Universität Zürich[UZH]

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

LIFE SCIENCE ZURICH

LIFE SCIENCE ZURICH GRADUATE SCHOOL ANNUAL REPORT 2020

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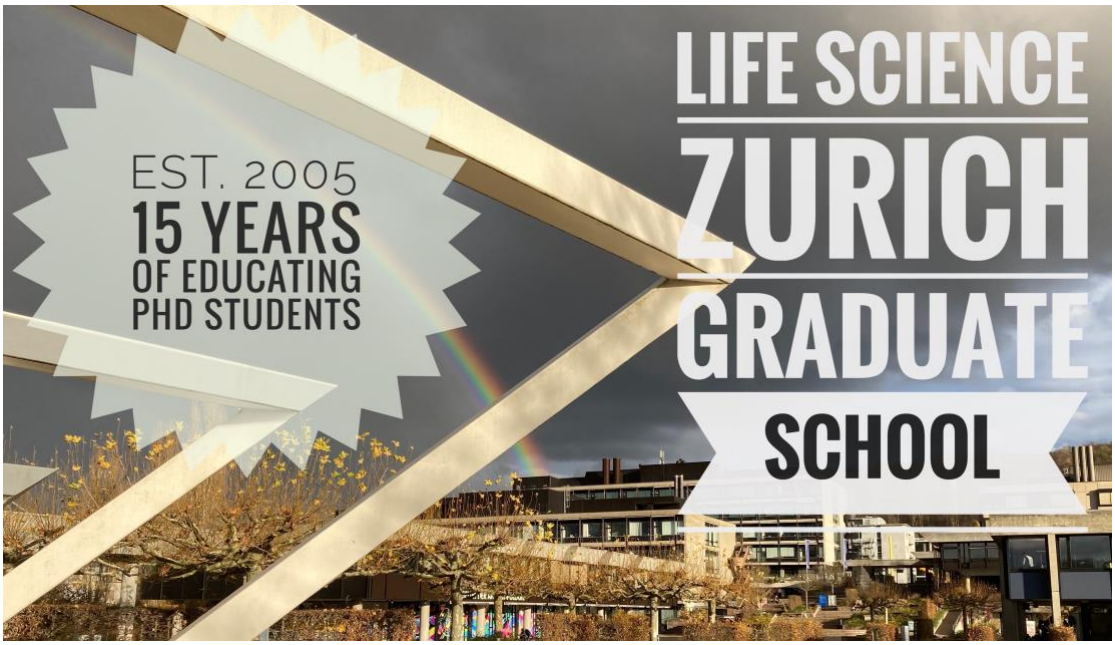

1 Executive summary

We would wish we could state here that the year 2020 was a regular and thus a good year for the Life Science Zurich Graduate School. Most regrettably, the Covid-19 crisis that hit the entire globe had of course also its impact on the LSZ GS. As far as we know, we do fortunately not have to bemoan any casualties but the pandemic had an enormous influence on the life of our PhD students, principal investigators, course trainers and colleagues at the universities. We are very grateful for the encouragement we experienced in these difficult times and we wish that we could have celebrated the Graduate School's 15th anniversary on 8 December 2020 with all of them to thank them for their long lasting support.

In the year 2020, the Life Science Zurich Graduate School did not undergo any major organizational changes, there are still 16 PhD programs and one MD-PhD program assembled under the roof of the Graduate School. At present, the LSZ GS includes 607 research group leaders and 1'629 doctoral students (as of 31 December 2020). Compared to 2019, the number of principal investigators (591) increased only slightly whereas the number of PhD students (1'538) grew nearly by a hundred. 58% of our early stage researchers are female and more than 73% come from abroad. 65% of them are enrolled at the University of Zurich, 33.5% at ETH Zurich and 1.5% at other academic institutions in Switzerland (mainly at the Universities of Basel and Berne).

The – repeated – switch of application databases for the December 2019 deadline was a good move and turned out to have happened at the right time. Since the new "join" application tool is in use, the numbers of applications are increasing again compared to the most recent years. For the 1 July deadline, the numbers of complete applications were nearly identical to the numbers of the previous deadline (1'493 and 1'483 respectively) and they further augmented for the 1 December deadline (1'693). The number of complete applications is, of course, only one landmark of a given recruitment round. It might still be a bit early to judge whether the new organization of the recruitment with a first, virtual round of "lab visits" and a second, optional round of in-person meetings is as successful as the former layout. For the moment, we can just state that there resulted a matching rate of 55%, and 76% of the positions were filled during the summer recruitment (new arrangement). In contrast, the winter recruitment (old arrangement) concluded with a low matching rate of 39% and 65% of filled positions. In general, all the rates are a bit on the lower side but still within the average of past years. We will of course carefully observe the further developments and make any necessary adjustments where it is indicated and the pandemic restrictions allow.

With 32 transferable skills courses the LSZ GS organized quite a bit less trainings in 2020 compared to former years – clearly a toll the lockdown in Spring 2020 took. 11 courses were jointly offered by a PhD program or another university institution and the Graduate School. Nearly 600 PhD students attended one or several of the offered courses and they seemed in general also happy with the virtual format, although quite a few remarked in the feedback forms that they would have benefited even more had the course attendance been in person and not online.

An occurrence that kept us busy for some time in 2020 was the assessment of the Graduate School by the Evaluation Office of UZH. The LSZ GS was requested to write a substantial self-evaluation report, which was handed in spring. Because of the pandemic, the visit of the experts was postponed to early winter and it eventually took place virtually. Just before the end of the year, the LSZ GS obtained the report of the experts containing many well-thought-out recommendations. In a next step the LSZGS will have to define further strategies and developments together with the headship of UZH and the Faculty of Science.

2 Introduction

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

2.1 Mission

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

Specifically, the Life Science Zurich Graduate School aims:

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

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

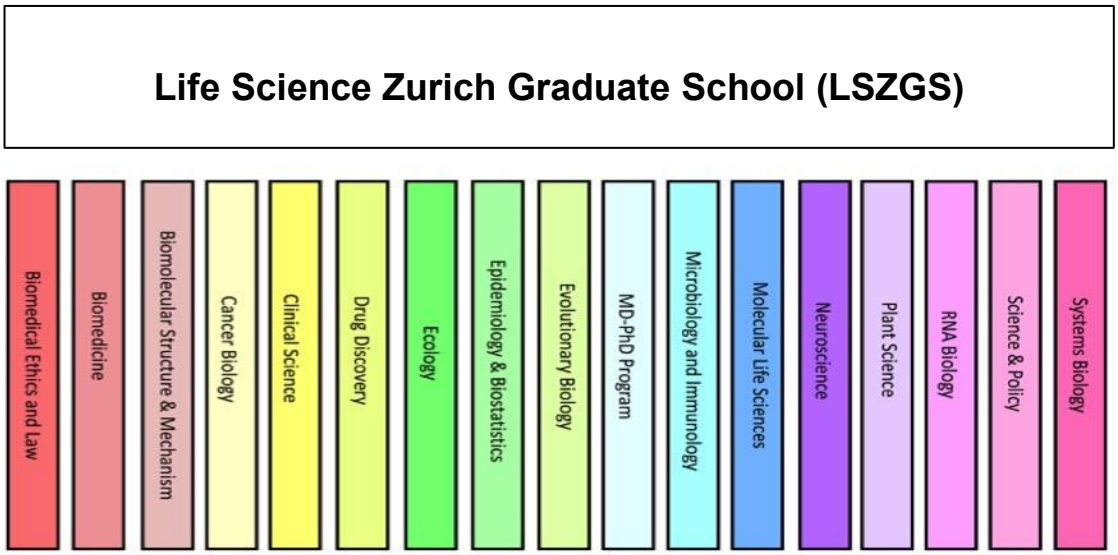

Figure 1: Chart of the LSZ Graduate School PhD programs

Numbers: ▪16 PhD programs and 1 MD-PhD program ▪ over 500 research groups ▪ more than 1600 students

2.2 Strategy and products of the LSZ GS

The major units of the LSZ GS are:

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

Table 1: Roles and responsibilities of the LSZ GS units

Unit	Roles and responsibilities
LSZ GS steering committee	• 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 skills curriculum • Identification and development of joint funding initiatives
PhD programs	• 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 travel expenses and accommodation for interview candidates from abroad
Graduate School office	• Increasing visibility of the PhD programs world-wide • Advertising the graduate school and its recruitment procedure (advertisements on web platforms, 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 platform 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 *independent* 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 Life Science Zurich • Exchange and collaboration with other graduate schools, both in- and outside of Zurich

2.2 a) LSZ GS Steering committee and participating PhD programs

With the fusion of the Integrative Molecular Medicine (imMed) and the Molecular and Translational Biomedicine (MTB) program to the new Biomedicine (BioMed) program that was approved in May 2019 by the PDC, the Life Science Zurich Graduate School got reduced to sixteen PhD programs and a MD-PhD program. Each program is presided by a director, who generally represents the program in the steering committee (see list below). In 2020, this steering committee met twice in order to decide on the strategic orientation and development of the Graduate School. Since July 2017, Prof. Eilika Weber-Ban, Institute of Molecular Biology and Biophysics (ETH) is presiding the LSZ GS as chair. Prof. Alex Hajnal, Institute of Molecular Life Sciences (UZH) is the current vice-chair.

