



[www.ehu.es/CTA](http://www.ehu.es/CTA)  
**INGURUMEN KUTSADURA ETA TOXIKOLOGIA**  
**CONTAMINACION Y TOXICOLOGIA AMBIENTALES**  
**ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY**  
GRADUONDOKO MASTERRA / MASTER DE POSTGRADO UPV/EHU  
Ref. MO2006-00749 #



**European Master of Science in  
Marine Environment and Resources**

SOTON, UPV/EHU, UBx1, AZTI, OFG - 2008-2010

**JOINT EUROPEAN POSTGRADUATE STUDIES**

Ref. MO2006-00744 ##

**3<sup>rd</sup> INTERNATIONAL POSGRADUATE COURSE \***

## **HISTOLOGY AND HISTOPATHOLOGY OF AQUATIC ANIMALS (3 ECTS)**

**March 23-27 2009, UPV/EHU, Leioa**

**Organized by: CTA and MER Masters (POP MAR, UPV/EHU)**  
Dept Zoology and Cell Biology, Fac Science and Technology, Univ Basque Country, Bilbo

### **Teaching Staff:**

Dr Steven Feist (CEFAS, Weymouth, UK)  
Dr Antonio Villalba (CIMAR, Arousa, Galicia)  
Dr Miren P. Cajaraville (UPV/EHU, Leioa, Basque Country)  
Dr Manu Soto (UPV/EHU, Leioa, Basque Country) **Coordinator**  
Dr Ionan Marigómez (UPV/EHU, Leioa, Basque Country) **Coordinator**

### **Additional information:**

Dr. Ionan Marigómez  
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[www:http://www.ehu.es/CTA](http://www.ehu.es/CTA)  
[www:http://www.ehu.es/MER](http://www.ehu.es/MER)

\* and Msc Course "Histology and Histopathology of Aquatic Animals" (4,5 ECTS)  
(CTA 0601 BCTA1) UPV/EHU ([www.ehu.es/CTA](http://www.ehu.es/CTA)) & (MER 0302 EHU) UPV/EHU ([www.ehu.es/MER](http://www.ehu.es/MER))

### **Supporting Institutions:**

- University of the Basque Country (Vicerrectorate Graduate & Postgraduate Studies)
- Basque Government, Education, Universities & Research Dept (teaching staff mobility prog)
- Ministry of Education and Science (MEC, teaching staff mobility prog)

**# Quality Award by Spanish Ministry of Education and Science (2005-2012)**  
**## Quality Award by Spanish Ministry of Education and Science (2008-2012)**

## Introduction

The International Postgraduate Course (3 ECTS\*) will take place for one week in **March 23-27th 2009**.

### \*EXTENSION MODULE (to complete 4,5 ECTS) FOR REGULAR CTA AND MER STUDENTS:

- **MARCH 12-13TH 2009** (9:30-13:30 & 15:00-17:00)
- SEMINARS ON HISTOTECHNOLOGY INCLUDING
  - LECTURES (B Zaldibar, I Marigómez & M Soto) – Biology Seminar Rooms (F2)
  - LAB PRACTICALS (B Zaldibar & M Soto) – Microsc lab Zool & Biol Cel dept

The course is directed to postgraduate or PhD students aiming to become specialized in the field of environmental toxico(patho)logy, with a focus in fish and shellfish histopathology. All lectures will be held in English.

Participants will receive a certificate with indication of lectures and practicals attended.

Students who request it will receive the same academic treatment than the official students enrolled in the CTA and MER Masters and will be given marks after examination (which includes practical notebook and a 10 page report based on the "web-practical"). Thus, together with the attendance certificate, a supplementary certificate indicating the obtained **marks** (and ECTS) will be provided (complete certificate)

## Registration

The course is limited to 20 participants. The registration fee is **250 €** and includes attendance to all lectures and lab practicals and course documentation. Those student who wish to participate in the Seminars on Histotechnology (March 12-13<sup>th</sup>) to complete 4,5 ECTS should include additional **100 €**.

