



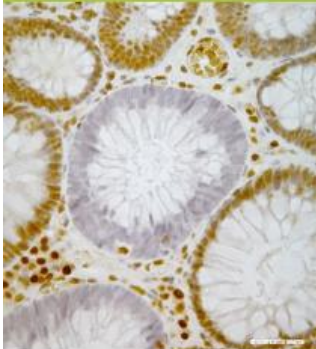
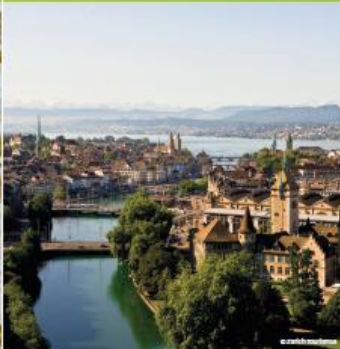

Life Science Zurich

Life Science Zurich Graduate School
Annual Report 2016

Dr. Susanna Bachmann

**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

Programs

- Biomedical Ethics and Law (Medical Track)
- Biomolecular Structure and Mechanism
- Cancer Biology
- Drug Discovery
- Ecology
- Epidemiology and Biostatistics
- Evolutionary Biology
- Integrative Molecular Medicine
- MD/PhD Program
- Microbiology and Immunology
- Molecular Life Sciences
- Molecular and Translational Biomedicine
- Neuroscience
- Plant Science
- RNA Biology
- Science and Policy
- Systems Biology




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1 Executive summary

In May 2016, the Life Science Zurich Graduate School accepted the PhD program in Drug Discovery as a new member program. With this addition the Graduate School now houses 16 joint ETH/UZH PhD programs and one MD-PhD Program (only UZH). Although the Drug Discovery program will officially be launched in May 2017 recruitment of PhD students already started in December 2016. The LSZ GS now includes 538 research group leaders and 1'590 doctoral students (as of 31 December 2016, including the students enrolled at the Universities of Basel and Berne via the Plant Science and the RNA Biology programs).

The trend of the past two years with roughly 1,200 for the winter deadline and around 1'400 applications for the summer deadline also continued in 2016 (1,244, respectively 1,496 complete applications). In general, we assume that many applicants prefer to apply towards the end of their MSc studies and therefore rather opt for the summer deadline. This observation is especially true for the applicants from India, who still constitute by far the largest group. In fact, the number of applicants from the Indian subcontinent (Bangladesh, India and Pakistan) is clearly higher for the July (464) than the December (344) deadline and makes up for roughly 50% of the difference. The number of applications from Europe is quite stable, although there are always minor ups and downs between the specific order of precedence. More important than the quantity of applicants is of course their experience and subject knowledge. We were slightly less successful than in earlier years to recruit the very best candidates to Zurich as we lost a considerable number of excellent students to other European universities this year. Especially for the winter deadline the dropout rates of 20% before and after the recruitment days were unusually high. Despite this negative aspect the number of candidates at interview (134 in February and 135 in September), free slots (116 and 100) and matches (64 and 69) corresponded over both rounds to the average ratio of past years.

In 2016, the LSZ GS continued to work on the new database, named "DissGo" that now encompasses nearly all parts of the PhD process. Some important features have been added, such as reminder emails for due milestones and a general export function for mailing lists and some statistics. "DissGo" is not only well received by the program coordinators but also by the PhD students who in the meantime got used to document their PhD progress in the database. Some graduate schools outside of the LSZ GS voiced an interest in using DissGo for their program administration.

Besides further development of "DissGo", the Graduate School also put some time and effort in finding a replacement for the nearly ten-year-old application tool. After the careful evaluation of the pros and cons of different possible solutions, the directors' conference decided that renting a ready-made platform to administrate the applications and to organize the lab visits will be the most convenient arrangement for the LSZ GS. As it took nearly one year to look for suitable possibilities and to assess all the (dis)advantages of each solution, the switch to the new platform will only occur in 2017.

A very positive feedback from the students was received for most of the 40 transferable skill courses offered via the LSZ GS in 2016. Nearly all courses were fully booked and not all students on the partially long waiting lists could eventually be accepted. In 2016, 40% (16) of the courses were jointly offered by a PhD program or another university institution and the LSZ GS. As in past years, the program again included some methodical courses, such as Next Generation Sequencing and Microscopy Toolbox courses that formerly had only been offered to the students of few specific PhD programs. Again, the transferable skill course program comprised a mix of popular "longsellers" such as "Presenting in English" and "Selfmarketing skills" and some new courses like "How to Postdoc" and "Winning the publication game". A new and long planned addition to the program is the "Introduction into Scientific Integrity and Good Scientific Practice". The 2-hour lecture is now compulsory for the doctoral students of 10 PhD programs and was run twice in 2016.

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 8th 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 (LSZ GS) now 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

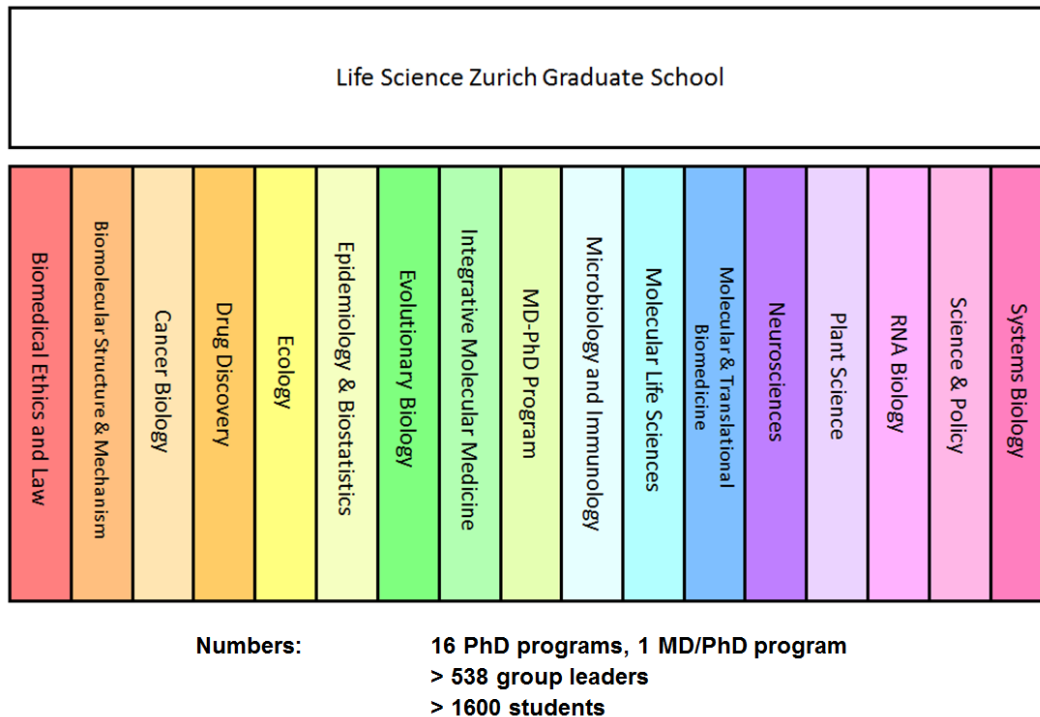


Figure 1: Chart of the LSZ Graduate School PhD programs

2.2 Strategy and products of the LSZ GS

The major units of the LSZ GS are:

- LSZ GS Directors' Conference (program directors from each PhD program form the steering committee)
- PhD programs
- 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">• Strategic development of LSZ GS• Advice and support for the PhD programs and GS administration• Development of common criteria for quality assurance of the PhD programs• Promotion of relevant contacts within the scientific community of life sciences• Identification of common course needs• Development of a transferable skill curriculum• Identification and development of joint funding initiatives
PhD programs	<ul style="list-style-type: none">• Evaluation and acceptance of students into the program• Development, implementation and funding of a discipline-specific graduate curriculum• Quality assurance• Fundraising for a specific PhD program• Tracking development of the students within each program• Funding flights and accommodation for interview candidates from abroad
Graduate School office	<ul style="list-style-type: none">• Increasing visibility of the PhD programs world-wide• Advertising the graduate school and its recruitment procedure (advertisements in Nature, posters etc.)• Coordination of the recruitment process (application forms, internal and external communication, i.e. information to PI and to candidates)• Organization of interviews• Funding for PR, the common application web tool and the transferable skill courses• Development and maintenance of the LSZ GS web site for dissemination of information• Financial planning and financial controlling of the LSZ GS activities (esp. recruitment and courses)• Advice and support for the development of new programs (practical procedures, know-how transfer)• 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)• 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• Support for the career development of graduate students (courses, activities, web-information)• Assurance of quality and sustainability of the services and products of the LSZ GS office• Exchange and collaboration with other units of the LSZ initiative• Exchange and collaboration with other graduate schools, both in- and outside of Zurich

2.2 a) LSZ GS Steering committee and participating PhD programs

Since May 2016, the Life Science Zurich Graduate School comprises 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 2016, this steering committee met twice in order to decide on the strategic orientation and development of the Graduate School. Since May 2014, Prof. Stephan Neuhaus, Institute of Molecular Life Sciences (UZH), presides the LSZ GS as chair and Prof. Eilika Weber-Ban, Institute of Molecular Biology and Biophysics (ETH) as 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)
Biomolecular Structure and Mechanism (BSM)	Prof. Raimund Dutzler (Institute of Biochemistry, UZH)
Cancer Biology	Prof. Josef Jiricny (until end of May 2016) (Institute of Molecular Cancer Research, UZH) Prof. Maries van den Broek (since June 2016) (Institute of Experimental Immunology, 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 Stud- ies, UZH)
Integrative Molecular Medicine (imMed)	Prof. Thierry Hennet (until end of September 2016) (Institute of Physiology, UZH) Prof. Christian Grimm (since October 2016) Division of Ophthalmology, USZ
MD-PhD Program	Prof. Adriano Aguzzi (Institute of Neuropathology, UZH) Prof. Alexandra Trkola (Institute of Medical Virology, UZH)

Program	Director
Microbiology & Immunology (MIM)	Prof. Leo Eberl (Institute of Plant Biology, UZH) Prof. Annette Oxenius (Institute of Microbiology, ETH)
Molecular Life Sciences (MLS)	Prof. Michael Hottiger (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 (previously Plant Sciences 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

Program	Administrator
Biomedical Ethics and Law [medical track]	Dr. Anna Elsner Michelle Heimgartner (Institute of Biomedical Ethics, UZH)
Biomolecular Structure and Mechanism (BSM)	Sabine Marty (until December 2016) (Institute of Biochemistry, UZH)
Cancer Biology	Dr. Eveline Bergmüller Bettina Rausch (Institute of Molecular Cancer Research, UZH)

Program	Administrator
Drug Discovery	Susanne Holliger (Institute of Pharmaceutical Sciences, ETH) Olga von Niederhäusern (Institute of Pharmacology and Toxicology, UZH)
Ecology	Dr. Debra Zuppinger-Dingley (Institute of Evolutionary Biology and Environmental Studies, UZH)
Epidemiology & Biostatistics	Dr. Eva Furrer (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)	Niña Reichert (until December 2016) (Competence Center Personalized Medicine, UZH/ETH)
Neurosciences (ZNZ)	Heidi Gauss (Neuroscience Center Zurich, UZH & ETH)
Plant Science (PSC)	Dr. Sandrine Gouingené Dr. Melanie Paschke Dr. Carole Rapo (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	Sibylle Meneghetti (until July 2016) Dr. Andrea Huber Brösamle (since August 2016) (Department of Biosystems Science and Engineering, ETH)

Graduate School student body 2016

Details to each program are published in appendix 3

Total numbers as of 31 December 2016

Total students	1,607
Affiliated at UZH	1,036
Affiliated at ETH	555
Other affiliation	42
Track I students	674
Track II students	936
Female students	884
Male students	721
International students	1,155
Swiss students	426
Program drop-outs	34
Completed PhD	298
Program alumni	2,517

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 35% 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.

On behalf of the Graduate Campus of the University of Zurich she attended the 9th EUA-CDE Workshop on “Doctoral Supervision – practices and responsibilities” hosted by Delft University of Technology in the Netherlands from 20-21 January 2016.

In 2016, both school administrator and assistant participated in a one week long workshop on how to train apprentices.

3 Activities

3.1 Recruitments

For both recruitment rounds in 2016, applicants of the Indian subcontinent (India, Pakistan and Bangladesh) formed the largest group (approximately 2/7 of all applicants for the July and 1/4 for the December deadline), followed by students from Italy, Germany, China and Iran. For a detailed overview of the applicants' nationality please see Appendix 1.

Table 4: Applications per PhD program in 2016

Complete applications of LSZ GS per PhD program			
	<u>1 Dec. 2015</u>	<u>1 July 2016</u>	<u>1 Dec. 2016</u>
Biomedical Ethics and Law (med. Track)	4	1	0
Biomolecular Structure and Mechanism	51	51	43
Cancer Biology	224	288	171
Drug Discovery	*	*	59
Ecology	59	61	47
Epidemiology & Biostatistics	72	46	52
Evolutionary Biology	17	28	21
Integrative Molecular Medicine	22	38	24
Microbiology and Immunology	179	338	173
Molecular Life Sciences	209	218	186
Molecular and Translational Biomedicine	57	89	76
Neuroscience	164	160	140
Plant Science	72	90	102
RNA Biology	20	24	20
Science and Policy	25	11	17
Systems Biology	69	53	65
TOTAL	1,244	1,496	1,196

After the absolute peak of 1,733 applications in December 2013, the numbers of applications dropped considerably in 2014 to 1,400 (1 July 2014) and 1,159 (1 December 2014) and rose again in the following year to 1,423 (1 July 2015) and 1,244 (1 December 2015). This pattern with roughly 200 appli-

cations more for the summer than the winter deadline continued in 2016. Such up and down movements are not new but we are still unsure about the reasons. A possible explanation could be the

general fluctuation of applications from the Indian subcontinent. Traditionally, a majority of applicants from this region of the world tends to apply to the summer deadline. It might also be possible that the acceptance of stricter immigration regulations (mainly the restriction of the free movement of persons within Europe) by the Swiss sovereign in February 2014 has come into play and makes Zurich less attractive for PhD students. However, such an assumption is of course difficult to prove.

Although the Graduate School numerically obtains plenty of applications, we still fail to meet our goal of inviting two students for each open position (100 slots and 127 applicants for the July and 114 positions and 119 applicants for the December deadline). This is due to the fact that on the one hand the quality of applications varies considerably and on the other hand our budget does not allow us to invite dozens of candidates from overseas. If one takes into account that many renowned European universities have set up PhD programs and Graduate Schools in recent years, it is understandable that we do have difficulties to recruit sufficient candidates from Europe. This means that we still have to work on our marketing strategies and to find appropriate ways how to make the LSZ GS better known among Master graduates and encourage them to apply.