Table 2: Directors of the LSZ GS PhD programs

Program	Director
Biomedical Ethics and Law [medical track]	Prof. Nikola Biller-Andorno (Institute of Biomedical Ethics, UZH)
Biomedicine	Prof. Christian Grimm (Division of Ophthalmology, USZ) Prof. Christian Wolfrum (Institute of Food, Nutrition and Health, ETH)
Biomolecular Structure and Mechanism (BSM)	Prof. Raimund Dutzler (Institute of Biochemistry, UZH)
Cancer Biology	Prof. Maries van den Broek (Institute of Experimental Immunology, UZH)
Clinical Science	Prof. Jean-Marc Fritschy (Institute of Pharmacology and Toxicology, UZH) Prof. Malcolm Kohler (Neuromuscular Center Zürich) Prof. Milo Puhan (Institute of Social and Preventive Medicine, UZH)
Drug Discovery	Prof. Michael Arand (Institute of Pharmacology and Toxicology, UZH)
Ecology	Prof. Anna-Liisa Laine (since June 2020) (Institute of Evolutionary Biology and Environmental Studies, UZH) Prof. Owen Petchey (until May 2020) (Institute of Evolutionary Biology and Environmental Studies, UZH
Epidemiology & Biostatistics	Prof. Torsten Hothorn (Institute of Social and Preventive Medicine, UZH) Prof. Milo Puhan (Institute of Social and Preventive Medicine, UZH)
Evolutionary Biology	Prof. Kentaro K. Shimizu (Department of Evolutionary Biology and Environmental Studies, UZH)

Integrative Molecular Medicine (imMed) Phasing out	Prof. Christian Grimm (Division of Ophthalmology, USZ)

Program	**Director**
MD-PhD Program	Prof. Adriano Aguzzi (Institute of Neuropathology, UZH) Prof. Alexandra Trkola (Institute of Medical Virology, UZH)
Microbiology & Immunology (MIM)	Prof. Rolf Kümmerli (Department of Quantitative Biomedicine, UZH) Prof. Jörn Piel (Institute of Microbiology, ETH)
Molecular Life Sciences (MLS)	Prof. Christian Lehner (until November 2020) (Department of Molecular Life Sciences, UZH) Prof. Ohad Medalia (since December 2020) (Department of Biochemistry, UZH)
Molecular and Translational Biomedicine (MTB) Phasing out	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 Biochemistry, ETH)
Science and Policy	Prof. Ueli Grossniklaus (Institute of Plant Biology, UZH)
Systems Biology	Prof. Uwe Sauer (Institute of Molecular Systems Biology, ETH) Prof. Jörg Stelling (Department of Biosystems Science and Engineering, ETH

Program administrators, who are in charge of day-to-day affairs, normally also participate in steering committee meetings, although without voting rights. They have their own meetings to discuss more practical issues as well as administrative matters. They get together irregularly throughout the year and gather also informally for lunch or coffee. 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. Roberto Andorno Michelle Heimgartner (Institute of Biomedical Ethics, UZH)
Biomedicine (BioMed)	Andrea Schmitz (ZIHP, UZH)
Biomolecular Structure and Mechanism (BSM)	Judita Tillova (Institute of Biochemistry, UZH)
Cancer Biology	Bettina Rausch (Institute of Molecular Cancer Research, UZH)
Clinical Science	Lisa Marxt (Dekanat, Medizinische Fakutlät, UZH)
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. Sarah Ziegler (Institute of Social and Preventive Medicine, UZH)
Evolutionary Biology	Dr. Tony Weingrill (Anthropological Institute, UZH)
Integrative Molecular Medicine (imMed) Phasing out	Andrea Schmitz (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) Phasing out	Dr. Susanna Bachmann Life Science Zurich
Neurosciences (ZNZ)	Heidi Gauss (Neuroscience Center Zurich, UZH & ETH)
Program	**Administrator**

Plant Science (PSC)	Dr. Melanie Paschke Dr. Luisa Last (Institute of Plant Science, ETH)
RNA Biology (RNA)	Isabelle Allen (until September 2020) (Institute of Molecular Biology and Biophysics, ETH) Rahel Büchi (from September 2020) (Institute of Biochemistry, ETH)
Science and Policy	Dr. Luisa Last (Institute of Plant Science, ETH)
Systems Biology	Dr. Andrea Huber Brösamle Swantje Pless (Department of Biosystems Science and Engineering, ETH)

Graduate School student body 2020

Table 4: Graduate School Student Body

Details of each program are published in the appendix 4.

Total numbers as of 31 December 2020*	
Total students	1629
Affiliated at UZH	1057
Affiliated at ETH	548
Other affiliation	24
Track I students	608
Track II students	1011
Female students	952
Male students	677
International students	1186
Swiss students	443
Program drop-outs	102
Completed PhD	183
Program alumni	2861

* Data from DDNZ PhD Program not confirmed

2.2 b) Graduate School office

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

The school administrator attended the EUA-CDE (European University Association - Council for Doctoral Education) series of online events dedicated to the impact of the Covid-19 crisis on doctoral education, namely the sessions on “Online assessment and doctoral dissertation defence” on 3 June and “Online skills training” on 5 June 2020. She also participated in the webinar on “Disciplines and interdisciplinarity in doctoral education” on 25 June and the EUA-CDE annual meeting online sessions dedicated to the topics of “Institutional approaches to doctoral education”, “Innovative programmes and services to support the development of doctoral candidates” as well as “Institutional practices to build the university profile and enhance policy making processes at doctoral schools” that took place between 26 – 30 June 2020. In addition, she attended in person a 1-day course on “Professionals in Supervision for PhD program coordinators” held by Mirjam Goskesen and organized by the Graduate Campus of the University of Zurich on 8 September. Furhermore, she met online with the other members of the GRADE (Goethe Research Academy for Early Career Researchers) advisory board on 7 October for the annual encounter. In order to strengthen the marketing outreach of the Graduate School, the school administrator also participated in a virtual marketing conference on “Understanding the movitvations, aspirations and concerns of prospective PhD students” and “Unprecedented times to setting a precedent: Maximising impact during virtual events” on 30 September.

Moreover, she joined the informal association of program coordinators of different European PhD programs in the life sciences, such as Max-Delbrück Center for Molecular Medicine Berlin, German Cancer Research (DKFZ), the Francis Crick Institute, Friedrich Mischer Institute for Biomedical Research in Basel, Center for Genomic Regulation in Barcelona, TU Dresden, Max Planck Institute in Dortmund, University of Göttingen, Institute of Science and Technology Austria, Research Institute of Molecular Pathology (IMP), Research Center for Molecular Medicine of the Austrian Academy of Sciences and European Molecular Biology Laboratory (EMBL). The coordinators met virtually on 9 April 2020 to discuss PhD recruitments during Covid-19 crisis.

3 Activities

3.1 Recruitments

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

Table 5: Complete applications per PhD program in 2020

	1 Dec. 2019	1 July 2020	1 Dec. 2020
Biomedical Ethics and Law (med. Track)	no data	no data	no data
Biomedicine	87	93	101
Biomolecular Structure and Mechanism	67	65	42
Cancer Biology	187	207	209
Clinical Science	14	15	17
Drug Discovery	77	83	96
Ecology	33	53	62
Epidemiology and Biostatistics	74	59	46
Evolutionary Biology	30	21	27
Integrative Molecular Medicine		phasing out – no recruitments	
Microbiology and Immunology	145	190	227
Molecular Life Sciences	154	158	212
Molecular and Translational Bio-medicine		phasing out – no recruitments	
Neuroscience	194	129	197
Plant Science	96	68	70
RNA Biology	27	16	32
Science and Policy	207	259	235
Systems Biology	101	67	120
TOTAL	**1’493**	**1’483**	**1’693**

After the absolute peak of 1’733 applications in December 2013, the numbers of applications dropped rather continuously to very low 968 complete applications in July 2018. With 1’123 applications in December 2018, the negative trend seemed to have come to a halt, however, already the next deadline brought declining numbers. The decrease was not as dramatic as it looks like: several programs did not secure their data for the July 2019 deadline and had no access to it after the LSZ GS had given up the Glowbase application platform and switched to the new tool. Nevertheless, for nearly all the programs the number of applications for the July 2019 deadline was lower than for the previous deadline. Luckily, with the switch of the application database the numbers raised again up to 1’493 for the December 2019 deadline and remained nearly the same for the following July 2020 deadline. With the December 2020 deadline the number of complete applications increased for another 200 and reached nearly the level of 1’700 again. As it became obvious over the year 2020, the LSZ GS had changed databases in the right moment and was as prepared as possible to tackle the challenges the Covid-19 crisis brought. In fact, instead of consolidating the new implementations, the database was considerably changed in summer 2020 in order to carry out the recruitment at the beginning of September completely virtually in a first step of the recruitment round. More information about the adaptions of the application tool “join” can be found in chapter 3.2.

With the pandemic, the working world experienced an enormous impulse of digitalisation and therefore it might not be so surprising that the application numbers increased for the winter deadline with a lot of students confined to carry out their studies remotely and in front of a computer. While the LSZ GS was at least in regard of the available database as prepared as possible for this shift, the whole recruitment process underwent for the first time a fundamental re-organisation. Luckily, we could just carry out our recruitment in February in the usual way but having already some students cancelling their trip because of the pandemic. When Europe went into a lockdown in March and the governments started to introduce restrictions of free movement and social gatherings, we had half a year to re-define and plan the next recruitment. The Directors’ Conference agreed in May to have a two-step recruitment with a first virtual round of admission interviews and meetings with PIs and group members. These were carried out during the same time as usual (Wednesday to Friday of week 36) but thereafter the applicants and PIs were free to arrange personal meetings or to come to a job agreement without having met each other in person. In fact, about a third of the applicants got an invitation to travel to Zurich or was allowed to come during September and October before the number of Sars-CoV-2 infections climbed rapidly up again and new travel restrictions were put in place. Altough the matching rates were within the range of the last years, it is still too early to draw already any conclusions and to recognise trends. We will definitely further adapt and amend the whole recruitment process since chances are that we will never switch back to the former scheme. The virtual recruitment has definitely its strengths and advantages and the main challenge might be to find a good balance or combination of virtual and on-site events. If the LSZ GS manages to do so, it should be able to hold it’s ground and remain an attractive player with a good visibility in order to recruit a satisfactory number of excellent PhD applicants.

