



## International Master's Program Molecular Medicine

### Basic information

**Keywords:** Master of Science | Translational Medicine | Molecular Medicine | Modules | International | English | Human Genetics | Bioinformatics | Endocrinology | Cardiovascular Disease | Infection | Pathogen

**Program directors:** Prof. Josef Köhrle, Prof. Reinhold Schäfer, Prof. Hans-Peter Herzel, Prof. Wolfgang Dubiel

**Program coordinators:** Naomi Weizenbaum, Dr Sarah Bhargava

**Program web link:** [www.molecular-medicine-berlin.com](http://www.molecular-medicine-berlin.com)

### Detailed program information

**Program summary description:** The master's program in Molecular Medicine is a two-year, fully accredited, international program that accepts 20 students each year and is conducted entirely in English. Students graduate with a Master's of Science in Molecular Medicine. The goal of the program is to provide state-of-the-art, intensive, hands-on training in translational medicine and thereby prepare students for top research and leadership positions in the international scientific community. The program is structured around six different modules (human genetics, tumor pathology, endocrinology, virology & immunology, cardiology, and bioinformatics) and includes both theoretical and practical components.

**Systems medicine and/or translational highlights:** The entire program was conceived to pursue both systems medicine and translational research goals. Thus, the research strategies involved in these scientific approaches are inextricably intertwined into every aspect of the program, from lectures, to laboratory research, and beyond to congresses our students attend and the PhD programs they select after graduating.

**Primary funding source:** Charité - Universitätsmedizin Berlin

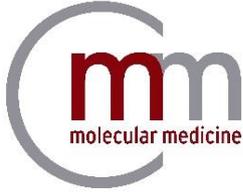
**Program start date:** 10/2005

**Number of students recruited per year (estimated):** 20

**Duration of program:** 2 years

### Scientific training

**Lecture series:** The program is organized around six, eight-week modules which are focused on different specialized topics. Within each module there are 3 lectures and one tutorial per week. Each module concludes with a written exam of 120 minutes and a graded presentation related to the student's research project.



**Practical courses:** Concurrent with the modules, students participate in 2 lab rotations, each lasting 6 months. There they work every day after morning lectures (approximately 20 hours per week) on their own experimental research project. The project is conducted in conjunction with the translational research goals of the hosting group and under their supervision, but is an individual project for which the student is fully responsible. The laboratory placements truly are one of the jewels in the crown of the program as they offer students the opportunity to participate in scientific research at the level of a professional researcher. Furthermore, they prepare students for the master thesis research project. This final and more comprehensive research project is conducted in the last six months of the program. It involves full-time research and culminates in a written master thesis, and a defense of the thesis.

### **Mentoring & supervision offered**

Given the small size of our program and the fact that students are placed individually in their lab rotations, students receive extremely close, one-on-one supervision in the lab. This is especially true at the beginning of their lab placements when they need to learn new techniques, grasp the context of the research project, and understand the research strategies involved. Supervision is also flexible enough to customize the speed at which a new student is expected to become independent. Furthermore, because students are fully integrated into the research lab, they are also supported in giving both internal, informal presentations of their findings, as well as official, graded presentations in front of a panel of other research supervisors. If problems arise, however, both students and supervisors are encouraged to contact the program coordinators to explore options for overcoming any obstacles that might arise. Mentoring during the thesis research follows the same supportive structure, but is extended over a longer period of time. Its success can be seen in the number of master students who are invited to pursue their PhD's in their master thesis labs.

Molecular Medicine students enjoy extensive secondary services provided by the program coordinators. These services enable students to transition smoothly into the program, maintain their focus on intensive academic training throughout the two years, and apply for the doctoral programs which will further their research objectives at the highest possible level. Services include, but are not limited to, assistance with visa processing, scholarship management, language training, housing, and assistance with applications for doctoral programs.

### **Additional features**

**Soft skills training:** Soft skill training is provided in-house for presentation training (four hours at the beginning of each year for new students). Additional individualized training is provided as needed throughout the first semester. Scientific writing skills are "out sourced" to individual lab supervisors who require students to submit between one and two drafts of their laboratory reports at various intervals throughout the lab placements.



**Support for conference visits:** Students are regularly informed of, and encouraged to attend congresses related to translational research and systems medicine. Depending on budget limitations, the program can offer partial support for associated travel and attendance costs. Occasionally our students are also invited to present their findings at conferences as well. Here every effort is made to support the students.

**Clinical visits:**

- Charité Comprehensive Cancer Center: radiology (3 hours), operations room (3 hours)
- German Heart Center catheter lab/echocardiography/electrophysiology study (3 hours)
- Clinical visit at the Clinical Infectiology/Intensive Care Unit (1-2 hours)