## MASTER THESIS OFFER (2011-2012) MER

| TITLE | DESCRIPTION (5-10 lines) | SUPERV. (Name; Contact e-mail) | LOCATION (Res Grp; Lab, Dept, Inst, City) | FUNDING (if available) | REQUISITES / NAME (if needed /if agreed) |
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| Environmental health assessment of the Oka estuary using cell and tissue level biomarkers. | The present work is integrated within the OKAMET project (UNESCO p09/23). The project is mainly focused in the evaluation of the health status of the Oka estuary within the Urdaibai Reserve of the Biosphere. Presently, the Master Thesis work is focused in the study of the health status of the oysters inhabiting the estuary based on histo(patho)logical approach and determination of the metal binding metallothionein-levels. | Beñat Zaldibar. (benat. zaldibar @ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs (OKAMET UNESCO p09/23) | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Description of aging in thicklip grey mullet (Chelon labrosus) using otoliths. | The aim of the present research work is the description of growth in thicklip grey mullet (Chelon labrosus) using otolith growth as endpoint. Mullets of different sizes collected during the last year will be analysed. Collected otoliths will be processed, based on commonly described techniques. Otolith growth (rings) will be counted and comparison with fish size will be established in order to establish the age of fish. Furthermore, histology of gonads will be assessed and the minimum size of mullets when sexually differentiated and mature will be established. Results obtained in the present work are planned to be published in international scientific journals. | Urtzi Izagirre (urtzi.izagirre @ehu.es) & Maren Ortiz -Zarragoitia (maren.ortiz @ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs (K-Egokitzen ) | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Effects of acidification on mussel gamete viability | The present work aims to study the effects of acidification on mussel gamete development and viability. It is known that acid environments can disrupt fertilization and embryo development in shellfish such as sea urchins. Mussels, used worldwide as sentinel organisms of marine ecosystem health, offer a good opportunity to study acidification processes. Recently, transcriptome level changes have been reported in mussels subjected to acidic environment. Together with assessing gamete development and quality, core health status biomarkers will be studied to evaluate adult stress after exposure to acidic environment. This work offers the opportunity on learning on fertility and fecundity techniques together with introducing the student on the evaluation of changes in the environment to marine organisms. | Urtzi Izagirre (urtzi.izagirre @ehu.es) & Maren Ortiz -Zarragoitia (maren.ortiz @ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs (K-Egokitzen ) | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Genomics and ultrastructure of marine toxic diatoms harmful for aquaculture practices | Only a few diatoms are toxic and most of them belong to the genus Pseudo-nitzschia. This genus includes a number of species responsible for blooms in coastal and open waters worldwide and has received much attention recently because of the capacity of some species to produce domoic acid, a neurotoxin responsible for amnesic shellfish poisoning (ASP). This toxic accumulated through the food web causing intoxication in humans and wildlife. The aim of this study is to identify the species of Pseudo-nitzschia present in the Abra of Bilbao by means of genetic as well as morphological analyses. | Emma Orive (emma.orive @ehu.es) | Dept of Plant Biology and Ecology UPV/EHU, Leioa. | Lab costs | MER (30 ECTS; 5-6 mo): . X..<br>CTA (21 ECTS; 4-5 mo): .X... |
| Regulation of vitellogenesis by estradiol in mussels (Mytilus galloprovincialis) | The present research work focuses on the study of the effects of estradiol exposure on mussel gametogenesis and vitellogenesis. Adult mussels exposed to estradiol during late gametogenesis will be analysed by studying the expression | Maren Ortiz -Zarragoitia (maren.ortiz @ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool | Lab costs (K-Egokitzen ) | JUNKAL FERNANDEZ |