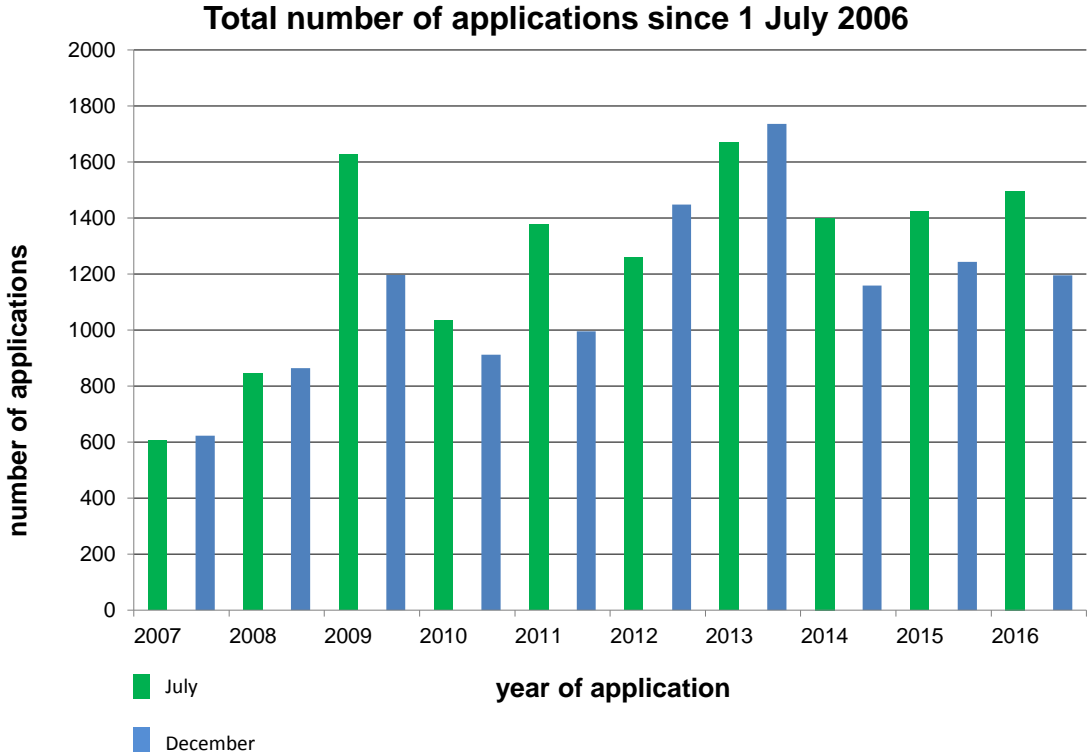


Figure 2: Total number of applications since 1 July 2006.

In 2016, we saw two “firsts”: in July, we had a nearly equal number of male and female applicants and for the December deadline the majority of the applicants was female (53%). This conforms to the trend we observed in the past years with the female students slowly but steadily catching up in number with the male applicants (in 2015, 52% male versus 48% female applicants). As for the past recruitment rounds, we invited more female than male candidates for an interview, the ratio 6:5 in July and nearly 1:1 in December. Most of the applicants learned about the program from the internet (from our own web page or ads on different recruiting web sites). 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. In fact, we have reduced the number of distributed posters but have not yet given it up completely.

Following review of the written applications by the admission committees of the different programs, the top 11% (July) to 12% (December) of applicants were invited to Zurich for an interview and lab visits. About half of the interviewed candidates were offered a position in Zurich, underscoring the fact that a selection based solely on written applications would not be sufficient to insure a high-quality student body. In the winter round 15% of the accepted candidates rejected a position offered by our groups leaders – an unusually high number. In contrast, with only 4% in summer this ratio was considerably lower than the average 10% of the last years. The drop-out rate was 20% for both rounds, which is slightly higher than the average of former recruitment rounds (15-20%). Although the matching rate of 48-52% is a bit lower than in former years, it is still satisfying. Many of the students who turned down our offer probably joined other very strong programs in Europe or in the US.

Table 5: Recruiting statistics in 2016

LSZ GS recruiting statistics

	<u>Dec. 1, 2015</u>	<u>July 1, 2016</u>	<u>Dec. 1, 2016</u>
Complete applications	1,244	1,496	1,206
Invited candidates	166	168	149
Drop-outs before interview	32	33	*
Candidates at interview	134	135	*
Free slots	116	100	114
Matches	64	69	*
Candidates without matches	34	47	*
No list handed in	12	9	*
Decision against LSZ GS	18	4	*
Rejected candidates	6	6	*

*data will be included in 2017 annual report

In December 2015, we managed to fill 55% of the open positions whereas with 69% this ratio was a bit more successful in July 2016. However, these rates correspond to the average of the last years. Although in general the matching process is satisfactorily, we are aware that it is a very sensitive part of the whole recruitment process. As the number of offered positions was slightly lower in 2016 than in former years and the number of invited applicants did not increase further, at the moment there is 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. Applications of track II students are administrated directly by the different programs.

3.2 Data systems and web site

The student database “DissGo” (for “Dissertation Go!”) continued to make headway in 2016. In contrast to 2015, when the database was made accessible for PhD students and PIs, the progress this year was less dramatic and obvious. Some newly introduced features were even not visible to all users but still they made the database easier to handle and the data administrated by the different program coordinators became more congruent. Namely the “account wizard” helps to ensure that all new PhD students are added with the same roles to the system and thus automatically obtain the relevant milestones for their PhD process according to their university and program affiliation. Another small but helpful feature are the reminder emails that are sent out to the PhD students 30 days prior to the due date of a milestone. Especially useful for the program coordinators is the export function that allows to generate not only mailing lists of the different program groups but also the most basic program statistics.

With the first run of the “Introduction to Scientific Integrity” lecture in June 2016, we also implemented the corresponding milestone in DissGo. Since attendance of the lecture is not compulsory for the doctoral students of all programs, the milestone had to be programmed in a way that it can be assigned to individual programs with varying deadlines. For this reason and because the curriculum milestone just allowed the students to enter courses they had participated in without providing them with an overview of which course is compulsory, core-elective or elective in each program, we had to adapt the whole curriculum framework and make it more flexible. All these rearrangements have been finished by the end of 2016 and in a next step we will now be able to add program-specific activities, such as courses, retreats or tutorials.

Quite a bit of effort was spent on finding out how we could make the application tool safer and modernize it at the same time. In a first step, we set up an anonymized database so that external companies could access the data and part of the underlying software in order to investigate how much time and money it would cost us to move the whole database to more recent PHP and Typo3 versions. At the same time, we also checked whether it would be more convenient for the LSZ Graduate School to rent an existing tool that would allow us to efficiently handle the approximately 2'000 applications we obtain at each recruitment deadline. Eventually, after pondering all the negatives and positives of the different solutions, the directors' conference decided in November 2016 to rent the application platform Glowbase has had on the market for several years already. Since this rented platform does not include all the features of our application tool, we will need a major one-time adaption. This will allow us also in the future to move applications from one program to the other, have an independent track for applicants who apply directly to a professor and organize the lab visits commonly and within the same database. Furthermore, the directors' conference would like the Graduate School to hand in a funding application to the Graduate Campus to try to get the one-time adaption and the rent of one year funded by them. A great advantage of the chosen solution is the easy integration of its data in DissGo as both databases use the same underlying software.

In early spring 2016, the new web pages of the Life Science Zurich Graduate School went online. Except for some minor adaptations we had to carry out in the beginning, the pages have proven to be user-friendly, informative and well-arranged. The pages are now hosted by the University of Zurich and it is a big plus for us that we can make use of the open analytic platform PIWIK to retrieve some statistics from our pages. In fact, we now have a good overview which job platforms the applicants visit before they end up on our application pages. Moreover, we can also observe how banner campaigns increase the traffic and how long the visitors, mainly prospective applicants as we assume, stay on our pages. In future, this will help us to allocate our marketing budget to those platforms that are best known and surfed by students seeking a PhD position or a graduate school. The flip side of the CMS used by the UZH is the fact that the pages are rather static and do not allow any animations such as picture galleries etc. However, this does not seem to have a negative effect on the traffic or visits to our web pages.

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. In 2016, the LSZ GS offered a total of 38 courses, 16 of them were organized by a program (or another university institution such as the Functional Genomics Center Zurich, the Center for Microscopy and Image Analysis, etc.) but were open for all students of the LSZ GS. 8 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 a quarter of the seats for its own students, if the LSZ GS bears the entire course costs. Should the program need more seats, the LSZ GS reduces its financial support accordingly.

Whereas in the beginning the programs offered very similar courses via the LSZ GS, mainly statistics, ethics and scientific writing, the variation of the topics increased in the past years. However, the program currently includes several courses that, strictly speaking, cannot be subsumed under the category “transferable skills” as to a great extent they are methodical courses, such as the Next Generation Sequencing course, the Flow Cytometry and the Matlab course. These courses are in high demand and it is unquestionable that they should be offered to the PhD students of the LSZ GS. However, should the inclusion of such courses increase in the future we might have to think of renaming the course program.

As in past years, most of the courses were completely booked or even over-booked, only one course had to be cancelled because of a lack of interest. Students 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 GS January to December

Transferable skills courses for PhD students	Number of courses	Number of participants	UZH affiliation (+ USZ/Kispi)	ETH affiliation	other
Best scientific practice & ethics	4	75	50	24	1
Ethical issues in Biological Research	1	19	11	8	0
Responsible Conduct in Research	1	2	1	1	0
Scientific Integrity introductory course	2	54	38	15	1
Communication & presentation skills	3	42	31	11	0
Logic and Reasoning for Scientists	1	12	9	3	0
Presenting in English	1	10	5	5	0
Scientific Drawing	1	20	17	3	0
Methodical skills	12	127	73	34	1
Crash Course in Statistics for (Neuro)scientists	1	13	9	4	0
Flow Cytometry	3	19	n.a.	n.a.	n.a.
Making the most out of my research: "Patenting in Life Science"	1	11	8	3	0
Matlab	1	13	9	4	0
Microscopy Toolbox	1	36	26	9	1
Modelling in Biology	1	3	2	1	0
NGS DNA / RNA Sequencing	4	32	19	13	0
Scientific writing & publishing	7	103	79	23	1
Best Practice in Rendering Digital Images for Publication	1	13	11	2	0
Dealing with the publication process	1	11	8	3	0
Preparing to Postdoc	1	24	19	5	0
Scientific Writing	2	33	22	11	0
Winning the publication game	1	14	11	2	1
Writing a postdoctoral grant	1	8	8	0	0

Transferable skills courses for PhD students	Number of courses	Number of participants	UZH affiliation (+ USZ/Kispi)	ETH affiliation	other
Social & self-management skills	12	149	111	34	4
BioEntrepreneurship & Innovation: From Scientist to BioEntrepreneur. Creation of a marketable product	1	20	12	8	0
Career cornerstones	1	10	8	2	0
Competency Awareness	2	20	17	3	0
Confidence - Creativity - Cooperation	1	11	9	1	1
Finding Connections: Building a network for Career, Collaborations and Conferences	1	12	7	4	1
Project Management (early stage researchers)	1	15	10	5	0
Selfmarketing skills	2	24	19	5	0
Successful start of professional career	2	31	24	5	2
Supervising students – dealing with roles and relationships	1	6	5	1	0
Total of all courses	38	496	344	126	7

4 On-going projects

The LSZ GS plans to further improve the student database “DissGo” at least until mid-2017, if sufficient funding is available. At this moment, it is not clear whether the faculty of science (UZH) would like to use DissGo for the faculty-wide monitoring of the PhD students. If this should be the case, we might sooner or later include the teaching obligations in DissGo – this is currently the only major milestone we have not yet mirrored in the database. Furthermore, the Graduate School has obtained some financial support via swissuniversities (formerly SUK) to implement the doctoral regulations of other UZH faculties (namely the faculty of arts and science), ETH departments and the universities of Basel and Berne. Although we are not actively looking for other PhD programs that are interested in renting “DissGo”, we are still convinced that the database is utterly helpful for other graduate schools and we would therefore be happy to let it to other institutions or partners.

Switching to the new application platform will definitely keep us busy in 2017. It is planned to have the tool ready for the December 2017 deadline, which means that the applicants should be able to register as of 2 July 2017. Ideally, we can start with the applicants of one PhD program to make sure that all the features of the platform are running properly. Thus, the majority of the programs would only switch to the new platform by 2 December 2017.

Eventually, the first introductory lecture on “scientific integrity and good scientific practice” was held on 30 June 2016 by Dr. Anna Deplazes Zemp. By that time, the lecture was compulsory for the PhD students of 7 programs and 19 participants attended the first lecture. A second round with 35 participants took place on 27 October 2016. We plan to hold the lecture three times in 2017 with a maximum of 50 participants but will add a fourth round, if need be. Currently, the lecture is mandatory for the doctoral

students of 10 PhD programs and we hope that more programs will declare it as compulsory. Moreover, as the ETH prolonged the financial support for the lecturer via funding from swissuniversities for the next two to three years, the Graduate School does not yet have to finance the lecture through its budget for the transferable skills program.

5 Finances

As in past years, the directors' conference worked out a distribution key (see Appendix 2) to allocate the funds obtained from ETH (CHF 300,000) and UZH (CHF 400,000) to the LSZ GS. Since 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). As in previous years and in order not to encourage a long duration of the PhD, the LSZ GS only financed students until the end of their 4th year. This means that the programs obtain the same amount of money for all students, irrespective of how long it takes them to complete their PhD.

Besides the PhD programs in Biomedical Ethics and Law and the MD-PhD program that are financed via the Medical Faculty, the newly affiliated PhD program in Drug Discovery is also not included in the above-mentioned distribution key. The RNA Biology program obtains financial support 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. Since 2016, the PhD program in Epidemiology & Biostatistics is also included in the distribution key and thus funded via the LSZ GS. As the student body is still growing (from 1,209 funded PhD students in 2015 to 1,257 in 2016), the funds for most programs have decreased over the past years and it is clear that a further reduction will be problematic for several of them. This is especially true for the programs that in the last years obtained a considerable share of swissuniversities money. Luckily, this funding mechanism will still exist for 2017 and 2018 and maybe even be prolonged until 2020. However, the distributed funds are going to decrease year by year and the programs will already have to face a first cut for the 2017 budget.

In 2016, the LSZ GS prepaid accommodation, travel as well as the general recruiting costs, such as publicity, provisions and public transport. Apart from the publicity, the individual PhD programs are billed for the entire recruitment costs, once it is clear which program the recruited students will join.

Annual Account LSZ Graduate School 2016 G-74010-03-01

Earnings 2016	CHF
Contribution UZH/Bologna	31,400
Contribution ETH/ carry-over 2015	136,938
Scientific Integrity (SUK: contribution 2016 and carry-over 2015)	18,813
Reimbursement recruitment costs PhD-programs (Sep. 2015 & Feb. 2016)	189,423
Annual support MD-PhD program	3,000
Surcharges courses	1,805
Total earnings	381,379

Costs 2016	CHF
Recruitment rounds (Feb. & Sep. 2016)	116,670
Transferable skills course program	92,405
Scientific Integrity	21,024
DissGo database	24,988
Computer-Services application tool	9,801
Marketing (ads, listings, poster)	11,656
Salary administrator	42,175
Conference attendance & further education school administrator	1,864
Overhead	3,149
Total costs	373,732

Balance as of 31 December 2016	7,647
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The social benefit costs for Susanna Bachmann (CHF 8,113) were covered by the Faculty of Science of the UZH.