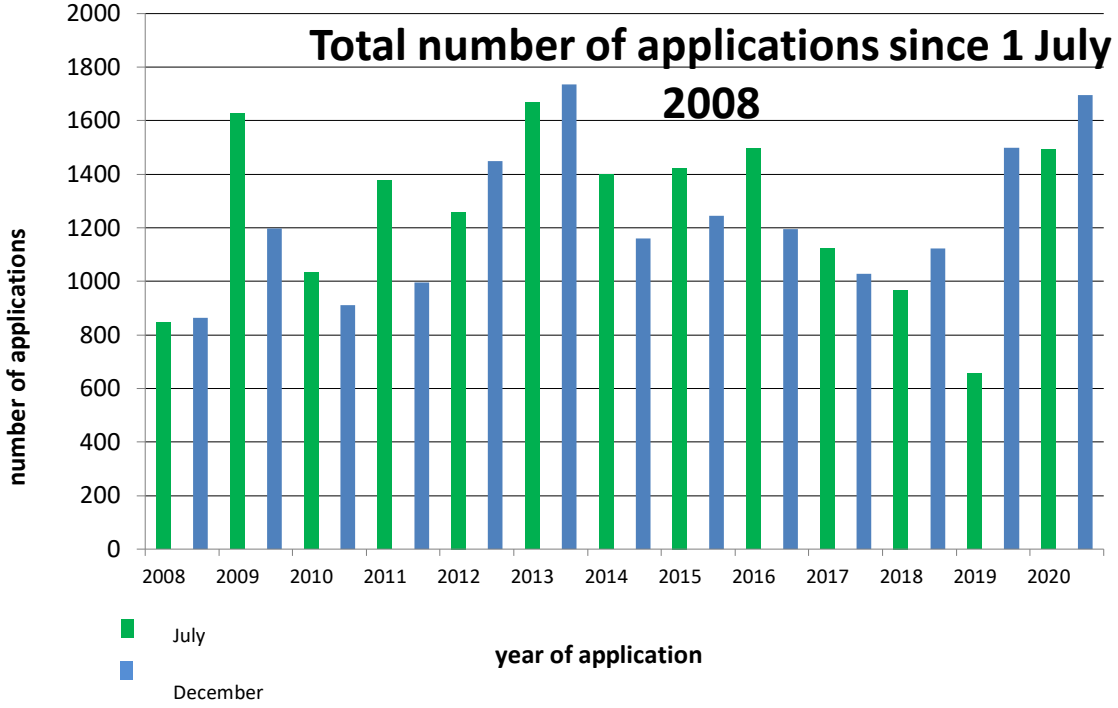

Figure 2: Total number of applications since 1 July 2008.

The trend we observed in the past years with the female students slowly but steadily catching up in number with the male applicants remained more or less on the level of the past years. In December 2019, we obtained about 100 applications more from female than from male students. In July 2020 the difference was 70 applications. As for the previous recruitment rounds, we invited more female than male candidates for an interview. Most of the applicants learned about the program from the internet (from our own web page or ads on different recruiting web sites, a fourth indicated google search). As in former years, applicants also learned about the program from friends who have once applied to the LSZ GS or who are performing their PhD in one of the programs. With the pandemic we definitely gave up the poster as a recruiting tool, which means that we do not send around printouts anymore but still use a pdf version of the poster for the online and email marketing.

From the Gallup Survey the Vienna BioCenter had carried out in 2019 and in which the LSZ GS participated, we know that the institutional webpages play an important role for the applicants for getting acquainted with the PhD programs and gathering information about them. For this reason, the graduate school used the time of the lockdown in Spring 2020 to redesign part of the webpages to make them more appealing for visitors. On the landing pages for the applicants we added some testimonials from PhD students either as written text or in form of a short movie. The redesign is a continuous task and therefore still ongoing. Unfortunately, the content management system the UZH opted for does not allow a lot of animations, it is not very mobile-friendly and looks in general rather old-fashioned.

After the admission committees of the different programs had reviewed the applications, the top 12% of the applicants were invited to Zurich for an in-person interview and lab visits in February and virtual admission interviews and lab visits in September 2020. Whereas in December, only 39% of the interviewed candidates were offered a position in Zurich, this rate went up to 55% in July but was still on the lower side compared to previous years. In the winter round, 17% of the accepted candidates rejected a position offered by our group leaders or dropped out of the recruitment process after the interview. In contrast, with 6% this ratio was

quite a bit lower in summer and again within the range of past rounds (4-10%). Many of the students who turned down our offer probably joined other very strong programs in Europe or in the US. The drop-out rate before the interviews was with 11% for the December deadline on the very low side and with 20% for the July deadline on the upper side of the average of former recruitment rounds (15-20%).

Table 6: LSZ GS recruiting statistics in 2020

	Dec. 1, 2019	July 1, 2020	Dec. 1, 2020
Complete applications	1’493	1’483	1’693
Invited candidates	181	183	194
Drop-outs before interview	20	36	*
Candidates at interview	161	147	*
Free slots	111	107	*
Matches	62	81	*
Candidates without matches	66	54	*
Decision against LSZ GS	27	9	*
Rejected candidates	6	3	*

*data will be included in 2021 annual report
Remark: Data from Drug Discovery is missing for December 2019.

In February 2020 (December 2019 deadline), we managed to fill 65% of the open positions whereas with 76% this ratio was even a bit more successful in July 2020 – despite the travel restrictions because of the Corona pandemic. Still both rates correspond to the average of the last years. Although we were relieved to see that the changes because of the Covid-19 crisis did not affect the entire recruitment process in a very negative way, we will still have to stand the test of time. Many matches in September happened without PI and PhD candidate meeting personally, actually only 45 of the 147 candidates at interview came or could come for a visit to Zurich (this number does not include Switzerland-based students unless they claimed travel costs with the LSZ GS office). As it is at the moment difficult to predict how the pandemic is going to develop and how the directors’ conference might decide in future upon the introduced changes in the recruitment process, we do not plan major alterations for 2021 but we will concentrate on smaller amendments and analyse the feedback of the PhD applicants and PIs very carefully when planning the next recruitments.

Because not all open positions can be filled during a given recruiting round and some outstanding applicants don’t want to wait for 6 months, if they have just missed an application deadline, all programs also accept "track II" candidates. Track II students are students who have applied independently to (and have been accepted by) a group leader who is a member of a specific PhD program. This more traditional way of recruiting students is more pronounced in some programs than in others. Currently, about 5 out of 8 students are hired via track II. Applications of track II students are administrated directly by the different programs.

3.2 Data systems and webpages

As pointed out in the previous chapter about the recruitment, it had been a wise and timely decision to give up the Glowbase application platform in 2019 and to switch to the “join” database programmed by a small team based at the Institute of Mathematics at UZH. Although some features of the lab visit planning were programmed at the eleventh hour, the new application tool enthralls with a convincing balance of automatization versus flexibility, a high user-friendliness and an architecture that is precisely tailored to our needs and requirements.

As it is not uncommon for such sophisticated datasystems, the programming of the basic features is followed by a shorter or longer period of fine-tuning and subsequent improvements. However, instead of fully concentrate on amending the weaker parts of the application platform or introducing additional “nice-to-haves”, the LSZ GS was forced to implement completely new functions: because of the restrictions the Covid-19 crisis entailed, the entire recruitment process had to be redefined. Fortunately, the programmers managed to set up everything in time and there was also no major glitch during the virtual interviews, which were all carried out in Zoom. The feedback of the candidates showed however, that the different deadlines for the lab visit invitations and the final preference list were confusing and not well understood. For this reason, one of our goals will be to better represent the single steps of the application process by the layout of the database and to guide the candidate through the entire process from submitting the application until accepting a job offer. Moreover, we hope that 2021 will allow us to focus on all the smaller details that still need to be added or improved in order to offer applicants, PIs and program coordinators a tool that is easy to handle and fully meets their requirements.

While the LSZ GS invested or had to invest quite some time and money in the extension or further development of the “join” platform but obtained in return a system that is relieving all users from a lot of work, quite the opposite is true for our “DissGo” database, the PhD portal. Since the Program Directors’ Conference decided - under reserve that there is a solution for the administrative handling of the ETH students - to give up “DissGo” in favor of the “studentadmin” datasystem the Faculty of Science (MNF) had introduced in early 2019, things have not moved any further. “DissGo” is still widely used by the program coordinators because “studentadmin” does not offer them the data and functions they need to govern the programs. However, most programs offered their UZH students to switch entirely to the studentadmin in order to avoid that they have to feed two systems with their data. Thus “DissGo” is only used to administrate the PhD students but the data documenting their PhD process (doctoral agreement, research proposal and committee reports) are stored in “studentadmin”. Because “DissGo” is not going to be used in the longer run, the LSZ GS was recultant to implement new features and only introduced the autocmatic calculation of the time-to-degree as this dimension figures often as a hallmark for the “success” of a PhD.

Another reason why the negotations with the Faculty of Science regarding the inclusion of the ETH PhD students in the studentadmin did not move further after a first meeting in December 2019 was the fact that ETH was about to implement new regulations for the doctorate for the Fall 2021 semester. Therefore, the representatives of the D-BIOL suggested waiting until all the details of the regulations were known and the new ordinance officially approved before entering in detailed discussions.

3.3 Transferable skills courses

Besides the centralization of the application process, one of the main motivations to found the Graduate School was to offer common courses, which are not related to the specific scientific focus of a program. The transferable skills course (TSC) program of the Life Science Zurich Graduate School focuses on the development and training of some key skills early stage researchers should dispose of for carrying out their dissertation project as well as for their future career, be it as scientist or in a leading position in industry or the public sector. The offered courses can roughly be grouped in 5 categories: Best Scientific Practice and Ethics, Communication & Presentation Skills, Methodical Skills, Scientific Writing and Publishing as well as Social and Self-Management Skills. Nearly 600 PhD students attended one or several of the 32 courses the LSZ GS offered in 2020. 11 of them were organized by a program or another university institution such as the Functional Genomics Center Zurich, Animal Welfare and 3R and the BioEntrepreneurship & Innovation unit of the Institute for Regenerative Medicine. 3 courses were offered by in-house staff and thus not liable to costs. The program administrators agreed on the following policy for joint courses: the organizing program obtains half of the seats for its own students, if the LSZ GS bears half of course costs. Should the program need more seats, the LSZ GS reduces its financial support accordingly.

