



qbio
quantitative
biology

QBIO MASTER PROGRAM

quantitative biology in practice

$$\frac{du}{dt} = \frac{\alpha_1}{1 + v^\beta} - u$$

qbio is a new curriculum of the Bio-Health Master's Degree of the University of Montpellier.

An innovative, hands-on and interdisciplinary program entirely held in English (2 years, 120 ECTS).

At the crossroads of Biology, Physics, Chemistry and Informatics, qbio is the graduate program destined for students interested in studying Biology with a quantitative perspective founded on transdisciplinary approaches.

We recruit outstanding and highly motivated students from various backgrounds.



OBJECTIVES

qbio is built around emerging interdisciplinary fields in biosciences, ranging from experimental state-of-the-art techniques in microscopy, synthetic and structural biology, to modelling and systemic approaches of life science.

You will learn the core of these disciplines by performing team and individual projects mentored by leading researchers in the fields and by means of an innovative pedagogical program.



Q BIO MASTER PROGRAM

quantitative biology in practice

$$\frac{du}{dt} = \frac{\alpha_1}{1 + v^\beta} - u$$

qbio is a hands-on curriculum designed around the active experience and the dynamic interactions of students.

“Cross-disciplinarity is more than just bringing disciplines together around some clearly delineated object of study. It’s about challenging those disciplines to reach out beyond their traditional purview in a way that makes them need the other.”

Edith Doron

iGEM* : The international Genetically Engineered Machine competition is an annual worldwide synthetic biology event aimed at undergraduate and graduate university students.

I-site MUSE** : The Montpellier Université d’Excellence (MUSE) project is a consortium of 19 organisations, which obtained in 2017 the label of excellence I-SITE (Initiative Science Innovation Territoire Economie), attributed to 9 French institutions only.



PEDAGOGICAL INNOVATION

We aim to transmit knowledge by *unconventional teaching strategies* built around *hands-on practical courses and student projects*, driven by outstanding researchers from Montpellier’s community. Scientific communication and project management also play a key role in our pedagogical offer.

Discussions animated by the teachers, together with your active and direct involvement in handling experiments and concrete difficulties, will help you appropriating the different subjects.

Our intent is to create a vibrant community around the students, based on their activities during the semester. You will also profit from a *group retreat* each year, and have the possibility to *organise a scientific event*. Furthermore, you can integrate the iGEM* team of the University of Montpellier and take part in this international student competition. Top students will benefit from funded internships at the end of the course.

qbio immersive program received financial support from the calls for projects takeoff #3 and #4 for pedagogical innovation (I-site MUSE**).



PROFESSIONAL OPPORTUNITIES

We aim to form high-level PhD candidates, but also provide the knowledge and background necessary to enter the private and biotech environment.



INTERNSHIPS

In addition to the wide choice of internship opportunities from the vibrant Bio-Health community in Montpellier, you will benefit from national and international internship propositions in leading laboratories worldwide, which are part of our network.