Life Science Zurich Graduate School: Recruitment costs 2016 in CHF

	February (139 Stud.)	September (137 Stud.)
On-site costs	CHF	CHF
Public transport	3,586	3,535
Student party	4,932	6,975
Lunch vouchers	3,850	3,676
Snack	6,167	6,842
Total	18,535	21,028
Costs per student	133	153

	February (116 Stud.)	September (113 Stud.)
Travel & accommodation costs for external students	CHF	CHF
Accommodation	33,471	31,668
Travel costs	37,987	23,981
Total	71,458	55,649
Costs per student	616	492
Total costs recruitment	89,993	76,677

6 Outlook

It still looks as if the financial situation of the Graduate School and its programs could get a bit tenser in future years. In 2016, most of the PhD programs as well as the LSZ GS received less money than in 2015 and the years before. Although the funding via swissuniversities will not stop immediately, for several programs the financial situation is becoming rather critical and also the Graduate School might face some financial problems in the coming years. Especially the costs for renting the application platform and the general maintenance costs of DissGo might considerably strain the budget.

The Graduate School should take care of this situation and start to look for possibilities to secure the funding in the future. Since the number of the doctoral students affiliated with ETH remained surprisingly stable in contrast to the UZH PhD student body that still continues to increase, the LSZ GS should probably first meet with the authorities of the University of Zurich. The support of the UZH should at least be increased to an extent that the per capita support equals the support offered by ETH. Ideally, the Graduate School will manage to obtain not only funding from the Faculty of Science but also from the Faculty of Medicine where many of the UZH PhD students carry out their PhD. In addition, the LSZ GS should of course also look for other national and international funding sources.

Appendix 1: Statistics intake rounds

Table 1: LSZ GS Intake round July 1, 2016

Sex	Not invited	Invited	Total
Female	717	75	792
Male	736	61	797
Total	1,453	136	1,589

Knowledge of program

Internet	977	75	1,052
Poster	32	8	40
Friends	464	73	537
Ad	46	1	47
Other	73	9	82

Nationality

Afghan	2	0	2
Albanian	3	0	3
Algerian	1	0	1
American	10	1	11
Argentinian	2	0	2
Australian	1	0	1
Austrian	8	7	15
Azerbaijani	2	0	2
Bahamian	2	0	2
Bangladeshi	16	0	16
Belgian	3	0	3
Belorussian	4	0	4
Beninese	2	0	2
Brazilian	5	1	6
Briton	24	7	31
Bruneian	1	0	1
Bulgarian	2	2	4
Cameroonian	18	0	18
Canadian	1	0	1
Chadian	1	0	1
Chinese	59	5	64
Colombian	13	0	13
Congolese	3	0	3
Croatian	8	1	9
Cuban	3	0	3
Cypriot	2	1	3
Dane	0	1	1
Dutch	8	5	13

Ecuadorean	6	0	6
Egyptian	29	0	29
Eritrean	2	0	2
Estonian	2	1	3
Ethiopian	33	0	33
Filipino	6	0	6
Finn	2	1	3
French	16	3	19
Gambian	1	0	1
Georgian	2	0	2
German	63	30	93
Ghanaian	17	0	17
Greek	34	5	39
Grenadian	1	0	1
Hungarian	2	2	4
Indian	354	5	359
Indonesian	7	0	7
Iranian	80	1	81
Iraqi	7	0	7
Irish	4	0	4
Israeli	3	0	3
Italian	83	16	99
Ivorian	1	0	1
Jordanian	6	0	6
Kazakh	2	0	2
Kenyan	23	0	23
Korean	2	0	2
Lebanese	14	0	14
Lithuanian	3	0	3
Luxembourger	1	0	1
Macedonian	1	0	1
Malagasy/Madagascan	1	0	1
Malaysian	11	0	11
Mexican	8	1	9
Mongolian	1	0	1
Moroccan	4	0	4
Mozambican	1	0	1
Namibian	1	0	1
Nepalese	13	0	13
New Zealander	3	0	3
Nigerian	62	0	62
Nigerien	2	0	2
Norwegian	1	1	2
Omani	1	0	1
Pakistani	88	1	89
Palestinian	4	0	4
Panamanian	0	1	1

Pole	14	7	21
Portuguese	24	5	29
Romanian	3	2	5
Russian	10	2	12
Rwandan	3	1	4
Saudi Arabian/Saudi	3	0	3
Scottish	5	0	5
Serb/Serbian	8	2	10
Singaporean	1	0	1
Slovak	2	0	2
Slovene/Slovenian	3	0	3
Somali	1	0	1
South African	2	0	2
South Korean	2	0	2
Spanish/Spaniard	23	0	23
Sri Lankan	7	0	7
Sudanese	9	0	9
Surinamese/Surinamer	1	0	1
Swede	3	1	4
Swiss	16	12	28
Syrian	5	0	5
Taiwanese	8	0	8
Tajik/Tadjik	1	0	1
Tanzanian	6	0	6
Thai	9	0	9
Togolese	2	0	2
Trinidadian/Tobagan	1	0	1
Tunisian	3	0	3
Turk	28	2	30
Ugandan	6	0	6
Ukrainian	6	2	8
Venezuelan	2	0	2
Vietnamese	4	1	5
Yemeni	1	0	1
Zambian	2	0	2
Zimbabwean	3	0	3

Table 2: LSZ GS Intake round December 1, 2016

Sex	Not invited	Invited	Total
Female	631	68	699
Male	558	62	620
Total	1,189	130	1,319

Knowledge of program

Internet	735	73	808
Poster	36	2	38
Friends	401	85	486
Ad	31	2	33
Other	52	3	55

Nationality

Afghan	1	0	1
Albanian	3	0	3
Algerian	3	0	3
American	9	2	11
Argentinian	3	0	3
Austrian	7	5	12
Azerbaijani	1	0	1
Bangladeshi	10	1	11
Belgian	2	3	5
Belorussian	2	0	2
Bosnian	1	0	1
Brazilian	6	1	7
Briton	36	6	42
Bulgarian	2	0	2
Burmese	3	0	3
Cameroonian	6	0	6
Canadian	2	2	4
Chilean	3	0	3
Chinese	71	8	79
Colombian	11	0	11
Costa Rican	1	0	1
Croatian	5	0	5
Cypriot	3	0	3
Czech	2	0	2
Dane	1	1	2
Dutch	15	2	17
Ecuadorean	2	0	2
Egyptian	25	2	27
Eritrean	1	0	1
Estonian	0	1	1

Ethiopian	17	0	17
Filipino	9	0	9
Finn	1	3	4
French	11	2	13
German	49	28	77
Ghanaian	15	0	15
Greek	22	6	28
Guatemalan	1	0	1
Hungarian	4	0	4
Icelander	1	0	1
Indian	280	3	283
Indonesian	8	0	8
Iranian	58	3	61
Iraqi	8	0	8
Irish	4	1	5
Israeli	0	1	1
Italian	79	9	88
Jamaican	2	0	2
Japanese	1	0	1
Jordanian	2	0	2
Kazakh	2	0	2
Kenyan	10	0	10
Korean	6	0	6
Kyrgyzstani	1	0	1
Latvian	3	0	3
Lebanese	9	0	9
Libyan	3	0	3
Lithuanian	3	1	4
Malagasy/Madagascan	1	0	1
Malaysian	13	1	14
Mexican	14	0	14
Mongolian	1	0	1
Moroccan	2	0	2
Namibian	1	0	1
Nepalese	15	0	15
New Zealander	2	0	2
Nigerian	34	1	35
Pakistani	49	1	50
Palestinian	2	0	2
Peruvian	1	0	1
Pole	14	3	17
Portuguese	15	5	20
Romanian	5	0	5
Russian	15	4	19
Rwandan	2	0	2
Saudi Arabian/Saudi	2	0	2
Scottish	1	0	1

Senegalese	1	0	1
Serb/Serbian	5	0	5
Singaporean	1	0	1
Slovak	3	0	3
Slovene/Slovenian	4	1	5
South African	2	0	2
South Korean	2	0	2
Spanish/Spaniard	23	3	26
Sri Lankan	4	0	4
Sudanese	5	0	5
Swiss	14	15	29
Syrian	3	0	3
Taiwanese	10	0	10
Tanzanian	2	0	2
Thai	7	0	7
Togolese	1	0	1
Tunisian	2	0	2
Turk	32	3	35
Ugandan	8	0	8
Ukrainian	4	0	4
Venezuelan	1	0	1
Vietnamese	4	2	6
Welsh	1	0	1
Yemeni	1	0	1
Yugoslav	1	0	1
Zambian	1	0	1
Zimbabwean	3	0	3

Appendix 2: Financial distribution key

Financial support of ETH and UZH in 2016								
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	290 CHF per student	Total amount	Total rounded
Biomedical Ethics and Law		0						
Biomolecular Structure and Mechanism	14,000	31	33		64	18,560	32,560	32,600
Cancer Biology	14,000	17	114		131	37,990	51,990	52,000
Ecology	14,000	9	37		46	13,340	27,340	27,300
Epidemiology & Biostatistics	14,000	1	33		34	9,860	23,860	23,900
Evolutionary Biology	14,000	2	85		87	25,230	39,230	39,200
Integrative Molecular Medicine	14,000	4	110		114	33,060	47,060	47,100
MD/PhD	14,000	1	36		37			
Microbiology & Immunology	14,000	73	113		186	53,940	67,940	68,000
Molecular Life Sciences	14,000	62	99		161	46,690	60,690	60,700
Molecular and Translational Biomedicine	14,000	48	9		57	16,530	30,530	30,500
Neuroscience	14,000	76	123	18	199	57,710	71,710	71,700
Plant Science	14,000	45	32	15	77	22,330	36,330	36,300
RNA Biology	14,000	3	5	10	8	2,320	2,320	2,300
Sciences and Policy	14,000	20	19	6	39	11,310	25,310	25,300
Systems Biology	14,000	43	11		54	15,660	29,660	29,700
TOTAL CHF	182,000	434	823	49	1,257	364,530	546,530	546,600

Life Science Zurich
Graduate School 153,400 (= approx. 1,257 x 122 CHF)

This support covers 1st - 4th year of PhD

Appendix 3: Graduate School student body 2016

As of 31 December 2016	Total GS	BSM	CB	Eco	Epi& Bio-stat	Evo	ImMed	MIM	MLS	MTB	Neuro	Plant Sc.	RNA	S&P	SysBio
Total students	1,607	79	138	65	39	105	116	116	181	181	296	133	28	52	78
Affiliated at UZH	1,036	53	128	44	39	109	116	132	115	9	205	48	6	19	13
Affiliated at ETH	555	52	14	15	0	2	3	82	72	55	98	51	8	27	76
Other affiliation	42											22	14	6	
Track I students	674	38	91	13	12	12	53	53	106	106	75	19	12	27	57
Track II students	936	44	47	52	27	93	63	63	75	75	221	114	16	25	21
Female students	884	30	91	39	25	66	72	72	94	94	145	75	19	25	37
Male students	721	52	47	25	14	39	42	42	87	87	151	58	9	27	41
International students	1,155	63	105	50	25	59	79	79	138	138	201	105	20	41	52
Swiss students	426	19	33	15	14	36	35	35	43	43	95	28	8	11	11
Program drop-outs	34	0	1	0	2	3	5	5	4	4	5	3	1	1	0
Completed PhD	298	10	28	8	5	19	26	26	47	47	37	28		13	4
Program Alumni	2,517	75	67	159	7	61	163	163	374	374	576	470		13	15
Faculty members	830	44	63	58	15	29	125	125	85	85	146	17	21	17	0

Appendix 4: PhD Programs Annual Reports

Biomolecular Structure and Mechanism

The program in figures and numbers

Program statistics	as of December 31
Program students	79
Track I students	38
Track II students	44
Female students	30
Male students	52
International students	63
Swiss students	19
Program drop-outs	0
Completed PhD	10
Program Alumni	75
Faculty members	44

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	49	43
Invited candidates	8	6
Drop-outs before interview	1	0
Free slots (XX priority program)	6	5
Matches	4	2
Candidates without matches	1	2
Decision against program	1	0
Rejected candidates	0	0
Change to other LSZGS programs	1	2
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ		
UZH		32'600
Fees		
Other		
Expenses		
Salaries program		9'400
Social benefits		0
Recruitment December 1		5'412
Recruitment July 1		1'824
Program activities (retreat, symposia, etc.)		15'300
Total		32'175
Balance as of December 31		

Program Activities

Lectures / Talks

Leonid Sazanov

Retreat

Hotel Antoniushaus, Morschach, September, 8-10, 2016

Organizers: Ole Niewöhner, Caro Anders, Alena Kroupova, Tobias Brandmann (Jinek-Gruppe)

Courses

Structural Biology Course for students of the Biomolecular Structure and Mechanism & the Molecular Life Sciences PhD Programs, January 26 and 27, 2016, UZH Irchel & ETH Honggerberg

Current Topics in Structural Biology for PhD students of the Biomolecular Structure and Mechanism Program, June 7, 2016

Meeting

Annual meeting followed by informal apero, April, 5, 2016, UZH Irchel

Cancer Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	138
Track I students	91
Track II students	47
Female students	91
Male students	47
International students	105
Swiss students	33
Program drop-outs	1
Completed PhD	28
Program Alumni	67
Faculty members	63

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	225	288
Invited candidates	28	25
Drop-outs before interview	9	9
Free slots (CB priority program)	12	14
Matches	8	16
Candidates without matches	4	2
Decision against program	3	0
Rejected candidates	2	1
Change to other LSZGS programs	3	2
Gained from LSZGS programs	2	3

Finances

	Income	Expenses
Balance January 1	12'020.00	
Income		
ETHZ	14'000.00	
UZH	38'000.00	
Fees	25'000.00	
URPP Translational Cancer	12'500.00	
URPP Functional Genomics	116'284.00	
SUK ETHZ	5'460.00	
SUK UZH	52'540.00	
Other		
Expenses		
Salaries program		95'254.00
Social benefits		21'030.00
Recruitment December 1		13'287.00
Recruitment July 1		10'274.00
Program activities (retreat, symposia, etc.)		108'125.00
Overhead		
Total	275'804.00	247'970.00
Balance as of December 31	27'834.00	

Program Activities

The mandatory module courses of the program received a new structure and are now organized as follows:

Module A – Cancer biology

Course days / lecturers:

Modes of cell death / Christian Münz, Martin Pruschy, Lynn Wong / 31.10.2016

Colon cancer: inflammation and epigenetics / Giancarlo Marra, Gerhard Rogler, Michael Scharl / 01.11.2016

Functional genomics / FGCZ Ralph Schlapbach / 02.11.2016

Cell biology / Stefano Ferrari, Jan Krützfeld, Roland Wenger / 03.11.2016

Model systems for cancer research / Martin Baumgartner, Maries van den Broek, Mitch Levesques, Anne Müller, Olga Shakhova / 04.11.2016

Module B – Cancer and the immune system – start of April

Introduction to the immune system / Maries van den Broek, Christian Münz / 04.04.2016

Infection-induced cancers / Anne Müller, David Nadal, Achim Weber / 05.04.2016

Tumor immunology / Onur Boyman, Antonio Cozzio, Reinhard Dummer, Michael Weller / 06.04.2016

Introduction to flow cytometry / Claudia Dumrese / 07.04.2016

Hematologic malignancies / Jean-Pierre Bourquin, Stefan Balabanov / 08.04.2016

Module C – Mechanisms of cancer induction and progression – mid of June

Genome instability / Stefano Ferrari, Josef Jiricny, Manuel Stucki / 20.06.2016

Oncogenes and tumor suppressor genes / Beat Schäfer / 21.06.2016

Metastasis / Lubor Borsig, Maries van den Broek / 22.06.2016

Tumor angiogenesis and lymphangiogenesis / Michael Detmar / 23.06.2016

Tumor imaging / Jürg Hodler, Daniel Nanz, Irene Burger, Thomas Berthold, Konstantinos Zeimpekis / 24.06.2016

Module D – Cancer treatments – end of September

Cancer chemotherapy / Bernhard Pestalozzi, Manuel Stucki / 26.09.2016

Cancer surgery / Pierre-Alain Clavien, Rolf Graf, Walter Weder / 27.09.2016

Cancer radiotherapy/ Martin Pruschy / 28.09.2016

Cell signalling molecules as therapeutic targets / Kurt Ballmer-Hofer, Philipp Berger 29.09.2016

Antibody phage technology and therapeutic antibodies / Dario Neri / 30.09.2016

Module E – Research with human samples – November 2016

Learning from patient's material for research and clinical decision / Alessandra Curioni / 29.11.2016

Tumor pathology / Holger Moch, Peter Schraml, Achim Weber, Peter Wild / 30.11.2016

Cancer treatment in veterinary medicine / Carla Rohrer-Bley / 01.12.2016

Personalised medicine in cancer / Leichtle Alexander, Michael Baudis / 02.12.2016

Scientific Writing Course

Proposal and Grant Writing, Anne Müller, 08.02. + 04.07. 2016

Paper Writing, Petr Cejka, 21.03. + 11.07. 2016

Science Ethics Courses

Anne Deplazes, 04.+11.02.2016

Jackie Leach Scully, 21. + 23.11.2016

Additionally the following course was organized:

Statistical Methods in Biology Course

Hubert Rehrauer, 7. + 8.12.2016

Cancer Biology Students retreat in Davos, 29.3.-31.3.2016

The 6th Cancer Biology Students retreat took place in Davos from in March, 2016.

