



## **Doctoral Training at the FMI**

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## The Friedrich Miescher Institute – Mission

FMI is part of the Novartis Research Foundation.

Its **mission** is

1. to pursue and promote basic research in the fields of biochemistry and medicine, as well as
2. to train young scientists by providing a top-rate academic environment.

## The Friedrich Miescher Institute – Focus on three research fields

The FMI is free in its choice of research areas.  
For the time being researchers concentrate on:

**Epigenetics:** heritable changes in genome function that occur without a change in DNA sequence

**Growth Control:** signaling circuits and mechanisms regulating the growth, division and death of cells and

**Neurobiology:** the formation of neuronal connections during development and their maintenance in adulthood.

## The Friedrich Miescher Institute – Technology Platforms

FMI researchers are supported by a high performance and ultra-modern research infrastructure – our **Technology Platforms**.

Bioinformatics support, Single Cell Profiling, Cell Sorting, Microarray, Histology, Image Analysis, Informatics, Microscopy, Monoclonal Antibodies, Protein Analysis, Protein Structure Facility.

**The technologies are cutting edge and available to all scientists and students at FMI. This adds considerably to the attractiveness of FMI as one's location of choice to do research.**

## The Friedrich Miescher Institute – Facts and Figures

FMI was founded as an independent foundation in 1970, as a first joint effort between the companies of Ciba and Geigy.

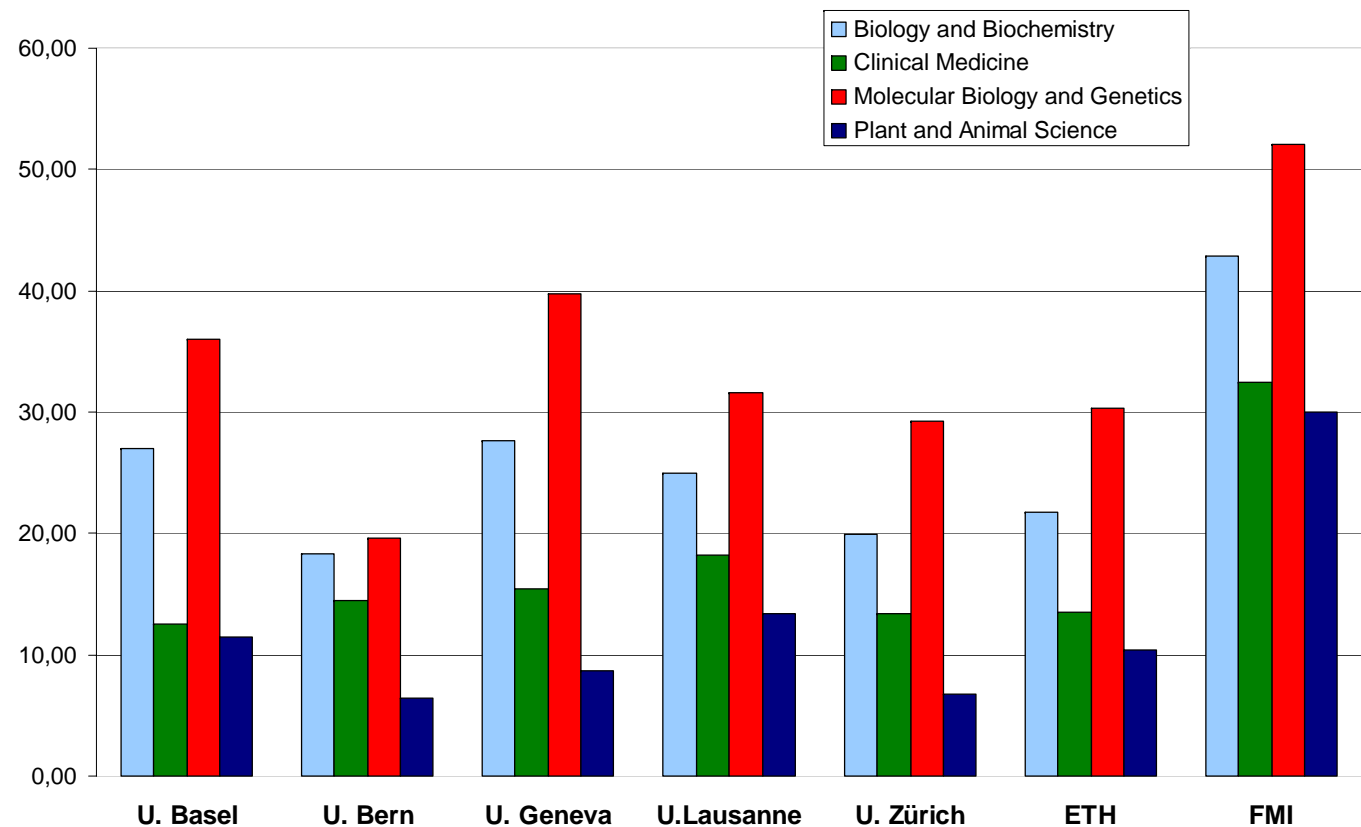
In 1998 it fused with the **Novartis Research Foundation (NRF)** but kept its own name. The purpose of NRF is to fund high risk project in the area of high-technology.