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

The pandemic affected of course also the TSC, several planned courses were postponed from spring to summer or early fall. Only the following courses were definitely cancelled: Introduction to Scientific Integrity (April edition), Mindfulness & Teambuilding, Next Generation Sequencing (two courses), Patenting in Life Sciences and Teaching at the University. During two entire months, April and May 2020, the LSZ GS did not offer any courses at all. As of summer the courses were offered virtually or in hybrid format until October when gatherings of more than 5 persons were again prohibited and the universities switched once more to online formats for non-practical courses. Not for all of our internal and external trainers the switch was easy, however the course evaluations show that the doctoral students are to a large extent satisfied with the courses. Although many of them state that they would have preferred to attend the courses in-person, they seem to appreciate that they are offered at least a few opportunities to meet other early researchers and to maybe acquaint with some new students. Moreover, they seem to take advantage of attending courses that are not directly linked to their research field, but help them to prepare for future leadership functions.

Table 7: Courses offered by the LSZ Graduate School from January to December 2020

Transferable skills courses for PhD students 2020	Number of courses	Number of participants	UZH affiliation (+ USZ & Kispi)	ETH affiliation	other
Best scientific practice & ethics	**5**	**232**	**160**	**64**	**8**
Responsible Conduct in Research (joint course with the Plant Science Center)	1	3		3	
Scientific Integrity Introductory Course (2 x online, 1 x on campus)	3	209	150	51	8
The Impact of Ethics on Doing Science (online)	1	20	10	10	
Communication & presentation skills	**4**	**57**	**42**	**14**	**1**
Effective Presentations/ Poster Presentation/Scientific Presentation (online)	2	29	21	8	
Logic and Reasoning for Scientists	1	15	9	5	1
Visualising your research - drawing workshop (online)	1	13	12	1	
Methodical skills	**5**	**49**	**32**	**17**	
Interactive Design Thinking Workshop for Implementing the 3Rs with Innovative Solutions (1x on campus, 2x online)	3	36	24	12	
Molecular Biology Methods (joint course with the Biomedicine PhD Program)	1	5	4	1	
NGS DNA / RNA Sequencing (hybrid format)	1	8	4	4	
Scientific writing & publishing	**7**	**88**	**53**	**34**	**1**
Dealing with the Publication Process online?	1	8	5	3	
Postdoc workshop (online)	1	19	12	7	
4th Science Filmmaking Marathon (in cooperation with the Swiss Science Film Academy)	1	3	2	1	
Scientific Writing (1xon campus, 2x online)	3	54	33	21	
Storytelling & Storyboarding (in cooperation with the Swiss Science Film Academy)	1	4	1	2	1

Transferable skills courses for PhD students	Number of courses	Number of participants	UZH affiliation (+ USZ & Kispi)	ETH affiliation	other
Social & self-management skills	**11**	**164**	**111**	**44**	**9**
BioEntrepreneurship & Innovation: From Scientist to BioEntrepreneur. Creation of a marketable product (Module A+B)	3	15	12	3	
Career Cornerstones	1	12	10	2	
Competency Awareness (1xonline, 1x on campus)	2	24	15	8	1
Miscellaneous Mysteries for Maintaining Motivation while Managing your PhD	1	11	7	4	
Project Management (online)	1	14	10	4	
Successful Start of a Professional Career	2	29	20	7	2
Time and Career Management (online)	1	36	20	11	5
Unfolding your Self-confidence (1x on campus, 1x online)	2	23	17	5	1
Total of all courses	**32**	**590**	**398**	**173**	**19**

3.4 Evalutations

In 2019, the Evaluation Office of the University of Zurich had informed that it wanted the LSZ GS to participate in the evaluation of the Third Cycle. This cycle places a stronger focus on the management processes, strategic policies and development plans of the units under evaluation. After a preliminary meeting with the Evaluation Office, the LSZ GS and the Faculty of Science signed in September 2019 an Evaluation Agreement. Early in 2020, the Evaluation Office invited the program directors, coordinators and PhD students to complete a survey, which it had elaborated with support of the LSZ GS chairs and office. The site visit of the three experts, Prof. Dr. Edwin Constable from the University of Basel, Prof. Dr. Christof Osman from the Ludwig Maximilian University Munich and Dr. Monika Lachner from EMBL, was planned to take place from 11–13 May 2020. The LSZ GS staff was working on the self-evaluation, which had to be handed in 6 weeks before the meeting was scheduled, when Switzerland and many other European countries went into lockdown due to the Covid-19 pandemic in mid March. Soon it became obvious that the meeting was unlikely to be held as planned, since many European borders were closed and there were strict travel restrictions in place. In fact, the meeting was postponed to fall, however in September, the Evaluation Office decided that the meeting with the experts was going to take place online on 2 and 3 November.

During the first day of the virtual site visit, the three experts met with all stakeholder groups individually for about one hour of discussion. On the second day, the virtual visit was closed with a debriefing with all the stakeholder groups of the LSZ GS followed by a briefing with

representatives of the Faculties of Science and Medicine. A few weeks later, shortly before the end of the year, the LSZ GS obtained a comprehensive and elaborated report from the experts, which included many helpful recommendations not only for the Graduate School but also for the Faculty of Science. As the report is confidential, we can unfortunately not give an account of the suggested amendments and changes. Roughly summarizing, the recommendations focus on the areas of the LSZ GS's governance, the quality of its management and administration as well as the quality of the doctoral training, the student recruitment and admission and last but not least the finances and rescources.

In early 2021, the Graduate School management and the other stakeholders have the opportunity to make representations on the report before the Evaluation Office. Later in spring the Evaluation Office will facilitate a meeting of faculty representatives and the LSZ GS to negotiate the further strategies and developments of the Graduate School.

4 On-going projects

We have just pointed out in the previous paragraph that the evaluation by the UZH will extend far into 2021. Indeed, the entire process is planned to last even longer. About two years after the agreement with measures to take will have been signed, the university will review their implementation in a follow-up round.

The LSZ GS has also already been informed that in the Spring 2021 semester another quality meeting has to be held. Actually this meeting was already due in 2020 but because of the evaluation of the Third Cycle, the Faculty of Science allowed the Graduate School to postpone it for a semester.

As also detailed above, we will continue working on the application database "join". Although all crucial features for each application step are in place, there are still many details to be added or improved. As the entire application process changed when the lab visits had to be split in virtual and in-person meetings, the candidates need to be better guided from each application step to the next one. This means that the different deadlines have to be individually announced because the entire application cycle is not the same for all applicants anymore. Thus, the applicant's dashboard will undergo some major retouches in order to provide a better overview about the whole process and to clearly show which deadlines are valid for each individual candidate.

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

Another persisting issue will be the quest for stable and long-term funding for the Graduate School and its PhD programs. As it has been pointed out in the past and will be specified in the next chapter, the support of swissuniversities (formerly SUK) has been phasing out and completely ceased by the end of 2020. Although the LSZ GS is only partially affected by the complete abolition of the swissuniversities support – at the moment solely the Scientific Integrity course is paid via this funding mechanism – some of its PhD programs will have to put up with a loss of nearly 50% of their budget and thus face serious problems maintaining the services

they are currently offering. Ironically, the Covid-19 crisis has had a positive effect on the budgets of the programs and the LSZ GS as they could not spend a lot of their funds as planned. Swissuniversities first prolonged the deadline for using up the grants to June and extended it later to the end of the year 2021. However, the financial adversities are only deferred for a year because the structural funding problems are not yet solved. As chances are minimal that new funding sources will be available in the short run, the LSZ GS might have to think about an internal reorganisation.

5 Finances

Since UZH and ETH signed their agreement in 2010, the Life Science Zurich Graduate School obtains CHF 700'000 from its host institutions annually. Each year ever since, the directors' conference works out a distribution key (see Appendix for the 2020 key) to allocate the funds. As the distribution of the funds per capita would have been very disadvantageous for the smaller programs, the directors' conference agreed on paying each program a fix allowance besides the per capita contribution. In order not to penalize the bigger programs, the allowance is slightly graded (CHF 5'000 for programs with up to 10 students, CHF 10'000 for programs with 10-20 students and CHF 14'000 for programs with more than 20 students). In order not to encourage a long duration of the PhD, the LSZ GS only finances students until the end of their 4th year. This means that the programs obtain the same amount of money for all students, irrespectively of how long it takes them to complete their PhD.

After a few relatively carefree years, the financial situation of the Graduate School is again getting tenser. This is mainly due to the abolition of the swissuniversities support. Especially those programs that obtained a considerable share of swissuniversities money in the last years would now be facing serious financial problems, had the pandemic not postponed the problem for a year or maybe a bit longer. Since most social activities have come to a stop after mid March, courses and recruitments are carried out online since summer 2020 and the retreats have also been cancelled or performed virtually, the programs spend currently quite a bit less money than usual. Fortunately, swissuniversities expanded the use of the grants until the end of 2021, so that the budget situation should not yet get too tense this year.

However, irrespective of whether the swissuniversities grants are prolonged for a year or more, the LSZ GS has not been able to fund all its PhD programs for a longer while already. Most of the programs (partially) affiliated with the Medical Faculty do not obtain any financial support via the Graduate School. On the contrary, the Clinical Science and MD-PhD program actually pay a membership fee. The RNA Biology program receives funding from the NCCR RNA Biology and thus asks the Graduate School to pay only for the per capita fee of its PhD students but not for the allowance, which is covered by the NCCR. Although the student body is not further growing at the moment (it rose from 1071 funded PhD students (year 1 to 4) in 2011 to 1'257 in 2016 and dropped to 1'178 in 2020), the pecuniary resources for most programs have decreased over the past years because of the addition of new programs and the continuous growth of the student body. In contrast, the support by UZH (CHF 400'000) and ETH (CHF 300'000) remained unchanged since the agreement has been signed in 2010.