Organization committee: Martin Falke/Institute of Molecular Cancer Research/UZH, Sabine Bender/Department of Radiation Oncology/USZ, Karthiga Santhana/Kumar Experimental Infectious Diseases and Cancer Research/Kispi, Ivo Grgic/Department of Radiation Oncology/USZ, Jelena Kresoja/Clinic and Polyclinic for Oncology/USZ.

Out of the 85 participants the organization committee choose 22 students who were allowed to have a talk at the retreat. Everyone, also the student speakers, presented a poster. 3 talk prizes and 6 poster prizes were financed.

International keynote speakers:

Prof. Anindya Dutta, University of Virginia Medical School, Charlottesville, USA

Dr. Thomas Ried, NIH/NCI, Bethesda, USA

Dr. Claudio Sustmann, Roche, Deutschland

M2M - from Mutation to Malignancy - Symposium, ETH Zurich Zentrum, AudiMax, 22.07.2016

For this symposium the program could win 12 excellent international researchers to speak at the symposium:

Paul Modrich (Nobel Laureate, Duke University, NC, USA)

Wei Yang (UCLA, USA)
 Sam Wilson (NIEHS, NC, USA)
 John Diffley (Francis Crick Institute, Cancer Research UK)
 Susan Gasser (FMI, Basel)
 Jean-Marc Egly (IGBMC, Strasbourg, France)
 Ketan J Patel (LMC, Cambridge, UK)
 Ian Hickson (University of Copenhagen, Denmark)
 Stephen West (Francis Crick Institute, Cancer Research UK)
 Jan Hoeijmakers (Erasmus University Medical Centre)
 Keith Caldecott (Genome Centre, Sussex University, UK)
 Tomas Lindahl (Nobel Laureate, Clare Hall Laboratory, UK)

Travel Reimbursements Grants: travel expenses for congresses, meetings, symposia, workshops and courses. Deadlines for applications: 15.1. and 1.5. and 1.9.2016

Awarded Travel Reimbursement Grants:

Student:	Funded meeting/congress etc.:
Aguade Julia	AACR annual meeting 2016, 16-20 Apr, New Orleans, USA
Beffinger Michal	13 th International Conference on Innate Immunity, 23-26 Jun, Rhodes, Greece
Bender Sabine	EACR24 Biennial Congress of the European Association for Cancer Research, 9–12 Jul, Manchester, UK
Franz Alexandra	EMBO Conference: Wnt Meeting 2016, 14-17 Sep, Brno, CZ
Kresoja Jelena	13th int. Conference of int. Mesothelioma Interest Group (iMig 2016), 1-4 May, Birmingham, UK
Mangani Davide	Tumor Immunology and Immunotherapy (AACR), 20 – 23 Oct, Boston, USA
Robl Bernhard	AACR annual meeting 2016, 16-20 Apr, New Orleans, USA
Kumar Karthiga	ISPNO 2016, 12–15 Jun 2016, Liverpool, UK

Social Activities:

* Summer BBQ with Students of the Cancer Biology PhD Program as well as the CNZ Network in front of the Studentenfoyer, Irchel at 23.8.2016.

* X-Mas Fondue and bowling for all students of the Cancer Biology PhD program at the Bowling Center West, 6.12.2016. At this event the new student representatives have been elected. Sabine Urban/Institute of Molecular Cancer Research, UZH and Chiara Giorgi, Division of Oncology, University Children's Hospital Zurich passed the baton over to Julia Godau, Institute of Molecular Cancer Research, UZH and David Vukovic, Department of Chemistry, UZH.

* Round table for new PhD candidates with students of the CB PhD Program at Steinfels restaurant with burger and beer, 11.2. + 7.9.2016

Scooped Newsletter:

SCOOPED is the biannual 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.

3rd Newsletter Scooped was sent out in February 2016 and edited by the following students: Corina Schmid (Institute of Molecular Cancer Research, UZH), IMCR, Michael Flori (Institute of Molecular Cancer Research, UZH) Hannah Parker (Institute of Molecular Cancer Research, UZH), Ana Antunes (Institute of Anatomy, UZH) and Karthiga Santhana Kumar (Division of Oncology, University Children's Hospital Zurich)

4th Newsletter Scooped was sent out in August 2016 and edited by the following students:

Ana Antunes, Karthiga Kumar and Hannah Parker

Outlook 2017

Courses:

Module B – **Cancer and the immune system** – 3.-7.4.2017

Module C – **Mechanisms of cancer induction and progression** – 19.-23.6.2017

Module D – **Cancer treatments** – 25.-29.9.2017

Module A – **Cancer biology** – 30.10.-3.11.2017

Module E – **Research with clinical samples** – 27.11.-1.12.2017

Statistical Methods in Biology – January 2017

Scientific Writing Course – February and June 2017

Science Ethics Course – Spring 2017

MATLab Course – Spring 2017

CNZ Retreat, Emmetten – 26.-28.3.2017

Travel Reimbursement Grants: travel expenses for congresses, meetings, workshops and courses.
Deadlines: 15.1. and 1.5. and 1.9.2017

Social Activities:

Round table in February and September

Summer BBQ in August

X-Mas Fondue in December

Scooped Newsletter

Planned for Spring and Autumn 2017

Ecology

Statistics and Figures

Overview

Program statistics	as of December 31
Program students	65
Track I students	13
Track II students	52
Female students	39
Male students	25
Program drop-outs	0
Completed PhD	8
Program Alumni	159
Faculty members	58

Recruitment

Recruiting statistics	December 1	July 1
Applications	120	143
Complete applications	57	59
Invited candidates	-	1
Drop-outs before interview	-	-
Free slots (XX priority program)	-	-
Matches	-	1
Candidates without matches	-	-
Decision against program	-	-
Rejected candidates	-	-
Change to other LSZGS programs	-	-
Gained from LSZGS programs	-	-

Finances

	Income	Expenses
Income		
ETHZ	-	-200
UZH	27300	
Fees	11100	
Other	-	
Expenses (UZH, Fees, Other)		
Salaries program		29 045
Social benefits		-
Recruitment		-
Program activities (retreat, symposia, etc.)		10 169
Overhead		-
Total		39 414
Balance as of December 31	-1014	

Program Activities

Teaching

The PhD program in Ecology organized courses in 2016 in four categories, subject-specific matters, methods, transferable skills and research seminars, at least one per semester.

In 2016 the program offered the following courses:

Urban Wildlife Ecology Summer School and Symposium, FS 2016;

Filmmaking for Scientists in cooperation with URPP Global Change and Biodiversity, FS 2016;

Community Ecology Workshop, FS 2016;

Introduction to Meta-Analysis and Research Synthesis in Ecology, FS 2016;

Visualising Research - Making an Effective Science Movie, HS 2016;

Contemporary analysis of Ecology: Mixed-Effect Models in R, HS 2016;

R Lunch Group, FS and HS 2016;

Gardening Techniques & Field Equipment, FS and HS 2016;

Reproducible Research in Ecology, Evolution, Behaviour, and Environmental Studies, FS and HS 2016;

Journal Club: Ecological Theory, FS and HS 2016;

Zurich Interaction Seminar: Ecology and Evolution.

These courses were attended not only by students from the PhD Program in Ecology but also students from other PhD programs in the LSZGS.

Two of the courses, Community Ecology Workshop and Urban Wildlife Ecology Summer School and Symposium, were funded by the SUK-Doktoratsprogramme.

Outreach

The Program Coordinator and Director promoted the Program in Ecology at conferences, specifically the British Ecological Society Conference 2016. Alejandra María Parreño represented the PhD Program in Ecology and presented a poster of the Program at The Annual Swiss Conference on Ecology, Evolution, Systematics, Biogeography and Conservation 2016.

Outlook

We will host the first Annual Meeting of the PhD Program in Ecology on 1 March 2017, combining it with a symposium for program members as well as host departments and other LSZGS PhD Programs. The Annual Meeting and Symposium will provide an opportunity for our PhD students to network with invited international speakers, Alumni and PI's of the Program.

In 2017 the PhD Program in Ecology will offer the following courses:

General Linear and Linear Mixed Models in R, FS 2017;

Developing your Personal Impact and Presence, FS 2017;

How to present at international scientific conferences in cooperation with URPP Global Change and Biodiversity, FS 2017;

How to publish in peer-reviewed journals in cooperation with URPP Global Change and Biodiversity, FS 2017;

Biotic Interactions - Mechanisms and Functions, Graduate School and Workshop, FS 2017;

Data Carpentry Workshop 1: Ecology, Graduate Workshop, HS 2017;

Data Carpentry Workshop 2: Genomics for ecologists, Graduate Workshop, HS 2017;

Animal Movement Workshop, Graduate Workshop, HS 2017;

R Lunch Group, FS and HS 2017;

Gardening Techniques & Field Equipment, FS and HS 2017;

Reproducible Research in Ecology, Evolution, Behaviour, and Environmental Studies, FS and HS 2017;

Zurich Interaction Seminar: Ecology and Evolution 2017.

Epidemiology and Biostatistics

The program in figures and numbers

Program statistics	as of December 31
Program students	39
Track I students	12
Track II students	27
Female students	25
Male students	14
International students	25
Swiss students	14
Program drop-outs	2
Completed PhD	5
Program Alumni	7
Faculty members	15

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	52	46
Invited candidates	6	1
Drop-outs before interview	1	1
Free slots	3	2
Matches	2	0
Candidates without matches	2	0
Decision against program	1	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	1	0

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ		
UZH G-74011-11-01	23'900.00	
Fees		
Other		
Expenses		
Salaries program L-42320-01-01		21'875.75
Social benefits L-42320-01-01		4143.20
Recruitment December 1 G-74011-11-01		3834.55
Recruitment July 1		0.00
Program activities (retreat, symposia, etc.) L-42320-01-01		15670.95
Zürcher R Kurse		9450.00
Researcher Development		5222.00
Overhead		
Total	23'900.00	60196.45
Balance as of December 31		

Program Activities

- Offer of Zurich R courses available to EBPhD students again
- BBQ of the Master Program in Biostatistics and the PhD Program in Epidemiology and Biostatistics, May 27, 2016
- Second EBPhD Retreat in the Seminarhotel am Ägerisee, June 30 - July 1st 2016
- EBPhD Welcome Day, September 14 2016 including a whole day program kick-starting our professional development series: new students orientation, Speed-Mentoring Stehlunch with postdocs for all PhD students, Information for current PhD students, Panel discussion "How I became a professor" for all PhD students, EBPhD General Assembly for the faculty and Apéro for all to conclude the day

- Writing course targeted to EBPhD students: " Get your journal article written and published" by PD Dr. Jürgen Barth, 8./15.9. 2016
- Epidemiology and Biostatistics Methods Seminar, spring and fall semester 2016
- Research in Progress talks spring and fall semester 2016
- Five graduates defended their theses in February, March, September and December

Our submission to swissuniversities for new funding of a "**Researcher Development Training for PhD Students**" has been granted in November. For this we propose to offer a professional development series modeled on the Researcher Development Framework (RDF; Vitae) but specifically targeted to researchers in epidemiological, biostatistical, clinical and public health research domains. The main goal of the series is that students complete their PhD degree mastering not only their content domains, but also the suite of skills and competencies required to succeed in an increasingly competitive research environment.

Our training program will offer an annual writing course (tailored towards the specific needs in publishing results from epidemiological, biostatistical, clinical and public health research projects), in addition to 6 other early career training modules on topics including: successful publishing, mentoring & supervision, career management & advocacy, successful proposal writing, and collaboration/leadership in a biomedical research context. The focus will be on practical, behavioral habits and tips. Speakers will be a mix of outside and in-house experts. In-house post-doctoral researchers will also be involved as mentors to the PhD students.

The offer of this training program started in September, before the funding decision was taken, with the first writing course and part of the activities of the Welcome day. It will continue in April with a presentation skills workshop and in June with a second writing course.