FMI has a staff of about 280 persons, representing nearly 40 nationalities from all continents:

Group leaders	22
Postdocs	63
PhD Students	83
Undergraduate Students	21
Technical/Research Associates	52
Technology Platforms Associates	20
Administration	14

## Essential Science Indicators – Citations per Paper (1995)

- Citations counts are a form of peer recognition.
- It could be argued, that highly cited scientists form the essential core of the scientific community.



## **The Friedrich Miescher Institute – Annual Review**

FMI is annually reviewed by a Scientific Advisory Board (SAB) composed of up to ten internationally renowned experts which help FMI maintain its international competitiveness.

The review takes place in the form of an annual retreat of three days, during which the entire institute goes to an attractive spot in Switzerland.

The programme is composed of talks by group leaders, postdocs and PhD students. All participants must present poster.



## The Friedrich Miescher Institute – Relationship with Academia

The FMI is officially affiliated with the [University of Basel](#), where it contributes to the teaching programme.

Ten FMI Group Leaders are professors at the University, and a further nine are actively involved in diverse teaching activities.

Our PhD students are generally enrolled at the University of Basel.



## The Friedrich Miescher Institute – Relationship with Industry/1

**FMI is situated at the interface of academic research and pharmaceutical application.**

By understanding the control of cell division, the patterning of gene expression during cell differentiation, or the formation and maintenance of neuronal circuitry, FMI hopes to forge new means to combat cancer, to correct degenerative states, and/or to suppress disease correlated with neuronal dysfunction.

Thus enhancing our grasp on the fundamental mechanisms at work within living cells is a goal of vital interest both to society at large and to the pharmaceutical industry.

## The Friedrich Miescher Institute – Relationship with Industry/2

FMI ensures that **Novartis International** is able to efficiently exploit our knowledge and tools for drug development.

FMI's intellectual property is filed in the name of FMI as part of NRF, and Novartis International has first right of refusal to licensing our patents.

As regards our PhD students and postdocs – given the training they receive and our interaction with Novartis, it is not surprisingly that a significant fraction (~10%) later decides to work in Novartis – which in consequence further strengthens the bridge from basic research to pharmaceutical application.

## The Friedrich Miescher Institute – International PhD Programme/1

### History

The FMI PhD Programme started in 1998.

### Figures

Since then 175 students from 33 nations have been employed. Most of them are Germans (42), followed by Swiss (34), Chinese (12), Poles (9), Austrians (8), Indians (7), Croatians and Italiens (6), French and Japanese (5). Currently the FMI hosts 93 PhD students.

### Duration

A course of study at the FMI leading to a PhD degree of the University of Basel typically lasts 4 years.

## The Friedrich Miescher Institute – International PhD Programme/2

### Selection of students

ALL persons that would like to do their PhD at FMI (including those that have already done some undergraduate work in an FMI group and want to continue there) have to go through the FMI International PhD Programme selection process. There are **two rounds of selection**: (1) a selection of candidates based on their written applications; and (2) those invited for interviews, will have a committee interview with those group leaders offering a PhD position and one on one discussions.