When discussing the budget for 2020 in November 2019, the PDC considered it to be an appropriate moment to ask the universities for more core funding. On the one hand, the Faculty of Science made it mandatory to have PhD programs but they are not paying for the costs involved. On the other hand, ETH is currently paying more attention to the doctorate and profoundly revising the promotional regulations. Under this mandate of the PDC, the LSZ GS chair and vice-chair, respectively, wrote a letter to the rectors of the corresponding universities. Although the LSZ GS could bring this motion forward and discuss it with the upper echelons, it was to no avail. The current (pandemic) situation would not allow the universities to set more

money aside for graduate education. The PDC hopes now that the issue can be brought up again when the negotiations with the faculty and the Evaluation Office will start. The team of experts clearly pointed out in their report that the Faculty of Medicine, where many PhD students are located despite being enrolled at the Faculty of Science, should contribute to the core financing of the LSZ GS. However, also the Graduate School should reevaluate the distribution of the funding within the organization and carefully check whether changes that were triggered by the pandemic might be perpetuated in case they are an opportunity to reduce core costs.

Table 8: Annual Account LSZ Graduate School 2020

Earnings 2020	**CHF**
Contribution UZH	114’848
Contribution ETH	42’194
SUK ETH (Scientific Integrity)	3’000
Reimbursement recruitment costs PhD-programs (Sep. 2019 & Feb. 2020)	183’211
Annual support MD-PhD program	3’000
Annual support Clinical Science Program	10’936
Surcharges courses	1’400
Total earnings	**358’589**

Costs 2020	**CHF**
Recruitment rounds (Feb. & Sep. 2020)	105’571
Transferable skills course program	55’436
DissGo database & Computer Services (servers etc.)	6’054
Application platform “join”	26’570
Marketing (online ads & listings)	6’252
Salary administrator	47’232
Conference attendance & further education school administrator	215
Overhead	545
Total costs	**247’875**

Balance as of 31 December 2020	**110’714**

The social benefit costs for Susanna Bachmann (CHF 10’764) were covered by the Faculty of Science of the UZH.

Table 9: Science Zurich Graduate School: Recruitment costs 2020 in CHF

	February (154 Stud.)	September (147 Stud.)
On-site costs	**CHF**	**CHF**
Public transport	2’541	Included in travel costs
Student party	5’346	
Lunch vouchers	3’433	Included in travel costs
Farewell event with PIs	6’610	
Total	**17’930**	**0**
Costs per student	116	0

	February (128 Stud.)	September (45 Stud.)
Travel & accommodation costs for external students	**CHF**	**CHF**
Accommodation	34’272	7’838
Travel costs	34’705	10’826
Total	**68’977**	**18’664**
Costs per student	679	415

Total costs recruitment	**86’907**	**18’664**

6 Outlook

As shown in the previous paragraphs, the financial situation of the Graduate School and its programs is getting tenser because the swissuniversities support definitely ceased by the end of 2020. As the attempt to engage the host institutions in a conversation about a possible budget increase was fruitless, the PDC will now to have to think of other strategies. The report of the experts who visited the LSZ GS on behalf of the Evaluation Office could be a good starting point. It dedicates quite some part to the analysis of the Graduate School’s finances and resources and brings forward several valuable recommendations. The negotiations between the faculties of Science and Medicine and the LSZ GS will show, whether a solution can be found that is realizable and satisfying for both sides. It is likely that the LSZ GS cannot simply hope for a budget increase but they will also have to go over their budget and see whether cuts or a redistribution of funds is possible. Some of the organisational changes the pandemic provoked for the courses and the recruitment might be a chance to save costs in the longer run.

The report of the experts does not focus only on the financial struggle of the Graduate School but brings up some other issues in regard of the supervision of PhD students, the course organisation and the embedding of the LSZ GS in the complex structure of its two host universities. It will be worthwile for the LSZ GS to assess all the recommendations carefully to consider where it can not only further improve its own services but also support the PhD programs better with the quality assurance of the doctorate. Although such an evaluation process is rather time-consuming and binding a lot of resources of a relatively small office, it is definitely a valuable opportunity to turn our attention for a moment away from the daily business and to focus on the core elements and structures of the Graduate School. In addition, we hope that the negotiations with the different players of the University of Zurich involved in the assessment will show how the Life Science Zurich Graduate School can best join forces with other offices and institutions of the universities in order to provide the early stage researchers with a comprehensive and premium doctoral education.

Appendix 1: Financial distribution key

Financial support of ETH and UZH in 2020	
Annual contribution ETH: 300'000 CHF Annual contribution UZH: 400'000 CHF Total contribution: 700'000 CHF	Allowances: up to 10 students: CHF 5,000 11-20 students: CHF 10,000 more than 20 students: CHF 14,000

Programs	Allowance	ETH students	UZH (MNF) students	Other uni/ faculty	Students total	301 CHF per student	Total amount
Biomedicine	14’000	6	18		24	7’392	21’392
Biomolecular Structure and Mechanism	14’000	33	32		65	20’020	34’020
Cancer Biology	14’000	5	99		104	32’032	46’032
Ecology	14’000	19	30		49	15’092	29’092
Epidemiology & Biostatistics	14’000	0	46		46	14’168	28’168
Evolutionary Biology	14’000	1	64		65	20’020	34’020
Integrative Molecular Medicine	7’000	0	63		63	19’404	26’404
Microbiology & Immunology	14’000	61	103		164	50’512	64’512
Molecular Life Sciences	14’000	67	81		148	45’584	59’584
Molecular & Translational Biomedicine	7’000	21	12		33	10’164	17’164
Neuroscience	14’000	79	140		219	67’452	81’452
Plant Science	14’000	54	34		88	27’104	41’104
RNA Biology	0	16	9		25	7’700	7’700
Sciences and Policy	14’000	14	7		21	6’468	20’468
Systems Biology	14’000	53	11		64	19’712	33’712
TOTAL CHF	182’000	429	749		1’178	362’824	544’824

Life Science Zurich
Graduate School 167’600 (= approx. 1’178 x 142.27 CHF)

This support covers 1st - 4th year of PhD

Appendix 2: Graduate School student body

As of 31 December 2020	Total students	Affiliated at UZH	Affiliated at ETH	Other affiliation	Track I students	Track II students	Female students	Male students	International students	Swiss students	Program drop-outs	Completed PhD.	Program Alumni
Graduate School total	1629	1057	548	24	608	1011	952	677	1186	443	102	183	2861
Biomolecular Structure & Mechanism	91	51	40	0	50	41	37	54	72	19	1	8	132
Biomedicine	56	46	10	0	27	29	37	19	46	10	1	0	0
Cancer Biology	116	110	6	0	89	27	81	35	87	29	4	26	295
Clinical Science	40	40	0	0	3	37	29	11	23	17	4	6	6
Drug Discovery*	19	10	9	0	8	11	12	7	17	2	0	3	5
Ecology	80	55	25	0	10	70	54	26	52	28	0	8	191
Epidemiology & Biostatistics	50	48	2	0	18	32	30	20	36	14	0	12	50
Evolutionary Biology	87	85	2	0	6	81	45	42	66	21	1	13	134
Integrative Molecular Medicne	57	57	0	0	24	33	30	27	34	23	4	14	257
Microbiology & Immunology	222	140	82	0	87	135	141	81	147	75	5	31	361
Molecular Life Sciences	188	106	82	0	121	57	114	74	148	40	5	26	517
Molecular & Translational Biomedicine	37	14	23	0	17	20	22	15	26	11	0	6	63
Neuroscience	299	203	94	2	49	250	166	133	217	82	44	27	682
Plant Science	120	50	62	8	19	101	67	53	86	34	28	10	110
RNA Biology	36	9	17	10	13	23	19	17	29	7	0	0	17
Sciency & Policy	47	16	27	4	17	30	29	18	29	18	5	2	41
Systems Biology	84	17	67	0	50	34	39	45	71	13	0	18	n.a.

*Numbers not confirmed by PhD program

Appendix 3: Statistics intake rounds by nationality

LSZ GS Intake round 1 July 2020, number of applicants

(Figures include more data groups than shown in table 6)

Country	Not invited	Invited	Total
All countries	**1,073**	**184**	**1,257**
Afghanistan	1	0	1
Albania	1	0	1
Algeria	5	0	5
Angola	1	0	1
Argentina	1	0	1
Australia	1	0	1
Austria	8	6	14
Azerbaijan	1	0	1
Bangladesh	13	0	13
Belarus	1	0	1
Belgium	2	2	4
Benin	1	0	1
Bosnia and Herzegovina	1	0	1
Brazil	7	0	7
Bulgaria	1	1	2
Cameroon	1	0	1
Canada	4	2	6
Chile	3	0	3
China	82	12	94
Colombia	7	0	7
Croatia	1	0	1
Cyprus	1	1	2

Czech Republic	2	0	2
Democratic Republic of the Congo	1	0	1
Denmark	2	0	2
Dominican Republic	1	0	1
Ecuador	1	0	1
Egypt	20	1	21
Estonia	1	0	1
Ethiopia	6	0	6
Finland	1	0	1
France	15	3	18
Gambia	1	0	1
Georgia	0	1	1
Germany	39	38	77
Ghana	13	0	13
Greece	19	8	27
Haiti	1	0	1
Hungary	2	1	3
India	239	6	245
Indonesia	5	0	5
Iran	88	3	91
Ireland	2	0	2
Israel	2	0	2
Italy	85	27	112
Jamaica	2	0	2
Japan	1	0	1
Jordan	3	0	3