Evolutionary Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	105
Track I students	12
Track II students	93
Female students	66
Male students	39
International students	59
Swiss students	36
Program drop-outs	3
Completed PhD	19
Program Alumni	61
Faculty members	29

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	17	26
Invited candidates	2	1
Drop-outs before interview	0	0
Free slots (EvoBio priority program)	2	5
Matches	0	1
Candidates without matches	0	0
Decision against program	2	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Balance January 1		0.00
Income		
UZH and ETHZ	39'200.00	
Student fees paid by PIs	6'200.00	
Total	45'400.00	
Expenses		
Salary program coordinator		30'000.00
Data Export DissGo		50.00
Annual Retreat		12'470.20
Symposium: The Nagoya Protocol on Access and Benefit-Sharing (ABS)		2'732.90
Total		45'253.10
Balance as of December 31		146.90

Program Activities

- Annual Retreat at Gais, AR, June 6-8
- BIO395 Concepts in Evolutionary Biology (held by PI's of the URPP Evolution in Action, together with PSC)
- BIO554 Survey Course: Topics in Evolutionary Biology
- BIO609 Introduction to UNIX/Linux and Bash Scripting (together with PSC)
- BIO610 Next-Generation Sequencing 1 – Introductory Course: Assembly, Mapping, and Variant Calling (together with PSC)
- BIO634 Next-Generation Sequencing 2 – Advanced Course: Transcriptomes, Variant Calling, and Biological Interpretation (together with PSC)
- BIO673 Computational Biology (organized by MLS)
- BIO555 Scientific Writing and a Research (in cooperation with URPP Evolution in Action)
- Symposium: The Nagoya Protocol on Access and Benefit-Sharing (ABS), December 20, UZH

Outlook 2017

-Annual Retreat at Möschberg BE, June 6-8 2017

-BIO395 Concepts in Evolutionary Biology (held by PI's of the URPP Evolution in Action, together with PSC)

-BIO554 Survey Course: Topics in Evolutionary Biology

-BIO609 Introduction to UNIX/Linux and Bash Scripting (together with PSC)

-BIO610 Next-Generation Sequencing 1 – Introductory Course: Assembly, Mapping, and Variant Calling (together with PSC)

-BIO634 Next-Generation Sequencing 2 – Advanced Course: Transcriptomes, Variant Calling, and Biological Interpretation (together with PSC)

-BIO673 Computational Biology (organized by MLS)

-BIO555 Scientific Writing and a Research (in cooperation with URPP Evolution in Action)

-Summer School: Integrated Methods to Detect Polygenic Adaptation from Genomic Data, August 28-30, WSL Birmensdorf (together with Ecology PhD Program)

-Symposium: Detecting the Genomic Signal of Polygenic Adaptation and the Role of Epistasis in Evolution, August **31 and September 1, ETH Zurich (together with Ecology PhD Program)**

Integrative Molecular Medicine

The program in figures and numbers

Program statistics	as of December 31
Program students	116
Track I students	53
Track II students	63
Female students	72
Male students	42
International students	79
Swiss students	35
Program drop-outs	5
Completed PhD	26
Program Alumni	163
Faculty members	125

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	20	37
Invited candidates	6	14
Drop-outs before interview	0	3
Free slots	6	9
Matches	5	6
Candidates without matches	1	4
Decision against program	0	1
Rejected candidates	0	0
Change to other LSZGS programs	1	2
Gained from LSZGS programs	1	1

Finances

	Income	Expenses
Balance January 1	0	0
Income		
ETHZ		
UZH	47'100	
Fees	13'550	
Other (GRC retreat)	7'000	
Expenses		
Salaries program		36'300
Social benefits incl. Lunchchecks		750
Recruitment December 1, 2015		6'168
Recruitment July 1, 2016		2'797
Program activities (retreat, symposia, etc.)		17'741
Overhead		
Total	67'650	63'766
Balance as of December 31		3'894

Program Activities

Graduate courses of the imMed PhD Program

January 11/12, 2016: Flow Cytometry

June 8/9, 2016: Introduction to human physiology: Regulation of cardiovascular function

June 16/17, 2016: Mouse physiology and pathophysiology

September 20/21/23, 2016: Muscle plasticity

October 24 - December 2, 2016: Aspects of sensory motor transformation: Balance, eye movement control, motion perception

Vision 2020

The seminar series «Vision 2020 – a personal perspective» organized by a committee of PhD students from the imMed PhD program was continued with the topics «Genetic Testing» and «Tissue Engineering». Prominent speakers, national and international, share their «Vision 2020» on multidisci-

plinary topics of general interest through different perspectives, such as economic, ethical and social facets in this series. The seminar series is very well established within the Life Science events at UZH and ETHZ with 40-65 participants and was supported by the SUK program Doktoratsprogramme.

Spring semester 2016: Genetic testing

[June 16, 2016: Human Genome at Bargain Price](#)

Prof. Dr. Karl Heinimann, University Hospital Basel

[June 30, 2016: Genetic testing in domestic animals – how champions are bred](#)

Prof. Dr. Tosso Leeb, University of Bern

[July 28, 2016: Genetic testing in humans - the hype of precision medicine](#)

Prof. Dr. Sabina Gallati, University of Bern

[September 1, 2016: Towards Data Driven Medicine](#)

Dr. Gioia Althoff, Sophia Genetics, Switzerland & France

Fall semester 2016: Tissue Engineering

[September 29, 2016: Materials, cells or tissue for bone repair](#)

Dr. Arnaud Scherberich, Department of Biomedicine, University Hospital Basel

[November 3, 2016: Biofabricating Living Tissues](#)

Prof. Dr. Marcy Zenobi-Wong, Cartilage Engineering & Regeneration, Dept Health Sciences & Technology, ETH Zurich

[December 15, 2016: Biomimetic Materials in Tissue Regeneration](#)

Dr. Martin Ehrbar, Department of Obstetrics, University Hospital Zurich

The series on «Tissue Engineering» will continue with two more talks in January 2017. The new topic from spring semester 2017 on will be «The future of agriculture». The prolongation and financial support of the series until 2018 has recently been accepted by the SUK program Doktoratsprogramme.

Retreat of the imMed PhD Program

The 11th retreat of the imMed PhD Program was held on June 13/14, 2016 at the Swiss Federal Institute of Sports in Magglingen. The PhD students presented their ongoing thesis projects in talks and on posters. Guest speaker Doris Wisler from the Clinical Trials Center at the University Hospital Zurich gave an insight into the processes of clinical trials.

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.

imMed Alumni

The imMed alumni event with the focus on women's careers in January 2016 with 60 participants - current students and alumni – was highly appreciated.

Changes in the PhD Program Commission

imMed PhD Program Director Thierry Hennet was elected Vice Dean of Studies of the Faculty of Science (MNF) as of fall semester 2016. Congratulations!

He stepped down from the PhD Program commission. The commission would like to thank Thierry Hennet for his continuous great work and support for the development of the program.

As his successor, longtime program commission member and deputy chairman of the ZIHP Christian Grimm was elected PhD Program Director as of November 1, 2016. Thomas Lutz will act as his deputy. Hans-Peter Landolt from the Institute of Pharmacology and Toxicology, UZH was elected member of the commission. Welcome!

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 ensure the supervision of and advice for the students from both perspectives.

The catalogue of graduate courses is constantly evaluated by both commission and students of the imMed 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

Microbiology and Immunology

The program in figures and numbers

Program statistics	as of December 31
Program students	203
Track I students	107
Track II students	96
Female students	130
Male students	73
International students	141
Swiss students	62
Program drop-outs	5
Completed PhD	41
Program Alumni	202
Faculty members	83

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	117	337
Invited candidates	17	21
Drop-outs before interview	3	1
Free slots (1st priority program)	14	15
Matches	6	8
Candidates without matches	4	7
Decision against program	3	2
Rejected candidates	0	1
Change to other LSZGS programs	1	2
Gained from LSZGS programs	2	1

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ	68000	
UZH		
Fees	37000	
Other	49225	
Expenses		
Salaries program		82320
Social benefits		
Recruitment December 1		13913
Recruitment July 1		9038
Program activities (retreat, symposia, etc.)		48862
Overhead		
Total	154225	154133
Balance as of December 31	92	

Program Activities

10th Microbiology and Immunology Introductory Course

January 13-15, 2016

Institute of Plant Biology, University of Zurich

In this yearly offered block course 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 10th MIM Introductory Course included 10 oral presentations of PIs and 62 of PhD students, covering the fields of general and medicinal Microbiology, Virology and Immunology, plus a talk of the MIM Alumnus Dr. Boas Felmy on "My PhD experience".

An interactive workshop on *Scientific Integrity* was held by Prof. Hans-Martin Fischer and Dr. Emma Slack. Additionally, three thematically different Zürich sightseeing tours were offered to the participants.

The Introductory Course was sponsored by *SUK Programm "Doktoratsprogramme" UZH & ETH Zurich*.

9th MIM Student Retreat

August 26-28, 2016

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. The broad scientific program of the 9th MIM Student Retreat with 9 oral and 42 poster presentations covered the fields of Microbiology, Immunology and Virology. 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.

A workshop on "Starting a professional career in industry: Matching market needs and self-presentation" was given by Dr. Monika Clausen. Invited guest speakers were MD Dr. Beat Steffen (Novartis Venture Fund) and Dr. Christoph Burkhardt (Department of Autoimmunity, Transplantation and Inflammation, Novartis Institutes for BioMedical Research).

SUK Programm "Doktoratsprogramme" UZH & ETH Zurich sponsored the Retreat.

MIM career events and other activities

The series of events for current students & alumni has been taking place in 2016 on various topics (organized by MIM alumni and student representatives):

14.1.2016 *MIM New Year's Reception*

Alumni Lounge, ETH Hönggerberg

4.3.2016 *MIM career event*

International career opportunities and a brief summary of working at WHO Dr. Philipp Lambach

6.6.2016 *MIM company visit*

Roche Diagnostics, Rotkreuz

7.6.2016 *MIM social event*

Crash course bouldering

17.11.2016 *MIM career event*

How to start your career in Pharma: typical entry positions for recently graduated PhD students

Guest speakers:

Dr. Daniel Andritschke, Market Access Specialist, MSD

Dr. Thomas Edinger, Medical Scientist, Gilead Sciences

Dr. Helge Frebel, Customer Brand Manager Oncology, Astellas Pharma

Dr. Patrick Kaiser, Product Manager, A.Menarini AG

Dr. Sanja Mandaric, Clinical Research Manager, Nobel Biocare

27.7.2016 *MIM social event*

BBQ Irchel Park, UZH

17.6.2016 *MIM Symposium*

MIM 10th Anniversary Symposium

Guest speakers:

Prof. em. Rolf Zinkernagel, Nobel Prize in Physiology / Medicine 1996, UZH

Prof. Markus Aebi, ETH

Dr. Rosa Barreira da Silva, Genentech USA

Prof. Salomé LeibundGut, UZH

Dr. Helge Frebel, Astellas Pharma

Prof. Rolf Kümmerli, UZH

Prof. Barbara Stecher, LMU, Germany

8.8.2016 *MIM social event*

Stand up paddling, Lake of Zurich

14.12.2016 *MIM social event*

Christmas get-together Weihnachtsmarkt Bellevue

These events were made possible due to financial support provided by KGF (Contact Group for Research Matters), Stadt und Kanton Zürich, SUK Programm "Doktoratsprogramme" UZH & ETH Zurich.

Advisory Services

Mentoring Program

We are committed to sustain and improve our one-to-one mentoring program, aimed at fostering the personal and professional development of the PhD students in addition to the scientific support provided by the PhD committee. Therefore, several activities have been offered to the mentors, such as coaching supervision by Dr. Monika Clausen (17.7.2016 & 5.12.2016) and a mentoring kick-off event for mentors and mentees.

We thank the Graduate Campus ("Qualitätssicherung") for sponsoring the activities.

Ombudsperson

The MIM Program has appointed an Ombudsperson, Prof. em. Hauke Hennecke, which provides advice - for both, PIs and PhD students - in situations of serious disagreements and conflicts. This service has been used in a number of occasions and we are happy that Prof. Hennecke was able to mediate successfully in so far all cases.

Travel Grants

Since 2014, the MIM Program provides travel support for national / international conferences / meetings. The following travel grants have been approved:

Francesca Franzoso	Swissvirology Meeting	Thun, Switzerland	2.-3.2.2016
Sandra Ring	WIRM	Davos, Switzerland	13.-16.3.2016
Urs Mörbe	WIRM	Davos, Switzerland	13.-16.3.2016
Franzi Schönherr	ASM	Seattle, USA	13.-17.4.2016
Mario Hupfeld	EMBO Conference: Problems of Listeriosis	Paris, France	14.-17.6.2016
Anna Karriagini	74th SSM-SGM	Bern, Switzerland	13.-16.6.2016
Thomas Liechti	Cyto Conference	Seattle, USA	11.-15.6.2016
Nadja Leimer	Gordon Microbial Stress Response	South Hadley, USA	17.-22.7.2016
Fanny Georgi	Dreseden Summer School in Systems Biology	Dresden, Germany	23.-31.7.2016
Neeta Shrestha	41st Annual International Herpesvirus workshop	Madison, USA	23.-27.7.2016
Raphi Ledermann	12th European nitrogen fixation conference	Budapest, Hungary	25.-28.8.2016
Anne Buttgereit	13th International Congress of Neuroimmunology	Jerusalem, Israel	26.-29.9.2016
Xueyang Yu	Cell Symposia - 100 years of Phagocytes	Sicila, Italy	19.-22.9.2016
Ana Raykova	16th meeting of the Society for Natural Immunity (NK 2016)	Sicila, Italy	2.-5.10.2016
Nadine Gözl	58th ASH Annual Meeting & Exposition	San Diego, USA	3.-6.12.2016

Outlook

Since two years, the student numbers have reached a stable equilibrium, but the MIM Program remains one of the largest within the LSZGS. We feel committed to provide best possible guidance to our PhD students and our advisory services provide concrete possibilities for support to prevent and / or manage situations of disagreement and conflicts.

As our students home institutes are widely distributed around the country, we continue to organize career and social events on a regular basis to facilitate networking.

The course program 2017 has been complemented by a workshop for MIM group leaders. The *laboratory management course for MIM PIs* is providing an opportunity to build, renew and increase the competence and awareness in laboratory and team management skills.

Furthermore, a science writing course will be implemented, since the existing courses are often booked out fast. Prof. Shinichi Sunagawa is responsible for the course organization.

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 85 faculty members (compared to 81 faculty members in 2015), who are associated with over a dozen different institutes at the ETH Zurich (ETH) and the University of Zurich (UZH). 181 graduate students were enrolled in the MLS program by the end of 2016 compared to 199 students at the end of 2015. 94 (52%) of our students are women and 87 men. 47 MLS students graduated in 2016. The program has now 374 alumni in total. The average time to successful completion of a Ph.D. thesis in the MLS program has so far been 4 years and 6 months.

The program in figures and numbers

Program statistics	as of December 31 st
Program students	181
Track I students	106
Track II students	75
Female students	94
Male students	87
International students	138
Swiss students	43
Program drop-outs	4
Completed PhD	47
Program Alumni	374
Faculty members	85

Student Body

Of the 181 students, 111 are enrolled at the UZH and 70 at ETH. German (43) and Swiss students (43) account for close to half of all students. The next larger groups are the Italians (15) and Indians

(9) followed by Poles (8), Austrians (7), Chinese (6) and Greeks (5). Three students come from Portugal, Russia and Turkey and two from Croatia and Malaysia. In addition, we have one student each from Albania, Argentina, Armenia, Canada, Colombia, Costa Rica, the Czech Republic, Estonia, France, Hungary, Iceland, Israel, Liechtenstein, Luxembourg, Mexico, Nepal, Pakistan, Serbia, South Africa, Ukraine, Uruguay and Vietnam in the MLS program.