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| | levels of vitellogenin in gonad tissue together with histological assessment of gamete development. Laboratory exposed mussels and individuals collected in the field along a whole reproductive cycle will be used. This work will offer the opportunity of using novel techniques of molecular biology such as real time PCR, histological tools and the integration of the student into a consolidated research work. Moreover, due to the interest of the work in the field of environmental toxicology and aquaculture, obtained results will be compiled to be published on international scientific journals. | | and Cell Biol, UPV/EHU, Leioa. | | MER (30 ECTS; 5-6 mo):X<br>CTA (21 ECTS; 4-5 mo): .X... |
| Development of a tissue-array for the biomarkers assay. | The aim of the present research work is the development of a tissue-array, a new histological method for the assessment of histochemical and tissue-level biomarkers and histopathological verifications in mussels and fish. These new method could also be useful in immuno-histochemical analysis due to 60 samples could analyzed together, taking in advance of the resources. Samples of mussels store in the BBEBB (Biscay Bay Environmental Biospecimen Bank) from different experiments previously performed in the laboratory will be analyzed. Different fish species collected in a Biscay bay Oceanography campaigns will be also studied. Results obtained in the present work are planned to be published in international scientific journals. | Larraitz Garmendia (larraitz.garmendia@ehu.es) and Urtzi Izagirre (urtzi.izagirre@ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs (K-Egokitzen) | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Measuring Marine Diversity | In other to implement the ecosystems approach to govern fisheries and their surrounding environment, multidisciplinary indicators are need. One of these indicators, which may be useful to measure the health of an ecosystem, is diversity. Thus, firstly this master thesis proposal deals with defining, measuring and comparing alternative marine diversity index. The result of this first objective is the derivation of complement measures of diversity index for a large enough time period. Secondly, aiming to understand the data generation process, a time series analysis would be undertaken in order to identify the variables, events and/or policies that may have influenced on the evolution of the proposed diversity index. | Ikerne del Valle Erkiaga. Email: Ikerne.delvalle@ehu.es | Fisheries Economics Research Group. Dep. Appl UPV/EHU. Bilbao. | - | Statistics. Notions of Ecology<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| Abrupt climatic changes and vegetation evolution in SW Europe during a close analogue for the current interglacial period (MIS 11, ~400 000 years ago) | For the last couple of millions years, climate has cyclically varied from glacial periods and interglacial periods. Marine Isotope Stage (MIS) 11 which occurred ~400 000 years is considered to be the best and most recent analogue for the current interglacial, i.e. the warm period in which we are living. It is therefore of major interest to study the evolution and in particular abrupt climatic changes during MIS 11 to better evaluate future impacts of the ongoing climate changes on terrestrial and marine environments. The proposed research training aims at studying the abrupt vegetation and climatic changes in southwestern Europe during MIS 11. The analytical work will consist of pollen analysis at high time resolution of a deep-sea core located off NW Spain. Pollen results will provide an image of past vegetation changes in this region and potential impact of abrupt climatic changes on land during MIS 11. These results will also be compared to available marine proxy data from the same core, indicating sea surface temperature changes off NW Iberia. | Stéphanie Desprat E-mail: s.desprat@epoc.u-bordeaux1.fr Phone: +33 (0) 540008861 | UMR 5805 EPOC, CNRS-Université Bordeaux 1 Avenue des Facultés, 33405 Talence (France) | EPHE grant | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): ..... |

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| Impact of the climate on the river estuaries: modifications of the ecological characteristics of the planktonic communities | The recent modifications of the littoral systems show that those are manifestly impacted in answer to the total change. Among the principal modifications, those in answer to the climate change whose immediate consequences are a marinisation and a warming of the systems. The consequence on the populations carries as well their distribution as on the metabolism and the physiology of the organisms. The population of zooplancton of the Gironde estuary do not escape to the rule with a largely wide spatail distribution and a important modification from the ecological preferendum. The work will concern