



**Universität  
Zürich** UZH


**ETH**

Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich


**LIFE SCIENCE ZÜRICH**

# LIFE SCIENCE ZÜRICH GRADUATE SCHOOL ANNUAL REPORT 2019

DR. SUSANNA BACHMANN






University of Zurich<sup>UZH</sup>




## International Ph.D. Programs in Life Sciences ETH Zurich and University of Zurich

Application deadlines: 1 December, 1 July  
Application forms and detailed information:  
[www.lifescience-graduateschool.ch](http://www.lifescience-graduateschool.ch)

<ul style="list-style-type: none"> <li>Biomedical Ethics and Law (Medical Track)</li> <li>Biomedicine</li> <li>Biomolecular Structure and Mechanism</li> <li>Cancer Biology</li> <li>Clinical Science</li> <li>Drug Discovery</li> </ul>	<ul style="list-style-type: none"> <li>Ecology</li> <li>Epidemiology and Biostatistics</li> <li>Evolutionary Biology</li> <li>MD/PhD Program</li> <li>Microbiology and Immunology</li> <li>Molecular Life Sciences</li> </ul>	<ul style="list-style-type: none"> <li>Neuroscience</li> <li>Plant Science</li> <li>RNA Biology</li> <li>Science and Policy</li> <li>Systems Biology</li> </ul>
--	---	---



<b>1 EXECUTIVE SUMMARY</b> .....	<b>3</b>
<b>2 INTRODUCTION</b> .....	<b>4</b>
2.1 MISSION.....	4
2.2 STRATEGY AND PRODUCTS OF THE LSZ GS.....	5
<b>3 ACTIVITIES</b> .....	<b>12</b>
3.1 RECRUITMENTS.....	12
3.2 DATA SYSTEMS AND WEBPAGES.....	15
3.3 TRANSFERABLE SKILLS COURSES.....	16
3.4 EVALUTATIONS.....	18
<b>4 ON-GOING PROJECTS</b> .....	<b>19</b>
<b>5 FINANCES</b> .....	<b>20</b>
<b>6 OUTLOOK</b> .....	<b>22</b>
<b>APPENDIX 1: FINANCIAL DISTRIBUTION KEY</b> .....	<b>23</b>
<b>APPENDIX 2: GRADUATE SCHOOL STUDENT BODY</b> .....	<b>24</b>
<b>APPENDIX 3: PHD PROGRAMS ANNUAL REPORTS</b> .....	<b>25</b>
BIOMOLECULAR STRUCTURE AND MECHANISM.....	26
CANCER BIOLOGY.....	30
CLINICAL SCIENCE.....	38
DRUG DISCOVERY.....	41
ECOLOGY.....	42
EPIDEMIOLOGY AND BIostatISTICS.....	47
EVOLUTIONARY BIOLOGY.....	51
INTEGRATIVE MOLECULAR MEDICINE.....	55
MICROBIOLOGY AND IMMUNOLOGY.....	60
MOLECULAR LIFE SCIENCES.....	66
MOLECULAR AND TRANSLATIONAL BIOMEDICINE.....	74
NEUROSCIENCE.....	77
PLANT SCIENCES.....	81
RNA BIOLOGY.....	90
SCIENCE AND POLICY.....	94
SYSTEMS BIOLOGY.....	101

# 1 Executive summary

For the first time the Life Science Zurich Graduate School has seen a fusion of two PhD programs to a new one: For the fall 2019 semester the programs in Integrative Molecular Medicine and Molecular and Translational Biomedicine merged to a Biomedicine Program. Although the two “old” programs will only be shut down completely when the last student has finished his or her PhD studies, they officially do not form part of the Graduate School anymore. That means that the LSZ GS currently consists of 16 PhD programs and one MD-PhD program. At present, the Graduate School includes 591 research group leaders and 1'538 doctoral students (as of 31 December 2019). Compared to 2018, the numbers of principal investigators (522) as well as the number of PhD students (1'520) slightly increased. 53% of our early stage researchers are female and more than 70% come from abroad. 65% of them are enrolled at the University of Zurich, 33% at ETH Zurich and 2% at other academic institutions in Switzerland (mainly at the Universities of Basel and Berne).

Luckily, the reversal of the downward trend in the number of applications we observed at the end of 2018 was not momentarily and continued in 2019 with a small boost at the end of the year. While the total amount was still on the lower side for the July 2019 deadline, we were relieved to see the numbers were on the increase by the end of 2019 with a total of 1'498 applications (compared to 1'129 a year before). It should be noted that for the December deadline we switched one more time application databases. Instead of using the platform of a commercial company that had proven to be too inflexible for our requirements, we now have a tool at our disposal that is tailored entirely to our needs. The number of complete applications is, of course, only one landmark of a given recruitment round. Whereas the December 2018 intake with interviews in February 2019 was below average with a matching rate of 45% and 68% of filled positions, these numbers were again within the range of former years with a matching rate of 58% and 77% of filled positions for the July deadline.

As mentioned before, the LSZ GS switched for the December deadline application platforms but this time the database is much user-friendlier and provides an excellent overview of the different steps and the status of a given application. In fact, the application tool “join” is not exclusively an application platform but rather a tool mirroring the entire recruitment process. The reviewing and assessment of the applications are included as well as the administration of the open positions, the very complex planning of lab visits, the designing of individual schedules, the submission of preference lists and the final matching of supervisors' and applicants' choices.

As in former years, the LSZ GS organized 41 transferable skills courses in 2019, of which 13 were jointly offered by a PhD program or another university institution and the Graduate School. More than 750 PhD students attended one or several of the courses that can roughly be grouped in 5 categories: Best Scientific Practice and Ethics, Communication & Presentation Skills, Methodical Skills, Scientific Writing and Publishing as well as Social and Self-Management Skills. As all courses are generally evaluated by the participants at the end of the event, we know that the doctoral students are to a large extent satisfied with the courses. They really seem to appreciate and take advantage of attending courses that are not directly linked to their research field, but help them to prepare for future leadership functions.

2019 turned out to be the year of internal evaluations. Not only did the Faculty of Science ask the LSZ GS to carry out a so-called quality meeting in June, but also are we requested by the UZH to pass through a formal evaluation of the third cycle. Whereas the latter procedure is still on-going, we aim to implement in 2020 some of the compiled suggestions of the quality meeting to further improve the services of the LSZ GS and the quality of the doctorate.

## 2 Introduction

The idea to found a graduate school that houses all the different PhD programs in the Life Sciences offered at the University of Zurich and the ETH Zurich came up in September 2005. On 8 December 2005, the Life Science Zurich Graduate School was officially launched and became an autonomous branch of the Life Science Zurich Initiative. The LSZ Graduate School currently consists of seventeen highly competitive PhD programs. Thanks to a strong teaching curriculum and a clear mentoring system these programs attract the best students worldwide.

### 2.1 Mission

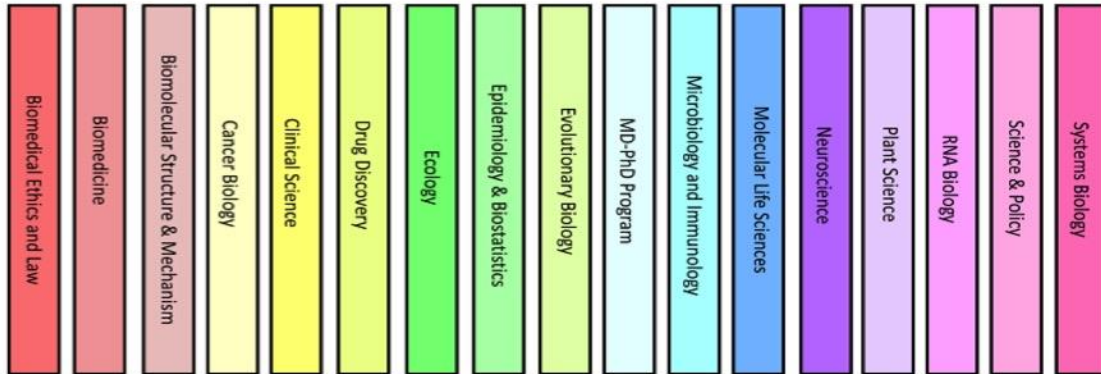
The aim of the Life Science Zurich Graduate School is to promote first-class graduate education in the life sciences at the University of Zurich (UZH) and the ETH Zurich (ETH). The LSZ GS offers centralized services (e.g. recruitment administration, assistance in identifying new funding possibilities) and products (e.g. transferable skills courses) that support established PhD programs and facilitate the development of new programs in the Life Sciences. The centralized administration of these services enables the individual PhD programs to focus on the education of their graduate students within the respective research fields. The individual PhD programs are thereby relieved of administrative tasks and ensuing costs in areas not directly related to their specific research fields.

Specifically, the Life Science Zurich Graduate School aims:

- to increase the visibility and attractiveness of the LSZ-PhD programs world-wide in order to reach excellent undergraduates who consider doing a PhD in the life sciences
- to initiate the recruitment process to attract the best students internationally
- to improve the coordination of recruitment, avoiding redundant reviews of applicants
- to support the development of new PhD programs
- to improve the coordination of teaching for PhD programs with common areas of interest and/or curricula
- to support the PhD programs by providing a centralized course program in relevant transferable skills for all graduate students
- to provide support on career development for the graduate students; alumni of the LSZ GS should be equipped with the key attributes for successfully entering the competitive job market in the life sciences
- to identify and pursue new funding opportunities for the Graduate School and its member PhD programs (e.g. European funding, foundations, SNF)
- to ensure *quality* and *sustainability* of the services and products of the LSZ GS

**The LSZ Graduate School:  
a family of PhD programs spanning the Life Sciences**

**Life Science Zurich Graduate School (LSZGS)**



## **2.2 Strategy and products of the LSZ GS**

The major units of the LSZ GS are:

- a) LSZ GS Directors' Conference (program directors from each PhD program form the steering committee)
- b) PhD programs
- c) Graduate School office: administration


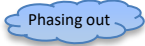
**Table 1: Roles and responsibilities of the LSZ GS units**


Unit	Roles and responsibilities
LSZ GS steering committee	<ul style="list-style-type: none"> <li>• Strategic development of LSZ GS</li> <li>• Advice and support for the PhD programs and GS administration</li> <li>• Development of common criteria for quality assurance of the PhD programs</li> <li>• Promotion of relevant contacts within the scientific community of life sciences</li> <li>• Identification of common course needs</li> <li>• Development of a transferable skills curriculum</li> <li>• Identification and development of joint funding initiatives</li> </ul>
PhD programs	<ul style="list-style-type: none"> <li>• Evaluation and acceptance of students into the program</li> <li>• Development, implementation and funding of a discipline-specific graduate curriculum</li> <li>• Quality assurance</li> <li>• Fundraising for a specific PhD program</li> <li>• Tracking development of the students within each program</li> <li>• Funding travel expenses and accommodation for interview candidates from abroad</li> </ul>
Graduate School office	<ul style="list-style-type: none"> <li>• Increasing visibility of the PhD programs world-wide</li> <li>• Advertising the graduate school and its recruitment procedure (advertisements on web platforms, posters etc.)</li> <li>• Coordination of the recruitment process (application forms, internal and external communication, i.e. information to PI and to candidates)</li> <li>• Organization of interviews</li> <li>• Funding for PR, the common application platform and the transferable skill courses</li> <li>• Development and maintenance of the LSZ GS web site for dissemination of information</li> <li>• Financial planning and financial controlling of the LSZ GS activities (esp. recruitment and courses)</li> <li>• Advice and support for the development of new programs (practical procedures, know-how transfer)</li> <li>• Fundraising for LSZ GS in areas <i>independent</i> of a specific research field (e.g. for common activities or for fellowships for students from a specific country)</li> <li>• Development and organization of a centralized Transferable Skills Course Program for all graduate students, including acquisition, commitment and support of internal and external facilitators, advertising the courses (GS web site) and coordinating sign-up</li> <li>• Support for the career development of graduate students (courses, activities, web-information)</li> <li>• Assurance of quality and sustainability of the services and products of the LSZ GS office</li> <li>• Exchange and collaboration with other units of the LSZ initiative</li> <li>• Exchange and collaboration with other graduate schools, both in- and outside of Zurich</li> </ul>

## 2.2 a) LSZ GS Steering committee and participating PhD programs

With the fusion of the Integrative Molecular Medicine (imMed) and the Molecular and Translational Biomedicine (MTB) program to the new Biomedicine (BioMed) program that was approved in May 2019 by the PDC, the Life Science Zurich Graduate School got reduced to sixteen PhD programs and a MD-PhD program. Each program is presided by a director, who generally represents the program in the steering committee (see list below). In 2019, this steering committee met twice in order to decide on the strategic orientation and development of the Graduate School. Since July 2017, Prof. Eilika Weber-Ban, Institute of Molecular Biology and Biophysics (ETH) is presiding the LSZ GS as chair. Prof. Alex Hajnal, Institute of Molecular Life Sciences (UZH) is the current vice-chair.

**Table 2: Directors of the LSZ GS PhD programs**



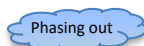
Program	Director
Biomedical Ethics and Law [medical track]	Prof. Nikola Biller-Andorno (Institute of Biomedical Ethics, UZH)
Biomedicine 	Prof. Christian Grimm (Division of Ophthalmology, USZ) Prof. Christian Wolfrum (Institute of Food, Nutrition and Health, ETH)
Biomolecular Structure and Mechanism (BSM)	Prof. Raimund Dutzler (Institute of Biochemistry, UZH)
Cancer Biology	Prof. Maries van den Broek (Institute of Experimental Immunology, UZH)
Clinical Science	Prof. Jean-Marc Fritschy (Institute of Pharmacology and Toxicology, UZH) Prof. Malcolm Kohler (Neuromuscular Center Zürich) Prof. Milo Puhan (Institute of Social and Preventive Medicine, UZH)
Drug Discovery	Prof. Michael Arand (Institute of Pharmacology and Toxicology, UZH)
Ecology	Prof. Owen Petchey (Institute of Evolutionary Biology and Environmental Studies, UZH)
Epidemiology & Biostatistics	Prof. Torsten Hothorn (Institute of Social and Preventive Medicine, UZH) Prof. Milo Puhan (Institute of Social and Preventive Medicine, UZH)
Evolutionary Biology	Prof. Kentaro K. Shimizu (Department of Evolutionary Biology and Environmental Studies, UZH)
Integrative Molecular Medicine (imMed) 	Prof. Christian Grimm (Division of Ophthalmology, USZ)

<b>Program</b>	<b>Director</b>
MD-PhD Program	Prof. Adriano Aguzzi (Institute of Neuropathology, UZH) Prof. Alexandra Trkola (Institute of Medical Virology, UZH)
Microbiology & Immunology (MIM)	Prof. Rolf Kümmerli (Department of Quantitative Biomedicine, UZH) Prof. Annette Oxenius (until September 2019) (Institute of Microbiology, ETH) Prof. Jörn Piel (since October 2019) (Institute of Microbiology, ETH)
Molecular Life Sciences (MLS)	Prof. Christian Lehner (Department of Molecular Mechanisms of Disease, UZH)
Molecular and Translational Biomedicine (MTB) 	Prof. Christian Wolfrum (Institute of Food, Nutrition and Health, ETH)
Neurosciences (ZNZ)	Dr. Wolfgang Knecht (Institute of Brain Research, UZH)
Plant Science (PSC)	Prof. Samuel Zeeman (Institute of Agricultural Science, ETH)
RNA Biology (RNA)	Prof. Frédéric Allain (Institute of Molecular Biology and Biophysics, ETH)
Science and Policy	Prof. Ueli Grossniklaus (Institute of Plant Biology, UZH)
Systems Biology	Prof. Uwe Sauer (Institute of Molecular Systems Biology, ETH) Prof. Jörg Stelling (Department of Biosystems Science and Engineering, ETH)

Program administrators, who are in charge of day-to-day affairs, normally also participate in steering committee meetings, although without voting rights. The following persons currently act as program administrators:



**Table 3: Administrators of the LSZ GS PhD programs**

<b>Program</b>	<b>Administrator</b>
Biomedical Ethics and Law [medical track]	Dr. Roberto Andorno Michelle Heimgartner (Institute of Biomedical Ethics, UZH)
Biomedicine (BioMed) 	Heidi Preisig (ZIHP, UZH)
Biomolecular Structure and Mechanism (BSM) Cancer Biology	Judita Tillova (Institute of Biochemistry, UZH) Bettina Rausch (Institute of Molecular Cancer Research, UZH)
Clinical Science	Lisa Marxt (since May 2019) Claudia Arnold (until April 2019) (Dekanat, Medizinische Fakultät, UZH)
Drug Discovery	Susanne Holliger (Institute of Pharmaceutical Sciences, ETH) Olga von Niederhäusern (Institute of Pharmacology and Toxicology, UZH)
Ecology	Dr. Debra Zuppingler-Dingley (Institute of Evolutionary Biology and Environmental Studies, UZH)
Epidemiology & Biostatistics	Dr. Sarah Ziegler (Institute of Social and Preventive Medicine, UZH)
Evolutionary Biology	Dr. Tony Weingrill (Anthropological Institute, UZH)
Integrative Molecular Medicine (imMed) 	Heidi Preisig (ZIHP, UZH)
MD-PhD Program	Jacqueline Wiedler (Institute of Neuropathology, UZH)
Microbiology & Immunology (MIM)	Judith Zingg (Institute of Microbiology, ETH)
Molecular Life Sciences (MLS)	Dr. Susanna Bachmann (Institute of Molecular Life Sciences, UZH)
Molecular and Translational Biomedicine (MTB) 	Dr. Susanna Bachmann (since September 2019) Life Science Zurich Alexandra Bündler (until September 2019) (Competence Center Personalized Medicine, UZH & ETH)
<b>Program</b>	<b>Administrator</b>

Neurosciences (ZNZ)	Heidi Gauss (Neuroscience Center Zurich, UZH & ETH)
Plant Science (PSC)	Dr. Melanie Paschke Dr. Luisa Last (Institute of Plant Science, ETH)
RNA Biology (RNA)	Isabelle Allen (Institute of Molecular Biology and Biophysics, ETH)
Science and Policy	Dr. Luisa Last (Institute of Plant Science, ETH)
Systems Biology	Dr. Andrea Huber Brösamle Swantje Pless (Department of Biosystems Science and Engineering, ETH)

## Graduate School student body 2019

Details of each program are published in appendix 2.