Kazakhstan	1	2	3
Kenya	9	0	9
Lebanon	12	1	13
Liberia	1	0	1
Lithuania	2	1	3
Malaysia	5	0	5
Malta	3	0	3
Mexico	8	1	9
Morocco	1	0	1
Nepal	6	0	6
Netherlands	5	1	6
New Zealand	1	0	1
Nigeria	27	0	27
Norway	2	0	2
Oman	2	0	2
Pakistan	64	2	66
Panama	1	0	1
Philippines	4	0	4
Poland	13	7	20
Portugal	11	1	12
Republic of Korea	4	0	4
Romania	2	2	4
Russian Federation	11	1	12
Rwanda	3	0	3
Saudi Arabia	3	0	3
Senegal	1	0	1

Serbia and Montenegro	2	2	4
Slovakia	1	0	1
Slovenia	1	0	1
South Africa	7	0	7
Spain	20	8	28
Sri Lanka	7	0	7
Sudan	2	0	2
Sweden	4	2	6
Switzerland	28	19	47
Syrian Arab Republic	3	1	4
Taiwan	7	5	12
Thailand	5	0	5
Trinidad and Tobago	2	0	2
Tunisia	3	0	3
Turkey	25	3	28
Uganda	4	0	4
UK	16	6	22
Ukraine	8	2	10
United Republic of Tanzania	2	0	2
USA	12	2	14
Uzbekistan	0	1	1
Venezuela	1	0	1
Viet Nam	7	2	9
Yemen	1	0	1
Zambia	4	0	4
Zimbabwe	3	0	3

LSZ GS Intake round 1 December 2020, number of applicants

(Figures include more data groups than shown in table 6)

Country	Not invited	Invited	Total
All countries	**1,307**	**194**	**1,501**
Albania	5	0	5
Algeria	3	0	3
Argentina	3	0	3
Armenia	2	0	2
Australia	1	0	1
Austria	9	5	14
Azerbaijan	1	0	1
Bangladesh	16	0	16
Belarus	1	0	1
Belgium	6	0	6
Bolivia	1	0	1
Bosnia and Herzegovina	2	0	2
Botswana	1	0	1
Brazil	10	3	13
Bulgaria	1	0	1
Cambodia	1	0	1
Cameroon	2	0	2
Canada	5	1	6
Chile	1	0	1
China	168	17	185
Colombia	9	3	12
Costa Rica	1	0	1

Croatia	3	1	4
Cyprus	3	2	5
Czech Republic	1	2	3
Ecuador	2	1	3
Egypt	19	0	19
Estonia	0	1	1
Ethiopia	17	0	17
France	15	4	19
Gabon	1	0	1
Gambia	1	0	1
Germany	55	40	95
Ghana	17	0	17
Greece	22	4	26
Hungary	3	0	3
India	291	12	303
Indonesia	7	1	8
Iran	90	1	91
Iraq	2	0	2
Ireland	2	1	3
Israel	2	0	2
Italy	85	11	96
Japan	3	0	3
Kazakhstan	3	1	4
Kenya	6	0	6
Latvia	2	0	2
Lebanon	17	1	18

Liberia	1	0	1
Lithuania	3	1	4
Luxembourg	2	0	2
Madagascar	1	0	1
Malaysia	6	2	8
Mauritius	1	0	1
Mexico	13	1	14
Mongolia	2	0	2
Morocco	1	0	1
Myanmar	1	0	1
Nepal	12	1	13
Netherlands	6	6	12
Nigeria	33	0	33
Pakistan	45	0	45
Palau	0	0	0
Panama	1	0	1
Peru	3	0	3
Philippines	7	1	8
Poland	9	8	17
Portugal	6	6	12
Qatar	0	0	0
Republic of Korea	4	1	5
Romania	4	2	6
Russian Federation	16	3	19
Rwanda	2	0	2
Saudi Arabia	1	0	1

Senegal	0	0	0
Serbia and Montenegro	3	0	3
Sierra Leone	1	0	1
Singapore	1	0	1
Slovakia	5	1	6
Slovenia	2	2	4
South Africa	3	0	3
Spain	20	7	27
Sri Lanka	6	0	6
Sudan	7	1	8
Swaziland	1	0	1
Sweden	5	2	7
Switzerland	28	12	40
Syrian Arab Republic	2	0	2
Taiwan	17	5	22
Thailand	2	0	2
Togo	1	0	1
Trinidad and Tobago	1	0	1
Tunisia	3	0	3
Turkey	35	2	37
Uganda	7	1	8
UK	24	9	33
Ukraine	1	1	2
United Republic of Tanzania	3	0	3
USA	21	7	28
Viet Nam	5	0	5

Yemen	2	0	2
Zambia	2	0	2
Zimbabwe	1	0	1

Appendix 4: PhD Programs Annual Reports

Biomedicine

The program in figures and numbers

Program statistics	as of December 31 (imMed + BioMed)
Program students	57 + 56 = 113
UZH affiliation	57 + 46 = 103
ETH affiliation	0 + 10 = 10
Other institute (please specify)	-
Track I students	24 + 27 = 51
Track II students	33 + 29 = 62
Female students	30 + 37 = 67
Male students	27 + 19 = 46
International students	34 + 46 = 80
Swiss students	23 + 10 = 33
Program drop-outs	4 + 1 = 5
Completed PhD	14 + 0 = 14
Program Alumni	257 + 0 =257
Faculty members	45 + 85 = 130

Recruitment (BioMed only)

Recruiting statistics	December 1, 2019	July 1, 2020
Complete applications	82	83
Invited candidates	14	27
Drop-outs before interview	0	4
Free slots (BioMed priority program)	14	11
Matches *	4	7
Candidates without matches	7	11
Decision against program	2	1
Rejected candidates	1	1
Change to other LSZGS programs	-	3
Gained from LSZGS programs	2	4

*without crossrecruitment

Finances

	Income	Expenses
Balance as of January 1		
Income		
ETHZ	0	
UZH	64’960	
Fees	29’000	
Other	1’050	
Total income	95’010	0
Expenses		
Salaries program		71’502
Social benefits		1’050
Recruitment December 1,		7’435
Recruitment July 1,		10’838
Program activities (retreat, symposia, etc.)		245
Overhead		-
Total expenses	0	91’070
Balance as of December 31	3’940	

Program Activities

Graduate courses of the BioMed PhD Program

- January 28/30, 2020: Introduction to human physiology: Respiration and Blood
- June 11/12, 2020: Mouse physiology and pathophysiology (via Zoom)
- September 9/10, 2020 Introduction to human physiology: Regulation of cardiovascular function
- October 19/20, 2020: Molecular Biology Methods
- *new:* Nov/Dec 2020 (6 full days) : Bioinformatics Next Generation Sequencing (via Zoom)

- Clinical courses at the University of Lugano (USI).
  The former MTB PhD program and the USI PhD program at the Faculty of Biomedical Sciences had a strong link. This option also continues after the merge into PhD Program in BioMed for all doctoral students (BioMed, imMed, MTB students).

Seminar series "From Vision 2020 to Future Perspectives"

All cancelled due to the pandemic

Retreat of the Bio Med PhD Program

The first BioMed Retreat in the Kartause Ittingen planned for September 2020 was cancelled due to the pandemic.

imMed Alumni

All cancelled due to the pandemic.

Outlook

The BioMed PhD Program offers students a scientific environment that combines basic and clinical research and applied biomedical 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 those perspectives.

The catalogue of graduate courses is constantly evaluated by commission and students of the BioMed PhD Program and adapted to the needs of the students.

The annual retreats as well as career events with the imMed alumni are highly successful for both scientific exchange and networking and will be continued (virtually) in 2021.

Merge of PhD Programs imMed and Molecular Translational Biomedicine (MTB) into PhD Program in Biomedicine (BioMed) as of mid October 2019

The two LSZGS PhD programs 'imMed' [basic and clinical research] and 'MTB' [basic and applied biomedical research] had a very similar focus which may have confused interested students. The merge of the two programs was approved by the LSZGS Director's Conference in May 2019 and by the UZH/MNF and the ETHZ in October 2019.

The new BioMed PhD program grew significantly since the merge and will continue to do so in the future.

New PI members of BioMed

As of end of 2020, 86 PIs are members of BioMed. 8 new BioMed PIs were accepted by the BioMed commission (two rejections).

Mentorship:

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

The assignments of the role as mentor were quite well accepted in 2020. Only one mentor had to be replaced. However, it has also become obvious that with an increasing number of BioMed doctoral students it is going to be more difficult to appoint the role of a mentor fairly among the PI's and guarantee the independency as a counselor at the same time. The mentor should often also have the right to award doctorates at the MNF (at least two members of the PhD thesis committee must have the right to award doctorates at the MNF according the BioMed guidelines), which make it even more challenging.

The mentorship is on the agenda of the next BioMed commission meeting in April 2021.

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

Biomolecular Structure and Mechanism

The program in figures and numbers

Program statistics	as of December 31
Program students	91
UZH affiliation	51
ETH affiliation	40
Other institute (please specify)	0
Track I students	50
Track II students	41
Female students	37
Male students	54
International students	72
Swiss students	19
Program drop-outs	1
Completed PhD	8
Program Alumni	132
Faculty members	26

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	61	41
Invited candidates	12	8
Drop-outs before interview	3	2
Free slots (XX priority program)	9	11
Matches	3	4
Candidates without matches	4	2
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	0	1
Gained from LSZGS programs	1	0

Finances

	Income	Expenses
Income		
ETHZ		
UZH	34’020.00	
Fees		
Other		
Total income	0	0
Expenses		
Salaries program		24’557.15
Social benefits		
Recruitment December 1		5’090.00
Recruitment July 1		1’073.35
Program activities (retreat, symposia, etc.)		0
Overhead		
Total expenses	0	0
Balance as of December 31	0	0

Program Activities

Due to COVID 19 all courses were held online.