the river estuary primarily: zone "border" between marine estuary and continental environment. It will consist of a characterization of the biodiversity of this river estuary (to continental water), with for main objective a characterization of the distribution upstream of the dominant species Eurytemora affinis (copépode) and of its production; the objective being Re-analyzes characteristics ecological of the species in the light of these new results. The work will be completed starting from a monthly sampling for the period (known) of production of the species (winter/spring), of a systematic determination, incubations of production. | Benoit Sautour E-mail: b.sautour @epoc.u-bordeaux1.fr | UMR EPOC, Station Marine d'Arcachon (France) | | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| Selection of zooplankton metrics to discriminate impaired conditions in estuaries of the Basque cost | The development of indices of biotic integrity (IBI) and ecosystem health are based on the selection of community metrics that discriminate impaired and non-impaired conditions. The IBIs are a useful tool for the management of coastal and transitional (estuarine) ecosystems, and they are been considered in the implementation of the European Water Framework Directive. However, no IBIs based on zooplankton communities have been developed for European coastal and transitional waters. The aim of this work is to select zooplankton metrics useful to develop indices of biotic integrity and ecosystem health for estuaries from zooplankton and environmental data obtained in the healthy estuary of Urdaibai, and in the estuary of Bilbao throughout the ongoing rehabilitation process. | Fernando Villate Email: fernando. villate @ehu.es | Dept of Plant Biology and Ecology UPV/EHU, Leioa. | | JOAQUIN BARRADO<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Assessing the effect of climate on inter-annual phytoplankton biomass variability in contrasting estuaries of the Basque coast | Eutrophication is a serious threat to the functioning of coastal and estuarine ecosystems. In addition to anthropogenic impacts, it is now considered that climate variability also exerts a major influence on variations in phytoplankton biomass in the marine environment. The aim of this work is to examine the changes in phytoplankton biomass that have occurred during the last 10 yr in the estuaries of Bilbao and of Urdaibai, including year-to-year variations in total biomass and in the seasonal pattern, and to analyze their relationship with climate factors. For this purpose time series of chlorophyll data obtained for these two estuaries for the last 10 yr will be used. | Fernando Villate Email: fernando. villate @ehu.es | Dept of Plant Biology and Ecology UPV/EHU, Leioa. | | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Estimation of the net physical transport and residence times for contrasting estuaries of the Basque coast using box models | The residence time of water is an important physical control on ecological processes in estuaries. However, the full potential of residence time as an explanatory variable in estuarine ecology has most likely not been realized because of the challenge of estimating it at the appropriate time and space scales. The aim of this work is to develop reasonably simple models that has been used to estimate physical | Fernando Villate Email: fernando. villate @ehu.es | Dept of Plant Biology and Ecology UPV/EHU, Leioa. | | MER (30 ECTS; 5-6 mo): . X... |

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| | transport and spatially resolved residence times in the estuaries of Bilbao and Urdaibai. These models are fundamental to analyse the dynamics of relevant water-quality factors such as the dissolved oxygen and other no conservative elements in these estuaries. | | | | CTA (21 ECTS; 4-5 mo): .X... |
| Assessment of the effects of metal nanoparticles using the Fish Embryo Test (FET) in zebrafish | Description (5-10 lines): Manufactured nanoparticles are considered as emergent contaminants and increasing concentrations are expected in the aquatic environments. As nanoparticles display new physico-chemical properties, their toxic potential must be evaluated. The objective of the project is to test the toxicity of metal nanoparticles to developing zebrafish embryos in comparison with the toxicity of other forms of the same metal: bulk and/or ionic form. Some of the following nanoparticles will be selected: SiO2, CdS and/or ZnO. Effects on embryo survival and hatching rates, hatching delay and malformation prevalence will be studied. In addition, other effects