---

### Total numbers as of 31 December 2019

---

Total students	1538*
Affiliated at UZH	1003
Affiliated at ETH	504
Other affiliation	32
Track I students	598
Track II students	938
Female students	814
Male students	724
International students	1079
Swiss students	457
Program drop-outs	76
Completed PhD	331
Program alumni	3100

---

\*No data from the Drug Discovery PhD program

### 2.2 b) Graduate School office

Since 1 April 2006, the Graduate School has its own administrative office. Dr. Susanna Bachmann is employed on a part-time basis of 40% and attends the day-to-day business of the LSZ GS. Since June 2011, Helen Stauffer is working as assistant for Life Science Zurich. She dedicates about 25% of her employment to the LSZ GS.

The school administrator attended the EUA-CDE (European University Association - Council for Doctoral Education) thematic workshop on "Inter-institutional Collaboration in Doctoral Education" on 17-18 January 2019. In addition, she met with the other members of the GRADE (Goethe Research Academy for Early Career Researchers) advisory board on 13 November in Frankfurt for the annual encounter. Moreover, she joined the informal association of program coordinators of different European PhD programs in the life sciences, such as Max-Delbrück Center for Molecular Medicine Berlin, German Cancer Research (DKFZ), the Francis Crick Institute, Friedrich Miescher Institute for Biomedical Research in Basel, Center for Genomic Regulation in Barcelona, TU Dresden, Max Planck Institute in Dortmund, University of Göttingen, Institute of Science and Technology Austria, Research Institute of Molecular Pathology (IMP), Research Center for Molecular Medicine of the Austrian Academy of Sciences and European Molecular Biology Laboratory (EMBL). The coordinators met on 2 and 3 December 2019 in Heidelberg at EMBL and the DKFZ to exchange best practices on topics such as mental health and well-being of PhD students, surveys, PhD training and student management.

## 3 Activities

### 3.1 Recruitments

As in former years, for both recruitment rounds the applicants of the Indian subcontinent (India, Pakistan and Bangladesh) formed the largest group (approximately 1/4 of all applicants of the December and the July deadline). They were followed by students from Germany, China, Italy, and Iran in varying order for the two deadlines.

**Table 4: Complete applications per PhD program in 2019**

	1 Dec. 2018	1 July 2019	1 Dec. 2019
Biomedical Ethics and Law (med. Track)	0	0	0
Biomedicine	-	-	86
Biomolecular Structure and Mechanism	59	43	67
Cancer Biology	178	179	190
Clinical Science	28	*	15
Drug Discovery	64	*	77
Ecology	48	40	33
Epidemiology & Biostatistics	48	30	74
Evolutionary Biology	15	19	30
Integrative Molecular Medicine	29	16	-
Microbiology and Immunology	168	120	145
Molecular Life Sciences	154	109	154
Molecular and Translational Biomedicine	56	39	-
Neuroscience	129	*	195
Plant Science	57	*	96
RNA Biology	18	14	27
Science and Policy	16	*	207
Systems Biology	62	47	102
<b>TOTAL</b>	<b>1'129</b>	<b>656*</b>	<b>1'498</b>

\* Access to the Glowbase database – in use until September 2019 – finished by the end of 2019. Those programs that did not secure their data by then were not able to retrieve any statistical information about the July 2019 recruitment.

After the absolute peak of 1'733 applications in December 2013, the numbers of applications dropped rather continuously to very low 968 complete applications in July 2018. With 1'123 applications in December 2018 the negative trend seemed to have come to a halt, however, already the next deadline brought declining numbers. The decrease was not as dramatic as it looks like: several programs did not secure their data for the July 2019 deadline and had no access to it after the LSZ GS had given up the Glowbase application platform and switched to the new tool. Nevertheless, for nearly all the programs the number of applications for the July 2019 deadline was lower than for the previous deadline. Luckily, with the switch of the application database the numbers raised again up to 1'498 for the December 2019 deadline. This might be an indication that the low numbers resulted partially from the fact that the Glowbase application platform was not only for the coordinators but also for the applicants cumbersome to handle. For this reason, the LSZ GS paid a lot of attention to keep certain steps in the application process flexible despite having automatized as much as possible. More information about the new application tool can be found in chapter 3.2.

Though it is too early to know whether the current reversal of the pattern of continuously declining numbers - with a few exceptions proving the rules - is transitory or not, we hope of course that the numbers of applications remain stable or, even better, will further increase. It is an undeniable fact that many other renowned European universities have set up PhD programs and Graduate Schools in the past years and, indeed, many of our applicants apply to one or several additional programs. However, the LSZ GS is still one of the bigger as well as thematically most diverse players and it disposes of a good visibility. It should hold its ground and strive to attract a satisfactory number of excellent PhD applicants.

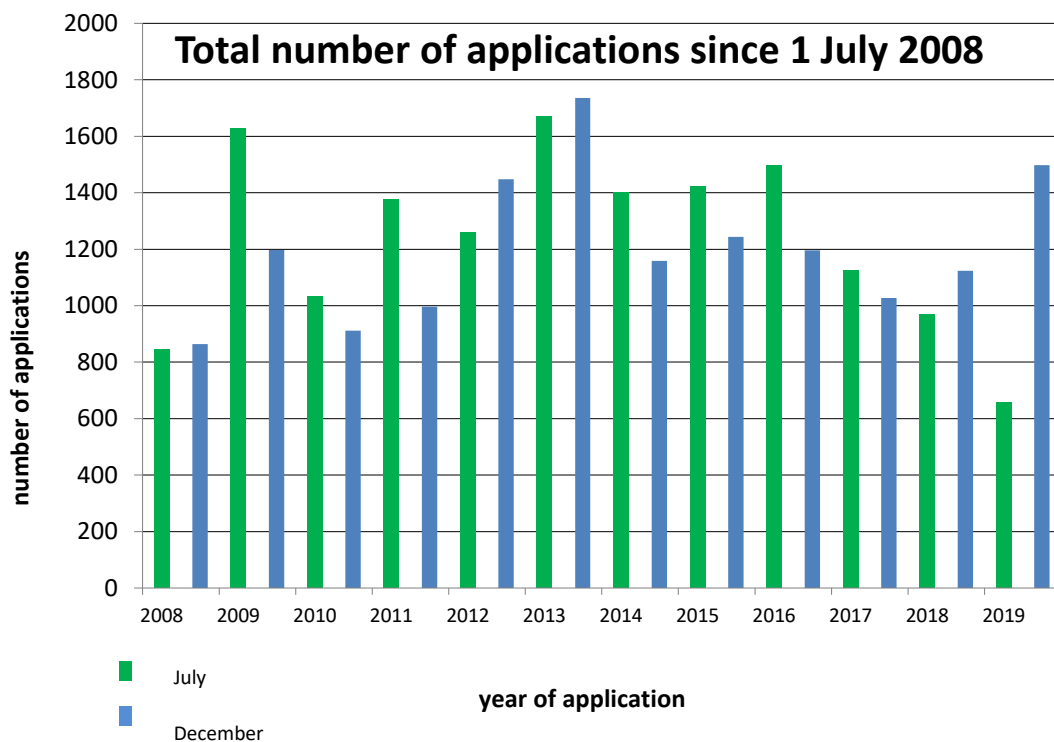


Figure 2: Total number of applications since 1 July 2008.

The trend we observed in the past years with the female students slowly but steadily catching up in number with the male applicants remained more or less on the level of the past years. As for the previous recruitment rounds, we invited more female than male candidates for an interview. Most of the applicants learned about the program from the internet (from our own web page or ads on different recruiting web sites, a fourth indicated google search). As in

former years, applicants also learned about the program from friends who have once applied to the LSZ GS or who are performing their PhD in one of the programs. The poster as a recruiting tool continues to lose importance compared to the other marketing tools but we have not yet given it up completely.

In early fall, the LSZ GS had the opportunity to participate in a survey focusing on the visibility of several PhD programs in Europe. Generously the Vienna BioCenter designed the Gallup Survey and took over the entire costs. Among other participating programs were the Friedrich Miescher Institute for Biomedical Research (FMI), the Institute of Science and Technology Austria and two Max Planck Institutes. For the LSZ GS 265 PhD students participated in the survey, 190 affiliated with UZH and 75 with ETH. Compared with the other, admittedly much smaller programs, the ETH and the University of Zurich were the best known institutions with one or several PhD programs in the life sciences. Interestingly, most PhD students first heard about the familiar institutes through peers, postdocs or professors. Social media and posters do not play a decisive role here and they are also not a very important channel to learn about the programs, this is still considered to be the institute websites. 88% of the respondents affiliated with the Graduate School would recommend their program to others, which means that satisfaction with the program is high.

After the admission committees of the different programs had reviewed the applications, the top 14% of the applicants were invited to Zurich for an interview and lab visits in February 2019 (December 2018 deadline; no consistent data available for the July deadline, see remark in Table 4). Whereas in December, 54% of the interviewed candidates were offered a position in Zurich, this rate was a bit higher in July with 63%. In the winter round, nearly 9% of the accepted candidates rejected a position offered by our group leaders. In contrast, with 5% this ratio was quite a bit lower in summer, however both rounds were within the range of past rounds (4-10%). Many of the students who turned down our offer probably joined other very strong programs in Europe or in the US. The drop-out rate was 15% for the December deadline and 13% for the July deadline, which is slightly below the average of former recruitment rounds (15-20%). The December matching rate of 45% is a bit lower than in past winter rounds, whereas the matching rate of 58% in July is within the average of past years.

**Table 5: LSZ GS recruiting statistics in 2019**

	Dec. 1, 2018	July 1, 2019	Dec. 1, 2019
Complete applications	1067	656	1498
Invited candidates	147	153	156
Drop-outs before interview	21	19	*
Candidates at interview	126	134	*
Free slots 1 Dec 2019	85	101	*
Matches	57	77	*
Candidates without matches	60	50	*
Decision against LSZ GS	11	7	*
Rejected candidates	0	3	*

\*data will be included in 2020 annual report

Remark: Several programs did not collect data for the July 2019 recruitment round, therefore the figures are not comparable to the other rounds. Data from Drug Discovery is missing for the entire year.

In February 2019 (December 2018 deadline), we managed to fill 68% of the open positions whereas with 77% this ratio was even a bit more successful in July 2019. However, these rates correspond to the average of the last years. Although in general the matching process is satisfactory, we are aware that it is a very sensitive part of the whole recruitment process. As the number of applicants has remained at a low level in 2019, there is at the moment no need to organize the recruitments differently or to add a third round.

Because not all open positions can be filled during a given recruiting round and some outstanding applicants don't want to wait for 6 months, if they have just missed an application deadline, all programs also accept "track II" candidates. Track II students are students who have applied independently to (and have been accepted by) a group leader who is a member of a specific PhD program. This more traditional way of recruiting students is more pronounced in some programs than in others. Currently, about 3 out of 5 students are hired via track II. Applications of track II students are administrated directly by the different programs.

### **3.2 Data systems and webpages**

As mentioned in last year's report, the Graduate School neither regarded the Glowbase application platform as user-optimized nor was it providing us with the utilities we had expected. Moreover, the highly appreciated flexibility the old tool had offered had nearly completely disappeared: it was not possible to consider late applications or prolong deadlines and the coordinators could not move applications from track I to track II or between the programs. Luckily, we could not only get in touch with the person who had programmed the very first database the LSZ GS had used but he also was willing and had the capacities to set up a completely new database for us. The application part was in fact ready in summer 2019, thus we could link our application pages with the new database "join" at the beginning of August. Collaboration with the staff of the Institute of Mathematics at UZH was very pleasant and the programmers did an excellent job to tailor the database to our needs and requirements. From the very first moment, the coordinators had a continuously updated manual at their disposal and via a well-functioning ticket system problems and requests were solved and dealt with in a speedy manner. As could be seen in the chapter about the recruitment, application numbers for the 1 December 2019 deadline went clearly up again and we therefore can say that "join" has successfully passed the first test. The more demanding functions to program, however, will be the preference lists, the scheduling of the lab visits and the final matching. Based on our former experiences, we are confident that the features will be user-friendly and ready on time.

Planning, implementing and testing the new application database was binding quite many resources of the school office during 2019. Fortunately, the charged price for the new tool was very fair, so that the LSZ GS's budget was not overtaxed with developing a new tool and simultaneously hiring the rather expensive Glowbase application platform until we could contract out of the agreement by the end of 2019.

Much to our regret, we also got into predicament with our other big database – the PhD portal DissGo. In February 2019, we were all of a sudden faced with the fact that the office of the Dean of Studies had programmed an own database (called "studentadmin") for the PhD students of the Faculty of Science (UZH). This concerns approximately 1'000 doctoral students of the LSZ GS and means that they and the coordinators now have to attend two parallel but not entirely congruent data systems. Not only does this situation create a lot of confusion among the students, it also entails additional administrative work for the program coordinators and the school administrator that cannot be covered by our decreasing budget.

Although the Faculty does not force the LSZ GS to switch to studentadmin in the short term, they still require that all data stored in DissGo regarding committee meetings, research proposal etc. is transferred to their database, which means that we have to implement an export for the data exchange. Since it did not prove easy to extract data quickly from DissGo, when we requested to obtain an overview of the committee meetings, and since Glowbase did not behave very customer-friendly when we introduced their application platform, it might be time for the LSZ GS to give up DissGo. The Program Directors' Conference of the Graduate School is willing to swallow the bitter pill, if there is a solution for the administrative handling of the ETH students (who are not integrated in the studentadmin database of the Faculty of Science of UZH). Furthermore, the data and functions the coordinators and directors need to govern in their programs must also be included in the new database. This concerns on the one hand information for the statistics in the annual report and on the other some fundamental features like exporting an email/address list of the PhD students and the PIs of a given program (the program affiliation of each PI is also not recorded in studentadmin). Ideally, in the very end LSZ GS will have to attend for all PhD students again only one single database containing all the features DissGo is offering. However, the Directors' Conference is well aware that this will take some time and might be difficult to achieve.

### **3.3 Transferable skills courses**

Besides the centralization of the application process, one of the main motivations to found the Graduate School was to offer common courses, which are not related to the specific scientific focus of a program. The transferable skills course (TSC) program of the Life Science Zurich Graduate School focuses on the development and training of some key skills early stage researchers should dispose of for carrying out their dissertation project as well as for their future career, be it as scientist or in a leading position in industry or the public sector. The offered courses can roughly be grouped in 5 categories: Best Scientific Practice and Ethics, Communication & Presentation Skills, Methodical Skills, Scientific Writing and Publishing as well as Social and Self-Management Skills. More than 750 PhD students attended one or several of the 41 courses the LSZ GS offered in 2019. 13 of them were organized by a program or another university institution such as the Functional Genomics Center Zurich, Animal Welfare and 3R, the BioEntrepreneurship & Innovation unit of the Institute for Regenerative Medicine, the Konstanz Research School of Chemical Biology (KoRS-CB), etc. 5 courses were offered by in-house staff and thus not liable to costs. The program administrators agreed on the following policy for joint courses: the organizing program obtains half of the seats for its own students, if the LSZ GS bears half of course costs. Should the program need more seats, the LSZ GS reduces its financial support accordingly.

For organisational reasons the LSZ GS offers also a few methodological courses within the TSC – these courses are normally taught by the facility centers of the universities, such as the Functional Genomics Center or the Flow Cytometry and the Microscopy and Imaging Centers. In 2018, we therefore renamed the course program webpage slightly to “Transferable and Methodological Skills Course Program”. This way it should be obvious to our PhD students that they can also find some courses in our program, which help to improve their methodological skills.

As in past years, most of the courses were completely booked or even over-booked. None of the courses had to be cancelled due to lack of interest. Since all courses are generally evaluated by the participants at the end of the event, we know that the doctoral students are to a large extent satisfied with the courses. They really seem to appreciate and take advantage of attending courses that are not directly linked to their research field, but help them to prepare for future leadership functions.