Retreat- online

Structural biology course – online

Current topics in structural biology – online

Scientific writing course – online

Annual meeting - online

Cancer Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	116
UZH affiliation	110
ETH affiliation	6
Other institute (please specify)	
Track I students	89
Track II students	27
Female students	81
Male students	35
International students	87
Swiss students	29
Program drop-outs	4
Completed PhD	26
Program Alumni	295
Faculty members	77

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	187	189
Invited candidates	31	35
Drop-outs before interview	7	3
Free slots (CB priority program)	17	17
Matches	13	12
Candidates without matches	8	8
Decision against program	-	-
Rejected candidates	1	5
Change to other LSZGS programs	-	-
Gained from LSZGS programs	-	-

Finances

	Income	Expenses
Balance as of January 1	13’352.37	
Income		
ETHZ	15’000.00	
UZH	30’900.00	
Fees	13’000.00	
SUK UZH	10’000.00	
SUK ETH	6’030.00	
CRC	85’601.60	
Other	2’500.00	
Total income	176’383.97	0
Expenses		
Salaries program		70’259.00
Social benefits		15’342.60
Recruitment December 1		18’314.80
Recruitment July 1		3’076.90
Program activities (retreat, symposia, etc.)		27’818.30
Overhead		
Total expenses	0	134’811.60
Balance as of December 31	41’572.37	0

Program Organization

Director:
Prof. Maries van den Broek (UZH)

Steering Committee:
Prof. Beat Schäfer, Oncology Department, Kispi
Prof. Dario Neri (ETH) – stepped back end of 2020

New members since end of 2020:
Prof. Anne Müller, Institute of Molecular Cancer Research, UZH
Prof. César Nombela Arrieta, Department of Oncology and Hematology, USZ
Prof. Roger Schibli, PSI and Department of Pharmaceutical Sciences, ETHZ

Student representatives:
Evelina Blomberg, Laboratory of Neuro-Oncology, USZ
Ulf Gündisch, Institute of Anatomy, UZH
Ekaterina Katchatourova, Institute of Anatomy, UZH

Program coordinator:
Bettina Rausch-Malina, c/o Institute of Molecular Cancer Research, UZH
Review/Admission Committee:
Dec/Feb:
Dr. Steffen Böttcher, Department of Oncology and Hematology, USZ
Prof. Maries van den Broek, Institute of Experimental Immunology, UZH
Prof. César Nombela-Arrieta, Experimental hematology Lab, USZ
Prof. Lorenza Penengo, Institute of Molecular Cancer Research, UZH
Prof. Roger Schibli, Institute of Pharmaceutical Sciences, ETHZ
Prof. Manuel Stucki, Gynecology Department, USZ
Prof. Michael Weller, Department of Neurology, USZ
Prof. Thorsten Zenz, Experimental hematology Lab, USZ

July/Sep:
PD Dr. Beat Bornhauser, Oncology Department, Kispi
Dr. Christian Britschgi, Department of Oncology and Hematology, USZ
Prof. Maries van den Broek, Institute of Experimental Immunology, UZH
Dr. Kerstin Kampa-Schittenhelm, Kantonsspital St. Gallen
Dr. Enni Markkanen, Institute of Veterinary Pharmacology and Toxicology, UZH
Prof. Anne Müller, Institute of Molecular Cancer Research, USZ
Dr. Antonio Porro, Institute of Molecular Cancer Research, USZ
Prof. Beat Schäfer, Oncology Department, Kispi
Dr. Hans-Georg Wirsching, Department of Neurology, USZ
Prof. Thorsten Zenz, Experimental hematology Lab, USZ

Program Activities

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

Course days / lecturers:
Module B – **Tumors and the immune system** – *cancelled due to lockdown!*

Introduction to the immune system / Maries van den Broek, Christian Münz / 30.03.2020

Hematologic malignancies / Jean-Pierre Bourquin, Stefan Balabanov, Thorsten Zenz, Beat Schäfer / 31.03.2020

Tumor immunology (basics and therapy) / Onur Boyman, Alessandra Curioni, Reinhard Dummer, Patrick Roth / 01.04.2020

High dimensional spatial profiling of tumour microenvironment / Karina Silina, Ruben Casanova / 02.04.2020

Infection-induced cancers / Anne Müller, Roberto Speck, Achim Weber / 03.04.2020

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

Genome instability / Matthias Altmeyer, Antonio Porro, Manuel Stucki / 15.06.2020

Oncogenes and tumor suppressor genes / Beat Schäfer, Martin Baumgartner, Michele Bernasconi, Beat Bornhauser, Marco Wachtel / 16.06.2020

Metastasis / Lubor Borsig, Maries van den Broek / 17.06.2020

Cell signalling molecules as therapeutic targets / Philipp Berger, Martin Béhé / 18.06.2020

Tumor angiogenesis and lymphangiogenesis / Lothar Dieterich, Steven Proulx / 19.06.2020

Module D – **Cancer treatments** – partly virtual

Cancer chemotherapy / Bernhard Pestalozzi, Manuel Stucki / 21.09.2020

Cancer surgery / Kuno Lehmann, Anurag Gupta / 22.09.2020

Cancer radiotherapy / Martin Pruschy / 23.09.2020

Tumor pathology / Hella Bolck, Peter Schraml, Achim Weber / 24.09.2020

Antibody phage technology and therapeutic antibodies / Dario Neri / 25.09.2020

Module A – **Cancer biology** – partly virtual

Modes of cell death / Christian Münz, Martin Pruschy, Lynn Wong / 26.10.2020

Colon cancer: inflammation and epigenetics / Giancarlo Marra, Gerhard Rogler, Stephan Vavricka / 27.10.2020

Functional genomics / FGCZ Ralph Schlapbach / 28.10.2020

Cell biology / Jana Krietsch, Jan Krützfeld, Roland Wenger / 29.10.2020

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

Scientific Writing Course *– partly virtual*
Proposal and Grant Writing, Anne Müller, 16.01.2020
Proposal and Grant Writing, Pavel Janscak, 10.07.2020
Paper Writing, Isabelle Arnold, 17.02. + 13.07.2020

Science Ethics for Cancer Biologists *- virtual*
Dr. Jacky Leach Scully, Professor of Bioethics and Director, Disability Innovation Institute, UNSW, Australia // Visiting Professor, Policy Ethics and Life Sciences Research Centre, Newcastle University, UK // Editor, *International Journal of Feminist Approaches to Bioethics*

06. – 08.07.2020

Statistical Methods in Biology – 13. – 15.01.2020
Lecturer Dr. Hubert Rehrauer

8th Student retreat of the Cancer Biology PhD Program, 01.04. – 03.04.2020
Unfortunately, the retreat had to be cancelled at short notice due to the first lockdown in Switzerland because of the pandemic situation.

Travel Grants: travel expenses for congresses, meetings, symposia, workshops and courses. Deadlines for applications: 15.1. and 1.5. and 1.9.2020
No travel grants could be awarded due to the pandemic.

Social Activities
* Summer BBQ with PhD students and PIs of the Cancer Biology PhD Program at the Irchel Park at 25.08.2020.
* X-Mas Event had to be cancelled.
* Round table for new PhD candidates with students of the CB PhD Program at Restaurant Cucina with pizza and drinks, 06.02.2020.

Outlook 2021

Courses:
Module B – **Tumors and the immune system** – 09.04.-16.04.2021
Module C – **Mechanisms of cancer induction and progression** – 21.06.-25.06.2021
Module D – **Cancer treatments** – 27.09.
Module A – **Cancer biology** – 26.10. – 30.10.2021

Statistical Methods in Biology – November 2021
Scientific Writing Course – January and June 2021
Science Ethics Course – February, June and September 2021
Presentation workshop – July 2021

8th Cancer Biology PhD Students Retreat - virtual
June 2021

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

Social Activities:
Virtual round tables in February and September
Summer BBQ in August
X-Mas event in December

Clinical Science

The program in figures and numbers

Program statistics	as of December 31
Program students	40
UZH affiliation	40
ETH affiliation	0
Other institute (please specify)	0
Track I students	3
Track II students	37
Female students	29
Male students	11
International students	23
Swiss students	17
Program drop-outs	4
Completed PhD	6
Program Alumni	6
Faculty members	43

Recruitment

Recruiting statistics	December 1, 2019	July 1, 2020
Complete applications	14	19
Invited candidates	4	6
Drop-outs before interview	10	13
Free slots (XX priority program)	1	1
Matches	4	5
Candidates without matches	-	-
Decision against program	-	-
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	-	-

Finances

	Income	Expenses
Balance as of January 1		
Income		
ETHZ		
UZH	51’595(real and virtual money)	
Fees		
Other	47’807	
Total income	99’402	0
Expenses		
Salaries program		28’880
Social benefits		
Recruitment December 1		
Recruitment July 1		
Program activities (retreat, symposia, etc.)		32’842
Overhead (virtual money)		22’715
Total expenses	0	84’437
Balance as of December 31	14’965	0

Program Activities

Retreat on 11 September 2020

Outlook

Retreat on 10 September 2021

Drug Discovery

The program in figures and numbers*

Program statistics	as of December 31
Program students	19
UZH affiliation	10
ETH affiliation	9
Other institute (please specify)	
Track I students	8
Track II students	11
Female students	12
Male students	7
International students	17
Swiss students	2
Program drop-outs	0
Completed PhD	3
Program Alumni	5
Faculty members	13

Recruitment

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

*Data not confirmed by the programm

Finances

	Income	Expenses
Balance as of January 1		
Income		
ETHZ		
UZH		
Fees		
Other		
Total income	0	0
Expenses		
Salaries program		
Social benefits		
Recruitment December 1		
Recruitment July 1		
Program activities (retreat, symposia, etc.)		
Overhead		
Total expenses	0	0
Balance as of December 31	0	0

Program Activities

Outlook

Ecology

The program in figures and numbers

Program statistics	as of December 31
Program students	80
UZH affiliation	55
ETH affiliation	25
Other institute (please specify)	
Track I students	10
Track II students	70
Female students	54
Male students	26
International students	52
Swiss students	28
Program drop-outs	0
Completed PhD	8
Program Alumni	191
Faculty members	72

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	23	38
Invited candidates	3	1
Drop-outs before interview	0	3
Free slots (priority program)	-	-
Matches	0	1
Candidates without matches	0	
Decision against program	-	-
Rejected candidates	54	32
Change to other LSZGS programs	-	-
Gained from LSZGS programs	-	-

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

Finances

	Income	Expenses
Income		
ETHZ		
UZH	29092.00	
Fees	11615.00	
Other:		
SUK 2020	9977.70	
GRC Rechenschaftsbericht		
Qualitätssicherung- und entwicklung	00.00	
Total income	50684.70	0
Expenses		
Salaries program		
UZH		30468.75
SUK		5466.00
Social benefits		
UZH		6750.35
SUK		443.35
Recruitment December 1		0.00
Recruitment July 1		0.00
Program activities (retreat, symposia, etc.)		4801.70
Overhead		639.50
Total expenses	0	48569.65
Balance as of December 31	0	2115.05

Positive delta in the SUK-Doktoratsprogramme as planned courses were postponed to 2021, this funding is assigned to courses in 2021.