12

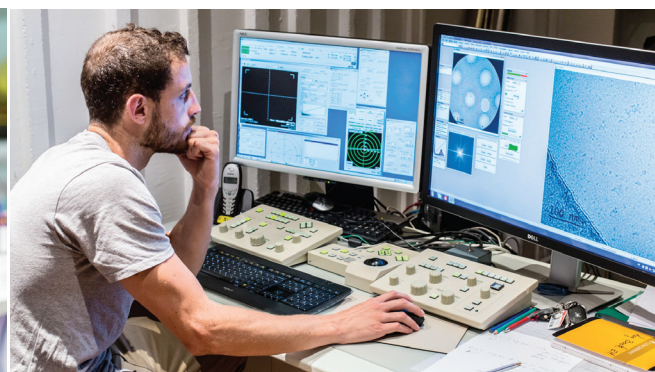
teaching units, 8 specific to qbio

60%

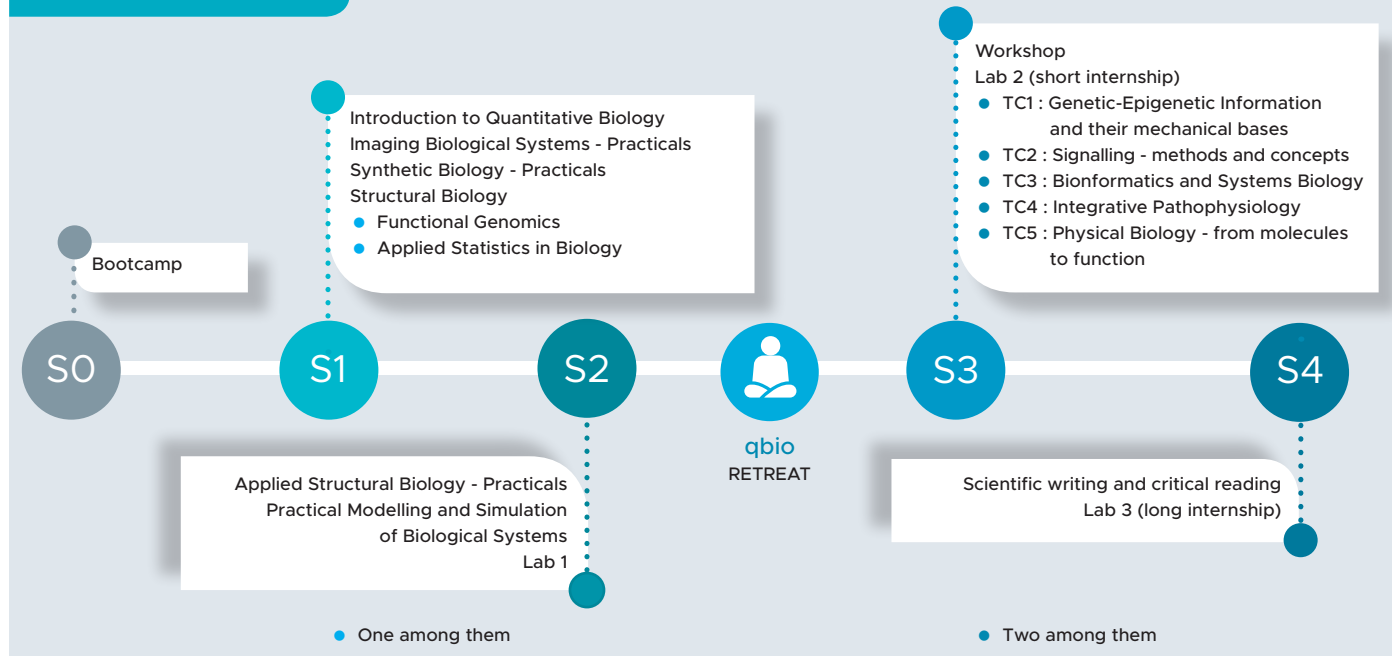
of them are practicals or based on student projects

3

short and long internships, based in Montpellier or abroad



TIMELINE



qbio is a four-semester program (S1-S4), plus an intense introductory period (S0) and a curriculum retreat.



PROGRAM

The necessary background of different disciplines will be refreshed during the Bootcamp, an intensive teaching unit held just before the beginning of term. You will face puzzles and riddles in 'escape lectures', during which you will have to assimilate and exploit concepts that will be fundamental for the other lectures.

qbio bases its foundations on four practical project-based teaching units in the first year: Imaging biological systems, Synthetic biology, Applied structural biology, Practical modelling and simulations of biological systems.

In addition, you will also complete 3 Lab courses (Internships) in S2, S3 and S4 of 1, 2 and 6 months respectively.

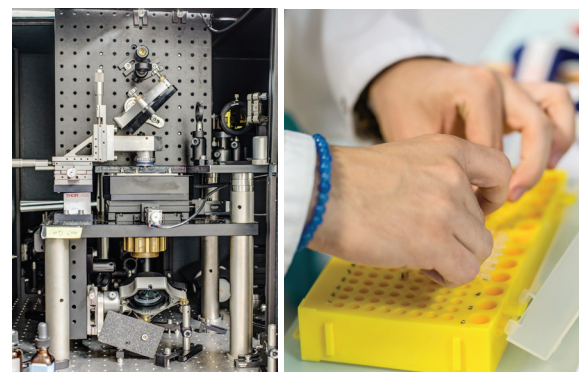
For more info and a detailed description of the different courses, check out our website : <https://qbio.umontpellier.fr>



HOW TO APPLY

We look for highly motivated students, eager to learn by innovative means, with undergraduate training (L3 or equivalent) ranging from biology to physics, mathematics and chemistry, keen on tackling biological questions by an array of interdisciplinary approaches.

If you are interested in applying for this curriculum, do not hesitate to contact us.



THE UNIVERSITY OF MONTPELLIER

The University of Montpellier (UM) is the 6th largest university in France, with about 50,000 students including 7000 international students.

One of the most innovative higher education institutions in France, UM ranks very high in many international rankings:



1st in the world in the 2018
Shanghaï ranking for Ecology



1st most innovative French
university in 2018 Reuter's ranking



5th in France in 2018 Leiden's
ranking for the quality of its
scientific publications



3rd French university in the 2019
"University Impact ranking" of
Times Higher Education



Montpellier is a growing, dynamic and sun-bathed European medium-sized city located in the South of France.

www.umontpellier.fr

CONTACT US

luca.ciandrini@umontpellier.fr

cherine.bechara@umontpellier.fr



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MUSE
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