**Table 6: Courses offered by the LSZ Graduate School from January to December 2019**

<b>Transferable skills courses for PhD students</b>	<b>Number of courses</b>	<b>Number of participants</b>	<b>UZH affiliation (+ USZ &amp; Kispi)</b>	<b>ETH affiliation</b>	<b>other</b>
<b>Best scientific practice &amp; ethics</b>	<b>7</b>	<b>314</b>	<b>222</b>	<b>77</b>	<b>15</b>
GMP (joint course with KoRS-CB)	1	18	15	3	
Responsible Conduct in Research (joint course with Plant Science Center)	1	4	2	1	1
Scientific Integrity Introductory Course	4	252	179	61	12
The right not to know (organised by Prof. Konrad Basler)	1	40	26	12	2
<b>Communication &amp; presentation skills</b>	<b>6</b>	<b>84</b>	<b>52</b>	<b>28</b>	<b>4</b>
Convincing and Debating	1	11	10	1	
Effective Presentations/ Poster Presentation/Scientific Presentation	3	34	16	17	1
Effective Visual Communication of Science	1	24	16	6	2
Logic and Reasoning for Scientists	1	15	10	4	1
<b>Methodical skills</b>	<b>5</b>	<b>60</b>	<b>46</b>	<b>11</b>	<b>3</b>
Interactive Design Thinking Workshop for Implementing the 3Rs with Innovative Solutions	1	11	6	5	
Molecular Biology Methods	1	25	20	4	1
NGS DNA / RNA Sequencing	3	24	20	2	2
<b>Scientific writing &amp; publishing</b>	<b>8</b>	<b>103</b>	<b>58</b>	<b>38</b>	<b>7</b>
Advanced Writing					
Dealing with the Publication Process	1	8	5	3	
Preparing to Postdoc	1	16	10	6	
Science Events Planning & Management	1	9	7	1	1
Science Filmmaking Marathon III	1	10	5	4	1
Scientific Writing	2	40	20	20	
Storytelling & Storyboarding	1	10	6	2	2
Writing a Postdoctoral Grant	1	10	5	2	3

<b>Transferable skills courses for PhD students</b>	<b>Number of courses</b>	<b>Number of participants</b>	<b>UZH affiliation (+ USZ &amp; Kispi)</b>	<b>ETH affiliation</b>	<b>other</b>
<b>Social &amp; self-management skills</b>	<b>15</b>	<b>196</b>	<b>140</b>	<b>50</b>	<b>6</b>
BioEntrepreneurship & Innovation: From Scientist to BioEntrepreneur. Creation of a marketable product (Module A+B)	4	56	42	14	
Career Cornerstones	1	12	8	4	
Competency Awareness	2	24	17	7	
Managing difficult working relationships (PhDs & Postdocs)	1	9	8	1	
Minfulness & Teambuilding (TLEX)	1	14	8	5	1
Networking for Conferences, Collaboration and Career	1	12	8	4	
Successful Start of a Professional Career	2	31	23	7	1
Teaching at the University	1	15	10	3	2
Unfolding your Self-confidence	2	23	16	5	2
<b>Total of all courses</b>	<b>41</b>	<b>757</b>	<b>518</b>	<b>204</b>	<b>35</b>

### 3.4 Evaluations

In Spring 2019, the Life Science Zurich Graduate School was informed by the Faculty of Science that it had to carry out a so-called [Quality Meeting](#). This is a round table conference between all relevant stakeholders of a study program to share quality-relevant issues. During the discussion the current state is described, development goals are defined and measures identified. The meetings should take place once a year to check whether the measures have been implemented and whether new issues have come up in the meantime.

The LSZ GS held the meeting on 27 June. In total, 37 PhD students, coordinators and program directors met in two different groups to discuss the questions, which the Dean of Studies of the Faculty of Science had preset:

- 1) Supervision of the doctoral dissertation
- 2) Administrative support by the PhD program
- 3) Admission procedure

The LSZ GS also wanted to discuss the financing of the program coordinators but due to the lack of time it was not possible to go into details. However, the question will be brought up again for the next meeting.

All in all, the discussions were constructive and for each subject of debate targets were specified and some concrete measures formulated. Here a random list mentions two points for each discussed topic:

- 1) a) Pls of the LSZ GS should be encouraged to attend leadership or lab management courses.
  - 1) b) The use of video conferencing for external thesis committee members is encouraged.
  - 2) a) The definition of additional admission requirements should be harmonized within the Faculty of Science.
  - 2) b) The LSZ GS should include in the annual report statistics on the duration of the PhD.
  - 3) a) Incoming students have to be better informed about the enrolment procedures.
  - 3) b) The LSZ GS could implement a “self profiling quiz” for applicants, if there is funding available.
- The minutes of the entire meeting can be retrieved upon request.

The report of the Quality Meeting had just been submitted when the [Evaluation Office](#) of the University of Zurich contacted the Graduate School to inform about the mandatory participation in the evaluation in the Third Cycle. This cycle places a stronger focus on the management processes, strategic policies and development plans of the units under evaluation. After a preliminary meeting with the evaluation office, the LSZ GS and the Faculty of Science signed in September 2019 an Evaluation Agreement. The LSZ GS also submitted a list of possible experts before the end of the year. The site visit is planned for Spring 2020 and a date will be set as soon as a team of three experts has been defined. Before the site visit is taking place, a survey will be carried out among the PhD students of the Graduate School, its coordinators and program directors. In addition, the LSZ GS office will have to submit a detailed self-evaluation about 6 weeks before the experts are going to come to Zurich.

## 4 On-going projects

We have just pointed out in the previous paragraph that the evaluation by the UZH will extend far into 2020. Indeed, the entire process is planned to last quite a bit longer. Two years after the experts will have handed in their report and an agreement with measures to take has been signed, the university will review their implementation in a follow-up round.

As also already detailed above, the new application database “join” is not yet entirely finished. Whereas most features related to the application, the advertisement of the open positions and the reviewing of the applications are programmed, the tool still lacks the submission of preference lists, the scheduling of admission interviews and lab visits as well as the final matching. We are optimistic that these specifications will be ready on time but we are also aware that the coding of the schedules is demanding and might involve a lot of testing and reprogramming.

It is also to suspect that the disconcerting and for the students of the Faculty of Science rather confusing situation of two parallel data systems will yet continue in the near future. Even though the Dean of Studies has stressed his goodwill to implement certain features from DissGo also in the studentadmin database, it is not likely that this is going to happen quickly. And it is even less likely that the LSZ GS doctoral students affiliated with ETH will soon be included in the studentadmin database either. Thus the coordinators might have to keep on handling two parallel databases for a fairly long time. .

Another persisting issue will be the quest for stable and long-term funding for the Graduate School and its PhD programs. As it has been pointed out in the past and will be specified in the next chapter, the support of swissuniversities (formerly SUK) is phasing out and will completely cease by the end of 2020. Although the LSZ GS is only partially affected by the complete abolition of the swissuniversities support – at the moment solely the Scientific

Integrity course is paid via this funding mechanism – some of its PhD program will have to face a loss of nearly 50% of their budget and thus face serious problems maintaining the services they are currently offering. As chances are minimal that new funding sources will be available in the short run, the LSZ GS might have to think about an internal reorganisation.

## 5 Finances

Since UZH and ETH signed their agreement in 2010, the Life Science Zurich Graduate School obtains CHF 700'000 from its host institutions annually. Each year ever since, the directors' conference works out a distribution key (see Appendix for the 2019 key) to allocate the funds. As the distribution of the funds per capita would have been very disadvantageous for the smaller programs, the directors' conference agreed on paying each program a fix allowance besides the per capita contribution. In order not to penalize the bigger programs, the allowance is slightly graded (CHF 5'000 for programs with up to 10 students, CHF 10'000 for programs with 10-20 students and CHF 14'000 for programs with more than 20 students). In order not to encourage a long duration of the PhD, the LSZ GS only finances students until the end of their 4th year. This means that the programs obtain the same amount of money for all students, irrespectively of how long it takes them to complete their PhD.

After a few relatively carefree years, the financial situation of the Graduate School is again getting tenser. This is mainly due to the abolition of the swissuniversities support. Especially those programs that obtained a considerable share of swissuniversities money in the last years are facing serious financial problems because the distributed funds are going to run out completely after 2020.

However, the LSZ GS has not been able to fund all its PhD programs for a longer while already. Most of the programs (partially) affiliated with the Medical Faculty do not obtain any financial support via the Graduate School. On the contrary, the Clinical Science and MD-PhD program actually pay a membership fee. The RNA Biology program receives funding from the NCCR RNA Biology and thus asks the Graduate School to pay only for the per capita fee of its PhD students but not for the allowance, which is covered by the NCCR. Although the student body is not further growing at the moment (it rose from 1071 funded PhD students (year 1 to 4) in 2011 to 1'257 in 2016 and dropped to 1'174 in 2019), the pecuniary resources for most programs have decreased over the past years because of the addition of new programs and the continuous growth of the student body. In contrast, the support by UZH (CHF 400'000) and ETH (CHF 300'000) remained unchanged since the agreement has been signed in 2010.

When discussing the budget for 2020 in November 2019, the PDC considered it to be an appropriate moment to ask the universities for more core funding. On the one hand, the Faculty of Science made it mandatory to have PhD programs but they are not paying for the costs involved. On the other hand, ETH is currently paying more attention to the doctorate and profoundly revising the promotional regulations. The PDC is aware that the programs and the LSZ GS were a bottom-up initiative and financed with seed money in the very beginning. However, things have changed in the past years and PhD programs are now mandatory at the Faculty of Science. In order to secure all the efforts that were invested in building up the programs and the Graduate School, the LSZ GS needs a long-term solution. Some program directors are concerned that the LSZ GS could loose independence and the programs could become bodies of the faculty, if (more) funding will come from that source. Given the fact that the rules of the Faculty of Science are binding for us and already in place, there is not so much independence to loose anyway.

## Annual Account LSZ Graduate School 2019

<b>Earnings 2019</b>	<b>CHF</b>
Contribution UZH	121'053
Contribution ETH	43'575
SUK ETH (Scientific Integrity)	3'000
Reimbursement recruitment costs PhD-programs (Sep. 2018 & Feb. 2019)	164'032
Annual support MD-PhD program	3'000
Annual support Clinical Science Program	9'424
Surcharges courses	2'135
<b>Total earnings</b>	<b>346'219</b>

<b>Costs 2019</b>	<b>CHF</b>
Recruitment rounds (Feb. & Sep. 2019)	171'655
Transferable skills course program	79'818
Databases & Computer Services (servers etc.)	16'735
Application platform Glowbase	19'593
Marketing (ads, listings, poster)	11'967
Salary administrator	43'803
Conference attendance & further education school administrator	925
Overhead	4'942
<b>Total costs</b>	<b>349'438</b>

<b>Balance as of 31 December 2019</b>	<b>-3'219</b>
---------------------------------------	---------------

The social benefit costs for Susanna Bachmann (CHF 11,204) were covered by the Faculty of Science of the UZH.

### Life Science Zurich Graduate School: Recruitment costs 2019 in CHF

	<b>February (130 Stud.)</b>	<b>September (130 Stud.)</b>
<b>On-site costs</b>	<b>CHF</b>	<b>CHF</b>
Public transport	1'964	1'931
Student party	7'216	4'763
Lunch vouchers	3'039	3'731
Snack	5'920	6'191
<b>Total</b>	<b>18'139</b>	<b>16'616</b>

Costs per student	140	128
-------------------	-----	-----

	<b>February (99 Stud.)</b>	<b>September (108 Stud.)</b>
<b>Travel &amp; accommodation costs for external students</b>	<b>CHF</b>	<b>CHF</b>
Accommodation	29'698	34'015
Travel costs	35'634	37'553
<b>Total</b>	<b>65'332</b>	<b>71'568</b>

Costs per student	656	663
-------------------	-----	-----

<b>Total costs recruitment</b>	<b>83'471</b>	<b>88'184</b>
--------------------------------	---------------	---------------

## 6 Outlook

As shown in the previous paragraphs, the financial situation of the Graduate School and its programs is getting tenuous because the Swiss universities' support is definitely ceasing by the end of 2020. As a first step the Program Directors' Conference decided to engage the host institutions in a conversation about a possible budget increase. It is yet to see where these negotiations will lead and it might be high time for the LSZ GS to prepare a fallback option in case ETH Zurich and the University of Zurich are unable to raise funds.

During the Quality Meeting in June 2019 several issues in regard of the supervision of PhD students, the administrative support during the doctorate and the admission procedure were brought up. It is a chance for the LSZ GS to not only further improve its own services but also to support the PhD programs with the quality assurance of the doctorate. Moreover, it is to assume that also the evaluation planned for late Spring 2020 will address certain shortcomings and recommend the LSZ GS to tackle some of its structural weaknesses. Although such an evaluation process is rather time-consuming and binding a lot of resources of a relatively small office, it is definitely a valuable opportunity to turn our attention for a moment away from the daily business and to focus on the core elements and structures of the Graduate School. In addition, we hope that the report of the experts and the exchange with the different players of the University of Zurich involved in the assessment will show the Life Science Zurich Graduate School where and how we are embedded in the European landscape of structured PhD programs and how we can best prepare ourselves to fulfil our tasks to provide the early stage researchers with a comprehensive and premium doctoral education.

## Appendix 1: Financial distribution key

Financial support of ETH and UZH in 2019								
Annual contribution ETH: 300'000 CHF  Annual contribution UZH: 400'000 CHF  Total contribution: 700'000 CHF			Allowances:  up to 10 students: CHF 5,000  11-20 students: CHF 10,000  more than 20 students: CHF 14,000					
Programs	Allowance	ETH students	UZH (MNF) students	Other uni/ faculty	Students total	301 CHF per student	Total amount	Total rounded
Biomolecular Structure and Mechanism	14'000	29	26		55	16'555	30'555	30'555
Cancer Biology	14'000	11	95		106	31'906	45'906	45'906
Ecology	14'000	19	27		46	13'846	27'846	27'846
Epidemiology & Biostatistics	14'000		41		41	12'341	26'341	26'341
Evolutionary Biology	14'000	2	71		73	21'973	35'973	35'973
Integrative Molecular Medicine	14'000	1	79		80	24'080	38'080	38'080
Microbiology & Immunology	14'000	58	103		161	48'461	62'461	62'461
Molecular Life Sciences	14'000	61	81		142	42'742	56'742	56'742
Molecular & Translational Biomedicine	14'000	34	10		44	13'244	27'244	27'244
Neuroscience	14'000	72	149		221	66'521	80'521	80'521
Plant Science	14'000	56	37		93	27'993	41'993	41'993
RNA Biology	0	13	12		25	7'525	7'525	7'525
Sciences and Policy	14'000	13	8		21	6'321	20'321	20'321
Systems Biology	14'000	55	11		66	19'866	33'866	33'866
<b>TOTAL CHF</b>	<b>182'000</b>	<b>424</b>	<b>750</b>	<b>0</b>	<b>1'174</b>	<b>353'394</b>	<b>535'374</b>	<b>535'374</b>

Life Science Zurich  
Graduate School

164'600 (= approx. 1'174 x 140.22 CHF)

This support covers 1st - 4th year of PhD

## Appendix 2: Graduate School student body

As of 31 December 2019	Total students	Affiliated at UZH	Affiliated at ETH	Other affiliation	Track I students	Track II students	Female students	Male students	International students	Swiss students	Program drop-outs	Completed PhD.	Program Alumni
<b>Graduate School total</b>	1538	1003	504	32	598	938	814	724	1079	457	76	331	3100
<b>Biomolecular Structure &amp; Mechanism</b>	84	43	41	0	46	38	32	52	67	15	3	17	120
<b>Biomedicine</b>	24	18	6	0	12	12	15	9	19	5	0	0	0
<b>Cancer Biology</b>	118	113	5	0	94	24	79	39	93	25	4	38	269
<b>Clinical Science</b>	30	30	0	0	1	29	18	12	16	14	1	1	1
<b>Drug Discovery</b>	No data received												
<b>Ecology</b>	67	51	16	0	10	57	44	23	49	18	0	6	187
<b>Epidemiology &amp; Biostatistics</b>	46	46	0	0	20	26	28	18	31	15	0	11	38
<b>Evolutionary Biology</b>	83	81	2	0	8	75	45	38	61	22	7	18	121
<b>Integrative Molecular Medicine</b>	76	75	1	0	36	40	45	31	48	28	7	29	244
<b>Microbiology &amp; Immunology</b>	198	131	67	0	84	114	118	80	128	70	9	34	330
<b>Molecular Life Sciences</b>	172	99	73	0	109	63	97	75	130	42	5	33	495
<b>Molecular &amp; Translational Biomedicine</b>	47	15	32	0	21	26	18	29	34	13	3	21	55
<b>Neuroscience</b>	315	208	104	3	57	258	137	178	221	94	14	77	653
<b>Plant Science</b>	130	49	67	14	24	106	67	63	89	41	22	5	500
<b>RNA Biology</b>	36	15	11	10	15	19	18	18	7	29	0	8	10
<b>Sciency &amp; Policy</b>	34	13	17	5	10	24	20	14	20	14	0	9	9
<b>Systems Biology</b>	78	16	62	0	51	27	33	45	66	12	1	24	68



## **Appendix 3: PhD Programs Annual Reports**

## Biomolecular Structure and Mechanism

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	84
UZH affiliation	43
ETH affiliation	41
Other institute (please specify)	0
Track I students	46
Track II students	38
Female students	32
Male students	52
International students	67
Swiss students	15
Program drop-outs	3
Completed PhD	17
Program Alumni	120
Faculty members	26

---

## Recruitment

Recruiting statistics	December 1	July 1
Complete applications	59	43
Invited candidates	11	8
Drop-outs before interview	3	2
Free slots (XX priority program)	10	14
Matches	3	4
Candidates without matches	4	2
Decision against program	0	0
Rejected candidates	37	29
Change to other LSZGS programs	0	1
Gained from LSZGS programs	1	0

## Finances

	Income	Expenses
Balance as of January 1	30 555.-	
<b>Income</b>		
ETHZ		
UZH		
Fees		
Other/Umbuchung	10'644.44	
Total income	41'199.44	41'199.44
<b>Expenses</b>		
Salaries program		13'274.60
Social benefits		
Recruitment December 1		5'744.20
Recruitment July 1		5'489.15
Program activities (retreat, symposia, etc.)		16'691.49
Overhead		
Total expenses	0	41'199,44
Balance as of December 31	0	0

## **Program Activities**

### **Retreat**

Hotel Antoniushaus, Morschach, August 25-27th, 2019

Organizers: Dutzler und Plückthun Gruppe

### **Courses**

Structural Biology Course for students of the Biomolecular Structure and Mechanism & the Molecular Life Sciences PhD Programs, February 4th and 5th, 2019, UZH Irchel & ETH Höggerberg

Current Topics in Structural Biology for PhD students of the Biomolecular Structure and Mechanism Program, June 25, 2019

