



American University of Beirut



2007-08

The PhD Program in Cell and Molecular Biology

The PhD program in the Biology Department aims to provide the best training in Cell and Molecular Biology to advance students in their careers as research scientists. The educational objectives of the program are to develop:

1. theoretical and practical expertise in Cell and Molecular Biology
2. skills to pursue basic research questions by initiating and conducting original research
3. an ability to generate and analyze data critically
4. skills necessary to communicate findings through oral presentations and written publications

Admission Requirements

Admission is on a competitive basis. Applicants must satisfy the following:

1. hold BS or MS degree in Biological Sciences or related fields
2. present 3 letters of recommendation from previous tutors or employers
3. submit scores from the general GRE and the subject GRE. Previous GRE scores are valid for 3 years.
4. submit a TOEFL or EEE score that meets University requirements
5. present a statement of purpose
6. be interviewed by a group of faculty members of the Department

Program Completion Requirements

Minimum of 36 credits beyond the BS or 15 credits beyond the MS are required. Maximum of 21 credits may be transferred from the MS. Six core courses (3 credits each) are required and may be replaced by electives if already taken as part of the MS program. These are:

- Biol 310 Quantitative Methods in Biology
- Biol 315 Research Techniques
- Biol 322 Advanced Biochemistry
- Biol 330 Molecular Genetics
- Biol 332 Advanced Cell Biology
- Biol 334 Cellular Biophysics

Elective courses, chosen from the Biology Department course offerings or from other departments, are taken to meet credit requirements and to complement the student's research work and field of specialty. After completion of 15 credits of coursework, the student sits for a comprehensive exam to determine whether he/she has acquired the necessary background to successfully complete the doctoral program.

To be admitted to **candidacy** students should meet the requirements set forth in the catalogue and:

- complete a minimum of 36 credits of course work beyond the BS
- attain an average of 85
- pass the written comprehensive exam
- pass an oral defense of the doctoral research proposal

For successful **graduation** the student must meet the requirements set forth in the catalogue and:

1. complete and successfully defend his/her dissertation.
2. acquire teaching experience (theory or lab) equivalent to a minimum of a 3 credit course
3. present yearly, during candidacy, his/her research progress to the Department
4. publish a research paper in an international peer-reviewed journal

Financial Support

Teaching assistantship covering tuition fees and stipends are awarded to PhD students upon admission to the program. The assistantship entitles the student to a tuition waiver and to a stipend that covers 12 months per academic year at \$800 per month with an annual increase of 2% thereafter. In return, students are expected to help in teaching undergraduate labs, with recitations of introductory courses and in proctoring and correcting exams.





The PhD Program in *Cell and Molecular Biology*

Faculty (Professorial Rank) and Areas of Special Interest

Michel Bariche

PhD; Université de la Méditerranée
Marine Biology and Ecology

Elias Baydoun

PhD; University of Cambridge
Membrane Biology and Plant Biochemistry

Nadine Darwiche

PhD; George Washington University
Molecular Biology of Cancer

Medhat Khattar

PhD; Loughborough University
Microbiology and Bacterial Genetics

Khouzama Knio

PhD; University of California, Riverside
Biodiversity and Insect-plant interactions

Sawsan Kreydiyyeh

PhD; American University of Beirut
Animal physiology, Signal Transduction and Transport Studies

Hala Gali-Muhtasib

PhD; Kansas State University
Natural Products and Cancer

Bared Safieh-Garabedian

PhD; University of London
Neuroimmunology; King's College Inflammation

Imad Saoud

PhD; Auburn University
Aquatic and Environmental Sciences

Colin Smith

PhD; Washington University
Nucleic Acids

Rabih Talhouk

PhD; Ohio State University
Cell Differentiation and Transformation

Research Areas of Strength

The Biology Department has 16 Faculty members: 3 instructors, 2 lecturers, 4 assistant professors, 2 associate professors and 5 full-professors. The Faculty have diverse fields of specialization covering the areas of Molecular and Cellular Biology, Biochemistry, Microbiology, Physiology, Immunology, among others. Research areas of strength include nucleic acids, cell differentiation, cancer biology, cell cycle regulation, membrane biology, signal transduction and transport, and bacterial genetics and resistance.

Facilities

Facilities available include departmental and AUB facilities. The former are comprised of 3 well-equipped research labs in addition to 7 research labs as annexes to faculty offices, cell culture rooms, radioactivity rooms, and animal room facilities. The labs include major equipment used in Cell and Molecular Biology research such as a fully equipped Cell Culture Facility, ELISA readers, fraction collector, PCR machine, and electrophoresis, among others. AUB facilities include the AUB Medical Core Lab (<http://staff.aub.edu.lb/~webmedic/CoreLabs.htm>) and the Central Research Science Laboratory (<http://staff.aub.edu.lb/~webcrsl/>) with state-of-the-art-equipment used in Cell and Molecular Biology research. In addition, departmental and University-wide computer and networking facilities (<http://www.aub.edu.lb/cns/>) are available for the Program.

For more information, visit:<http://staff.aub.edu.lb/~webbiol/>