such as oxidative stress –protein carbonylation- and metal bioaccumulation could be considered. | Amaia Orbea, Email: amaia. Orbea @ehu.es | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs EU Nano ReTox project and MEC Nano Cancer project | Preferable Degree in Biosciences (but not compulsory)<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Effects of metal nanoparticle exposure on adult zebrafish | Manufactured nanoparticles are considered as emergent contaminants and increasing concentrations are expected in the aquatic environments. As nanoparticles display new physico-chemical properties, their toxic potential must be evaluated. The objective of the project is to test the toxicity of Ag and/or CuO nanoparticles to adult zebrafish, in comparison with the toxicity of other forms of the same metal: bulk and/or ionic form. Different endpoints, such as oxidative stress, histopathological alterations and general health status will be evaluated. | Amaia Orbea, Email: amaia. Orbea @ehu.es | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs EU Nano ReTox project and MEC Nano Cancer project | ANDER RETUERTO<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| The effects of natural vs. artificial substrata on the development of benthonic assemblages inside marinas | | Ana Isabel Neto | U Açores | | OLALLA TORRONTEGI<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Seasonal variability in lysosomal biomarkers in mussels exposed to pollutants | Biomarker responses to Cd exposure in mussels. Laboratory experiments with mussels in different stages of their reproduction cycle. Organism sensitivity against environmental stress related gender and reproduction stage | Ionan Marigomez Email: ionan. marigomez @ehu.es | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs (K-Egokitzen ) | <br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Winkle attachment assay:<br>a tool for screening general physiological condition in intertidal gastropods | One important effect of the Prestige oil spill in coastal animals was the loss of attachability in intertidal limpets. Thus, limpets were detached from the substrate and died as a result of mechanical forces or of accessibility to predators (e.g. crabs, ...). The large impact in the limpet populations was not necessarily the direct result of a toxic effect. Enhanced detachment could be the result of alterations in muscle, nervous system, mucous production or simply weakening of the individuals results from reduced food | Ionan Marigomez Email: ionan. marigomez @ehu.es | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | - | MER (30 ECTS; 5-6 mo): . X... |

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| | intake. WE therefore decided to develop a laboratory assay to determine the effects of model pollutants on the attachment capacity of intertidal gastropods. Due to difficulties in maintaining limpets in the lab, winkles of the species Littorina littorea are used as test model organisms. | | | | CTA (21 ECTS; 4-5 mo): .X... |
| Standardization of the Stress-On-Stress (SOS) response test in mussels | | Ionan Marigomez Email: ionan. marigomez @ehu.es and Urtzi Izagirre (urtzi.izagirre @ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | - | PATRICIA FERNANDEZ<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| Availability and subcellular localization of metal nanoparticles in mussel cells | | Manu Soto Email: manu. soto @ehu.es | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | Lab costs EU Nano ReTox project | <br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| - | Endocrine disruption: a molecular biology approach in mussels | Miren P Cajaraville (mirenp. cajaraville @ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | | ADRIANA SARDI<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| | Chemical carcinogenesis in fish and mussels | Miren P Cajaraville (mirenp. cajaraville @ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | | NADIA CONLLEDO<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .X... |