Scientific writing course with Sergio Gloor 21.11,28.11,5.12, 12.12.2019

### **Meeting**

Annual meeting followed by informal Apéro, 15.05.2019, UZH Campus Irchel

### **Invited Speaker/Talk**

**Dr. Andrew Carter, Laboratory of Molecular Biology, Cambridge, UK**

13.11.2019 at UZH Irchel Campus

## Cancer Biology

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	118
UZH affiliation	113
ETH affiliation	5
Other institute (please specify)	
Track I students	94
Track II students	24
Female students	79
Male students	39
International students	93
Swiss students	25
Program drop-outs	4
Completed PhD	38
Program Alumni	269
Faculty members	76

---

## Recruitment

Recruiting statistics	December 1	July 1
Complete applications	178	179
Invited candidates	22	29
Drop-outs before interview	3	4
Free slots (CB priority program)	11	12
Matches	9	17
Candidates without matches	7	6
Decision against program	3	1
Rejected candidates	0	1
Change to other LSZGS programs	2	6
Gained from LSZGS programs	3	0

## Finances

	Income	Expenses
Balance as of January 1	15'409,27	
<b>Income</b>		
ETHZ	14'000.00	
UZH	31'000.00	
Fees	39'000.00	
SUK UZH	29'000.00	
SUK ETH	4'980.00	
CRC	85'601.60	
Other		
Total income	218'990.87	0
<b>Expenses</b>		
Salaries program		70'259.00
Social benefits		15'342.60
Recruitment December 1		14'140.80
Recruitment July 1		12'267.40
Program activities (retreat, symposia, etc.)		93'628.70
Overhead		
Total expenses	0	205'638.50
Balance as of December 31	13'352.37	0



## **Program Organization**

### *Director:*

Prof. Maries van den Broek (UZH)

### *Steering Committee:*

Prof. Dario Neri (ETH)

Prof. Beat Schäfer (Kispi, right to confer a PhD at the MNF, UZH)

### *Student representatives:*

Julia Godau, Institute of Molecular Cancer Research, UZH

David Vukovic, Institute of Biochemistry, UZH

### *Program coordinator:*

Bettina Rausch-Malina, c/o Institute of Molecular Cancer Research, UZH

### *Review/Admission Committee:*

#### *Dec/Feb:*

Prof. Lubor Borsig, Institute of Physiology, University of Zurich

Prof. Maries van den Broek, Institute of Experimental Immunology, University of Zurich

Prof. Massimo Lopes, Institute of Molecular Cancer Research, University of Zurich

Prof. Andreas Moor, Institute of Molecular Cancer Research, University of Zurich

Prof. César Nombela-Arrieta, Experimental hematology Lab, University Hospital Zurich

Prof. Lorenza Penengo, Institute of Molecular Cancer Research, University of Zurich

Dr. Alexandre Theocharides, Experimental hematology Lab, University Hospital Zurich

Prof. Thorsten Zenz, Experimental hematology Lab, University Hospital Zurich

#### *July/Sep:*

Dr. Isabelle Arnold, Institute of Molecular Cancer Research, University of Zurich

Dr. Hella Bolck, Institute of Pathology and Molecular Pathology, University Hospital Zurich

PD Dr. Beat Bornhauser, Division of Oncology, University Children's Hospital Zurich

Prof. Maries van den Broek, Institute of Experimental Immunology, University of Zurich

Prof. Richard Chahwan, Institute of Experimental Immunology, University of Zurich

Dr. Abdullah Kahraman, Institute of Pathology and Molecular Pathology, University Hospital Zurich

Prof. Andreas Moor, Institute of Molecular Cancer Research, University of Zurich

Prof. César Nombela-Arrieta, Experimental hematology Lab, University Hospital Zurich

Prof. Lorenza Penengo, Institute of Molecular Cancer Research, University of Zurich

Prof. Alessandro Sartori, Institute of Molecular Cancer Research, University of Zurich

Prof. Roger Schibli, Institute of Pharmaceutical Sciences, ETH Zurich

Prof. Peter Schraml, Institute of Pathology and Molecular Pathology, University Hospital Zurich

Prof. Michael Weller, Department of Neurology, University Hospital Zurich

## Program Activities

The **mandatory module courses** of the program took place as follows:

Course days / lecturers:

Module B – **Tumors and the immune system** - *week 14!*

**Introduction to the immune system** / Maries van den Broek, Christian Münz / 01.04.2019

**Hematologic malignancies** / Jean-Pierre Bourquin, Stefan Balabanov, Thorsten Zenz, Beat Schäfer / 02.04.2019

**Tumor immunology (basics and therapy)** / Onur Boyman, Alessandra Curioni, Reinhard Dummer, Patrick Roth / 03.04.2019

**Introduction to flow cytometry** / Claudia Dumrese / 04.04.2019

**Infection-induced cancers** / Anne Müller, Roberto Speck, Achim Weber / 05.04.2019

Module C – **Mechanisms of cancer induction and progression**

**Genome instability** / Matthias Altmeyer, Matteo Berti, Manuel Stucki / 17.06.2019

**Oncogenes and tumor suppressor genes** / Beat Schäfer, Martin Baumgartner, Michele Bernasconi, Beat Bornhauser, Marco Wachtel / 18.06.2019

**Metastasis** / Lubor Borsig, Maries van den Broek / 19.06.2019

**Cell signalling molecules as therapeutic targets** / Philipp Berger, Martin Béhé / 20.06.2019

**Tumor angiogenesis and lymphangiogenesis** / Michael Detmar, Steven Proulx / 21.06.2019

Module D – **Cancer treatments**

**Cancer chemotherapy** / Bernhard Pestalozzi, Manuel Stucki / 23.09.2019

**Cancer surgery** / Pierre-Alain Clavien, Rolf Graf, Walter Weder / 24.09.2019

**Cancer radiotherapy** / Martin Pruschy / 25.09.2019

**Tumor pathology** / Holger Moch, Peter Schraml, Achim Weber / 26.09.2019

**Antibody phage technology and therapeutic antibodies** / Dario Neri / 27.09.2019

Module A – **Cancer biology**

**Modes of cell death** / Christian Münz, Martin Pruschy, Lynn Wong / 28.10.2019

**Colon cancer: inflammation and epigenetics** / Giancarlo Marra, Gerhard Rogler, Stephan Vavricka / 29.10.2019

**Functional genomics** / FGCZ Ralph Schlapbach / 30.10.2019

**Cell biology** / Matteo Berti, Jan Krützfeld, Roland Wenger / 31.10.2019

**Model systems for cancer research** / Martin Baumgartner, Maries van den Broek, Mitch Levesques, Anne Müller / 01.11.2019

### **Scientific Writing Course**

Proposal and Grant Writing, Anne Müller, 17.01. + 04.07.2019

Paper Writing, Kerstin Gari, 17.01.2019

### **Science Ethics Courses**

Dr. Anne Deplazes, Center for Ethics, UZH, 14. + 21.03.2019

Dr. Jacky Leach Scully, Policy Ethics and Life Sciences Research Centre, Newcastle, UK, 03.-05.06.2019

### **1<sup>st</sup> Comprehensive Cancer Center Scientific Retreat**, 24.03. – 26.03.2019

The 1<sup>st</sup> scientific retreat of the Comprehensive Cancer Center Zurich took place in Emmetten, OW in March 2019 with 151 participants who consisted of research group leaders, post docs and PhD students. 68 PhD students participated and presented a poster. In addition, 15 of these students had the opportunity to present their work in an oral presentation.

The following CB PhD students had the possibility to independently chose and invite the keynote speakers of the different sessions:

Simon Deycmar, Department of Radiation Oncology, University Hospital Zurich

Tamara Kazimova, Department of Radiation Oncology, University Hospital Zurich

Devmini Moonamale, Division of Oncology, University Children's Hospital Zurich

Vadim Saratov, Division of Oncology, University Children's Hospital Zurich

Fabienne Tschanz, Department of Radiation Oncology, University Hospital Zurich

The following researcher followed their invitation:

Michele De Palma, EPFL, Lausanne for the session "Tumor immunology"

Nicolo Riggi, UNIL, Lausanne for the session "Epigenetics, Genetics and Genomics"

Gilbert Fruhwirth, Kings College, London for the session "Imaging & Technology Development"

Manuela Baccharini, MFPL, Vienna for the session "Oncogenic Signaling"

Five CB PhD students were awarded with a poster price:

Katrin Bertram, Institute of Molecular Cancer Research, University of Zürich

Patrick Helbling, Experimental Hematology Lab, University Hospital Zurich

Alekhya Mazumdar, Department of Orthopedics, Uniklinik Balgrist

Linda Schadt, Institute of Experimental Immunology, University of Zürich

Patrick Schürch, Experimental Hematology Lab, University Hospital Zurich

**Travel Grants:** travel expenses for congresses, meetings, symposia, workshops and courses. Deadlines for applications: 15.1. and 1.5. and 1.9.2019

Awarded Travel Reimbursement Grants:

*Student: Funded meeting/congress etc.:*

*Charles Capdeville*, EMBO workshop: Cell polarity and membrane dynamics, 26. – 31.05.2019, Sant Feliu de Guixols, Spain

*Sara Przedocka*, Mammalia DNA Repair Gordon Research Seminar & Conference, 09.-15.02.2019, Ventura, CA, USA

*Maria Chiara Raso*, Keystone Symposia. DNA replication and Genome Stability: From Mechanism to Disease, 13.-17.01.2019 - Snowbird, Utah, USA  
*Anika Trenner*, Mammalia DNA Repair Gordon Research Seminar & Conference, 09.-15.02.2019, Ventura, CA, USA  
*Raquel Maria Ramos Calçada*, ISSCR 2019 Annual Meeting, Los Angeles Convention Center, 26. – 29.06.2019, Los Angeles, California, USA  
*Simon Deycmar*, 58<sup>th</sup> Annual Conference of the Particle Therapy Co-operative Group (PTCOG58), 10.06 - 15.06.2019, Manchester, UK  
*Konstantina Kapolou*, International Cancer Immunotherapy Conference CICON19, 25 - 28.09.2019, Paris, France  
*Vadim Saratov*, Advances in Pediatric Cancer Research (AACR Special Conference), 17. – 20.09.2019, Montreal, QC, Canada

*Sabrina Steiner*, 50<sup>th</sup> Annual Meeting of the American Pancreatic Association, 06.11.-09.11.2019, Maui, USA,

### **Social Activities**

- \* Summer BBQ with PhD students and PIs of the Cancer Biology PhD Program at the Medizinerhof, Irchel at 22.08.2019.
- \* X-Mas Event with night hike to the Uetliberg followed by fondue at Uto Staffel for all students of the Cancer Biology PhD program, 18.12.2019.
- \* Round table for new PhD candidates with students of the CB PhD Program at Restaurant Cucina with pizza and drinks, 07.02. + 05.09.2019.

### **Scooped Newsletter**

SCOOPED is the Cancer Biology PhD program newsletter. It welcomes new group leaders of the Cancer Network Zurich, shows recent publications of students from the CB PhD program and tells whatever became of former PhD students etc. It is a platform where students can inform about a conference they attended or a technique they developed and which they would like to explain in more detail or any type of information they would like to communicate. Every student of the CB PhD program is welcome to contribute either as author or as editor.

7<sup>th</sup> Newsletter Scooped was sent out in June 2019 and edited by the following students:

Raquel Calçada (Institute of Anatomy, UZH)  
Mara De Marco Zompit (Gynecology, USZ)  
Hind Hashwah (Institute of Molecular Cancer Research, UZH)  
Karthiga Kumar (Oncology, Kispi)  
Anca-Irina Milhai (Institute of Molecular Cancer Research, UZH)  
Devmini Moonamale (Oncology, Kispi)  
Hannah Parker (Institute of Molecular Cancer Research, UZH)

### **Outlook 2020**

#### **Courses:**

Module B – **Tumors and the immune system** – 30.03 – 03.04.2020  
Module C – **Mechanisms of cancer induction and progression** – 15.06. – 19.06.2020  
Module D – **Cancer treatments** – 21.09. – 25.09..2020  
Module A – **Cancer biology** – 26.10. – 30.10.2020

**Statistical Methods in Biology** – January 2020

**Scientific Writing Course** – January and July 2020

**Science Ethics Course** – July 2020

**8<sup>th</sup> Cancer Biology PhD Students Retreat**

01.04. – 03.04.2020

**Travel Reimbursement Grants:** travel expenses for congresses, meetings, workshops and courses. Deadlines: 15.1. and 1.5. and 1.9.2020

**Social Activities:**

Round table in February and September

Summer BBQ in August

X-Mas Dinner in December

**Scooped Newsletter**

Planned for Spring and Autumn 2020

## Clinical Science

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	30
UZH affiliation	30
ETH affiliation	0
Other institute (please specify)	0
Track I students	1
Track II students	29
Female students	18
Male students	12
International students	16
Swiss students	14
Program drop-outs	1
Completed PhD	1
Program Alumni	1
Faculty members	22

---

## Recruitment

Recruiting statistics	December 1, 2019	July 1, 2019
Complete applications	No data	No data
Invited candidates	6	8
Drop-outs before interview	No data	No data
Free slots (XX priority program)	No data	No data
Matches	6	7
Candidates without matches	0	0
Decision against program	0	0
Rejected candidates	0	1
Change to other LSZGS programs	No data	No data
Gained from LSZGS programs	No data	No data

## Finances

	Income	Expenses
<hr/>		
Balance as of January 1		
<b>Income</b>		
ETHZ		
UZH	51'595 (real and virtual money)	
Fees		
Other (SHK)	58'718	
<hr/>		
Total income	110'313	
<hr/>		
<b>Expenses</b>		
Salaries program		28'880
Social benefits		
Recruitment December 1		0
Recruitment July 1		0
Program activities (retreat, symposia, development, ect.)		33'156
Overhead (virtual money)		22'715
<hr/>		
Total expenses	0	84'715
<hr/>		
Balance as of December 31	25'598	0
<hr/>		

## Program Activities

Retreat on 26 February 2019

## Outlook

Retreat on 21 April 2020



## **Drug Discovery**

No report received for 2019.

## Ecology

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	67
UZH affiliation	51
ETH affiliation	16
Other institute (please specify)	*
Track I students	10
Track II students	57
Female students	44
Male students	23
International students	49
Swiss students	18
Program drop-outs	0
Completed PhD	6
Program Alumni	187
Faculty members	64

---

## Recruitment

Recruiting statistics	December 1	July 1
Complete applications	35	40
Invited candidates	0	3
Drop-outs before interview	-	-
Free slots (priority program)	-	-
Matches	0	0
Candidates without matches	0	3
Decision against program	-	-
Rejected candidates	-	-
Change to other LSZGS programs	-	-
Gained from LSZGS programs	-	-

\* 20 students are additionally affiliated to Swiss Federal Institute of Aquatic Science and Technology, Swiss Federal Institute for Forest, Snow and Landscape Research, Agroscope (Centre of excellence for agricultural research), Swiss Ornithological Institute, Fachhochschule Nordwestschweiz

## Finances

	Income	Expenses
Balance as of January 1		
<b>Income</b>		
ETHZ		
UZH	27846.00	
Fees	11870.00	
Other:		
SUK 2019	30150.00	
GRC Rechenschaftsbericht		
Qualitätssicherung- und entwicklung	6500.00	
GRC Summer School Grant	12811.00	
Total income	85741.00	0
<b>Expenses</b>		
Salaries program		
UZH		30438,20
SUK		10932.00
Social benefits		
UZH		6803,8
SUK		868.80
Recruitment December 1		2719.50
Recruitment July 1		2518.25
Program activities (retreat, symposia, etc.)		7563.45
Overhead		2993.30
Total expenses	0	64836.30
Balance as of December 31	0	5029.70

Positive delta in the SUK-Doktoratsprogramme as a planned fall school was postponed to 2020, this funding is assigned to the school in fall 2020.

## **Program Activities**

The biannual lunches were well-attended. We continued with the biannual newsletter sent to students and principal investigators with a 'Featured PhD project' which is added to the first page of our [website](#).

The student membership of the PhD Program in Ecology remained static due to the number of students defending their thesis. In 2019 14 new students joined the program compared to 17 new students in 2018. We welcomed two new affiliated research groups to the program.

### Teaching

In 2019 the PhD Program in Ecology organized the following courses:

Subject-specific matters –

BIO 398 Ethics in biological research,

ECO397 Cutting Edge Research Club,

ECO342 Transdisciplinary Champions Training.

Methods –

ECO 331 General linear and linear mixed models in R,

ECO 336 Gardening Techniques & Field Equipment,

ECO 350 Causal Inference for Biologists Graduate Workshop.

Transferable Skills –

ECO 380 Introduction To Science Busking – a gateway to effective, enjoyable communication with the public,

ECO 303 Teaching Science at University.

'Introduction To Science Busking – a gateway to effective, enjoyable communication with the public' was co-organised with the Agora Project 'Biodiversity means Life'.

'Transdisciplinary Champions Training' was organised in collaboration with the URPP on Global Change and Biodiversity.

Students were reserved places on the following course:

UWW 252 Spatial Ecology and Remote Sensing

UWW 291 Ecology and Evolution at the Heart of the 'Wicked Problems

UWW 271 Contemporary analysis for ecology.

### Outreach

The Program Coordinator and Director promoted the program at conferences, including the British Ecological Society Conference 2019 and ESA 2019.

## Outlook

We will host a biennial meeting in 2020, this will feature oral presentations by research group leaders and advanced PhD students, and poster presentations of all PhD students. The purpose of such a meeting is to foster and strengthen the ecology network in Zurich.

PhD student lunch meet-ups will take place in February and September 2020.

