CSIC-UIMP Master in Molecular and Cellular Integrative Biology

What is the MCIB?

- MCIB is a research school co-organized by the Spanish Research Council (CSIC) and the International University Menéndez Pelayo (UIMP) to provide advanced training in molecular and cellular life sciences to graduate students in a cutting-edge scientific environment.

- MCIB is a pioneer in-house research training experience at CSIC centers, stem from the Centro de Investigaciones Biológicas (CIB) – the hub of MCIB - as a collective higher-education action of CSIC scientists, bringing together a wide range of expertise and know-how.
What is the MCIB?

- This novel concept will allow the students (up to 20) to be exposed to the scientific activities developed in-house, based on the synergies among research programs on structural, molecular, cellular, chemical and synthetic biology, that apply front-line technologies to study essential processes and systems with environmental and/or medical relevance.

- This integrated research program aims at elucidating fundamental principles of biological function and at providing novel tools to improve quality of life.
MCIB Program Structure and Timing

- MCIB will run during 3 academic semesters, starting in October until March of the second year.
- It comprises **90 ECTS credits**, organized in **3 academic modules (60 ECTS)** and a TFM master research project (30 ECTS). **Duration TFM = 1 year**

- MCIB will adopt an **innovative format** in which the students will progress rapidly from intensive course instruction to research in their projects.
- **MCIB students = CIR** (Científicos Internos Residentes, as MIR, QIR, FIR at hospitals)
- Most of MCIB activities will be in **English**.
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<th>MCIB modules</th>
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What is the MCIB?

- This training portfolio has recently been fostered by the active participation of scientists from other CSIC centers, for example, the Rocasolano Phys. Chem. Institute (IQFR) and the Institute of Food Science, Technology, and Nutrition (ICTAN).

- MCIB is inspired in the Max Planck International Research School for Molecular Life Sciences established at the MP campus nearby Munich.
IMPRS for Molecular Life Sciences

From Biological Structures to Neural Circuits

08.06.2018
IMPRS-LS Workshop
Getting Funded

11.06.2018
IMPRS-LS Workshop
Scientific Writing

13.06.2018
IMPRS-LS Workshop
Data Analysis with R
The International Max Planck Research School Initiative in Germany

- IMPRS was first launched in 1999 by MPS to promote excellence in PhD training via PhD programs
- 60 IMPRS involving 80 MP Institutes and many universities
  - 23 Biology & Medicine (BMS)
  - 26 Chem. Phys. & Technol. (CPTS)
  - 11 Human & Social Sci. (HSS)
“The IMPRS Concept: PhD Education at the Max Planck Society”

Hans Joerg Schaeffer
International Max Planck Research Schools (IMPRS) of Molecular and Cellular Life Sciences
Munich (Germany)

Monday, October 9th 2017
12:00 h
Main Lecture Hall (CIB)
SEMINAR - Frontiers in MCIB

Ralf Jungmann
Max Planck Institute of Biochemistry
Martinsried
http://www.biochem.mpg.de/jungmann

“Super-Resolution Microscopy with DNA Molecules”
June, 9th 2017
12:00 h
Main Lecture Hall (CIB)

Centro de Investigaciones Biológicas
Ramiro de Maeztu, 9, 28040 Madrid
Subway: Metropolitano, line 6

Contact person: German Rivas
Email: grivas@cib.csic.es
Tel.: 91 837 3112 ext. 4304

IMPRS
From Biological Structures to Neural Circuits
Interdisciplinary Lecture Series – Winter 2018

11.01.2018 | Daniel del Toro Ruiz | MPI of Neurobiology
FLRTs: From Balancing Repulsion and Cell Adhesion to Cortex Folding

18.01.2018 | Oscar Antonio Llorca Blanco | CIB-CSIC
Cryo-Electron Microscopy as a Tool to Study the Structure and Function of Kinases of the mTOR/ATM/SMG1-Family

25.01.2018 | Peter Murray | MPI of Biochemistry
Immunity in the Context of Metabolic Sensing and Signalling

01.02.2018 | F.-Ulrich Hartl | MPI of Biochemistry
The Cellular Machinery of Protein Folding

08.02.2018 | Mark Hübener | MPI of Neurobiology
How Sensory Deprivation and Learning Change Neuronal Responses in the Visual Cortex

15.02.2018 | Hannes Mutschler | MPI of Biochemistry
Prebiotic and Synthetic RNA Worlds

22.02.2018 | Johanna Scheuermann | LMU
Towards an Understanding of IncRNA Biology and Mechanisms

01.03.2018 | Benedikt Grothe | LMU
Neuronal Circuit Dynamics Underlying Spatial Hearing

Thursdays 17:00
Main Lecture Hall, T-building, MPI of Biochemistry

More information: www.imprs-is.de
Ramakrishnan, premio Nobel de Química y Presidente de la Royal Society, recibe la Medalla de Honor de la UIMP

Petra Schwille
Director MPI Biochem
Coord. MaxSynBio Program
Santander 2014

* Escuela de Biología Molecular y Celular Integrativa
Fundamentos y fronteras de la nueva Biología