Usually students do not apply for a position in a certain lab with a certain group leader, but indicate solely their specific interests in the written application. Only those invited for interviews to Basel will be informed on the day of their arrival, which group leaders actually have open positions. Like this FMI intends to advertise itself as an excellent place to do research as a whole and not only in individual research groups.

## The Friedrich Miescher Institute – International PhD programme/3

"The Scientist", an American magazine of the life sciences, announced FMI as the winner of its 4th annual "Best Place to Work for Postdocs" survey in spring this year.

### Applications

For every round of PhD student selection, the FMI receives around 200-250 written applications and narrows this number down to 20-30 shortlisted applicants who are then invited for interviews in Basel. Normally there are 5-10 positions to be filled within every round.

Students are invited for a five day stay including the weekend to make themselves familiar with the city of Basel.

## The Friedrich Miescher Institute – International PhD Programme/4

### Reimbursement

The FMI provides financial support to graduate students in accordance with the scale of the [Swiss National Science Foundation](#). (currently: first year 21,500 €, second year 23,400 € third 25,300 €)

Semester application fees and semester fees are also reimbursed by FMI.

Some "extras", e.g. a subsidy (currently 900 €) upon purchasing a laptop, and interest-free short-term loans in case of financial difficulties (deposits, purchasing furniture, etc.) for students are also provided.

## The Friedrich Miescher Institute – International PhD Programme/5

### Support

The **Student Representatives** are committed to help students give and get the most possible from their years at FMI.

A **Dean of Students** is nominated from among FMI's Group leaders.

The **FMI Graduate Studies Committee** is set up to help if there are problems or questions about the PhD program. So far it is composed of six FMI Group Leaders.

## The Friedrich Miescher Institute – International PhD Programme/6

### Courses

PhD students matriculated at the University of Basel are required to attend twelve semester hours of graduate lecture level. A programme of courses is organised by the University of Basel. FMI participates in teaching.

### Lab Meetings

There are weekly lab meetings where lab members report on the progress of their projects.

### Journal Clubs

These are intended to help students improve their analytical skills in critically reading scientific literature.



## The Friedrich Miescher Institute – International PhD Programme/7

### Human Resources Development Support

Workshops on scientific and technical writing. Seminars on leadership and organizational behavior. Trainings on 'How to give effective presentations'. Courses in scientific English for students from Asia. German courses. Career Development Conferences.

### Students Science Colloquia

Students Science Colloquia is an unique series of seminars, where outstanding scientists proposed by students are invited to come over for a formal seminar and discuss their work. These seminars are widely advertised and are open to the public. They attract crowd from various educational institutes in and around Basel and also from the research centers of Novartis and Roche.

## The Friedrich Miescher Institute – Recognition of PhD student efforts

### Edmond H. Fischer Prize

The Edmond H. Fischer Prize is awarded every year for the best PhD thesis of an FMI student published in the previous academic year. The FMI selection committee after careful considerations, chooses the winner. The recipient is invited to give a lecture at the Annual Meeting of FMI, where the award (medal, certificate and a cash prize) is handed over.



## The Friedrich Miescher Institute – International PhD Programme Rules/1

### Supervision

The FMI research group leader will be the student's PhD thesis advisor. In addition, the student will be supported by a **Thesis Committee** of experts in her/his field of study.

This committee is composed of three to five members:

1. The **thesis advisor** - and if this person is not certified by the university faculty –
2. a **faculty representative** is required (7 group leaders are in this capacity at FMI)
3. and one member must be an **external expert** with a university appointment at least the rank of a Privatdozent.

However, two of the Thesis Committee members must be FMI group leaders.