The PhD Program in Ecology will offer the following courses in 2020:

Cutting Edge Research Club,

Interdisciplinary Research in Global Change and Biodiversity

General Linear and Linear Mixed Models in R,

Gardening Techniques & Field Equipment,

Bayesian Thinking and Ecology Workshop,

Teaching Science at University,

Controversies in Ecology – Humans and Nature,

Causal Inference for Biologists Graduate Clinic Workshop,

Teaching Skills for Teaching Assistants.

Courses we offer to our students organised through collaborators:

UWW 252 Spatial Ecology and Remote Sensing

UWW 291 Ecology and Evolution at the Heart of the 'Wicked Problems

UWW 271 Contemporary analysis for ecology and Ethics in Biological Research

## Epidemiology and Biostatistics

### The program in figures and numbers

---

Program statistics	as of December 31, 2019
Program students	46
UZH affiliation	46
ETH affiliation	0
Other institute (please specify)	0
Track I students	20
Track II students	26
Female students	28
Male students	18
International students	27
Swiss students	15
Program drop-outs	0
Completed PhD in 2019	11
Program Alumni	38
Faculty members	18 (MNF members with Promotionsrecht)
	Of those 7 are MNF Faculty Members

---

## Recruitment

Recruiting statistics	December 1, 2018	July 1, 2019
Complete applications	48	30
Invited candidates	4	0 (2 invited from 2 <sup>nd</sup> choice program)
Drop-outs before interview	0	0
Free slots (XX priority program)	2	0
Matches	1 (+1 gained)	n.a.
Candidates without matches	3	n.a.
Decision against program	0	n.a.
Rejected candidates	0	n.a.
Change to other LSZGS programs	0	n.a.
Gained from LSZGS programs	1	n.a.



## Finances

	Income	Expenses
Balance as of January 1, 2019		
<b>Income</b>		
ETHZ		
UZH	26'341.00	
Fees (Vermittlungsgebühren)	1'500.00	
Other (swissuniversities)	7471.00	
swissuniversities Saldo 2018	4957.41	
Total income	40'269.41	0
<b>Expenses</b>		
Salaries program		15'000.00
Recruitment Sept 18		1'056.40
Recruitment Feb 19		3'028.40
Retreat		8'143.70
BBQ PhD Program		420.00
Career Development Series (12'583.00 Ausschöpfung SBFI Mittel)		12'755.50
Overhead		
Total expenses	0	40'404.00
Balance as of December 31, 2019	-134.59*	0

\*14'990 Eigenleistung (excl. coordinator salary)

## Program Activities

- Many students and PIs participating at UZH Reproducibility Day February 5, 2019
- EBPI Spring Semester Colloquia "Reproducible Science Series"
- Epidemiology and Biostatistics Methods Seminar, spring and fall semester 2019
- Research in Progress talks spring and fall semester 2019
- Students-initiated "Science & Social" events (01.11./05.12.2019)
- 11 successful graduations in 2019

- More activities within the Career Development Series:
  - Workshop: How to Revise & Resubmit (7.02.2019)
  - Interview Skills training (1.03.2019)
  - Dilemma Game (research integrity, 28.3.2019)
  - Social Media Training for Researchers (external media trainer, 25.04.2019)
  - BBQ of the Master Program in Biostatistics and the PhD Program in Epidemiology and Biostatistics, (24.05.2019)
  - Post Doc Mentoring Event (29.05.2019)
  - SNF mobility grant application support meeting (30.05.2019)
  - Dilemma Game (research integrity, 03.06.2019)
  - Fourth EBPhD Retreat, Tagungszentrum Schloss Au, (01.07.2019)
  - Kick-off afternoon including a Dilemma Game (research integrity) and a game-show style panel discussion about successful academic careers with external professors (18.09.2019)
  - Research Project Management Training (external speaker, 18.10.2019)
  - Post Doc Mentoring Event (23.10.2019)
  - Dilemma Game (research integrity, 12.11.2019)
  - SNF mobility grant application support meeting (15.11.2019)

## Outlook

- Many students and PIs participating at 2<sup>nd</sup> International Meeting of Teaching Epidemiology, Jan 2020
- Many students and PIs participating in Journal Club on Causal Inference & Journal Club on Reproducibility
- Many students are involved in the EBPI's open door day (22.08.2020)
- New students-initiated events "EBPhD Science & Social"
  - Successful collaborations with Milo Puhan & Mark Adams (29.01.2020)
- Students initiated guest visits to talk about career opportunities (18.03.2020)
- EBPI Spring Semester Colloquia "Health Geography"
  - Global trends in antimicrobial resistance in animals in low- and middle-income countries, Thomas von Boeckel, ETHZ, (11.03.2020)
  - Monitoring geospatial patterns and temporal trends of patient experience and substance use in the united states using digital big data, Yulin Hswen, Harvard University (04.05.2020)
  - Cardiovascular mortality in relation to noise, air pollution and green space – multiexposure environmental modeling, Martin Röösl, Swiss TPH, (19.05.2020)
- BBQ of the Master Program in Biostatistics, the PhD Program in Epidemiology and Biostatistics and the PhD Program Clinical Science in May 2020
- Epidemiology and Biostatistics Methods Seminar, spring "Deep learning" and fall semester "Misconceptions and Misspecifications 2020"
- Research in Progress talks, spring and fall semester 2020
- More activities within the Career Development Series:
  - Proposal Preparation – from Idea to Submission (18.02.2020)
  - "Rock Your Talk" with Ric Oquita, Impuls Plus (21.04.2020)
  - Post Doc Mentoring Lunch, Facilitator: Rolf Heusser (22.04.2020)
  - SNF mobility grant application support meeting (25.05.2020)
  - 3-MinuteThesis Competition Qualification Round (10.06.2020)
  - Paywall: The Movie, with a following Panel Discussions with experts from science, libraries and funding bodies (09.07.2020/23.07.2020)
  - 3MT Competition – Finalists Training Sessions with Alexis Puhan from ThinkStoryline !® (June/July 2020))
  - 3MT Competition – Finals at EBPI Open Door Day (22.08.2020)

## Evolutionary Biology

### The Program in Figures and Numbers

---

Program Statistics	as of December 31
Program students	83
UZH affiliation	81
ETH affiliation	2
Track I students	8
Track II students	75
Female students	45
Male students	38
International students	61
Swiss students	22
Program drop-outs	7
Completed PhD	18
Program Alumni	121
Faculty members	30

---

## Recruitment

Recruiting Statistics	December 1	July 1
Complete applications	15	19
Invited candidates	1	0
Drop-outs before interview	0	0
Free slots (EvoBio priority program)	1	0
Matches	0	0
Candidates without matches	1	0
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

## Finances

	Income	Expenses
Balance as of January 1		0.00
<b>Income</b>		
UZH and ETHZ	35'973.00	
Fees	8'400.00	
URPP Evolution in Action	2'000.00	
Total income	46'373	
<b>Expenses</b>		
Salaries Program		30'000.00
Annual Retreat		13'521.75
Annual EvoBio Institute Visit		812.55
Adjustments to DissGo		280.80
Contribution to BIO624		2000.00
Total expenses		46'615.10
Balance as of December 31		-242.10

## Program Activities

- Annual Retreat in Werdenstein (GR), June 24-26
- EvoBio visit of the Paleontological Institute, November 28
- BIO395 Concepts in Evolutionary Biology (held by PIs of the URPP Evolution in Action)
- BIO554 Survey Course: Topics in Evolutionary Biology
- BIO555 Scientific Writing and a Research (in cooperation with URPP Evolution in Action)
- BIO609 Introduction to UNIX/Linux and Bash Scripting (in cooperation with URPP Evolution In Action)
- BIO610 Next-Generation Sequencing for Model and Non-Model Species (in cooperation with URPP Evolution in Action)

- BIO634 Next-generation Sequencing 2 - Continuation Course: Transcriptomes, Variant Calling and Biological Interpretation (in cooperation with URPP Evolution in Action)
- BIO624 Human Genetic, Demographic and Cultural Diversity (in cooperation with URPP Evolution in Action)

### **Outlook 2020**

- Annual Retreat in June
- EvoBio visit of the Botanical Institute
- BIO395 Concepts in Evolutionary Biology (held by PIs of the URPP Evolution in Action)
- BIO554 Survey Course: Topics in Evolutionary Biology
- BIO555 Scientific Writing and a Research (in cooperation with URPP Evolution in Action)
- BIO609 Introduction to UNIX/Linux and Bash Scripting (in cooperation with URPP Evolution in Action)
- BIO610 Next-Generation Sequencing for Model and Non-Model Species (in cooperation with URPP Evolution in Action)
- BIO634 Next-generation Sequencing 2 - Continuation Course: Transcriptomes, Variant Calling and Biological Interpretation (in cooperation with URPP Evolution in Action)
- BIO624 Human Genetic, Demographic and Cultural Diversity (in cooperation with URPP Evolution in Action)
- BIO692 Introduction to Genome-Wide Association Studies (in cooperation with URPP Evolution in Action)

## Integrative Molecular Medicine

### The program in figures and numbers

---

Program statistics	as of December 31 (imMed +new BioMed)
Program students	76+24=100
UZH affiliation	75+18=93
ETH affiliation	1+6=7
Track I students	36+12=48
Track II students	40+12=52
Female students	45+15=60
Male students	31+9=40
International students	48+19=67
Swiss students	28+5=33
Program drop-outs	7+0=7
Completed PhD	29+0=29
Program Alumni	244+0=244
Faculty members	imMed117 BioMed72

---

**Recruitment (imMed only)**

Recruiting statistics	December 1, 2018	July 1, 2019
Complete applications	29	16
Invited candidates	6	9
Drop-outs before interview	-	2
Free slots (imMed priority program)	5	11
Matches	4	3
Candidates without matches	2	3
Decision against program	-	-
Rejected candidates	-	1
Change to other LSZGS programs	1	-
Gained from LSZGS programs	-	1



## Finances

	Income	Expenses
<hr/>		
Balance as of January 1		
<b>Income</b>		
ETHZ	0	
UZH	38'080	
Fees	15'050	
Other	11'250	
<hr/>		
Total income	64'380	0
<hr/>		
<b>Expenses</b>		
Salaries program		40'931
Social benefits		625
Recruitment December 1, 18		4'303
Recruitment July 1, 19		5'085
Program activities (retreat, symposia, etc.)		13'716
Overhead		
<hr/>		
Total expenses	0	64'660
<hr/>		
Balance as of December 31		280
<hr/>		

## Program Activities

### Graduate courses of the imMed PhD Program

June 5/6, 2019: Introduction to human physiology: Membrane transport / Signal transduction

June 13/14, 2019: Mouse physiology and pathophysiology

September 4/5, 2019: Molecular Biology Methods

All courses were evaluated, with very good to excellent results.

### Seminar series "From Vision 2020 to Future Perspectives"

The seminar series «From Vision 2020 to Future Perspectives» organized by a committee of PhD students mainly from the imMed PhD Program was continued with the topic “Disease diagnostics and therapy”. Prominent speakers, national and international, shared their vision on future perspectives on multidisciplinary topics with a career angle. The seminar series is very well established within the Life Science events at UZH and ETHZ with 20-60 participants and was supported by the SUK program “Doktoratsprogramme”. The seminar series will continue in 2020 with the topic “Biomedicine and Society”.

November 7, 2019: Nanomedicine for therapy and diagnostics: New endocannabinoid modulators to treat CNS disorders: from basic research to translational science

PD Dr. Andrea Chicca, Institute of Biochemistry and Molecular Medicine, University of Bern / Co-Founder, CEO and CSO at Synendos Therapeutics AG, Allschwil

June 27, 2019: Nanomedicine for therapy and diagnostics: Ultrasound-enhanced drug delivery using nanoparticle-stabilized microbubbles

Dr. Ruth Schmid, SINTEF Industry, Biotechnology and Nanomedicine, Polymer Particles and Surface Chemistry, Trondheim, Norway

June 6, 2019: Kiadis Pharma and ATIR101 in personalized leukemia therapy

Dr. Janine Hähnlein, Kiadis Pharma, Amsterdam / NL

March 28, 2019: Impact of functional weight-bearing MRI on diagnosis and therapy

Eugenio Biglieri, Esaote, Genoa / Italy

### **Retreat of the imMed PhD Program**

The 14th retreat of the imMed PhD Program was held on June 3/4, 2019 at the Youth Hostel in Rapperswil. The PhD students presented their ongoing thesis projects in talks and on posters. Daniela Gunz from Career Services UZH and imMed alumnus Marek Whitehead (Witec AG) informed the participants in input talks about their services and experiences in the

### **Annual symposium of the ZIHP**

The imMed PhD Program was founded by the Zurich Center for Integrative Human Physiology (ZIHP). One of the main aims of the ZIHP is the promotion of young researchers. At the ZIHP Symposium on August 23, 2019 many imMed PhD students presented their work in talks and on posters.

### **imMed Alumni**

The traditional imMed alumni event in February with imMed alumni Josua Jordi presenting his start-up firm EraCal Therapeutics Ltd and Martin Stucki, Country Medical Head Rare Disease and Endocrinology at Sanofi Genzyme, Baar attracted more than 50 participants - current students and alumni – and was again highly appreciated, also from students from other LSZGS PhD programs.

### **PI workshop “Reducing stress when leading co-workers (PhDs and postdocs)”**

The workshop series was set up to improve the handling of challenges when hiring and developing co-workers. The primary target audience for this workshop series were junior PIs of the PhD Program in Integrative Molecular Medicine (imMed). Course facilitator Dr. Monica Clausen, Clausen Netzwerkpartner Zurich, welcomed 8 participants from 4 LSZGS PhD

Programs in the 4 half-day workshop. The workshop was highly appreciated by the mainly female participants. The workshop was funded by the Gradudate Campus UZH/Quality Development Grant.

## **Outlook**

The imMed PhD Program offers students a scientific environment that combines basic and clinical research for the comprehensive study of organ functions in health and disease. The program commission and the coordinator attach great importance to the supervision of and advice for the students to ensure a high quality education and successful completion of the studies by the PhD students.

The catalogue of graduate courses is constantly evaluated by both commission and students of the imMed (and the the new BioMed) PhD Program and adapted to the needs of the students. The annual retreats as well as career events with the imMed alumni are highly successful for both scientific exchange and networking and will be continued in 2020.

## **Merge of PhD Programs imMed and Molecular Translational Biomedicine (MTB) into PhD Program in Biomedicine (BioMed) as of Mid-October 2020**

The two LSZGS PhD programs 'imMed' [basic and clinical research] and 'MTB' [basic and applied biomedical research] have a very similar focus, which in fact may be confusing to interested students. Thus, it was decided to merge the two programs into the new program in Biomedicine (BioMed). The merge of the two programs was approved by the LSZGS Director's Conference in May 2019 and by the UZH/MNF and the ETHZ in October 2020.

All PI members of the imMed or the MTB programs have the right to become a member of the BioMed program. As of the end of 2019, 72 PIs are members of BioMed.

Current PhD students that are members of either imMed or MTB will finish their PhD thesis according to the imMed or MTB regulations.

PhD students who started their project in summer/fall 2020 started directly in the BioMed program.

The BioMed program introduces a dedicated mentor to the PhD committee of each student. This mentor (a BioMed member) is appointed by the coordinating office, functions as independent counselor for both the PhD student and the other members of the committee and ensures a mutual fairness between student, supervisor and committee. The mentor must not be: i) from the same institute as the direct supervisor, ii) a close collaborator of the direct or official thesis supervisor, iii) involved in the project of the student. The PhD candidate as well as the direct and official supervisor have the power of veto and can request another mentor in justified cases. After having received a written and justified request, the program will appoint a different person as mentor.

The BioMed program also introduces a 'project defence' of the PhD project during the 3rd committee meeting. The student has to pass this 'project defence' (judged by the committee) in order to proceed to the real PhD defence. This should ensure that the student is sufficiently well prepared for her/his official defence at the end of the studies.

## Microbiology and Immunology

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	198
UZH affiliation	131
ETH affiliation	67
Other institutes (please specify)	0
Track I students	84
Track II students	114
Female students	118
Male students	80
International students	128
Swiss students	70
Program drop-outs	9
Completed PhD	34
Program Alumni	330
Faculty members	93

---

## Recruitment

Recruiting statistics	December 1	July 1
Complete applications	164	120
Invited candidates	13	26
Drop-outs before interview	2	5
Free slots (MIM priority program)	11	21
Matches	7	17
Candidates without matches	4	3
Decision against program	1	2
Rejected candidates	0	0
Change to other LSZGS programs	3	2
Gained from LSZGS programs	4	3

## Finances

	Income	Expenses
Balance as of January 1		
<b>Income</b>		
ETHZ / UZH	62460	
Fees	53130	
Other	32120	
Total income	147710	0
<b>Expenses</b>		
Salaries program		89030
Recruitment Dec / July 1		21350
Program activities (retreat, symposia, etc.)		32870
Overhead		
Total expenses	0	143250
Balance as of December 31	4460	

## Program Activities

### Program specific courses for doctoral students

#### 13<sup>th</sup> Microbiology and Immunology Introductory Course

January 16-18, 2019

Tierspital, UZH

In this yearly-offered three days' workshop, MIM PIs introduce their fields of expertise, their basic research questions and the methodologies applied to answer them. Students of the MIM PhD program present their own research projects. Participants become acquainted with the research performed at the different microbiological and immunological laboratories of the MIM consortium, facilitating contact with those labs whose expertise could contribute to their own research work.

The scientific program of the 12<sup>th</sup> MIM Introductory Course included 11 oral presentations of PIs and 38 of PhD students, covering the fields of general and medicinal Microbiology, Virology and Immunology, additionally Ralph Schlapbach (FGCZ) and Urs Ziegler (ZMB) gave an insight talk about the methods and services of the facilities.

Prof. Hans-Martin Fischer and Prof. Emma Slack held an interactive workshop on Scientific Integrity. Additionally, two thematically different Zürich sightseeing tours were offered to the participants.

