

## **Dottorato in Biochimica e Biologia Molecolare (BBM)**

OFFER TRAINING DELIVERED LAST YEAR (2019)

The PhD program in BMB trains the students, both at the technological and theoretical level, in making a substantial and original contribution to knowledge, leading to peer-reviewed international publications, which remains the core objective of the doctoral studies. Therefore, the PhD program in BMB includes several innovative measures designed to support students in achieving the academic and professional activities.

General overview of the PhD program:

The PhD program last 3 years full-time to complete. The PhD students have to publish at least one scientific article in an international peer-reviewed journal. The final examination for the degree of PhD is based on a description of the candidate's research written up as theses. The theses will be evaluated by three external experts in the specific research topic. The thesis will be defended in a oral examination by a specific designed committee.

The students during the three years PhD program are required to:

- 1) Take yearly exams: Structural Biology (first year); Metabolism and Clinical Biochemistry (second year); Advanced Molecular Biology (third year).
- 2) Yearly, provide a written report and give an oral presentation on the state-of-the art of the on-going research proposal. The oral presentation is given to the doctorate faculty members. It is also opened to the rest of the academic staff.
- 3) Monthly, present Journal Club. Selected scientific articles will be presented and discussed to the other students and PhD faculty members to develop critical thinking.
- 4) Monthly, attend mini-courses on specific topic (ie. statistics, bioinformatics, scientific writing, scientific integrity) held by members of the PhD school faculty as well as by external experts (see below).
- 5) Monthly, attend and participate actively to the department's seminar program (see below).

All students are strongly encouraged to attend foreign laboratories and meetings, as well as have long face-to-face scientific discussions with foreign visitors on their projects. In addition, we offer training in Editorial (The BMB PhD program is located in the same department with the Editorial Office of Springer Nature publisher in Rome) as well as Industrial areas.

The students also are stimulated toward the following aspects:

- 1) Improve their linguistics capacities: Teaching activities, including seminar cycles or courses, are held by internal teachers and/or international speakers, exclusively in English. Students present and critically discuss a



scientific article monthly in English (journal club). They are also required to write an annual report and to support a presentation on the progress of their research project once a year, always in English. Theses are written, presented and discussed in English.

- 2) Improve their computer skills: In addition to the computer resources available in each laboratory where they can learn the basics of using programs for the presentation and analysis of the data, PhD students have several PCs available in the library of the Biomedical Area for the use of University databases. Also available: fast computers, access to the superfast computer of Bologna, to the CASPUR laboratory of molecular dynamics.
- 3) Research Management, knowledge of systems and systems of financing: The PhD students are aware of research systems and funding through their guidance teachers and the coordinator. Furthermore, students are offered activities at the Editorial Didactic Center for scientific journals of the Nature (NPG) group: Cell Death & Differentiation, Cell Death & Disease and Cell Death and Discovery. Students are trained annually on how you write an article and a research project on principles and rules behind the "scientific integrity".
- 4) The University's patent office was also presented to the students, illustrating the procedures and the various stages of the patent.

### **Selected activities for 2019:**

#### **SEMINARS:**

- 1) 29/01/2019 "Manipulating the Tumour Microenvironment for cancer therapy" Dr. Ivano Amelio
- 2) 21/03/2019 "*Transglutaminase 2 as a therapeutic target for cancer*" Prof Soo-Yul Kim
- 3) 03/05/2019 "Regulation and functions of p53 in cancer cells" Prof. Nicolai Barlev
- 4) 21/05/2019 "Mesenchymal Stem/Stromal Cells and Inflammatory Tissue Microenvironment" Prof Yufang Shi
- 5) 21/06/2019 "*HMGB1 connects chromatin and inflammation*" Prof Marco Bianchi
- 6) 18/06/2019 "Proteoliposomes" Prof. Mayte Bolean
- 7) 18/06/2019 "Strontium-flavonoid complexes" Prof. Ana Paula Ramos
- 8) 19/06/2019 "*Ubiquitination in the control of sodium homeostasis in kidney health and disease*" Prof Sharad Kumar
- 9) 23/10/2019 "*Cancer therapy: when good and bad turn ugly*" Prof Yuval Shaked

#### **WORKSHOP:**

WORKSHOP organized by third year PhD students:

- 1) 10/05/2019 – Villa Mondragone, Frascati  
PhD Honorary Degree (Honoris Causa) to Guido Kroemer (University of Paris)  
Lectio Magistralis "Immunogenic Cell Death"  
(5 CFU)

#### **COURSES:**

- 1) 27-28/01/2019, aula D29, Facoltà di Medicina e Chirurgia, Università di Roma Tor Vergata.  
- Dr Ivano Amelio, PhD, MRC Toxicology Unit, University of Cambridge, UK  
"*p53 family in Cancer*" (15 hours course, 2CFU).
- 2) Advanced statistics

- Prof. Alessandro Cozzi Lepri PhD

First part: Principles of Epidemiology and Biostatistics

Second part: Measures of Disease and Study Designs

Third part: Observational study designs and Causation in Epidemiology

Fourth part: Epidemiological studies, Systematic reviews and Causation in Epidemiology

40 hours course (5 CFU).

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## TRAINING ACTIVITIES for “XXXVI CICLO” (2020)

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The Skills Training Program (STP) for 2020.

The PhD Course in Biochemistry & Molecular Biology (BMB) has developed a Core Skills Training Program (STP), comprising 10 components, up to one week each, which you are strongly recommended to complete the STP by the second year. Completing the CSTP will ensure that the PhD students are informed of the range of opportunities available in University of Rome “Tor Vergata” and provide the foundational skills in personal effectiveness and scientific communication that are essential for progression.

The PhD students will be enrolled onto the STP Introductory Lecture in early December. This will provide the students with all the information needed about the STP. The component of the STP will help the students to develop training abilities and allows them to create a personal development plan.

|                             |                          |                               |                          |
|-----------------------------|--------------------------|-------------------------------|--------------------------|
| Experimental design         | <input type="checkbox"/> | Statistics                    | <input type="checkbox"/> |
| Publishing                  | <input type="checkbox"/> | Molecular Dynamics            | <input type="checkbox"/> |
| Bioinformatics/Blast Search | <input type="checkbox"/> | Cell Imaging & Flow Cytometry | <input type="checkbox"/> |
| Gene Expression/PCR         | <input type="checkbox"/> | NMR                           | <input type="checkbox"/> |
| Spectroscopy                | <input type="checkbox"/> | Clinical Biochemistry         | <input type="checkbox"/> |

The students will be invited to participate to additional activities (ie. Seminars, courses, etc) that will be organized by the Departments.