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	209	218
Invited candidates	25	30
Drop-outs before interview	5	7
Free slots (MLS priority program)	12	17
Matches	11	12
Candidates without matches	7	10
Decision against program	1	2
Rejected candidates	1	1
Change to other LSZGS programs	3	7
Gained from LSZGS programs	4	6

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. Claus Azzalin (ETH – representative of junior faculty members, until September 2016)

Prof. Yves Barral (ETH – vice chair)

Prof. Alex Hajnal (UZH)

Prof. Michael O. Hottiger (UZH – chair)

Prof. Joao Matos (ETH - representative of junior faculty members, since September 2016)

Dr. Raffaella Santoro (UZH)

Prof. Anton Wutz (ETH)

Prof. Oliver Zerbe (UZH)

Susan Nieuwenhuize (UZH – student representative since September 16)

Asim Sengör (ETH – student representative since September 16)

Meret Arter (ETH – student representative until September 16)

Lorenzo Gatti (UZH – student representative until September 16)

Meetings of the SC are planned for every second Wednesday of each month. However, since the program is well established and is smoothly running, the SC did meet only 3 times in 2016 to discuss and decide on the different 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. Five new faculty member joined the MLS program in 2016. 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:

Claus Azzalin, Biochemistry, ETH to Instituto de Medicina Molecular, Lisbon

New PIs:

Michael Baudis, Institute of Molecular Life Sciences, UZH

Reinhard Dechant, Institute of Biochemistry, ETH

Collin Ewald, Institute of Translational Medicine, ETH

Susanne Ulbrich, Institute of Agricultural Sciences, ETH

Olivier Urwyler, Institute of Molecular Life Sciences, 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 2016.

Finances (in CHF)

	Income	Expenses
Income		
ETHZ	30'350	
UZH	30'350	
Fees	9'500	
SUK ETH	43'500	
SUK UZH	43'500	
Sponsoring	9'200	
Expenses		
Salary program coordinator (including social benefits)		45'553
Recruitment costs September 15		14'158
Recruitment costs February 16		16'872
Teaching		4'958
Redesign web page		4'357
Program activities: Retreat		41'965
Travel Grants		13'972
Lecture series		3'701
Christmas Party		3'276
Alumni (1 Career Event)		637
Overhead		641
Total	166'400	150'090
Balance as of December 31	16'310	

Program Activities

Teaching

Module	Length	Dates	Participants	Remarks
Systems Biology	2 days	18 & 19 January 2016	19 students	
Structural Biology	2 days	26 & 27 January 2016	5 students	Joint course with BSM program
1 st -year-Presentations	4x1/2 day	29 February, 4, 11 & 18 March 2016	18 students & 4 moderators	
Microscopy Toolbox	3 days	4 - 6 May 2016	28 students	As of 2015 open to all students of the LSZGS
Ethics in Science	2 days	23 & 24 May 2016	9 students	
Scientific Writing	4x1/2 day	19, 26 May, 2 & 9 June 2016	8 students	Together with Graduate Campus
Matlab	3 days	28 - 30 September 2016	5 students	As of 2015 open to all students of the LSZGS
1 st -year-Presentations	4x1/2 day	11, 14, 21 & 28 October 2016	18 students & 4 moderators	
Ethical Issues in Biological Research, Genetics & Genomics	2 days	10 & 17 November 2016	16 students	
Computational Biology	3 days	30 November - 2 December 2016	13 students	Joint course with EvoBio & PSC

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 and the “Scanning Electron Microscopy I” course offered by the ScopeM. While both facilities had offered in the past courses exclusively for the MLS, the program tends to send the students to the general courses as it was sometimes difficult to fill the courses. Should the demand within the student body be high enough to organize an own course, the program will do so once in a while.

Tutorials

In 2016 again several tutorials were offered by faculty members of the MLS program 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
Functional and genome-wide analysis of protein-chromatin interactions	Tuncay Baubec
Inflammasomes in Health and Disease	Dietmar Beer
Endogenous Tagging Using CRISPR/Cas9	Constance Ciaudo
Stem Cell Biology	Paolo Cinelli
Computational modeling of signaling pathways using the BMA software	Alex Hajnal
Oxidative stress and redox signaling	Michael O. Hottiger
Mastering the Eukaryotic Gene	Christian Mosimann
TNF in cell death and inflammation	Wei-Lynn Wong
Membrane protein structure and topology	Oliver Zerbe

Retreat

The 13th MLS retreat was held from 1st to 3rd September 2016 in Kiental. 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 June 2016 either gave a talk or presented a poster. Four external speakers, Prof. Ziheng Yang, chair of Statistical Genetics at the University College London, Prof. Lawrence Rajendran, Institute for Regenerative Medicine at the University of Zurich, Prof. Jason Rock, Departments of Anatomy and Medicine at the University of California, San Francisco, as well as Dr. Anna Obenauf from the Research Institute of Molecular Pathology in Vienna, 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, a visit of the spa, the Qigong & Relaxation center or the Tropenhaus Frutigen with its sturgeon farm. The organizing committee was formed by: Meret Arter (student representative), Gianluca D'Agati, Anne Dubrovsky-Gaupp, Lorenzo Gatti (student representative), Ranjan Mishra, Karin Prummel and Janko Tackmann.

Lecture Series

All organized lectures were a full success and attracted a large audience. 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. The students elected at their retreat a new committee who will continue their predecessors' effort to invite top-class lecturers to Zurich.

Speaker	Topic	Date
Prof. Gaudenz Danuser, Lyda Hill Department of Bioinformatics, UT Southwestern Medical Center, Dallas	"Computer vision in cancer cell biology"	7 March 2016
Prof. Stephan Sigrist	"The functional organization of the presynaptic active zone"	16 September 2016
Prof. Ana Maria Cuervo	"Selective autophagy: lysosomal degradation of one protein at a time"	20 October 2016

Organizing committee MLS lecture series 2015/2016: Izzet Mehmet Akcay, Soumya Chaurasia , Elisabeth Fischer, Marie Sarazova

Organizing committee MLS lecture series 2016/2017: Avantika Gupta, Vanessa Hoop, Asim Sengör, Lazaros Vasilikos

Awarded Travel Grants 2016

The deadlines were 1 March, 1 July and 1 November 2016.

Student	Attended conference/summer school/ EMBO course/ workshop
Meret Arter	Students and Postdocs Meiosis Workshop
Manuela Bieri	12th International Adenovirus Meeting
Lavinia Bisceglie	EMBO/Febs Lecture Course "Chromatin and the environment"
Mandy Boermel	EMBL Workshop "From 3D Light to 3D Electron Microscopy"
Xiuzhen Chen	EMBO Symposia "Microtubule: From Atoms to Complex Systems"
Gianluca D'Agati	5th International Chordoma Research Workshop
Heike Duda	EMBO workshop "Chromosome segregation and aneuploidy"
Anastasia Felker	Weinstein Cardiovascular Development and Regeneration Conference
Katharina Frischer	Cold Spring Harbor Meeting on "Nuclear Organization and Function"
Samuel Gilberto	Cold Spring Harbor Conference "The Cell Cycle"
Avantika Gupta	PI3K Pathways in Immunology, Growth Disorders and Cancer
Christopher Hess	75th Annual Meeting of the Society for Developmental Biology (SDB)
Jette Lengefeld	3 rd Barbados Workshop on the "Physical basis of cellular adaptation and memory"
Mario Leutert	Cold Spring Harbor Meeting "The PARP Family & ADP-ribosylation"

Faina Myachina	EMBL Meeting “Microtubules: From Atoms to Complex Systems”
Kathrin Nussbaum	16 th International Congress of Immunology (ICI) 2016
Richard Pentz	EMBO conference “Telomeres, telomerase and disease”
Karin Prummel	Workshop on “Biological image reconstruction and analysis”
Dimitra Tripolitsioti	EMBO conference “Cellular signalling and Cancer Therapy”
Johanna Wagner	Gordon Research Conference on “Mammary Gland Biology”
Qiutan Yang	2nd international conference on “Innate Immunity and Immune System Diseases”

Travel grant committee: Martin Müller (PI, UZH), Joao Matos (PI, ETH), Juliana Komuczki (MLS student). In total, the program awarded CHF 13'972 as travel grants.

Social and Other Activities

Face-lift of the MLS web page: Due to the financial support of the Graduate Campus, the program could completely redesign its web pages in 2016. Neha Daga, a program student, conceptualized and drafted a completely new web site according to the rather rigid requirements including the corporate design of the UZH, on their server the pages are now hosted. The pages provide now additional useful information for the program students and prospective applicants. For the first time the different research groups are not only trackable by alphabetic order but also via the institute they are affiliated with and via their main research field. Moreover, there is a regularly updated list of all program students available. Before going online an external expert revised the drafted pages and his suggestions for improvement were implemented whenever the content management system “Magnolia” would allow to do so. The pages can be accessed via the following URL: <http://www.mls.uzh.ch/en.html>

Newsletter: The first release of the MLS newsletter was launched later than originally planned and was sent on 28 November 2016 to the program faculty members, students and alumni. Among other items it contained a welcome address of the chair, information about past and forthcoming events, feedback about a tutorial from the organizing PI (tutor) and the participants and an overview which students have started in the program and left it in the past six months. According to the statistics the email was sent to 239 addresses (without the alumni) and opened by 123 persons (open rate of 52.1%). The click rate was 13.1%. A pdf of the newsletter can be downloaded from the MLS home page. It is planned to issue the MLS newsletter twice per year.

Career and Networking event 2016: The students of the MLS program organized a career & networking event on 22 June (organizer: Janine Toggweiler and Qiutan Yang) to which 4 alumni were invited to provide insights in their current job or depict their career steps after they had finished their PhD.

Indrani Gupta, Associate Project Manager, Novartis Animal Health

Stephan Gysi, Research Associate Diagnostics, University Hospital Zurich

Lukas Reiter, Chief Technical Officer, Biognosys AG

Jonas Schaefer, Head of High-Throughput Facility, University of Zurich

The Christmas Party took place on 2 December 2016.

Outlook

The program would like to organize again a meeting with its alumni in 2017. It is planned to invite this time not only the former program students but also the current students and principal investigators of the MLS. We hope to enable and facilitate the exchange and networking between the different cohorts of students as well as among the faculty members.

Although the tutorial platform is not yet very old, we aim to revise it in 2017, mainly because the curriculum part of the DissGo database is going to be extended in the coming year and it makes sense to integrate the tutorials in the curriculum and in DissGo. With the relocation we would also like to add a few new features. Completed tutorials should be visible to everyone in order to make transparent who has been offering in the past which topic. Moreover, the platform should better support the organizing tutor/student by facilitating the administration of contact hours, group coordination and (de)registration.

Molecular and Translational Biomedicine

The program in figures and numbers

Program statistics	as of 31 December
Program students	67
Track I students	40
Track II students	27
Female students	34
Male students	33
International students	57
Swiss students	10
Program drop-outs	1
Completed PhD	9
Program Alumni	99
Faculty members	

Recruitment

Recruiting statistics	1 December	1 July
Complete applications	57	157
Invited candidates	10	10
Drop-outs before interview	2	1
Free slots	3	5
Matches	4	3
Candidates without matches	3	7
Decision against program	2	0
Rejected candidates	0	1
Change to other LSZGS programs	2	1
Gained from LSZGS programs	1	1

Finances

	Income	Expenses
Income		
ETH		
UZH (LSZGS)	30'500.00	
Other		
SUK Proposal ETH	48'060.00	
SUK Proposal UZH	10'760.00	
Expenses		
Recruitment December 2015		5'017.05
Recruitment July 2016		8'015.20
Program activities		
Retreat 2015 of MTB & CC-PM		50'982.35
Retreat 2015 Moderator		3'486.75
NGS Course Fees 2015		2'400.00
LATSIS Helper		1'020.08
Total balance		18'398.55-

Program Activities

The MTB Ph.D. program currently has 65 Ph.D. students from over 24 countries, working on different projects within 29 different research groups at the University of Zurich, USZ and the ETH Zurich.

Courses

- April, 2016: interdisciplinary lecture series 'Practical Personalized Medicine' (PPM), 1 day
- September, 2016: Drug Discovery and Development at Novartis Pharma, Basel, 2 days
- October/ November, 2016: Technologies and Systems Approaches in Biology (in collaboration with the Ph.D. Program ,Systems Biology')
- November, 2016: 'Genomic Medicine'
- December, 2016: 'Next Generation Sequencing' on RNA (at the FGCZ)

Retreat

The third annual MTB/CC-PM Retreat took place at Kartause Ittingen in October 2016 with over 70 participants (31 Ph.D. students and 31 postdocs, professors and other CC-PM members). With Dirk Haller (Institute for Food & Health, Technical University Munich) and Dirk Jäger (National Center for Tumor Diseases, University Medical Center Heidelberg) internationally renowned scientists held the keynote lectures. All Ph.D. students displayed their work during different poster sessions. Several students - selected by their abstracts - had the opportunity to present their research projects in talks. Best poster and best talk were awarded with prizes, sponsored by *biotechnet Switzerland*.

Outlook

The MTB Ph.D. program will offer the elective compulsory course 'Basic and Applied Cancer Biology' once again in January 2017. In February and March 2017, the event series 'From Bench to Bedside' - a combination of panel discussions, meet and greet and workshops - will take place. It is organized by a group of MTB Ph.D. students who applied for a grant at the Graduate Campus to realize this activity. In April, the lecture series on 'Practical Personalized Medicine' will be held for the third time. The annual Retreat of the CC-PM and its associated MTB Ph.D. program will take place on November 2nd, 2017 in Zurich Centre. The event will last a whole day with a focus on international top keynote speakers. Accompanying workshops covering topics such as 'Diabetes and the Metabolic Syndrome' or 'Cancer' are planned. Ph.D. students will have the opportunity to review their research work by keynote speakers throughout open discussions.

Once more in 2017, the CC-PM together with the MTB program will be present at the *Scientifica*, held 1-3 September 2017 at the University of Zurich and the ETH. The topic for this year's *Scientifica* will be 'Was Daten verraten'- *Big Data & Personalized Medicine*.

The MTB courses 'Technologies and System Approaches in Biology' and 'Genomic Medicine' both will take place in fall 2017.

Neuroscience

The program in figures and numbers

Program statistics	as of December 31
Program students	296
Track I students	75
Track II students	221
Female students	145
Male students	151
International students	201
Swiss students	95
Program drop-outs	5
Completed PhD	37
Program Alumni	576
Faculty members	146

Recruitment

Recruiting statistics	Interviews Feb. 16	Interviews Sept. 16
Complete applications	77	94
Invited candidates	22	19
Drop-outs before interview	5	3
Free slots	14	7
Matches	7	10
Candidates without matches	5	8
Decision against program	5	1
Rejected candidates	-	-
Change to other LSZGS programs	1	3
Gained from LSZGS programs	2	1

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ	35850	
UZH	35850	
Saldo 2015	1932	
Other (Stiftung Besinnung und Ordnung)	2455	
Expenses		
Salaries program		
Social benefits		
Recruitment February 2016		10062
Student Travel Grants / Conference contributions		22021
Deutschkurse		2455
Program activities (PhD retreat and courses)		23780
Recruitment September 2016		9991
Miscellaneous		213
Newsletter Dec 15		3000
LSZGS Rückzahlung für Statistik		-3791
Total	76088	67731
Balance as of December 31		8357

Program Activities

1) Courses

- Introductory Course in Neuroscience I (Fall term 2016)
- Introductory Course in Neuroscience II (Spring term 2016)
- BIO628: Neuroscience Block Course (June 2016, primarily for MD/PhD Students)
- Ethics in the Neurosciences (31 May- 2 June 2016)
- Crash Course in Statistics for Neuroscientists (27 June - 6 July 2015)
- Writing Neuroscience Research Papers (June 2016)
- Toolbox for Neuroscientists (11-21 July 2016)

2) Symposia, conferences and other scientific activities

- ZNZ PhD Retreat, 28 – 30 April 2016, Valens
- ZNZ Symposium and Best PhD Thesis Award, (15 September 2016)

3) Outlook 2017

- Student exchanges in pilot projects within our partnerships with McGill, Oxford and UCL.