### **12<sup>th</sup> MIM Student Retreat**

August 29-31, 2019

Mountain Hostel, Grindelwald

The MIM Retreat is an opportunity to exchange ideas and get to know colleagues of the MIM PhD Program as well as some excellent guest speakers. It offered the students a chance to increase their presentation skills in a friendly atmosphere and to discuss the research projects with fellow PhD students. The broad scientific program of the 12<sup>th</sup> MIM Student Retreat included 12 oral and 35 poster presentations. Special events were the talks of external guest speakers Ana Patricia Silva (Roche), Peter Keller (University of Berne), Fabian Juncker (Roche) and a workshop on talent acquisition held by a team from CSL Behring (with Elena Kharlamova, Director Global Talent Acquisition EMEA).

### **General Principles of Scientific Writing**

September 11 & 12, 2019

by Prof. Shinichi Sunagawa

11 participants

### **Basic Presentation Course**

October 11 & 12, 2019

by Prof. Emmanuella Guenova, Prof. Nicole Borel, Dr. Cory Leonard

12 participants

### **Research Data Management: Basics and how to apply them**

October 16, 23 & 30, 2019

By ETH Library

7 participants

### **Program-specific courses for Principal Investigators**

#### **Conflict Management**

March 26, 2019

by Dr. Monika Clausen & Daniel Ludwig

8 participants

A second edition of the hands-on training on conflict management for MIM PIs was offered in 2019. Dr. Monika Clausen guided through the workshop on "How to bring across difficult messages. From the thought to the message to the perception". In simulated dialogues (role-plays) with a professional actor (Daniel Ludwig), different aspects of communication have been practiced and evaluated.

## **MIM career events and other activities**

The series of events for current students & alumni took place in 2019 on various topics (organized by MIM alumni and student representatives):

- 17.1.2019      *MIM social event*  
New Year's Reception Alumni Lounge, ETH
- 7.2.2019      *MIM social event*  
Pub crawl with new candidates
- 22.2.2019      *MIM social event*  
Badminton at Yonex
- 20.5.2019      *MIM Career Event*  
Careers for Life Scientists in the public sector
- Dr. Eva Guiducci, Frontiers
  - Dr. Daniela Jaramillo, FAMH
  - Dr. Lucia Reh, BAG
  - Dr. Christina Sina, Project leader Wyss Center
- 17.6.2019      MIM Career Event  
Company visit Roche Glycart AG, Schlieren
- 8.8.2019      *MIM social event*  
BBQ at Medizinerhof, UZH
- 5.9.2019      *MIM social event*  
Pub crawl with new candidates
- 12.12.2019    *MIM social event*  
Christmas get-together (Weihnachtsmarkt am Bellevue)



## Advisory Services

### Mentoring Program

The demand for getting a mentor (senior PhD or Alumnus/a) was high, and nine doctoral students can newly benefit of being assigned to a mentor. We are committed to sustain and improve our one-to-one mentorship program. Therefore, coaching supervision by Dr. Monika Clausen have been offered to the mentors (2.7.2019) and Prof. Sophia Johler, Prof. Nicole Borel and Prof. Alex Hall organized a MIM Mentoring kickoff event on the 15<sup>th</sup> of May, 2019.

### Ombudsperson

Various members of the program got in contact with Prof. em. Hauke Hennecke (MIM Ombudsperson) during the year; the dialogue with the MIM Ombudsperson led to a consensus / solution of the disagreement in all cases.

### Travel Grants

The MIM Program provides travel support for national / international conferences / meetings. The following travel grants have been approved:

<b>Marjan Verest</b>	RiPPS Conference	Granada, Spain	April 24-26, 2019
<b>Wülser Janine</b>	IS_MPMI	Glasgow, UK	July 14-18, 2019
<b>Ioannis Kritikos</b>	Gordon Research Conference on Lymphatics	Ventura, US	March 1-6, 2020
<b>Peter Runge</b>	Gordon Research Conference on Lymphatics	Ventura, US	March 1-6, 2020

### Outlook

The MIM activities, including career and social events and the program's core activities (MIM PhD student retreat, MIM Introductory Course) were well attended and will therefore be continued in 2020. At request of the student representatives, course concepts on "How to supervise students" and "Effective oral presentations" will be developed. In addition, a workshop for MIM PIs focusing on "Team management / team building" will be organized in 2020.

It is gratifying that the MIM Program continues to grow. Associated therewith, additional administrative work arises, and it will be challenging to the Program to handle any tasks satisfactorily, as the coordination of the Program remains a part-time post.

Since the financial situation is becoming increasingly difficult with the expiration of the SHK funding end of 2020, one key task of the Steering Committee is hence to find alternative funding strategies.

## Molecular Life Sciences

### Program Motivation

The Molecular Life Sciences Ph.D. program is a 3-4 year Ph.D. program with the aim to recruit and train outstanding young scientists in biochemistry, genetics, microbiology, as well as cell, computational, developmental, molecular, structural, and systems biology. The MLS program recruits internationally and strives to bring the very best students interested in aspects of molecular life sciences to Zurich. Through its activities, the program aims at strengthening Zurich as a center of excellence in graduate education and cutting-edge research in life sciences.

### Overview

Founded in 2003, the MLS program has currently 93 faculty members (compared to 89 faculty members in 2018), who are associated with over a dozen different departments/institutes at the ETH Zurich (ETH) and the University of Zurich (UZH). 172 graduate students were enrolled in the MLS program by the end of 2019 compared to 165 students at the end of 2018. 97 (57%) of our students are women and 75 men. 33 MLS students graduated in 2019. The program has now 495 alumni in total. The average time to successfully complete a Ph.D. thesis in the MLS program remains with 4 years and 7 months unchanged.

### The program in figures and numbers 2019

Program statistics	as of December 31
Program students	172
UZH affiliation	99
ETH affiliation	73
Track I students	109
Track II students	63
Female students	97
Male students	75
International students	130
Swiss students	42
Program drop-outs	5
Completed PhD	33
Program Alumni	495
Faculty members	93

## Student Body

Of the 172 students, 99 are enrolled at the UZH and 73 at ETH. Swiss (42) and German students (38) account for close to half of all students. The next larger groups are the Italians (15) followed by Austrians (7), Chinese (7), Indians (6), Poles (6) and Dutchmen/ Dutchwoman (6). Three students come from Portugal, Russia, Spain and Turkey. Two from America, Estonia, Great Britain and Iceland. In addition, we have one student each from Belgium, Brazil, Canada, Colombia, Croatia, Finland, France, Greece, Grenada, Hungary, Iran, Japan, Latvia, Lebanon, Lithuania, Luxembourg, Malaysia, Mexico, Norway, Pakistan, Peru, Sri Lanka, Sweden, Taiwan, Uruguay and Vietnam in the MLS program.

## Recruitment 2019

Recruiting statistics	December 1	July 1
Complete applications	154	109
Invited candidates	34	28
Drop-outs before interview	3	4
Free slots (MLS priority program)	20	25
Matches (within MLS)	16 (11)	16 (9)
Candidates without matches	10	10
Decision against program/ no list	5/3	0/1
Rejected candidates	0	0
Change to other LSZGS programs	5	7
Gained from LSZGS programs	0	7

## Program Organization

The program is led by an elected Steering Committee (SC) with executive power. Since November 2006 the steering committee is formed of 7 faculty representatives and two student representatives (one of an institute from UZH, and one of an institute from ETH):

### SC Members

Prof. Yves Barral (ETH – vice chair)

Prof. Alex Hajnal (UZH)

Prof. Christian Lehner (UZH - chair)

Prof. Joao Matos (ETH - representative of junior faculty members)

PD Dr. Raffaella Santoro (UZH)

Prof. Anton Wutz (ETH)

Prof. Oliver Zerbe (UZH)

Claudia Gafko (ETH – student representative since October 19)

Kim Marquart (UZH/ETH – student representative since October 19)

Anna Rüegg (ETH – student representative until October 19)

Catharina Sängler (ETH – student representative until October 19)

The second Wednesday of each month is reserved for potential Meetings of the SC; the minimal number of yearly meetings is three. In 2019, the SC met 3 times to discuss and decide on various program activities.

The MLS program faculty consists of principal investigators (PIs) from several different institutes of the UZH and the ETH. Since Fall 2005 all group leaders who want to become member of the MLS faculty, have to submit their application to the SC, irrespective of their affiliation. Six new faculty members joined the MLS program in 2019. MLS program faculty members support the program by serving on admission or travel grant committees as well as by teaching course modules or tutorials.

PI leaving:

Robin Klemm, Department of Molecular Life Sciences, UZH

Benoît Kornmann, Institute of Biochemistry, ETH

Nathan Luedtke, Department of Chemistry, UZH

Christian Mosimann, Department of Molecular Life Sciences, UZH

Renato Paro, Department of Biosystems Science and Engineering, ETH

New PIs:

Ori Bar-Nur, Institute of Human Movement Sciences and Sport, ETH

Jacob Corn, Institute of Molecular Health Science, ETH

Madhav Jagannathan, Institute of Biochemistry, ETH

Soeren Lienkamp, Institute of Anatomy, UZH

Lorenza Penengo, Institute of Molecular Cancer Research, UZH

Ataman Sendoel, Institute of Regenerative Medicine, UZH

A program coordinator oversees the day-to-day program matters. The program coordinator monitors the students' progress, schedules the interviews and lab visits, organizes meetings and admission sessions and manages the finances of the program. The employment of the MLS program coordinator is currently 35%. Dr. Susanna Bachmann, who joined the MLS program as program coordinator in the fall of 2003, continued in this function in 2019.

## Finances 2019 (in CHF)

	Income	Expenses
Balance as of January 1		
<b>Income</b>		
ETH	35'000	
UZH	21'742	
ETH swissuniversities	41'300	
UZH swissuniversities	38'000	
Fees	13'000	
VAUZ (lecture series)	2'000	
Other (GRC – lecture series)	6'326	
Sponsoring Retreat	17'414	
Total income	174'782	0
<b>Expenses</b>		
Salaries program (with social benefits)		48'762
Recruitment September 2018		18'453
Recruitment February 2019		18'850
Program activities: Retreat		38'957
Travel Grants		10'492
Lecture Series		8'256
New Year Party		2'937
Alumni (1 Career Event)		626
Program Teaching		4'170
Overhead		664
Total expenses	0	152'167
Balance as of December 31	22'615	

## Program Activities

### Teaching

Module	Length	Dates	Participants	Remarks
Structural Biology	2 days	4 & 5 February 2019	0 MLS student	Joint course with BSM program
Good Manufacturing Practice	3 days	18-20 February 2019	20 MLS students	Organized jointly with partner program KoRS-CB, sponsored by IBH
Scientific Writing	4x1/2 day	14, 19, 21 & 26 March 2019	20 students	
1 <sup>st</sup> -year-Presentations	4x1/2 day	14 & 22 February, 1 & 8 March 2019	15 students & 3 moderators	
1 <sup>st</sup> -year-Presentations	4x1/2 day	3, 13, 27 & 28 September 2019	25 students & 4 moderators	
Scientific Writing	4x1/2 day	15, 20, 22 & 27 August 2019	20 students	
Scientific Writing	4x1/2 day	21 & 28 November, 5 & 12 December 2018	4 MLS students	Joint course with BSM program
The right not to know	2 days	24 & 25 October 2019	28 MLS students	Organized by Konrad Basler & Anna Deplazes

Besides the above-mentioned courses a few students of the MLS program attended one of the “Next Generation Sequencing” courses offered by the Functional Genomics Center Zurich. While this facility had offered in the past courses exclusively for the MLS, the program tends now to send the students to the general courses, as it was sometimes difficult to fill the courses.

### Tutorials

Also 2019, several tutorials were offered by faculty members of the MLS program and external trainers to a small group of students (usually not more than 6 participants). The workload for the students is approx. 25-30 hours. The tutor and the participants decide when and how often they meet. A minimum of 6 contact hours with the tutor is required per tutorial by the MLS program.

Topic	Tutor
Introduction to Scientific Programming in Python	Max Brambach
Insights into Regulatory Affairs in Pharma	Paolo Dametto

High-dimensional single cell analysis (introduction)	Edoardo Galli & Burkhard Becher
The power of Drosophila Genetics	Federico Germani & Konrad Basler
Microfluids: fundamentals and applications in biology	Sung Lee
Project Management in Clinical Research (run twice)	Dmitry Linde
Electronic Lab Notebooks	Francesca Peri & Katrin Möller
Scientific Writing	Natalie de Souza
The role of innate immunity in organ homeostasis	Christian Stockmann

## Retreat

The 16<sup>th</sup> MLS retreat was held from 1 to 3 October 2019 in Rigi Kaltbad. The aim of the retreat is mainly to allow students to exchange knowledge, and to provide them an opportunity to improve their presentation skills. All first-year students who had started their Ph.D. before 1 August 2019 either gave a talk or presented a poster. Three external speakers, Prof. Norah Fogarty (King's College, London), Prof. Boris Hinz (University of Toronto), Prof. Robert Ernst (University of Saarland) as well as an internal scientist, Prof. Mark Robinson (Department of Molecular Life Sciences at UZH), provided the students insights into their respective fields of research. Apart from the poster presentations, talks and discussions, the retreat committee organized different leisure activities such as hiking, relaxing in the spa and team building and board games. A novelty in 2019 was a workshop on doctoral supervision, which was organized by a student of the committee. Besides presenting the students the existing help structures and associations at UZH and ETH, she also invited the ombudspersons of both institutions for a direct exchange on this delicate topic.

The organizing committee was formed by: Dominik Christe, Patrick Freitag, Renard Lewis, Madlen Müller, Pascal Rauher, Anna Rüegg, Catharina Sängler and Alina Teuscher.

## Lecture Series

In 2019, the global lecture series "[Growing up in Science](#)" that had started at the end of the previous year gathered momentum and run several times. Thanks to the funding offered by VAUZ (Association of doctoral students, postdocs and scientific employees of the University of Zurich) and the GRC (Graduate Campus of the University of Zurich) the lecture series committee could invite 9 speakers in 2019. Whereas the invited speaker still gives a scientific lecture, there is also a second and more informal get-together, during which the lecturer tells about the obstacles, doubts and failures of his or her professional career. Although the speakers focused on very different challenges or problems they faced during their occupational development, PhD students and postdocs learned that they are not alone with their struggles and that professors or leaders are humans who have learned to be resilient. All organized lectures, the classical ones as well as the those following the new format "Growing up in Science", were a full success and saw a good turnout of PhD students. The MLS students and other interested audience had after all talks the opportunity to talk to the speaker during a social beer, which was often followed by a dinner in town. A special highlight of the series was the talk by Wei Ji Ma on 27 June, the founder of the globally run series "Growing up in Science".

Speaker	Institution	Date
Dr. Marco Vignuzzi	Institut Pasteur, Paris	17 January 2019
Prof. Lindley Winslow	Massachusetts Institute of Technology	18 February 2019
Dr. Maria Waldhoer	InterAx Biotech AG	14 March 2019
Prof. Eva Benková	Institute of Science and Technology Austria	9 April 2019
Dr. Erini Trompouki	Max Planck Institute of Immunobiology and Epigenetics	14 May 2019
Dr. Bassem Hassan	Institut du Cerveau et de la Moelle épinière, ICM	4 June 2019
Prof. Wei Ji Ma	Center for Neural Science and Department of Psychology at New York University	27 June 2019
Dr. Tom Bennett	Centre for Plant Sciences, University of Leeds	24 October 2019
Prof. Vladimir Denic	Harvard University	21 November 2019

Organizing committee MLS lecture series 2018/2019: Greta Ebner, Maria Landinez, Manuela Pérez Berlanga, Pascal Rauher, Erik Slabber, Vinay Shekhar, Silvan Spiri and the program alumnus Jacopo Marino.

### Awarded Travel Grants 2019

The deadlines were 1 March, 1 July and 1 November 2019.

Student	Attended conference/summer school/ EMBO course/ workshop
Myrto Andreadou	9 <sup>th</sup> International Conference on Autoimmunity
Eivind Birkeland	International Society of Cancer and Metabolism 2019
Dominik Bruecher	Keystone Symposia on Molecular and Cellular Biology
Kerstin Doerner	24 <sup>th</sup> Annual Meeting of the RNA Society
Tanja Eberhart	A Nature Conference: Metabolism in Health and Disease
Svenia Heinze	22 <sup>nd</sup> International <i>C.elegans</i> Conference
Adrian Henggeler	EMBO Workshop on Meiosis 2019
Kathrin Nowak	18 <sup>th</sup> Human Proteome Organization World Congress
Sophia Pantasis	FASEB Science Conference: The Matricellular Proteins in Tissue Remodeling and Inflammation
Pascal Rauher	EMBO Workshop "Lipid function in health and disease"
Coenraad Slabber	Gordon Research Seminar and Conference on Tissue Repair and Regeneration
Anna Stier	Cell Cycle Meeting 2019
Rahel Wettstein	EMBO Workshop on Meiosis 2019



Travel grant committee: Martin Müller (PI, UZH), Joao Matos (PI, ETH), Tea Kohlbrenner (MLS student). In total, the program awarded CHF 10'500 as travel grants.

## **Social and Other Activities**

Newsletter: We dispatched two newsletters on 28 May and on 16 December 2019. Among other items the newsletter contains a presentation of a faculty member or a member of the steering committee, information about past and forthcoming events, feedback about one or several tutorials from the organizing PI (tutor) and/or the participants and an overview which students have started in the program and left it in the past six months. The letter is sent out to current and former program students as well as to all faculty members. According to the statistics the email has an open rate of roughly 50%, which is quite good. It is planned to issue the MLS newsletter also in 2020 twice per year.