Rafael Giraldo Suárez
Germán Rivas Caballero

Santander
25 a 28 de agosto de 2014

Santander 2015

II Escuela de Biología Molecular y Celular Integrativa
Biólogía Sintética-Ingeniería de Sistemas Biológicos

Rafael Giraldo Suárez
Germán Rivas

Santander 2016

III Escuela de Biología Molecular y Celular Integrativa
Biólogía «in silico»: Del modelado molecular a la modelización de sistemas complejos

Rafael Giraldo Suárez
Germán Rivas Caballero

Santander 2017

IV Escuela de Biología Molecular y Celular Integrativa
Frontiers in Structural Biochemistry

Rafael Giraldo
Germán Rivas

Santander 2017

V Escuela MCIB
Avances en Biología Sintética

27-30 agosto 2018
Acknowledgments

• Vicepresidencias del CSIC (Profs. A. Figueras, JR Urquijo)
• Departamento de Posgrado, CSIC

• Prof. MJ Martínez (Director, CIB-CSIC)
• CIB scientists and all personel

• Profs. C. Nombela, Lora-Tamayo (Chancellors, UIMP)
• Prof. F. G. Caballero (Vice-Ch, UIMP)
• Prof. M. A. Casermeiro (UIMP)
• Staff at UIMP

• Dr. H-J Schaeffer (IMPRS-MLS)
• Prof. P. Schwille (MPI-Biochemistry)
Master in Cellular and Molecular Integrative Biology (MCIB); CIB (CSIC)-UIMP

Leticia Lucero & Ignacio Ramírez
Master students in MCIB, CIB (CSIC)-UIMP
1. All lessons are given by CSIC researchers
2.- Highly sophisticated research technologies
3.- Wide, varied and non-repetitive subjects
4. - Wide practical approaches
5.- Reduced number of students; higher personalization when teaching
6. - Symposia, workshops and seminars with prestigious speakers
7. Developing your entrepreneurship capabilities
8.- Importance of divulgence and its basic tools
9. Improving your English skills!
10.- 1st mcib generation of students: Currently working on their Master Thesis at CIB!
11. - But it’s not all about working...
## CSIC-UIMP Master in Molecular and Cellular Integrative Biology

### MCIB modules

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MCIB III (2018-20) Abbreviated Program

October - November 2018

M1 – MCIB FUNDAMENTALS: Research Topics / Advanced Methods / Lab Rotations (part 1)


- **3DMOLBIOCHEM lab rotations**

M2 – MCIB FRONTIERS: Advanced seminars. TBA: to be announced at the beginning of the academic course.

December 2018

- **M1: EXAM 3DMOLBIOCHEM**
- **M2: MCIB FRONTIERS - Advanced seminar + workshop 1** (TBA)
MCIB III (2018-20) Abbreviated Program

January - February 2019

M1 – MCIB FUNDAMENTALS: Research Topics / Advanced Methods / Lab Rotations (part 2)

- **CELLBIOMED**: Cell Biology and Molecular Biomedicine. Internal organization of the cell: bioenergetics; membrane traffic; cell cycle and division; autophagy; cell death. Physiology and pathophysiology: model systems in biomedicine; cancer; neurodegenerative diseases. Immunity and infection: Host-pathogen interactions. Medicinal chemistry and drug design. Journal club sessions.
- **CELLBIOMED lab rotations**
- **EXAM CELLBIOMED** (second half Feb)

M2 – MCIB FRONTIERS: Advanced seminars (TBA)
MCIB III (2018-20) Abbreviated Program

February - March 2019
M1 – MCIB FUNDAMENTALS: Research Topics / Advanced Methods / Lab Rotations (part 3)

- **BIOTEC lab rotations**
- **EXAM BIOTEC** (end March).

M2 – MCIB FRONTIERS: Advanced seminars (TBA).
MCIB III (2018-20) Abbreviated Program

April - June 2019

- **TFM: lab selection** (first half April; immediate incorporation), **writing of mini-review** on TFM research topic (as part of M2 / M3; to be submitted in June).
- **M2 – MCIB FRONTIERS**: Advanced seminars + **workshops 2 and 3** (TBA).

July 2019 - March 2020

- **TFM research project**
- **TFM dissertation** (ordinary call: Feb 2020; extraordinary call: June 2020)
Selected activities

- Workshop "Cell migration in health and disease" - 13/06/2018

- Workshop on Strategic Professional Development - Part III 22/05/2018

- Workshop: Amyloidosis & Neurodegeneration: Molecular & Cellular Perspectives - 13/04/2018

- Workshop: "Basic Notions in Biostatistics" 14/03/2018

- Workshop on Human Microbiomics: Microbiome, diet and health 12/03/2018

- Workshop "Use of Bibliographic data base" and "Blog writing" (26/01/2018)

- Workshop: Systems and Synthetic Biology 15/12/2017

- Interdisciplinary Workshop on Ethics in Science - 11/12/2017

- Workshop on Scientific Reading, Writing and Presentation (05/10/2017)
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