Plant Sciences

The program in figures and numbers

Program statistics	as of December 31
Program students	133
Track I students	19
Track II students	114
Female students	75
Male students	58
International students	105
Swiss students	28
Program drop-outs (in 2016)	3
Completed PhD (in 2015)	28
Program Alumni	Approx. 470
Faculty members (reported only for University of Zurich)	17

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	70	67
Invited candidates	10	10
Drop-outs before interview		1
Free slots		
Matches	6	5
Candidates without matches	3	34
Decision against program		
Rejected candidates		
Change to other LSZGS programs		
Gained from LSZGS programs		

Finances

	Income	Expenses
Balance January 1	21'844	
Income		
ETHZ / UZH	38'200	
Fees	23'240	
Other (SUK contribution)	Separate re- porting	
Expenses		
Salaries program		32'980
Social benefits		Included in above
Recruitment December 1 (2015)		4813
Recruitment July 1 (2015)		4130
Program activities through SUK (retreat, symposia, etc.)		Separate re- porting
Overhead (to LSZGS)	9394	9394
Total	92'678	51'287
Balance as of December 31	41391	

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.lifescience-graduateschool.uzh.ch), an international graduate school in life sciences, Swiss Plant Science Web (www.swissplantsciencweb.ch), housing 9 national PhD

programs in Plant Sciences, Graduate Campus University of Zurich (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	female	male	national	international
2016	133	46	66	21	75	58	28	105

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
Mandatory Module: Colloquium “Challenges in Plant Sciences”	2
Mandatory Elective Modules: <ul style="list-style-type: none"> • Frontiers in Plant Sciences: Intensive Courses on skills, methods and techniques, • Statistical Methods • Transferable Skill Courses (Communicating and Disseminating Science / Professional Conduct in Research / Research Management / Career Development / Finance, funding and resources) • Workshops from the specialized PSC PhD Program in Science and Policy 	4 - 10
Elective Module: Remainder of 12 ECTS may be chosen from*: <ul style="list-style-type: none"> • Participation in international scientific symposium with own scientific contribution (oral or poster presentation) (max. 1 ECTS) • Organization of PSC PhD Symposium (max. 3 ECTS) • Other scientific or transferable skill courses 	max. 6

* 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 2016.

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 month 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 2016 we can currently report

- 83% of all scheduled thesis committee meetings in 2016 finished in time and 17% delayed by 3 – 6 month at University of Zurich
- 90% carried out in time and 10% delayed by 3-6 month at ETH Zurich.
- University of Basel will integrate in this quality pipeline in 2017.

Evaluation of the program is continuously done, see

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

Mentoring activities: in the PhD Program in Plant Sciences – targeted introductory events and targeted brown bag lunch events

In 2016 several mentoring activities were carried out; these included: 1 introductory event was carried out. This resulted in a very positive feedback from the **13 participants** and in 2 targeted mentoring (of total 16+ hours, on teaching research in secondary classrooms). Very good feedback we got for the company visits where PhD students had opportunities to present their research work to R&D representatives and get insight in hiring procedures and careers in the companies. Brown Bags were on funding opportunities and career development.

Date	Mentoring Activity	Mentor	Nr. Part.
01.03.2016	Lunch Brown Bag event: How to apply for a Job in the Industry	Roger Gfrörer, Career Service Center UZH.	11
29.03.2016	Lunch Brown Bag event: How to prepare for an ERC grant application 2017	Andrea Degen, Eurelations	28
24 & 25.05.2016	Diversity Management	Dr Monika Clausen and Dr Hilde Janssens	5
07.09.2016	Welcome Workshop PSC (in Zurich)	Dr. M. Paschke, Dr. Carole Rapo, Dr. Luisa Last, Dr. Juanita Schöpfer	13
16.06.2016	Ricola AG – Industry Visit	Dr. Sandrine Gouinguené	7
07.11.2016	Frutarom, Wädenswil – Industry Visit	Romy Kohlmann	20

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.

Special Events - PhD Program in Plant Sciences

The PSC has organized one **Summer School: Agriculture in Transformation – New Concepts for an Agriculture Production that is Socially Fair, Environmentally Safe and Economically Viable (September 11 to 16, 2016, Einsiedeln, Switzerland)**

Lecturers: Prof. Hans Herren, Franziska Stössel, Dr. John Ingram, Dr. Gurbir Bhullar, Dr. Michael Meissle, Prof. Alan Buckwell, François Meienberg, Dr. Philipp Aerni, Martin Schmid, Dr. Markus Frank, Dr. Jose Vogelesang, Prof. Van der Heijden, Dr. Melanie Paschke

Frontiers in Plant Sciences Courses Series: Between 2012 and 2016 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:

7 „Frontiers in Plant Science“ workshops in 2015:

Frontiers in Plant Sciences: **Tutorial on Plant Modelling**, Dr. Barbier de Reuille, Pierre (University of Berne)

Frontiers in Plant Sciences: **RNA sequencing – A practical course for plant scientists**, Dr. Lucy Poveda, Dr. Weihong Qi, Lennart Opitz and others, Functional Genomics Center Zurich

Frontiers in Plant Sciences: **Population genetics and genomics of adaptation**, Dr. Barbier de Reuille, Pierre (University of Berne)

Frontiers in Plant Sciences: **Applications of Stable Isotopes in Plant Sciences (Workshop)**, Prof. Nina Buchmann, Prof. Ansgar Kahmen, Prof. Emmanuel Frossard, Prof. Johan Six, Dr. Roland Werner, Dr. Matthias Barthel, Dr. Charlotte Decock, Dr. Paul Mäder, Dr. Andreas Fliessbach, Juliane Hirte (ETHZ, UniBas)

Frontiers in Plant Sciences: **Best practice in rendering digital images for publication**, Bernd Pulverer (EMBO, Germany)

Frontiers in Plant Sciences: **Advanced course on 3D microscopy imaging of plant tissues and image processing**, Dr. Célia Baroux (UZH); Prof. Joop Vermeer (UZH); Prof. Alexis Maizel, Center for Organism Science (University of Heidelberg)

Frontiers in Plant Sciences: **Analysis of Ecological Data**, Dr. Sabine Güsewell (ETHZ)

Courses carried out in the reporting period

In the reporting period the PSC organized / co-organized 31 courses. We report 363 course visits of PhD students.

Course evaluations are regularly done after every course: 31 courses (=100%) of the total 31 courses (from which evaluation records were available) were rated as 3 to 4 (=fully agree) in “I learned & benefited from this course” and several other aspects.

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

Year	Total Course Nr	Total Participants	Nr. ETHZ	Nr. UZH	Nr. Basel	Other
2016	31	363	164	173	8	18

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

Date	Course	Lecturer	Nr. ETHZ	Nr. UZH	Nr. Basel	Other
19.02. & 18.03	Scientific Writing Practice II	Penelope Barnett, M.A. (ZHAW)	9	9	1	1
22.02. & 23.02.	Introduction to R	Dr. Jan Wunder (WSL)	11	6	0	0
08.03 & 09.03	Concepts in Evolutionary Biology	Prof. Kentaro Shimizu, Prof. Wolf Blanckenhorn, Prof. Lukas Keller, Prof. Barbara König, Dr. Michael Krützen, Dr. Anna Lindholm, Dr. Erik Postma, Dr. Kathleen Sprouffske, Prof. Barbara Tschirren, Prof. Andreas Wagner, Prof. Marcelo Sanchez (UZH)	6	2	0	0
10.03 & 11.03	Frontiers in Plant Sciences: Tutorial on Plant Modelling	Dr. Barbier de Reuille, Pierre (University of Berne)	5	2	0	0
17.03. & 21.05.	Responsible Conduct in Research	Prof. Nina Buchmann, Dr. Melanie Paschke (ETHZ, PSC)	6	5	0	1
04.04 – 08.04.	Introduction to meta-analysis	Prof. Julia Koricheva (Royal Holloway, University of London)	2	3	0	0
14.04 & 20.05	Scientific Presentation Practice	Penelope Barnett, M.A. (ZHAW)	5	7	0	0
25.04 & 26.04.	Advanced Data Management and Manipulation using R	Dr. Jan Wunder (WSL)	11	4	0	0
11.05	Introduction to UNIXLinux and Bash Scripting	Dr. Stefan Wyder, Dr. Heidi Lischer (UZH)	7	5	1	1
17.05	Introduction to UNIXLinux and Bash Scripting	Dr. Stefan Wyder, Dr. Heidi Lischer (UZH)	5	6	0	0
18.05 & 19.05	BIO610_Introduction_NGS	Prof. Kentaro Shimizu, Prof. Jun Sese, Dr. Rie Inatsugi, Dr. Masaomi Hatakeyama, Dr. Hiromi Matsumae	5	7	0	0

		(UZH)				
23.05 & 24.05	BIO634_Advanced_NGS	Dr. Stefan Wyder, Dr. Heidi Lischer, Prof. Kentaro Shimizu (UZH)	5	7	0	0
23.05 – 25.05	Frontiers in Plant Sciences: Population genetics and genomics of adaptation	Prof. Karl Schmid, Dr. Fabian Freund (University of Hohenheim)	2	10	0	0
03.06 & 21.06	Dealing with the Publication Process	Dr. Philipp Mayer, Prof. Christian Fuhrer, Dr. Melanie Paschke (UZH, ETHZ, PSC)	6	11	0	1
06. – 08.06	Basic Plant Disease Diagnostics	Ueli Merz & Monika Maurhofer Bringolf (ETHZ)	9	4	0	0
13. – 17.06	Genetic Diversity: Analysis	Dr. Jean-Claude Walsler and Dr. Stefan Zoller (Genetic Diversity Center, ETHZ)	0	1	0	0
27. – 29.06	Frontiers in Plant Sciences: Applications of Stable Isotopes in Plant Sciences (Workshop)	Prof. Nina Buchmann, Prof. Ansgar Kahmen, Prof. Emmanuel Frossard, Prof. Johan Six, Dr. Roland Werner, Dr. Matthias Barthel, Dr. Charlotte Decock, Dr. Paul Mäder, Dr. Andreas Fliessbach, Juliane Hirte (ETHZ, UniBas)	9	1	0	1
13. – 15.07	Introduction to Functional Genomics	Dr. Katja Bärenfaller, Dr. Bernd Roschitzki, Dr. Endre Laczko, Dr. Giancarlo Russo and Andrea Patrignani (ETHZ)	8	1	0	0
17. – 23.07	Alpine Ecology	Prof. Christian Körner, Prof. Jürg Stöcklin, Dr. Erika Hiltbrunner (all UniBas), Prof. Markus Fischer (Uni-Bern)	2	2	0	0
30.08 – 02.09	Frontiers in Plant Sciences: RNA sequencing – A practical course for plant scientists	Dr. Lucy Poveda, Dr. Weihong Qi, Lennart Opitz and others, Functional Genomics Center Zurich	3	5	0	0
11–16 & 19 September 2016, Switzerland	Agriculture in Transformation: New Concepts for an Agricultural Production that is Socially Fair, Environmentally Safe and Economically Viable	Prof. Hans Herren, Franziska Stössel, Dr. John Ingram, Dr. Gurbir Bhullar, Dr. Michael Meissle, Prof. Alan Buckwell, François Meienberg, Dr. Philipp Aerni, Martin Schmid, Dr.	9	6	0	13

		Markus Frank, Dr. Jose Vogelesang, Prof. Van der Heijden, Dr. Melanie Paschke, Dr. Carole Rapo, Dr. Luisa Last				
23.09 & 14.10	Scientific Writing Practice 1 - General Principles	Penelope Barnett, M.A. (ZHAW)	9	10	0	0
28.09 & 03.11	Colloquium "Challenges in Plant Sciences"	Thomas Boller, Consuelo De Moraes, Beat Keller, Chris Kettle, Stefan Hörtensteiner, Bruno Müller, Christoph Ringli, Antía Rodríguez-Villalón, Christian Schöb, Johan Six	13	8	4	0
03.11 & 23.11	Genetic Diversity: Techniques	Dr. Aria Minder (Genetic Diversity Center, ETHZ)	2	2	0	0
14.11 – 16.11	Frontiers in Plant Sciences: Best practice in rendering digital images for publication	Bernd Pulverer (EMBO, Germany)	3	12	0	0
22.11 & 24.11	Writing a Post-Doctoral Grant	Dr. Andrea Degen (Eurelations AG), Dr. Melanie Paschke (PSC)	4	12	0	0
28.11 & 29.11	Scientific Visualisations using R	Dr. Jan Wunder (WSL)	9	7	0	0
07.12 – 09.12	Frontiers in Plant Sciences: Advanced course on 3D microscopy imaging of plant tissues and image processing	Dr. Célia Baroux (UZH); Prof. Joop Vermeer (UZH); Prof. Alexis Maizel, Center for Organism Science (University of Heidelberg)	3	4	0	0
12.01 – 20.01 (2017)	Frontiers in Plant Sciences: Analysis of Ecological Data	Dr. Sabine Güsewell (ETHZ)	6	1	2	0
29.11 & 31.01 (2017)	Current challenges in plant breeding	Prof. Dr. Bruno Studer (ETHZ), Dr. Andreas Hund (ETHZ), Dr. Simon Krattinger (UZH) und Dr. Thomas Wickert (UZH)	3	3	0	0
20.02. & 21.02. (2017)	Introduction to R	Dr. Jan Wunder (WSL)	6	10	0	0

Table 3: Course Evaluation 2013: 4 = fully agree, 1 = fully disagree

Course	Number of Questionnaires #	The Course was well organized? The topics covered met my expectations?	The instructor explained clearly? The material was helpful & relevant to the future?	The balance between theoretical & practical? The topics covered were according to my needs?	working atmosphere was good? The course benefited from this course?	The instructor meet an appropriate pace? 1 = too slow/too fast, 2 = just right				
		Average	Average	Average	Average	Average	Average			
Introductory Course to R	17	3.88	3.41	3.71	3.82	3.65	3.12	3.82	3.56	1.88
Current challenges in plant breeding	7	3.71	3.29	3.71	2.67	3.71	3.71	3.86	3.86	2.00
Analysis of Ecological Data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
(FPS) Advanced course on 3D microscopy imaging of plant tissues and image processing	7	3.57	4.00	3.86	3.29	3.71	3.86	3.86	4.00	2.00
Scientific visualisation using R	14	3.93	3.50	3.71	3.50	3.93	3.50	4.00	3.79	1.86
Writing a postdoctoral grant	16	3.81	4.00	4.00	3.69	3.73	3.75	3.87	3.93	2.00
(FPS) Best practice in rendering digital images for publication	12	3.25	2.70	4.00	3.08	3.17	3.09	3.75	3.50	1.80
Genetic Diversity: Techniques	4	4.00	4.00	3.75	4.00	3.75	3.75	3.75	3.75	2.00
Coloquium - Challenges in Plant Sciences	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Scientific Writing Practice 1: General Principles	16	3.56	3.44	3.87	3.75	3.63	3.44	4.00	3.50	1.80
Summer School 2016 – Agriculture in Transformation (SMART)	27	3.30	3.22	3.52	3.10	3.11	3.26	3.70	3.42	1.81
(FPS) RNA sequencing – A practical course for plant scientists	8	4.00	3.75	3.63	3.50	3.50	3.75	3.88	3.88	2.00
Alpine Ecology - Summer School on Alpine Plant Life	5	3.80	3.80	3.75	3.60	4.00	3.80	4.00	3.14	2.00
Introduction to Functional Genomics	9	3.56	3.44	3.11	3.44	3.56	3.56	3.56	3.63	1.89
(FPS) Applications of Stable Isotopes in Plant Sciences	12	3.83	3.75	3.92	3.82	3.67	3.67	3.83	3.83	2.00