| The role of dispersal and recruitment for local trophic regulation in the design and evaluation of marine reserves | The general objectives of the project are to:<br>MPA design in the Gulf and estuarine area of the St Lawrence considering biodiversity real-time collected data on buoys over a 10 year period.<br>Understand the implications of climate change (environmental locations), natural and anthropogenic variations, on biodiversity changes in the region. | Prof. Guichard | McGill University (CAN) | | JORGE NEGRIN<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| Monitoring the effects of Climate Change on the intertidal rocky vegetation at the Basque coast. | The objective of this study is to extend our knowledge about the undergoing changes in the intertidal vegetation at open coast stretches of the Basque coast. The locality of Lemoiz (Bizkaia coast) will be studied using an appropriate methodology to facilitate future monitoring studies. Sampling will be carried out in spring-summer of 2012. The researcher student will learn modern monitoring vegetation techniques | José Mª Gorostiaga (jm.gorostiaga@ehu.es) | Benthic Marine Group Lab. Botany, Dep. Plant Biology and Ecology, FCT/ZTF,UPV/EHU | | Availability for field work in April, May, June<br>MER (30 ECTS; 5-6 mo): . X... |

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| | for different rocky intertidal habitats and microhabitats as well as knowledge of the diversity of the flora and the use of various statistical tools. This study will increase gradually our monitoring network to evaluate the effects of climate change on marine vegetation. | | | | CTA (21 ECTS; 4-5 mo): .... |
| Evaluating biological and ecological changes in subtidal communities of the Basque coast and its possible relationship to climate change. Incidence of frond yellowing and breakage and demographic alteration in populations of Gelidium corneum. | The objective of this study is to extend our knowledge about the undergoing changes in the subtidal vegetation at open coast stretches of the Basque coast. The researcher student will carry out a laboratory study to assess the degree of deterioration of fronds (frond yellowing, breakage, demographic alteration) coming from five subtidal Gelidium corneum populations sampled in summer 2011. The biological variables will be correlated to physical variables (irradiance and temperature of seawater obtained by means of sensors at 5 m depth). The student will become familiar with the application of statistical tools to detect PERMANOVA significant responses to different environmental conditions between the different populations of G. corneum. | José Mª Gorostiaga (jm.gorostiaga@ehu.es) | Benthic Marine Group Lab. Botany, Dep. Plant Biology and Ecology, FCT/ZTF,UPV/EHU | | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| Rôle des fronts associés au Courant Circumpolaire Antarctique sur le phytoplancton et les flux de CO2 dans le passage de Drake | Le Courant circumpolaire Antarctique (ACC) est le plus intense de l'océan global. L'augmentation du vent autour de l'océan Austral observé au cours de ces dernières décennies a conduit les océanographes à examiner le comportement de l'ACC : déplacement des fronts vers le sud, variations du transport, augmentation de l'activité tourbillonnaire. L'impact de la modification des vents dans l'océan Austral pourrait produire une modification radicale des flux de CO2 échangés à l'interface océan atmosphère. Les prévisions effectuées par les modèles de circulation océanique couplés à des modèles de biogéochimie suggèrent une augmentation de la concentration de la pression partielle du CO2 (pCO2) de l'eau de surface et une réduction de la quantité de CO2 séquestrée par l'océan. Ainsi la zone Australe se convertissant en une zone source de CO2 pour l'atmosphère induirait une perte importante de la capacité de l'océan à séquestrer du CO2.<br>Que nous apprennent les observations in situ obtenues récemment sur l'évolution des flux de CO2 échangés entre l'océan et l'atmosphère dans la zone de l' ACC ? | D. Ruiz-Pino<br>C. Provost<br>LOCEAN<br>V. Garçon<br>LEGOS | Coopération entre le LOCEAN-UPMC/CNRS/MNHN/IRD et le LEGOS-CNRS/CNES/UPS/IRD (V. Garçon) | | CYRIL AQUILIN GERMINEAUD<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| Caracterización de fondos marinos mediante sensores remotos | Multi-beam data will be processed by means of specific software. The data will be integrated with sea bed characteristics information to perform a description of the Basque continental shelf seabed and make progress on the classification of habitats. | Ibon Galparsoro (aduriarte@azti.es) | AZTI tecnalia Pasaia | | LUCAS JANEAU<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| Aplicación de muestreadores pasivos para evaluación del impacto ambiental producido por compuestos orgánicos en las aguas costeras y estuáricas | European directives refer to the total dissolved fraction of organic compounds in the water column, as one of the indicators of the chemical status of water bodies. However, the concentrations required by the European Community, on occasions, are located on the edge of the conventional analytical techniques or even below them. This means that we have | Maria Jesús Belzunce (aduriarte@azti.es) | AZTI tecnalia Pasaia | | LAURA RODRIGUEZ |