Students in charge in 2019: Paula Carrio Cordo, Itzel Martinez Lopez and Daniela Sequeira

Career and Networking event 2019: The students of the MLS program organized a career & networking event on 22 May (organizer: James Moore and Harshitha Santhosh Kumar) to which 4 alumni were invited to provide insights in their current job or depict their career steps after they had finished their PhD.

Jeannette Abplanalp, Fisher Clinical Services

Pratiksha Gulati, Roche

Claudia Rockel, Celgene

Youjin Teo, Executive Insight

The Christmas Party was converted to a New Year event. It took place on 18 January 2019. It was decided not to switch back to Christmas but to organize the next event also at the beginning of 2020 as a Leap Year Party.

## **Outlook**

We had planned to revise or replace our tutorial platform in 2019 because it is not meeting current security standards anymore. While we first had aimed to run the database within the OLAT platform of UZH, we gave up these plans when our external partner Glowbase suggested updating the platform and moving it on a UZH server. The project had progressed already rather far when it turned out that such a move is not possible because the outdated Ubuntu version of the tutorials cannot be hosted on the UZH servers. Luckily, the IT services of the Department of Molecular Life Sciences offered to program a small database for the tutorials during the course of the year 2020.

Also, the other target of 2019 – detecting new financial sources for replacing the expiring swissuniversities support at least partially – is not yet met. Although the program has started internal discussions how to best adjusting the budget, we haven't currently found other options than cutting down services. It is still not clear how much (or rather how little) additional support UZH and ETH will be willing to offer. As financial issues are administrated by the LSZGS, the program cannot do much more than applying pressure on the level of the directors' conference by highlighting the imminent financial problems again and again. We hope that the LSZGS will eventually take the initiative in 2020 and start serious negotiations with the governing body of UZH and ETH.

Last but not least, the MLS program plans for 2020 a further get-together with its program alumni, the current PhD students and the PIs.

## Molecular and Translational Biomedicine

### Mission Statement

The Ph.D. program “Molecular and Translational Biomedicine” (MTB) of the Competence Center for Personalized Medicine (CC-PM) imparts knowledge, concepts and modern technologies in basic and applied biomedical research. Ph.D. students have the opportunity to work on a broad spectrum of topics including energy homeostasis, metabolism, aging, cell growth and differentiation, stem cells, inflammation and cell signaling pathways. In their projects they will apply modern approaches in (epi)genetics, genomics, systems- and molecular cell biology. The Ph.D. program provides a modern teaching curriculum and an international research environment to advance our molecular knowledge in cell, tissue and organ function in physiological and disease states with the goal to improve genomic-based patient care.

### The program in figures and numbers

Program statistics	as of December 31
Program students	47
UZH affiliation	15
ETH affiliation	32
Other institute (please specify)	
Track I students	21
Track II students	26
Female students	18
Male students	29
International students	34
Swiss students	13
Program drop-outs	3
Completed PhD	21
Program Alumni	55
Faculty members	56

## Recruitment

Recruiting statistics	December 1, 2018	July 1, 2019
Complete applications	56	39
Invited candidates	8	6
Drop-outs before interview	1	0
Free slots (1st priority program)	9	9
Matches	4	4
Candidates without matches	4	2
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	3	3
Gained from LSZGS programs	0	0

## Finances

	Income	Expenses
<hr/>		
Balance as of January 1		
<b>Income</b>		
UZH	27'244	
SUK ETH	53'600	
SUK UZH	5'000	
<hr/>		
Total income	85'844	0
<hr/>		
<b>Expenses</b>		
Salaries program (including social benefits)		19'301
Recruitment September 18		5'553
Recruitment February 19		4'222
Program activities (retreat, symposia, etc.)		20'940
Overhead		
<hr/>		
Total expenses	0	50'016
<hr/>		
Balance as of December 31		35'828
<hr/>		

## Program Activities

The course in Genomic Medicine was held between 14 – 18 January 2019.

In the afternoon of 26 November 2019, the annual retreat of the Molecular and Translational Biomedicine program took place at ETH Centre. It was arranged as joint retreat of the imMed, the Biomedicine and the MTB program. 26 students affiliated with the MTB program attended the retreat and gave a talk or presented a poster.

## Outlook

In 2019, the PhD programs in Integrative Molecular Medicine and the Molecular and Translational Biomedicine decided to fuse to a new program called Biomedicine (BioMed). This program started in Fall 2019 and since that moment no more students are accepted into the MTB program. For the coming years courses and retreats will be run commonly among the three programs to make sure that there is a critical mass of students. Thus, the MTB program is slowly going to phase out and will be closed down as soon as the last doctoral student has obtained his or her PhD degree.

## Neuroscience

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	315
UZH affiliation	208
ETH affiliation	104
Other institute (please specify)	3 (Maastricht, Basel, Bern)
Track I students	57
Track II students	258
Female students	137
Male students	178
International students	221
Swiss students	94
Program drop-outs	14
Completed PhD	77 (2017-2019)
Program Alumni	653 (since 2001)
Faculty members	133

---

## Recruitment

Recruiting statistics	Interviews Feb 18	Interviews Sept. 18
Complete applications	n.a.	n.a.
Invited candidates	20	12
Drop-outs before interview	5	1
Free slots (XX priority program)	8	6
Matches	3	1
Candidates without matches	10	6
Decision against program	1	4
Rejected candidates	-	-
Change to other LSZGS programs	2	1
Gained from LSZGS programs	-	-

## Finances

	Income	Expenses
<hr/>		
Balance as of January 1		
<b>Income</b>		
ETHZ	40'260	
UZH	40'260	
Saldo von 2018	-3'520	
<hr/>		
Total income	77'000	0
<hr/>		
<b>Expenses</b>		
	UZH	ETH
Salaries program	10'928	
Social benefits		
Student travel grants	4'486	16'025
German courses		
Ethic course	830	
Recruitment Sept 18	9'776	
Recruitment Feb 19	3'360	3'600
Writing course		6'240
Statistics course		
Thesis Award		
Program activities (retreat, symposia, etc.)	10'653	11'095
<hr/>		
Total expenses		<b>76'993</b>
<hr/>		
Balance as of December 31	0	<b>7</b>
<hr/>		

## **Program Activities**

### 1) Courses

- Introductory Course in Neuroscience I (Fall term 2019)
- Introductory Course in Neuroscience II (Spring term 2019)
- BIO628: Neuroscience Block Course (31 May – 12 June 2019, primarily for MD/PhD Students)
- Neuroimaging Blockkurs (21-22 May 2019)
- Ethics in the Neurosciences (3-5 June 2019)
- Crash Course in Statistics for Neuroscientists (8-12 July 2019)
- Writing Neuroscience Research Papers (31 May, 6, 14, & 2 June 2019)

### 2) Symposia, conferences and other scientific activities

- ZNZ PhD Retreat, 23-25 May 2019, Clinic Valens, Valens
- ZNZ Symposium and Best PhD Thesis Award and Best Poster Award, (12 September 2019)

### 3) Outlook 2020

- Design of new Advanced Course in Neuroscience starting in 2020



## Plant Sciences

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	130
UZH affiliation	49
ETH affiliation	67
Other institute (please specify)	14 (Uni Basel, Uni Hohenheim, Uni Lausanne)
Track I students	24
Track II students	106
Female students	67
Male students	63
International students	89
Swiss students	41
Program drop-outs	22
Completed PhD	Ca. 500
Program Alumni	Ca. 500
Faculty members	17

---

## Recruitment

Recruiting statistics	December 1	July 1
Complete applications	77	NA
Invited candidates	0	5
Drop-outs before interview	0	0
Free slots (XX priority program)	0	3
Matches	0	2
Candidates without matches	0	3
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

## Finances

	Income	Expenses
Balance as of January 1	17687	
<b>Income</b>		
ETHZ	42000	
UZH	Incl. above	
Fees	2820	
Other (SUK reporting, separate)		
Total income	62507	0
<b>Expenses</b>		
Salaries program		33040
Social benefits		Incl.above
Recruitment December 1		2450
Recruitment July 1		1913
Program activities (retreat, symposia, etc.)		16071
Overhead		
Total expenses	0	53474
Balance as of December 31	9033	0

## Program Activities

### Excellent capacities and experience for carrying out training

The PSC has core infrastructure and personal resources to carry out and manage training for 500+ participants per year. Established training formats range from workshops, colloquia and lectures to summer schools, and face-to-face events to blended learning and e-learning formats that make our education highly scalable in number of participants. Didactical formats include case-study work, cognitive apprenticeship models, role play scenarios, simulations but also hands-on training in tools and methodology and experimentation that make our education highly successful in targeting learning objectives to the different target groups and demands of a multi-faceted academic education.

The PSC educational programs are embedded in several educational platforms that operate nationally and internationally and make the course offer of the PSC and of corresponding programs fully transferable: Life Science Zurich ([www.lifesciences.ch](http://www.lifesciences.ch)), an international graduate school in life sciences, Swiss Plant Science Web ([www.swissplantsciencweb.ch](http://www.swissplantsciencweb.ch)), housing 9 national PhD programs in Plant Sciences, Graduate Campus University of Zurich ([www.grc.uzh.ch](http://www.grc.uzh.ch)), bringing together all PhD students of the University of Zurich.

**Students registered in the program in the reporting period, as of Dec 31 of each year.**

Year	TOTAL	Univ. of Zurich	ETH Zurich	Univ. of Basel	Other	female	male	national	international
2019	130	49	67	13	1	67	63	41	89

### Program Curriculum for the PSC PhD Program in “Plant Sciences”

Since 2003 The PSC has offered the PhD Program in Plant Sciences with 20 – 30 ECTS per year of methodological training in several areas of plant sciences and following the international accepted frameworks of joint skills statement, 2001 and Vitae, 2010 for transferable skill training in:

- Understanding of the research environment and scientific community (e.g. understanding standards of good research practice and ethical standards, funding and publication practices in research)
- Research management (e.g. project management in research)
- Training of communication skills (e.g. scientific writing, scientific presentation, scientific communication practice)
- Networking and teamwork
- Career management

### PhD Program in Plant Sciences – Curriculum

Module	ECTS
<b>Compulsory Activity:</b> Colloquium “Challenges in Plant Sciences”	2
<b>Elective Activities:</b> Remainder of 12 ECTS may be chosen from*: <ul style="list-style-type: none"> <li>• Technical Courses (in all areas of Plant Sciences): Intensive workshops on skills, methods and techniques</li> <li>• Courses on Statistical Methods</li> <li>• Transferable Skill Courses</li> <li>• Participation in international scientific symposium with own scientific contribution (oral or poster presentation) (max. 1 ECTS)</li> <li>• Organization of PSC PhD Symposium (max. 3 ECTS)</li> <li>• ECTS from the offer of the program of technical and scientific courses and Transferable skill courses. Transferable skill course can also be visited at GRACE and other continuing education offers at University of Basel.</li> </ul>	4-10
	<b>12</b>

\* with approval from principal investigator or thesis committee

**Recruitment & interviews:** The PSC offers a fully implemented Track I admission channel (recruitment via Life Science Zurich Graduate School, LSZGS) following LSZGS guidelines that was used for below 20% of all PhD students recruited to the program in 2019.

For Track II admission channel (direct application to principal investigator, PI): We now request formal admission interview with future PhD students to be organized by PI. The interview should be conducted in presence of at least one other principal investigator or faculty member and is confirmed with signed PhD Program interview protocol. This admission channel is used for 80% of PSC PhD student population.

Supervision: The supervision is following the regulation of the partner universities and includes: doctoral agreement between supervisor and PhD students is set up 6 months after arrival of student. Set up of a research plan, establishing of thesis committee with internal and external experts, thesis committee meeting all 12 month and documentation of the meeting and the feedback in the thesis committee meeting protocol. The protocol is part of the documentation that is sent to the doctoral program coordination. The coordination is communicating to the universities' management (dean of faculties) if thesis committee meetings are not carried out regular. Establishment of these processes in 2019 we can currently report.

- 90% of all scheduled thesis committee meetings in 2019 finished in time and 10% delayed by 3 – 6 months at University of Zurich
- 90% carried out in time and 10% delayed by 3-6 months at ETH Zurich.
- University of Basel will integrate in this quality pipeline in 2020.

**Evaluation of the program is continuously done, see**

<http://www.plantsciences.uzh.ch/teaching/phdplantscience/evaluation.html>

### **PSC Training Certifications**

The PSC PhD Program “Plant Sciences” is finished with a **PhD Program certification**. The certification is part of the diploma supplement of the doctoral certificate that is awarded by the University of Zurich, ETH Zurich or University of Basel. The certification includes a transcript of record of all PhD courses work carried out by the PhD student.

**Dec 11, 2019: PSC PhD Symposium 2019 - Plant Response to Environment across Scales; 200 registered participants,**

<https://www.plantsciences.uzh.ch/en/outreach/conferences/plantresponseacrosscales.html/>

Every second year, the PSC PIs organize the international PSC Symposium on a topic of their choice.

**Invited speakers:** Bruno Studer (ETH & PSC, CH); Kirsten Bomblies (ETH & PSC, CH); Anne Roulin (UZH & PSC, CH); Ben Oyserman, (Wageningen University, NL); Hendrik Poorter (Jülich Plant Phenotyping Center, DE); Nicole van Dam (German Centre Integrative Biodiversity Research (iDiv), DE); Jaakko Kangasjärvi (University of Helsinki, FI); Yvonne Willi (University of Basel & PSC); Tamir Klein (Weizman Institute of Science, Israel); Francesco Miglietta (Institute of Bioeconomy, IT)

**Frontiers in Plant Sciences Courses Series:** Between 2012 and 2019 the PSC received funding for a series of workshops at the frontiers in plant sciences by the SUK “Interuniversity Program” through

University of Zurich, ETH Zurich and University of Basel. These workshops are dedicated to applications: i.e. concepts but also tools in these advanced areas:

5 „Frontiers in Plant Sciences“ workshops in 2019:

- **Get going with statistics in functional genomics** (Prof. Anne Roulin), 12 participants
- **Advanced Data Management and Data Manipulation using R** (Dr. Wunder), 18 participants
- **Advanced course 3D microscopy imaging of plant tissues and image processing** (Célia Baroux, Joop Vermeer, Alexis Maizel), 9 participants
- **Scientific Integrity - How to publish reproducible results** (Dr. Celine Carret (European Molecular Biology Organization (EMBO), Dr. Simon F. Nørrelykke (Scientific Centre for Optical and Electron Microscopy (ScopeM), ETH Zurich), 11 Participants
- **How to visualize (big) biological data sets generated by omics technologies** (Prof. Dr. Kay Nieselt (Center for Bioinformatics Tübingen, Integrative Transcriptomics, University of Tübingen), 12 Participants
- **RNA sequencing – A practical course for plant scientists** (Dr. Lucy Poveda (Functional Genomics Center Zurich), Dr. Weihong Qi (Functional Genomics Center Zurich) and others), 8 Participants

### Courses carried out in the reporting period

In the reporting period, the PSC organized / co-organized 24 courses. We report 319 course visits of PhD students.

**Table 1: Number of courses carried out and number of course participations. Participants per University are summarized over all courses.**

Year	Total Course Nr	Part. University of Zurich	Part. ETH Zurich	Part. University of Basel	Part. Other	Course Participations
2019	24	161	151	7	6	319

**Table 2: Courses in the PhD Program in Plant Sciences and number of participants.**

Course	Speakers / case study supervisors	Participants
Scientific Writing Practice II	Jacopo Marino	ETH (9) UZH (3)
Get going with statistics in functional genomics	Prof. Anne Roulin (UZH), Dr. Jean-Claude Walser (GDC, ETHZ)	ETH (5) UZH (7)
Project Management	Dr. Andrea Degen (EUrelations)	ETH (5) UZH (9)
Responsible Conduct in Research	Prof. Nina Buchmann (ETHZ), Dr. Melanie Paschke (PSC)	ETH (15) UZH (6)
Concepts in Evolutionary Biology (BIO 395)	Prof. König, Prof. Keller, Prof. Krützen, Prof. Sanchez, Prof. Shimizu, Dr. Roulin, Dr. Lindholm Krützen	ETH (3) UZH (8) Other (2)
Scientific Presentation Practice	Dr. Barbara Hellermann	ETH (7) UZH (5)

BIO 609 - Introduction to UNIX/Linux and Bash Scripting	Dr. Carla Bello (ZUH), Dr. Gregor Rot (ZUH)	ETH (6) UZH (13)
BIO 610 - Next-Generation Sequencing for Model and Non-Model Species	Prof. Kentaro Shimizu, Prof. Roman Vladimir Briskine, Prof. Jun Sese, Dr. Rie Shimizu Inatsugi, Dr. Masaomi Hatakeyama, Dr. Tony Kuo, Dr. Heidi Tschanz-Lischer	ETH (5) UZH (12)
BIO 634 - Next-generation Sequencing 2 - Continuation Course: Transcriptomes, Variant Calling and Biological Interpretation	Dr. Carla Bello, Dr. Gregor Rot	ETH (2) UZH (5)
Dealing with the Publication Process	Dr. Philipp Mayer (textflow), Andre Hofmann, Dr. Melanie Paschke (PSC)	ETH (8) UZH (6)
Genetic Diversity Analysis	Dr. Stefan Zoller, Dr. Jean-Claude Walser, Dr. Niklaus Zemp	ETH (3) UZH (1)
Alpine Plant Ecology	Christian Körner, Erika Hiltbrunner, Markus Fischer, Jake Alexander	ETH (3) UZH (4) UNIBA (1)
Colloquium "Challenges in Plant Sciences"	Sylvain Bischof, Mana Gharun, Antia Rodriguez Villalon, Maria Santos, Christian Schöb, Marcel van der Heijden, Julia Vorholt, Alex Widmer, Samuel Zeeman, Thomas Boller, Sylvia Martínez	ETH (15) UZH (7)
Sustainable Plant Systems (part of "Integrative Plant Sciences"), ETH VVZ 551-0209-00	Dr. Melanie Paschke, Dr. Navreet Bhullar, Dr. Frank Liebisch, Prof. Marcel van der Heijden	ETH (9) UZH (1) UNIBA (5)
Scientific Writing Practice 1	Dr. Patrick Turko	ETH (13) UZH (6)
Genetic Diversity: Techniques (ETH VVZ: 701-1425-01L)	Dr. Aria Minder (GDC, ETHZ)	ETH (2) UZH (1)
Writing a Post-Doctoral Grant	Dr. Andrea Degen (EUrelations), Dr. Melanie Paschke (PSC)	ETH (7) UZH (8) Other (1)
Introduction to R	Dr. Jan Wunder	ETH (9) UZH (8)
Scientific Visualisations using R	Dr. Jan Wunder	ETH (9) UZH (7)