Genetic Diversity: Analysis	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dealing with the publication process	17	3.59	3.28	3.50	3.41	2.94	3.29	3.65	3.47	1.82
Basic Plant Diseases Diagnostics	12	3.92	3.50	3.58	3.67	4.00	3.83	4.00	3.92	2.00
(FPS) Population genetics and genomics of adaptation	12	3.42	3.50	2.83	3.67	3.50	2.91	3.67	3.58	1.50
Scientific Presentation Practice	12	3.92	3.33	3.83	3.83	3.83	3.58	3.83	3.50	2.00
Next-Generation Sequencing 2 – Advanced Course: Transcriptomes, Variant Calling, and Biological Interpretation	12	3.83	3.50	3.75	3.67	3.58	3.42	3.83	3.75	2.00
Next-Generation Sequencing 1 – Introductory Course: Assembly, Mapping, and Variant Calling	21	3.52	3.25	3.29	3.48	3.25	2.95	3.60	3.25	1.81
Introduction to UNIXLinux and Bash Scripting (11. Mai)	21	3.24	3.33	3.48	3.71	3.52	3.15	3.65	3.45	1.85
Introduction to UNIXLinux and Bash Scripting (17. Mai)	20	3.35	3.10	2.95	3.10	3.00	2.70	3.45	3.10	1.70
Advanced data management & manipulation using R	15	4.00	3.93	4.00	4.00	3.80	3.73	3.87	3.93	2.00
Introduction to Meta-Analysis and Research Synthesis in Ecology	5	3.80	3.60	3.80	3.80	3.80	3.60	3.80	3.80	2.00
Responsible Conduct in Research	12	3.50	3.33	3.50	3.60	3.83	3.50	3.92	3.67	2.00
(FPS) Tutorial on Plant Modelling	6	3.67	3.83	4.00	3.80	3.83	3.33	4.00	4.00	1.83
Concepts in Evolutionary Biology	9	3.33	3.11	3.44	3.22	3.00	2.78	3.67	3.33	1.56
Introduction to R	16	4.00	3.88	3.69	3.94	3.75	3.81	3.94	3.94	1.72
Scientific Writing Practice 2	19	4.00	3.79	4.00	4.00	3.89	3.84	4.00	3.84	2.00

Not all courses are evaluated following the standardized PSC course evaluation sheet.

Colours codes: green – highest possible rating, yellow: below internal benchmark for quality control of 2.5. Feedback is evaluated for improvements.

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	28
Track I students	12
Track II students	16
Female students	19
Male students	9
International students	20
Swiss students	8
Program drop-outs	1
Completed PhD	-
Program Alumni	-
Faculty members	21

Recruitment

Recruiting statistics	December 1, 2015	July 1, 2016
Complete applications	17	28
Invited candidates	5	3
Drop-outs before interview	1	1
Free slots		
Matches	1	3
Candidates without matches	4	0
Decision against program		
Rejected candidates		
Change to other LSZGS programs		2
Gained from LSZGS programs		

Finances

	Income	Expenses
Balance January 1	27'649.68	
Income		
ETHZ	20'0000	
UZH	2'300	
Fees		
Other		
Expenses		
Salaries program	-	
Social benefits	-	
Recruitment July 2015, Interview costs Sept 2015		5'399.60
Recruitment December 2015, Interview costs Feb 2016		2'835.70
Program activities (retreat, symposia, etc.)		
Travel expenses Admission Committee members		55.60
Welcome coffee on interview days		92.50
Travel grant		500.00
Overhead		
Total	49'949.68	8'883.40
Balance as of December 31	41'066.28	

Program Activities

PhD Retreat : After 4 days of science at the NCCR RNA & Disease Retreat and the Swiss RNA Workshop, the PhD students met for their first retreat, for a dinner and 'Bavarian Curling' in Bern (January 22, 2016). Half of the PhD students participating in the retreat were already present at the NCCR retreat in Kandersteg (January 19–21, 2016), and all of the students attended the Swiss RNA Workshop in Bern (January 22, 2016).

Travel grants:

One student was granted a CHF 500 contribution towards traveling to an international conference.

Science and Policy

The program in figures and numbers

Program statistics	as of December 31
Program students	52
Track I students	27
Track II students	25
Female students	25
Male students	27
International students	41
Swiss students	11
Program drop-outs	1
Completed PhD	13
Program Alumni	13
Faculty members	17

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	10	9
Invited candidates	0	0
Drop-outs before interview	0	0
Free slots		
Matches	0	0
Candidates without matches	0	0
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	1	0

Finances

	Income	Expenses
Balance January 1	91'425	
Income		
ETHZ / UZH	25'300	
UZH		
Fees	0	
Other		
Expenses		
	EU funding	EU funding
Salaries program		
Social benefits		
Recruitment December 1	-	-
Recruitment July 1	-	-
Program activities (retreat, symposia, etc.)		
Overhead	4'758	4'758
Total		
Balance as of December 31	116'725	116'725

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.lifescience-graduateschool.uzh.ch), an international graduate school in life sciences, hosting 16 PhD programs, the Swiss Plant Science Web (www.swissplantsciencweb.ch) housing 9 national PhD programs in Plant Sciences, and the Graduate Campus University of Zurich (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	female	male	national	international
2016	52	19	27	6	25	27	14	41

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

ECTS	Course Title
Total 8	<p><u>Mandatory Module(s)</u>: 4 out of 6 modules - Policy Workshops A - F:</p> <p>Course A: Evidence-based Policy-making in Plant Sciences</p> <p>Course B: Stakeholder Engagement</p> <p>Course C: Communicating Science</p> <p>Course D: Building Political Support</p> <p>Course E: Contributing to a Policy Action</p> <p>Course F: Understanding Policy Evaluation</p>
max. 2 - 4	<p><u>Elective Module:</u></p> <p>Lecture in Basics of Policy Sciences</p> <p>Scenario-building and modelling</p>
	<p><u>Elective Module:</u></p> <p>Remainder of 12 ECTS may be chosen from:</p> <p>Colloquium 'Challenges in Plant Sciences' (2 ECTS)</p> <p>Participation in international scientific symposium with own scientific contribution (oral or poster presentation) (max. 1 ECTS)</p> <p>Organization of PSC PhD Symposium (max. 3 ECTS)</p> <p>Careers in Science or Policy, or both?</p> <p>Other research or transferable skill courses</p>
Minimum: 12	

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 34 (50%) PhD students recruited to the program until December 31, 2016.

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 2014 we can currently report:

- 100% of all scheduled thesis committee meetings in 2016 carried out in time at ETH Zurich
- 95% carried out in time and 5% delayed by 1-6 month at University of Zurich.
- University of Basel has been integrated in this pipeline in 2016.

Evaluation

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

PSC Training Certifications

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.

Special Events

Events jointly organised with the PhD Program in Plant Sciences:

Mentoring activities: *see Reporting of Plant Sciences program*

Past public round tables and panel discussions: 25 Oct 2016: **Special Seminar - Tef - the cereal that feeds Ethiopia**, 30 participants, Main Building, ETH Zurich. Tef is an important food grain in Ethiopia, where it is used to make injera or keyta. *Eragrostis tef* has an attractive nutrition profile, being high in dietary fiber and iron and providing protein and calcium. However Tef has not benefitted from the green revolution and there are many research possibilities. Additionally, a socio-economic issue is that Tef is in danger of becoming a glutenfree fashion superfood in the Global North, leading to possible food shortages among the 94 million people who rely on it as a staple. Hosted by: Prof. Samuel Zeeman, ETH Zurich. Speakers: Dr. Kebebew Assefa, Ethiopian Institute of Agricultural Research, Addis Ababa; Dr. Zerihun Tadele, University of Berne; Wuyan Wang, ETH Zurich; Samuel Hauenstein, ETH Zurich.

1 Sep 2016: EUCARPIA 20th General Congress: Plant Breeding – the Art of Bringing Science to Life - Panel Discussion on "Innovation vs. Regulation", extended public discussion, moderated by Tim Sykes, 350 participants, ETH Zurich; Speakers: Beat Boller, Agroscope, Richard Visser, Wa-

geningen University Research, The Netherlands; Eva Reinhard, Federal office of Agriculture, Switzerland; Peter Van der Toorn, Syngenta, Stephanie Franck, Saatzucht Oberlimpurg / Chair of Bund Deutscher Pflanzenzüchter BDP, Germany; Michael Keller, Secretary General, International Seed Federation, Switzerland; Edith Lammerts van Bueren, Louis Bolk Institute, The Netherlands; Stephan Scheuner, swiss granum, Switzerland; approx. Courses carried out in the reporting period

In the reporting period the PSC organized 7 courses. We report 88 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 Courses	Total Participants	University of Zurich	ETH Zurich	University of Basel	Others
2016	7	113	39	57	16	1

Table 7: PhD Program in Science & Policy

Date	Course	Speakers / case study supervisors	Participants
12.01 & 9.02.	Understanding Policy Evaluation	Dr. Sibylle Studer	15
07.03. & 07.04.	Evidence-based Policy Making	Dr. Kathrin Frey, Dr. Christian Hirschi, Dr. Manuela Di Giulio, Dr. Susanne Menzel, Holger Gerdes	16
30.05. – 01.06	Contributing to Policy Action – Analysis and Communication of Risks and Uncertainties	Prof. Tobias Krüger, Dr. Sergio Bellucci, Prof. Anthony Patt, Christoph Beuttler	15
20.09 – 06.12	Careers in Science or Policy, or both?	Dr. Luisa Last, Dr. Thomas Pfluger, Simon Briner (Federal Office for Agriculture FOAG); Franziska Humair (Federal Office for the Environment FOEN); Claudia Boelter (KWS SAAT AG); Sabine Perch-Nielsen (Ernst Basler + Partner); François Meienberg (Berne Declaration); Friedrich Wulf (Pro Natura, Friends of the Earth); Dominik Klauser (Syngenta Foundation); Eva Spehn (Swiss Academy of Sciences SCNAT); Michele Garfinkel (European Molecular Biology Organization EMBO); Thomas Marty (Berinfor AG); Thomas Brooks (International Union for Conservation of Nature and Natural Resources – IUCN) and Claude Garcia (ETHZ, CIRAD)	23
03.10 & 05.10	Introduction to Political Sciences	Dr. Sarah Bütikofer	16
17.10 –	Stakeholder Engagement	Dr. Minu Hemmati	14

19.10			
13.12 – 15.12	Scenario-building and modelling	Véronique Lamblin (Futuribles), Claude Garcia (ETHZ)	14

Table 3: Course Evaluation 2016: 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	tical	Level of course was according to my needs	Working atmosphere was good	I learned & benefited from this course	1 = too slow/too fast, 2 = just right	Recommendation
Course		Average	Average	Average	Average	Average	Average	Average	Average	Average	%-Yes
Scenario-building and modelling	14	3.64	3.36	3.57	3.36	3.38	3.64	3.93	3.36	2.00	86
Stakeholder Engagement	14	3.86	3.50	3.79	3.62	3.71	3.64	3.93	3.71	2.00	93
Introduction to Political Sciences	16	3.39	2.93	3.67	2.93	3.63	3.00	3.75	3.44	1.93	88
Careers in Science or Policy, or both?	14	3.86	3.62	3.58	3.38	3.60	3.67	3.92	3.85	2.00	93
Risk and Uncertainties - Analysis and Communication	14	3.36	3.36	3.43	3.14	3.36	3.29	3.71	3.43	2.00	93
Understanding Policy Evaluation	11	3.27	2.91	2.45	3.27	2.91	2.55	3.36	3.00	1.40	55

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.

With the IDP BRIDGING PLANT SCIENCE AND POLICY fellowships (a Marie Curie Initial Training Networks (ITN) funded by the SEVENTH-FRAMEWORK PROGRAMME (FP7) Marie Curie Actions – People) as well as the PSC-Mercator Fellowship Program - Bridging Plant Science and Society, we have the opportunity to create a strong cohort in which also research projects are addressing policy aspects of research, and thus these cohorts' efforts can be more closely tied to the course contents. We intent do continue efforts in opening such fellowship programs, aiming to combine course insights to individual students' projects.

Systems Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	78
Track I students	57
Track II students	21
Female students	37
Male students	41
International students	52
Swiss students	11
Program drop-outs	0
Completed PhD	4
Program Alumni	15
Faculty members	0

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	61	47
Invited candidates	12	12
Drop-outs before interview	4	3
Free slots (SysBio priority program)		
Matches	5	6
Candidates without matches	1	6
Decision against program (reject offer)	2	0
Rejected candidates (failed interview)	1	2
Change to other LSZGS programs		
Gained from LSZGS programs	3	3

Finances

	Income	Expenses
Balance January 1	62'672	
Income		
Life Science Zurich interne Umverteilung	45'500	
Fees	6'000	
Expenses		
Salaries program		1'775
Social benefits		117
Recruitment December 1 (2015)		6'817
Recruitment July 1		12'597
Program activities (retreat, symposia, etc.)		19'133
Overhead		
Total	114'172	40'439
Balance as of December 31	73'733	

Program Activities

- (i) Introductory course "Mathematical modeling" (conducted by SB program, 8 participants from SB and 1 participant from MTB programs): one week full-time course aimed at biologists to provide background for mathematical modeling methods and applications.
- (ii) Course "Technologies and Systems Approaches in Biology" (jointly with MTB program, 15 participants from SB, 10 participants from MTB programs and 1 participant from "Allgemeines Doktorat UZH, Stephan Neuhauss): interdisciplinary two-week full-time course aimed at students with biology, engineering or computational backgrounds to illustrate how concepts of systems biology are used to solve biological problems.
- (iii) Advanced course "Computational Biology" (conducted by SB program, 126 participants from SB and MTB programs): two-week full-time course aimed at students with sufficient theory background for in-depth review of mathematical / computational approaches to systems biology problems, combined with practical case study performed in groups (based on project proposals by PhD students).
- (iv) Student retreat (organized by students of the SB program, 32 participants): Three-day student retreat in Meielisalp (Leissingen, CH), from September 28-30, 2016. Students presented their work in short presentations; keynote speakers of various fields of systems biology gave seminars.
- (v) Seminar Series (organized by students of the SB program). Two talks of the SysBio Seminar Series have taken place (one in Basel, one in Zurich). Very good feedback.