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| | no knowledge of the real concentration in many bodies of water, and just know that it stays below the detection limits. However, it is well known that chemical compounds can have great ecotoxicological relevance even if its concentration in the environment is very low. Some of the limitations of sampling and subsequent analysis by the conventional analytical techniques, could be overcome through the use of passive samplers: concentrations of organic compounds integrated in time and being more representative of rich media (e.g. estuaries), preconcentration of samples and therefore a greater sensitivity, whilst avoiding the contamination of the samples, greater representativity of the fraction of major ecotoxicological, etc. | | | | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): . ... |
| Aplicación de un modelo de distribución vertical de hueva de anchoa para la optimización de las campañas del MPDH | Collation of vertical distribution profiles of anchovy roe in 2010 and 2011, during Bioman fieldwork stations, following the model developed by Boyra et al. (2003) and others (Petitgas et al., 2006). Obtaining of anchovy abundance estimates in those stations, integrating the profiles of the vertical distribution model, scaled through CUFES (Continuous Underway Fish Egg Sampler) data. Validate the model by comparing abundances estimated by means of the CUFES-model and those provided by the vertical Pairovet samples. Optimization of DEPM (Dayly Egg Production Method) campaigns by replacement or combination of vertical samples with continuous CUFES sampling. | Unai Cotano (aduriarte@azti.es) | AZTI tecnalia Pasaia | | OIHANE ERDAIDE<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): . ... |
| The biogeography of Emiliania huxleyi in the Atlantic Ocean: morphotypes, calcification state and Ocean Acidification | The coccolithophore Emiliania huxleyi is often regarded as a globally ubiquitous species, however the truth is rather that it has a variety of morphotypes and genotypes able to exist successfully in a wide variety of marine environments. The student will access the considerable SEM image depository that exists at NOC, including images from samples collected throughout the Atlantic Ocean (70oN to 70oS), and will identify the morphotype(s) present in different oceanic regions. The student will use image analysis software to identify the morphotypes and make measurements of the coccolith calcite content of individual coccoliths. As well as already imaged samples, there is also a considerable wealth of un-imaged samples from several areas (e.g., N Atlantic Subtropical Gyre) which the student can image and analyse using in-house SEM facilities. Lastly, there are several strains of E. huxleyi growing in the NOC culture collection and the student could also examine morphometric trends in cultures grown under different environmental conditions. | Alex Poulton (aljp@noc.ac.uk)<br>"Back-up" Colleague Jeremy Young, UCL (j.young@ucl.ac.uk) | NOCS Research Group Ocean Biogeochemistry and Ecosystems | | OU LIAN<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |
| Parasite communities of deep sea fishes as indicators of natural variability and anthropogenic impact in the Mediterranean | Parasite communities of deep sea fishes as indicators of natural variability and anthropogenic impact in the Mediterranean | Ana Perez del Olmo | U AUTONOMA DE BARCELONA | | CELINE FRANK<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): .... |

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| Stockage du carbone organique dans les mangroves (biomasse et substrat) | Dans le cadre du master, les questions spécifiques auxquelles nous souhaitons répondre sont les suivantes : Quelle est la quantité de carbone organique stockée dans la biomasse des mangroves en fonction du type de palétuvier ? Quelles sont les stocks de carbone organique dans les substrats des mangroves (sédiments et eau interstitielles) en fonction du type de palétuvier et de la nature du substrat (principalement sa granulométrie)?<br>Actions proposées et méthodologies: Cette | Michel Allenbach<br>E-mail : allenbach@univ-nc.nc<br><br>Cyril Marchand<br>Tel.: +687 26 07 66<br>Fax: +687 26 43 26<br>E-mail : cyril.marchand@ird.fr | (MdCF, UNC) Université de la Nouvelle-Calédonie<br><br>(CR, IRD) Centre IRD de Nouméa | Le financement des analyses et des missions sera assuré par le projet. Le billet d'avion A/R, ainsi qu'une indemnité de 417 euros par mois seront pris en charge par l'Université. | MER (30 ECTS; 5-6 mo): . X... |
