado 31 de octubre

12:00 - 13:30 BUCEO CON TIBURONES E INMOVILIDAD TÓNICA
Karlos Simón. DIRECTOR DE BUCEO HISPANIA Y EXPERTO EN TIBURONES
Teresa Migoya. BIÓLOGA MARINA Y EXPERTA EN TIBURONES

13:30 Clausura y cierre

NOTA: Los títulos de las ponencias y los horarios de las mismas quedan sujetos a la aprobación y disponibilidad definitiva de los ponentes.

Organiza: Marefondum | Colaboran: Karlos Simón, azti, Oceanográfica, Universidad del País Vasco Euskal Herriko Unibertsitatea, PiE Plentziako Itsas Estazioa Estación Marina de Plentzia, hidria, Bolueta | Diseño: TARTE www.tartestudio.com

Taller: Formación en Varamientos de Cetáceos

7-8 Noviembre

Taller de formación para voluntarios de AMBAR

Organizan: AMBAR, PiE-UPV/EHU, CEMMA

ACTIVIDADES EN COLABORACIÓN CON EL AYUNTAMIENTO DE PLENTZIA

CONFERENCIAS

13 Agosto. Javier Quevedo. *Modelo estandar tridimensional del todo. Paradoja del Universo*.

23 Octubre. Sabino Laucirica. *Los balleneros vizcaínos del S.XVI y en concreto sobre la relación de Plentzia y Placentia*

23 Octubre. Aimar Arizmendi. *Detalles de la expedición que se desarrollará en barco en 2017.*

CONCIERTO

3 Diciembre. Euskararen Eguna.

Visitantes / *Bisitariak* /Visitors

NAME	INSTITUTION	PERIOD	ACTION
1. Mikel Becerro	CSIC, Blanes	1. September (1 week)	RiMER
		2. February (1 week)	PiE Zabalduz
2. Jörg Schaffer	Univ. Bordeaux 1	3. February 2015 (1 week)	MER Mundus - selection
		4. June 2015(1 week)	RiMER
			JPB meeting
		5. September 2015 (1 week)	JPB meeting & External evaluator MER MSc
3. Mathieu Poulicek	Univ. Liege	6. February 2015 (1 week)	MER Mundus - selection
		7. September 2015 (1 week)	JPB meeting & External evaluator MER MSc
4. Iñigo Losada	Univ. Cantabria	8. June 2015(2 d)	RiMER
5. Adonis F Velegrakis	U Aegean, Greece	9. June 2015 (1 week)	RiMER
6. Regina Asariotis	United Nations Conference on Trade and Development, UNCTAD, Geneve	10. June 2015 (1 week)	RiMER
7. Aldo Sottolichio	Univ. Bordeaux 1	11. June 2015 (1 week)	RiMER
8. Alex Bastos	U F Espírito Santo, Brazil	12. June 2015 (1 week)	RiMER
9. Thomas Heyd	University of Victoria, Canada	13. June 2015 (1 week)	MER Int Posgraduate Course
10. Olivier Donard	French ESB & U Pau	14. May 2015 (1 week)	Research collaboration
11. Thomas Goreau	Global Coral Reef Alliance, Jamaica	15. June-july 2015 (4 week)	RiMER
			Research collaboration
12. Fernando de la Calle	Pharmamar, Madrid	16. June 2015(1 week)	RiMER
13. Stephen Feist	CEFAS, Weymouth, UK	17. March 2015(1 week)	Histol & Histopathol
14. Antonio Villalba	Cimar, Galicia	18. April 2015 (1 week)	Histol & Histopathol
15. Aitor Cayero	Albia, Bilbao	19. June 2015 (2 days)	RiMER
16. Chema Navas	INIA, Madrid	20. June2015 (1 week)	Reproduction course
			PiE Zabalduz
17. Jackie Ward	SOTON	21. February 2015 (1 week)	MER Mundus - selection
18. Yngvar Olsen	Univ. Tromso	22. September 2014 - March 2015 (5 months)	Sabattical Research
			External evaluator MER MsC
19. Thierry Correge	Univ. Bordeaux 1	23. February (1 week)	RiMER
20. Maria F. Sanchez-Goñi	Univ. Bordeaux 1	24. February (1 week)	RiMER
21. Evan P. Gallagher	University of Washington.	25. July (1 week)	Seminars
22. Angel del Valls	U. Cadiz	26. February 2015 (1 week)	Rimer & MER Mundus - selection
		27. June 2015(1 week)	RiMER
			JPB meeting - External Advisor
		28. September 2015 (1 week)	JPB meeting & External evaluator MER MsC
23. Andrew Desbois	Univ. Stirling	29. September 2015 (1 week)	External evaluator MER MsC
24. Dominic L. Poccia	Amherst College, MA (USA)	30. March 2015 (1 week)	Seminars

Universidad del País Vasco | Euskal Herriko Unibertsitatea

PiE Plentziako Itsas Estazioa Estación Marina de Plentzia