## The Friedrich Miescher Institute – International PhD Programme Rules/2

### Nomination and Meetings

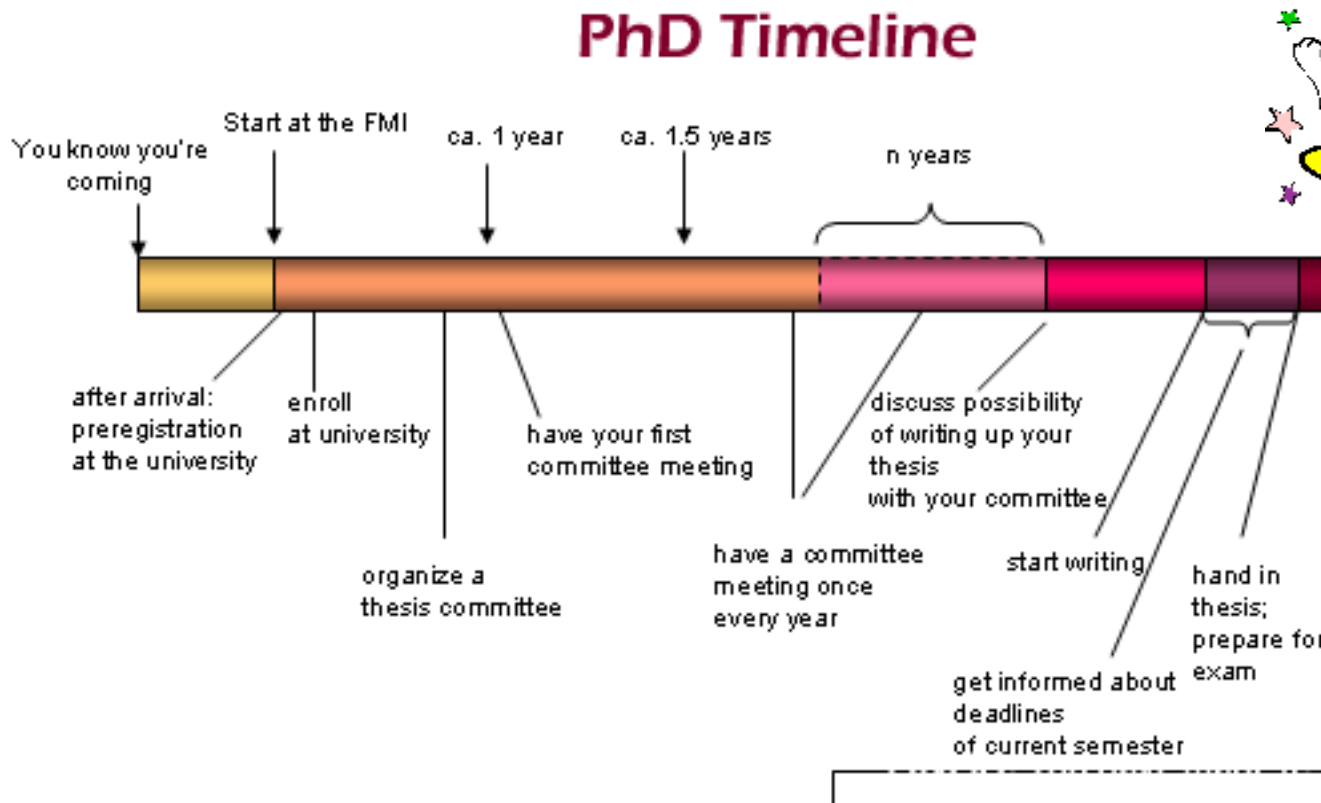
- Within 12 months at FMI, the student submits a provisional thesis title and names of Thesis Committee members (in consultation with the thesis advisor)
- Between 12 and 18 months at FMI the student and the thesis advisor organize the first Thesis Committee meeting with at least three members present. External experts of the committee are strongly encouraged to participate.
- After the first meeting the student arranges meetings at 12 months intervals.
- At the end of the meeting the student will meet with the thesis committee in the absence of the thesis advisor.
- Subsequently the thesis committee will discuss in the absence of the student. It will provide the student with the outcome of this discussion immediately afterwards in the form of a detailed feedback.

## The Friedrich Miescher Institute – International PhD Programme Rules/3

### Writing and defense of the thesis

- FMI recommends that the thesis be written in English.
- The thesis defence lasts one hour. It is an oral examination based on but not restricted to the thesis topic.
- A public presentation of the thesis work (~30 min) has to be given either on the day of the defense or up to six months prior.

Graph from the FMI PhD students website:



**FINISH! You have made it!**  
**Organize a party & invite everybody!!!**