| Study of the toxicity of sediments from Urdaibai and Abra estuaries in the polychaete worm Nereis diversicolor. | Description (5-10 lines): The present work is integrated within the OKAMET research project (UNESCO p09/23). In the master thesis sediments coming from 3 different sites in Urdaibai and 2 different sites in the Abra estuary will be collected and transported to the lab. Then, polychaete worms Nereis diversicolor will be put in contact with the sediments for 29 days. Physico-chemical parameters of the sediments, metal concentration of sediments and worms, survival, changes in the weight of worms and different cell and tissue level alterations are going to be measured in order to determine the toxicity of the sediments in the worms. | Urtzi Izaguirre and Beñat Zaldibar. (urtzi.izagirre@ehu.es; benat.zaldibar@ehu.es) | Cell Biol in Environ Toxicol (CBET) Dept. Zool and Cell Biol, UPV/EHU, Leioa. | | MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): ..X.. |
| Fishery management and using different tools in the assessment of a fishery | Fishery management and using different tools in the assessment of a fishery | Tony Pitcher | University of British Columbia, Vancouver. | Visiting Scholar | WILLIAM HUNT<br>MER (30 ECTS; 5-6 mo): . X...<br>CTA (21 ECTS; 4-5 mo): ... |
| Investigating nitrogen and phosphorus geochemistry in seagrass meadows over diurnal and seasonal cycles | Coastal sediments are zones of intense biological activity, particularly complex habitats such as seagrass meadows, which contribute to 12% of the global organic carbon production in the oceans. Recent studies have demonstrated that seagrass habitats experience dramatic changes in biogeochemistry between day and night – seagrass pump the oxygen produced by photosynthesis into the sediment to minimise their exposure to reduced phyotoxins (sulphide and ammonium). Recently developed two-dimensional in situ techniques have allowed these biogeochemical processes to be observed – techniques that measure iron(II) and sulphide can determine the changes in biogeochemical zones in and beneath the seagrass rhizosphere. Two-dimensional techniques have also been developed to measure phosphate, and a technique for nitrite and ammonium is currently being investigated. The ability to make these measurements in the same location using layered techniques, has allowed a new view of | Dave Welsh, Peter Teasdale, Will Bennett | Environmental Futures Centre Griffith University Gold Coast, Queensland Australia | | Skills in microbiology, chemistry and field work.<br>MER (30 ECTS; 5-6 mo): . .x.. |

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| | these processes and some unexpected results have been obtained. This project will use these novel techniques to undertake a detailed investigation of the nutrient mobilisation in response to changes in sediment biogeochemistry. Field deployments will be undertaken in different seasons to investigate how the diurnal cycling varies. Seagrass will be grown within laboratory mesocosms to all allow convenient investigation of the biogeochemical changes that occur over successive diurnal cycles. | | | | CTA (21 ECTS; 4-5 mo): .... |
| Deep sea ecosystems in the Gulf of Guinea: macrofauna settled near the "cold fluids sources" at depths about 3200m | Deep sea ecosystems in the Gulf of Guinea: macrofauna settled near the "cold fluids sources" at depths about 3200m | Karine Olu-Le-Roy | IFREMER Brest (France). | | ERWAN GUILLON<br>MER (30 ECTS; 5-6 mo): . .x..<br>CTA (21 ECTS; 4-5 mo): .... |
| Improving our understanding of sediment biogeochemistry and heterogeneity by using new in situ, two-dimensional measurement techniques | Sediments are complex systems that play an important role in the cycling of metals, nutrients, and carbon. The biogeochemistry of sediments is driven by the decomposition of deposited organic matter by successive layers of microbial respiration. Bacteria obtain energy for respiration from oxidised substances, such as O2. However, when the O2 is depleted other substances are utilised in turn; NO3-, Mn(IV)O2(s), Fe(III)OOH(s) and SO4-2. Reduced forms of the above species, soluble Fe(II), Mn(II) and sulphide, are products of this respiration and therefore provide a guide to the main biogeochemical processes and zones within sediment (Fe(II) and Mn(II) are indicative of the sub-oxic zone and sulfide of the anoxic zone in marine sediment). Burrowing organisms and benthic plants dramatically modify these