**Table 3: Course Evaluation 2019: 4 = fully agree, 1 = fully disagree**

	Number of Questionnaires	The Course was well organized?	The topics covered met my expectations?	The instructor explained clearly?	Manual was helpful & useful also for future?	Good balance between theoretical & practical?	level of course was according to my needs?	working atmosphere was good?	I learned & benefited from this course?	The instructor meet an appropriate pace? 1 = too slow/too fast, 2 = just right
Advanced course on 3D microscopy	7	4.00	4.00	4.00	3.86	4.00	3.38	3.86	4.00	2.00
Genetic Diversity: Techniques	11	4.00	3.64	4.00	3.64	3.91	3.70	4.00	3.82	2.00
Introduction to R	16	3.94	3.69	3.94	3.50	3.56	3.88	3.75	3.75	2.00
Scientific Visualisations in R	15	3.87	3.53	3.80	3.87	3.80	3.47	3.73	3.67	1.93
Sustainable Plant Systems (in ETH VVZ: 551-0209-00L)	13	3.23	3.54	3.62	3.58	3.23	3.29	3.58	3.69	2.00
Scientific Writing I	19	3.95	3.79	3.95	3.89	3.95	3.71	3.89	3.72	2.00
Colloquium: Challenges in Plant Sciences (in ETHZ VVZ: 551-0205-00L)	21	3.76	3.14	3.57	3.41	3.39	3.42	3.74	3.44	1.77
Scientific Integrity: How to publish reproducible results	11	3.82	3.55	3.91	3.55	3.73	3.64	3.82	3.73	2.00
Writing a Post-doctoral Grant	17	4.00	3.19	3.69	3.53	3.00	3.44	3.82	3.65	1.94
RNA Sequencing	8	3.75	3.38	3.75	3.50	3.88	3.50	3.88	3.50	2.00
Get going with statistics in functional genomics	10	3.70	2.89	3.80	3.60	3.60	3.20	3.80	3.56	1.90
Dealing with the	13	3.69	3.46	3.54	3.43	3.69	3.54	3.54	3.62	1.92



Publication Process										
Scientific Presentation	12	3.58	3.00	3.50	3.08	3.75	3.08	3.75	3.25	2.00
Scientific Writing II	12	3.92	3.83	4.00	4.00	3.75	3.67	3.92	3.83	2.00
Responsible Conduct	21	3.00	3.63	3.53	3.16	3.72	3.24	3.53	3.40	1.94
Alpine Plant Ecology - International Summer School 2019	19	3.79	3.74	3.94	3.47	3.74	3.89	4.00	3.95	1.95
Project management for research	10	3.60	3.30	3.50	3.60	3.60	3.30	4.00	3.67	2.00
Advanced Data Management	17	4.00	3.59	3.88	3.76	3.88	3.47	3.88	3.88	2.00
Genetic Diversity: Analysis (in ETHZ Vorlesungsverzeichnis: 701-1425-01L)	3	4.00	3.33	4.00	4.00	3.25	3.67	4.00	4.00	2.00
How to visualize (big) biological data sets generated by omics technologies	14	3.60	3.29	3.93	3.77	3.77	3.29	3.93	3.57	2.00
Concepts of Evolutionary Biology	12	3.17	3.33	3.08	3.08	3.42	3.67	3.42	3.33	1.92
Next-Generation Sequencing I (BIO610)	11	3.55	3.73	3.18	3.73	3.45	3.64	3.64	3.55	1.73
Next-Generation Sequencing II (BIO634)	6	3.67	3.50	3.83	3.83	3.00	3.83	3.83	3.83	2.00
Introduction to UNIXLinux and Bash Scripting (BIO609)	17	3.41	3.41	3.29	3.53	3.59	3.24	3.65	3.47	1.56

## Outlook

The PSC PhD Program in Plant Science remains one of the largest in its field, offering students access to (a) transferable skills and competencies courses to enhance employability and career perspectives, as agreed in the Lisbon strategy and following the Research Development Framework (Vitae) competency matrix as well as (b) multidisciplinary courses on research topics, from molecular biology to ecosystem research.

## RNA Biology

### The program in figures and numbers

---

Program statistics	as of December 31
Program students (incl. > 4years)	36 (43)
UZH affiliation	15 (16)
ETH affiliation	11 (15)
Uni Bern	10 (12)
Track I students	15 (19)
Track II students	19 (22)
From Predoc program	2
Female students	18 (23)
Male students	18 (20)
International students	7 (14)
Swiss students	29 (29)
Program drop-outs	-
Completed PhD	8
Program Alumni	10
Faculty members	27

---

## Recruitment

Recruiting statistics	December 1, 2018	July 1, 2019
Complete applications	13	14
Invited candidates	3	6
Drop-outs before interview	1	
Free slots (XX priority program)		
Matches	2	3
Candidates without matches	1	3
Decision against program		
Rejected candidates		
Change to other LSZGS programs		2
Gained from LSZGS programs		1

## Finances

	Income	Expenses
Balance as of January 1	26'709.20	
<b>Income</b>		
ETHZ		
UZH	7'525.00	
Uni Bern	5'031.40	
Other		
	12'556.40	
Total income	39'265.60	
<b>Expenses</b>		
Salaries program		
Social benefits		
Recruitment July 2018, Interviews September 2018		1'326.50
Recruitment December 2018 Interviews February 2019		2'268.00
Program activities (retreat, seminars, costs invited speakers, etc.)		702.28
Travel expenses Adm. Committee		170.40
Welcome Coffee Adm. interviews		199.18
Total expenses		4'666.36
Balance as of December 31		34'599.42

## **Program Activities**

Seminar Series hosted by the PhD students of RNA Biology:

Prof. Phil Bevilacqua, Pennsylvania State University, University Park, USA,

“Enhancement of Small Ribozyme Function by Biological Solution Conditions and Confinement”.

There were no travel grant requests.

## Science and Policy

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	34
UZH affiliation	13
ETH affiliation	17
Other institute (please specify)	5 (Uni Basel, Uni Lausanne)
Track I students	10
Track II students	24
Female students	20
Male students	14
International students	20
Swiss students	14
Program drop-outs	0
Completed PhD	9
Program Alumni	9
Faculty members	17

---

## Recruitment

Recruiting statistics	December 1	July 1
Complete applications	177	NA
Invited candidates	11	0
Drop-outs before interview	0	0
Free slots (XX priority program)	8	0
Matches	6	0
Candidates without matches	5	0
Decision against program	1	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

## Finances

	Income	Expenses
Balance as of January 1	133312	
<b>Income</b>		
ETHZ	20320	
UZH	Incl. above	
Fees		
Other	SUK, Separate reporting	SUK, Separate reporting
Total income	153632	0
<b>Expenses</b>		
Salaries program		33040
Social benefits		Incl. above
Recruitment December 1		
Recruitment July 1		
Program activities (retreat, symposia, etc.)		734
Overhead	Separate reporting	Separate reporting
Total expenses	0	33774
Balance as of December 31	119858	0



## Program Activities

### Excellent capacities and experience for carrying out training

The PSC has core infrastructure and personal resources to carry out and manage training for 500+ participants per year. Established training formats range from workshops, colloquia and lectures to summer schools, and face-to-face events to blended learning and e-learning formats that make our education highly scalable in number of participants. Didactical formats include case-study work, cognitive apprenticeship models; role-play scenarios, simulations but also hands-on training in tools and methodology and experimentation that make our education highly successful in targeting learning objectives to the different target groups and demands of a multi-faceted academic education. The PSC educational programs are embedded in several educational platforms that operate nationally and internationally and make the course offer of the PSC and of corresponding programs fully transferable: Life Science Zurich (<http://www.lifescience-graduateschool.uzh.ch/en/about-LSZGS/phd-programs.html>), an international graduate school in life sciences, hosting 18 PhD programs, the Swiss Plant Science Web ([www.swissplantsciencweb.ch](http://www.swissplantsciencweb.ch)) housing 9 national PhD programs in Plant Sciences, and the Graduate Campus University of Zurich ([www.grc.uzh.ch](http://www.grc.uzh.ch)), bringing together all PhD students of the University of Zurich.

### Students registered in the program in the reporting period, as of Dec 31 of each year.

Year	TOTAL	University of Zurich	ETH Zurich	University of Basel	Other	female	male	national	international
2019	34	13	17	4	1	20	14	14	20

Since 2009, the PSC has pioneered the PhD Program in Science & Policy. Highly specialized skills for the interface of Science & Policy are offered to the PhD students: they acquire tools for policy work, learn about policy sciences and attend international conferences at the interface of science and policy.

### PhD Program in Science & Policy Curriculum

Module	ECTS
<p><b><u>Compulsory Activity:</u></b></p> <p>4 out of 6 modules - <b>Policy Workshops</b> (offered by PSC, 2 ECTS each):</p> <ul style="list-style-type: none"> <li>• Evidence-based Policy-making in Plant Sciences</li> <li>• Stakeholder Engagement</li> <li>• Communicating Science</li> <li>• Building Political Support</li> <li>• Contributing to Policy Action - Analysis and Communication of Risks and Uncertainties</li> <li>• Understanding Policy Evaluation</li> </ul> <p>1 Lecture in <b>Basics of Policy Sciences</b> (i.e. Introduction to Political Sciences, 1 ECTS)</p>	9
<p><b><u>Elective Activities:</u></b></p> <ul style="list-style-type: none"> <li>• <b>Technical Courses:</b> Intensive workshops on skills, methods and techniques</li> <li>• <b>Transferable Skill Courses</b></li> <li>• PSC: Careers in Science or Policy, or both? (1 ECTS)</li> <li>• PSC: Scenario-building and modeling (1 ECTS)</li> <li>• PSC: System Thinking (1 ECTS)</li> <li>• Seminars, Colloquia</li> </ul>	3

<p><b><u>Other Elective Activities:</u></b></p> <ul style="list-style-type: none"> <li>• Participation in international scientific symposium with own scientific contribution (oral or poster presentation, preferentially with science-policy section) (max. 1 ECTS)</li> <li>• Organization of PSC PhD Symposium, preferentially with science-policy section (max. 3 ECTS)</li> <li>• ECTS from the PSC offer of technical and scientific courses and Transferable skill courses.</li> </ul>	
	<b>12</b>

## Recruitment & interviews

The PSC offers a fully implemented Track I admission channel (recruitment via Life Science Zurich Graduate School, LSZGS) following LSZGS guidelines that was used for 10 of the 34 PhD students recruited to the program until December 31, 2019.

For Track II admission channel (direct application to principal investigator, PI): We now request a formal admission interview with future PhD students to be organized by the PI. The interview should be conducted in presence of at least one other principal investigator or faculty member and is confirmed with a signed PhD Program interview protocol.

## Supervision

The supervision is following the regulations of the partner universities and includes: doctoral agreement between supervisor and PhD student is set up 6 months after the PhD start. Set up of a research plan, establishment of thesis committee with internal and external experts, thesis committee meetings every 12 months and documentation of the meeting and the feedback in the thesis committee meeting protocol. The protocol is part of the documentation that is sent to the doctoral program coordination. The coordination is communicating to the universities' management (dean of faculties) if thesis committee meetings are not carried out regularly. Establishment of these processes in 2019 we can currently report:

- 80% of all scheduled thesis committee meetings in 2019 carried out in time at ETH Zurich
- 90% carried out in time and 10% delayed by 1-6 month at University of Zurich.
- University of Basel will integrate in this quality pipeline in 2020.

## Certification

The PSC PhD Program "Science and Policy" is finished with a PhD Program certification. The certification is part of the diploma supplement of the doctoral certificate that is awarded by the University of Zurich, ETH Zurich or University of Basel. The certification includes a transcript of record of all PhD courses work carried out by the PhD student.

## Evaluation

Evaluation of the program is done via course evaluations, see below.

## Special Events - PhD Program in Science & Policy

**Dec 11, 2019: PSC PhD Symposium 2019 - Plant Response to Environment across Scales; 200 registered participants,**

<https://www.plantsciences.uzh.ch/en/outreach/conferences/plantresponseacrossscales.html/>

Every second year, the PSC PIs organize the international PSC Symposium on a topic of their choice.

**Invited speakers:** Bruno Studer (ETH & PSC, CH); Kirsten Bomblies (ETH & PSC, CH); Anne Roulin (UZH & PSC, CH); Ben Oyserman, (Wageningen University, NL); Hendrik Poorter (Jülich Plant Phenotyping Center, DE); Nicole van Dam (German Centre Integrative Biodiversity Research (iDiv), DE); Jaakko Kangasjärvi (University of Helsinki, FI); Yvonne Willi (University of Basel & PSC); Tamir Klein (Weizman Institute of Science, Israel); Francesco Miglietta (Institute of Bioeconomy, IT)

### Courses carried out

In the reporting period, the PSC organized 4 courses. We report 43 course visits of PhD students.

**Table 1: Number of courses carried out and number of course participations.**

Year	Total Course Nr	Part. University of Zurich	Part. ETH Zurich	Part. University of Basel	Part. Other	Course Participations
2019	4	25	18	0	1	43

**Table 2: Courses in the PhD Program in Science and Policy and number of participants.**

Date	Course	Speakers / case study supervisors	Participants
18-20.03.2019	Stakeholder Engagement	Minu Hemmati	ETH (9) UZH (4) Other (1)
15.05 & 03.07.2019	Evidence-based Policy-Making	Dr. Jerylee Wilkes (ETHZ), Holger Gerdes (Ecologic Institute), Dr. Eva Lieberherr (ETHZ), Susanne Menzel (FOAG), Daniela Eberli (ZUH)	ETH (6) UZH (4)
11.09; 25.09; 09.10; 23.10; 13.11; 11.12	Careers in science and policy, or both?	Invited guests: Sascha Ismail (Swiss Academy of Sciences), Jeanne E. Tomaszewski (World Food System Center), Lisa King (WWF France), Dominik Klauser (Syngenta Foundation), Charlotte Pavageau (Biovision), Simon Briner (Federal Office for Agriculture / Agrovivo) Jasmin Schubert (RethinkResource GmbH), Simon Zeller (Office for Forest, Hunting and Fishing / canton SG), Philipp Aerni (Center for Corporate Responsibility and Sustainability), Franziska Humair (Federal Office for the Environment), Ute Budliger (PSC & Dr. Budliger, Institut für Gartentherapie), Serenella Sala (European Commission, Joint Research Centre)	ETH (6) UZH (6)
25.11.2019 - 27.11.2019	Workshop E: Contributing to policy action – Analysis and communication of risks and uncertainties	Cornelius Senf (University of Natural Resources and Life Sciences, Vienna), Melanie Paschke, (Zurich-Basel Plant Science Center), Christoph Beuttler (Risk-Dialogue Foundation, St. Gallen), Elisabeth Ehrensperger (TA Swiss)	ETH (4) UZH (4)

**Table 3: Course Evaluation 2019: 4 = fully agree, 1 = fully disagree**

	Number of Questionnaires	The Course was well organized?	The topics covered met my expectations?	The instructor explained clearly?	Manual was helpful & useful also for future?	Good balance between theoretical & practical?	level of course was according to my needs?	working atmosphere was good?	I learned & benefited from this course?	The instructor meet an appropriate pace? 1 = too slow/too fast, 2 = just right
Contributing to policy action – Analysis and communication of risks and uncertainties	5	3.80	3.80	3.20	3.80	3.60	3.40	3.80	3.80	2.00
Careers in Science and Policy, or both?	11	3.64	3.82	3.78	3.78	3.71	3.63	3.91	3.91	2.00
Stakeholder Engagement	15	3.80	3.53	4.00	3.50	3.67	3.60	4.00	3.80	1.93
Evidence-based Policy-Making	7	3.57	3.29	3.43	3.14	3.29	3.00	3.71	3.43	2.00

## Outlook

The efforts for increasing the visibility of the program in other research fields within the life sciences and student numbers continues. Yet, we acknowledge that it will remain a specialized program for students especially interested in the interface of science and policy.

The PSC EU-COFUND proposal «RESPONSE - to society and policy needs through plant, food and energy sciences» (Horizon 2020, MARIE SKŁODOWSKA-CURIE ACTIONS) submitted on September 27, 2018 was successful. RESPONSE started in February 2020. RESPONSE will result in additional cohort of PhD students of 35 within the next 2 years.

## Systems Biology

### The program in figures and numbers

---

Program statistics	as of December 31
Program students	78
UZH affiliation	16
ETH affiliation	62
Other institute (please specify)	
Track I students	51
Track II students	27
Female students	33
Male students	45
International students	66
Swiss students	12
Program drop-outs	1
Completed PhD	24
Program Alumni	68
Faculty members	34

---

## Recruitment

Recruiting statistics	December 1	July 1
Complete applications	62	47
Invited candidates	14	13
Drop-outs before interview	3	1
Free slots (SysBio priority program)		
Matches	2	3
Candidates without matches	9	9
Decision against program		
Rejected candidates		
Change to other LSZGS programs	0	1
Gained from LSZGS programs		