For registration, participants should fill in the registration form and send it to Prof. Ionan Marigomez before the **13<sup>th</sup> March 2009**, together with a bank check payable to "**HHAA09, BCTA (UPV/EHU)**" or a copy of the bank document indicating that a bank transfer has been made to the bank

### **BILBAO BIZKAIA KUTXA**

BRANCH: 0260, UNIBERTSITATEA, LEIOA E-48940 LEIOA, BASQUE COUNTRY, SPAIN

Account Number: 2095 0260 80 9105923720

For International transfers (IBAN: ES94 2095 0260 8091 0592 3720; SWIFT: BASKES2BXXX)

Registrations after this date may be only exceptionally accepted. All participants will receive a receipt of payment and notification of acceptance in the course.

## Grants

A limited number of grants covering the registration fee may be offered. Students wishing to be elected must indicate it in the registration form. Those students receiving a grant will be refunded during the course.

### **Accommodation:**

Accommodation can be booked at the students' residence "Colegio Mayor Miguel de Unamuno", depending on the availability. This is located in the center of Bilbao, close to a metro station and is connected by bus to the campus of Leioa, where the course will take place. Rooms are offered at a price around 45€ per night including breakfast. The rooms have individual bathroom inside, television and room service. Dinner (7 €) is optional. Lunches will take place at the campus (around 5 €). Participants wishing to get accommodation in the students' residence should fill in the application form available at [www.ehu.es/Unamuno](http://www.ehu.es/Unamuno) and send the application form (preferably by fax and giving the reference of "HHAA course BCTA(UPV/EHU)09") to the following address:

**Colegio Mayor Miguel de Unamuno**, Avda. Lehendakari Agirre 140, 48015 Bilbo, <http://www.ehu.es/unamuno/general.html>

TIn: 94-6017499, Fax: 944764147, e-mail: [unamuno@lg.ehu.es](mailto:unamuno@lg.ehu.es)

- Other student residences available are "Residencia Universitaria Blas de Otero" in Bilbao and "Residencia de Estudiantes de Plentzia" in the small coastal town of Plentzia. You can get more information on these and other student's residences in the web page of the university ([www.ehu.es](http://www.ehu.es), student information, servicio de alojamiento).

## PRELIMINARY PROGRAMME

### **MARCH 23 TH MONDAY: 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 & I Marigómez

### **MARCH 24TH TUESDAY: 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.) A 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

### **MARCH 25TH WEDNESDAY: 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; "Cell and tissue biology of fish liver." 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

### **MARCH 26 TH THURSDAY: 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

### **MARCH 27TH FRIDAY: 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

11:40-12:30; "Histopathology in marine ecosystem health assessment: Mussel Watch and Fish Disease Monitoring programmes." (cont.) I Marigómez

12:40-13:30; "Round Table: Mollusc and fish histopathology in ecosystem health assessment." S Feist / A Villalba / MP Cajaraville / M Soto / I Marigómez

15:00-17:00; "Practical session 6: Navigating through the web searching databases and images on histopathology of aquatic animals." M Soto, S Feist & A Villalba

**MARCH 23-27TH 2009, SCHOOL SCI & TECHNOL, UPV/EHU**



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HISTOLOGY AND HISTOPATHOLOGY  
OF AQUATIC ANIMALS (3 ECTS)  
March 23-27 2009, Univ Basque Country, Leioa



Registration form: HHAA09 BCTA (UPV/EHU)

Surname.....

Name.....

Title.....

Postal address.....

.....

Postal code.....City/Town.....Country.....

Telephone.....

Fax.....

e-mail.....

I wish to attend the "Seminars in histotechnology" Module      YES      NO

I wish to be elected for a grant:      YES      NO

I need accommodation in the student's residence:      YES      NO

SIGNATURE:

PLACE AND DATE:

For registration, participants should fill in this registration form and send it to Prof. Ionan Marigomez before the **13<sup>th</sup> March 2009**, together with a bank check payable to "HHAA09, BCTA (UPV/EHU)" or a copy of the bank document indicating that a bank transfer has been made to the bank:

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