biogeochemical zones, introducing considerable heterogeneity (often on a mm-scale) into the distribution of these substances in sediment porewaters (see Figure). Conventional methods of measuring solutes in sediment porewaters are not capable of measuring distributions in two-dimensions at all or of making measurements at sufficient resolution to allow the heterogeneity of these biogeochemical zones to be observed accurately. This can lead to misinterpretation of the biogeochemical interactions. This project will use colourimetric DET (Fe(II), Mn(II), phosphate) and DGT (sulfide, phosphate) methods currently available to investigate the biogeochemistry and heterogeneity of several coastal sediment habitats (e.g. mangrove, seagrass and non-vegetated coastal sediment) which will provide a range of conditions with respect to sediment particle size, organic matter and density of benthic macro-organisms. | Dave Welsh, Peter Teasdale Will Bennett | Environmental Futures Centre Griffith University Gold Coast, Queensland Australia | | Skills in microbiology, chemistry and field work.<br>MER (30 ECTS; 5-6 mo): . ..x.<br>CTA (21 ECTS; 4-5 mo): .. |
| The relationship between biogeochemical cycles to physics using numerical models | The relationship between biogeochemical cycles to physics using numerical models | Nadia Pinardi | SiNCEM (Simulazioni numeriche del clima e degli ecosistemi marini) laboratory Ravenna, Italy | | GIULIA MUSSAP<br>MER (30 ECTS; 5-6 mo): . .x..<br>CTA (21 ECTS; 4-5 mo): .... |

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| Wind control on Antarctic Bottom Water export rate in the Weddel gyre | | Alberto Naveira Garabato<br><br>Co-supervisor: Loic Jullion | SOTON | | TONIA CAPUANO STAYS IN WOODS HOLE AND IN SCRIPPS<br>MER (30 ECTS; 5-6 mo): . ..x.<br>CTA (21 ECTS; 4-5 mo): .. |
| Metal bioaccumulation in gulls | Fish-eating birds are valuable bioindicators of ecotoxicity and bioaccumulation of contaminants due to their relatively long life-cycles and their position as top predators in the trophy chain. Heavy metals can link to the protein molecules that composed the feathers during the growth period and can be eliminated through the moult. Females can also transfer a part of the accumulated metals to the eggs. Toxicity has been reported as producing altered behaviour, and impaired growth and reproduction in adults, increased mortality of embryos, reduced clutch size and development success and increase malformations. In present study, metal bioaccumulation in feathers and eggshells of gulls (Larus cachinnans) and Little Egrets (Egretta garzetta) nesting in Izaro Island (Bermeo, Bizkaia) will be studied. Gulls have a more diversified feeding sources, being oportunistic species, foraging on sea fishes but are also regular scavengers and frequent visitors of waste dumps, whereas, little egrets feed on fishes, frogs and invertebrates of wetlands of Urdaibai estuary, close to the island. The study of both species will provide a view of regional bioaccumulation risk by metals at different scales. | Pilar Rodriguez<br><br>Maite Martinez-Madrid | Animal Ecotoxicology & Water quality. Zoology & Animal Cell Biology UPV/EHU | | Interest by field work, that is the basis of the data collection in present study.<br>MER (30 ECTS; 5-6 mo): . ..X.<br>CTA (21 ECTS; 4-5 mo): ..X |
| Swash effects on the beach face | | Nadia Sénéchal | UB1 | | GUILLAUME OLIVIER<br>MER (30 ECTS; 5-6 mo): . ..x.<br>CTA (21 ECTS; 4-5 mo): .. |
| Shark biology | | Samuel Gruber sgruber@rsmas.miami.edu | SHARKLAB BIMINI BIOLOGICAL FIELD STATION BAHAMAS | | NILS SOMMER<br>MER (30 ECTS; 5-6 mo): . ..x.<br>CTA (21 ECTS; 4-5 mo): .. |
| Slipper limpet Crepidula fornicata in the Solent | | Antony Jensen | NOCS | | PATRICIA WADVOGEL |

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| The effects of anthropogenic stresses on sedimentary processes in a coral reef of Kho Pan Ngan, Gulf of Thailand | | Christian Wild | LEIBNIZ CTR FOR TROPICAL MARINE ECOLOGY U BREMEN | | SOUREYA BECKER<br>MER (30 ECTS; 5-6 mo): . ..x.<br>CTA (21 ECTS; 4-5 mo): .. |
| Intense storm activity during the Little Ice Age on the Spanish Mediterranean coast based on paleogeography, paleoclimatology and paleoecology | | Laurent DEZILEAU | U MONTPELLIER | | PIERRE-OLIVIER COSTE<br>MER (30 ECTS; 5-6 mo): . ..x.<br>CTA (21 ECTS; 4-5 mo): .. |
| An investigation into the inter and intra annual variability at a coastal site using biological, physical and chemical data | | Laire Mosseau | OBSERV OCEANOL VILLEFRANCHE SUR MER UB1 | | ALICE WEBB<br>MER (30 ECTS; 5-6 mo): . ..x.<br>CTA (21 ECTS; 4-5 mo): .. |