Program Activities

Student meet-up activities were limited in 2020 as a result of the COVID restrictions however in fall we organised a student lunch meet-up outdoors and observed the BAG recommendations for social distancing. We continued with the biannual newsletter which is sent to students and principal investigators with a 'Featured PhD project' which is added to the first page of our website.

The student membership of the PhD Program in Ecology increased this year. In 2020, 20 new students joined the program compared to 14 new students in 2019. We welcomed seven new affiliated research groups to the program.

Teaching

In 2020, the PhD Program in Ecology organized the following courses:

Subject-specific matters –

ECO 338 Ecological Controversies: Humans and Nature Summer School, ECO 397 Cutting Edge Research Club.

Methods
ECO 331 General linear and linear mixed models in R,

ECO 336 Gardening Techniques & Field Equipment,

ECO 350 Causal Inference for Biologists Graduate Clinic Workshop,

ECO 351 Bayesian Thinking and Ecology Workshop.

Transferable Skills –

ECO 303 Teaching Science at University.

Students were reserved places on the following course:

UWW 252 Spatial Ecology and Remote Sensing

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

UWW 271 Contemporary analysis for ecology.

Outreach

The Program Manager and Director did not have the opportunity to promote the program in 2020.

Outlook

The planned biennial meeting in 2020 was postponed as a result of COVID. We plan that this will take place in fall 2021 and will feature oral presentations by research group leaders and advanced PhD students, and poster presentations of all PhD students. The purpose of such a meeting is to foster and strengthen the ecology network in Zurich.

The biannual PhD student lunch meet-up is unlikely to take place in February but we hope this event will take place in September 2021.

The PhD Program in Ecology will offer the following courses in 2021:

Ecological Theory,

Cutting Edge Research Club,

Interdisciplinary Research in Global Change and Biodiversity,

Introduction to Structural Equation Modeling,

General Linear and Linear Mixed Models in R,

Gardening Techniques & Field Equipment,

Bayesian Thinking and Ecology Workshop,

Teaching Science at University,

Ecological Controversies – Humans and Nature,

Teaching Skills for Teaching Assistants.

Courses we offer to our students organised through collaborators:

UWW 252 Spatial Ecology and Remote Sensing

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

UWW 271 Contemporary analysis for ecology and Ethics in Biological Research

Epidemiology and Biostatistics

The program in figures and numbers

Program statistics	as of December 31
Program students	50
UZH affiliation	48
ETH affiliation	2
Other institute (please specify)	
Track I students	18
Track II students	32
Female students	30
Male students	20
International students	36
Swiss students	14
Program drop-outs	0
Completed PhD	12 in 2020
Program Alumni	50
Faculty members (MNF)	7
PIs with “Promotionsrecht” at MNF	14
PIs with “Promotionsrecht” at ETH	4
PIs without “Promotionsrecht”	10

Recruitment

Recruiting statistics	December 1, 2019	July 1, 2020
Complete applications	65	51
Invited candidates	**12**	**5**
Drop-outs before interview	2	0
Free slots (XX priority program)	6	3
Matches	5	3
Candidates without matches	5	2
Decision against program	1	0
Rejected candidates (failed interview)	2	0
Change to other LSZGS programs	1	1
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Income 2020		
UZH	28’168	
Fees (Vermittlungsgebühren)	2’000	
Other (swissuniversities)	5’776.44	
Swissuniversities Saldo 2019	-154.85	
Total income	35’789.59	0
Expenses 2020		
Salaries program		15’000
Recruitment Dec 1, 2019		3003.80
Recruitment July 1, 2020		0.00
Program activities (BBQ, Retreat Annulation, Career Development Program)		11’936.63
Career Development Series		353.05
Total expenses	0	30’293.48
Balance as of December 31	5’496.11*	

*5’423 SBFI Mittel auf 2021 übertragen (10'524 CHF Eigenleistung excl. coordinator salary)

Program Activities

- Many students and PIs participating at 2nd International Meeting of Teaching Epidemiology, Jan 2020
- Many students and PIs participating in Journal Club on Causal Inference & Journal Club on Reproducibility
- EBPI Colloquium Science and Health Policy with Stefan Spycher (27.01.2020)
- New students-initiated events “EBPhD Science & Social”
  - Successful collaborations with Milo Puhan & Mark Adams (29.01.2020)
- Proposal Preparation – from Idea to Submission (18.02.2020)
- Reciprocity Ring v2: Working Remotely (26.03.2020)
- Epidemiology and Biostatistics Methods Seminar, spring “Deep learning” and fall semester “Misconceptions and Misspecifications 2020

- Research in Progress talks, spring and fall semester 2020
- Kick-off afternoon for all EBPhDs (09.09.2020)
- CRS hosted ReproducibiliTea Journal Clubs
    - A Reproducible Data Analysis Workflow with R (02.04.2020)
    - Rethinking Reproducibility as a Criterion for Research Quality (30.04.2020)
    - Reproducibility of animal research in light of biological variation (17.09.2020)
    - Reproducibility in psychological interventions between humans: Is the working alliance an epiphenomenon? (15.10.2020)
    - High Replicability of Newly-Discovered Social-behavioral Findings is Achievable (12.11.2020)
    - Statistical Analysis Must Improve to Address the Reproducibility Crisis: The ACcess to Transparent Statistics (ACTS) Call to Action (26.11.2020)
    - Challenges and future directions for representations of functional brain organization (10.12.2020)
- EBPI Fall Semester Colloquia “Health Geography”
  - Monitoring geospatial patterns and temporal trends of patient experience and substance use in the united states using digital big data, Yulin Hswen, Harvard University (24.11.2020)
  - Cardiovascular mortality in relation to noise, air pollution and green space – multiexposure environmental modeling, Martin Röösli, Swiss TPH, (08.12.2020)
- With the outbreak of the pandemic, we unfortunately had to cancel some of our planned events. First and foremost, our Retreat, Postdoc Mentoring Lunches, Movie Nights and our 3 Minute Thesis Competition. As the pandemic and home office situation continued, the psychological and mental well-being of our PhDs increasingly came to the forefront. Together with our Student Representatives we therefore launched different offers in 2020:
    - Online cup of coffee event with Dr. Raphaelle Beau (March 18, 2020).
    - Online cup of coffee event with Dr. Mirko Winkler (November 10, 2020)
    - Online course "Let's talk grant writing" (May 04, 2020)
    - Spacial chat event (May 19, 2020)
    - Weekly virtual breaks for the PhDs
    - Secret Santa during the Advent season (December 2020)
    - A virtual PhD Christmas party with games (December 09, 2020)
    - Online course for our PhDs "Miscellaneous mysteries for maintaining motivation while managing your PhD" (December 03-10, 2020)
- In addition, we have been regularly informing our PhDs about what the Graduate Campus has to offer: Well-being in Academia webinars, Virtual Mental Health drop-in, online Yoga, GRC Writing Labs, Individual Coaching offer.

Outlook

- Research & Methods: a new journal club for health services research and beyond
- EBPI Spring colloquium:
    - Corona Immunitas (10.05.2021)
- New students-initiated events “EBPhD Science & Social”
- Epidemiology and Biostatistics Methods Seminar, spring “Visualization” and fall semester tbd 2021
- Proposal Preparation – from Idea to Submission (18.02.2021)
- Post-award grant management (11.03.2021)
- Study visit funding support (15.04.2021)

- Scientific writing training (16./23.04.2021)
- Postdoc mentoring event (04.2021)
- 3 Minute Thesis Competition (11.05.2021)
- SNSF Mobility grant support (27.05.2021)
- Research in Progress talks fall semester 2021
- Kick-off afternoon for all EBPhDs (14.09.2021)
- CRS hosted ReproducibiliTea Journal Clubs spring and fall 2021
- Further planned events:
    - Online cup of coffee events
    - Weekly virtual breaks for the PhDs
- In addition, we will regularly inform our PhDs about what the Graduate Campus is offering: Well-being in Academia webinars, Virtual Mental Health drop-in, online Yoga, GRC Writing Labs, Individual Coaching offer.

Evolutionary Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	87
UZH affiliation	85
ETH affiliation	2
Track I students	6
Track II students	81
Female students	45
Male students	42
International students	66
Swiss students	21
Program drop-outs	1
Completed PhD	13
Program Alumni	134
Faculty members	30

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	22	19
Invited candidates	1	1
Drop-outs before interview	0	0
Free slots (XX priority program)	1	3
Matches	0	1
Candidates without matches	1	0
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	1	0

Finances

	Income	Expenses
Balance as of January 1		0.00
Income		
ETHZ and ETH	34’020.00	
Member Fees	8’600.00	
URPP Evolution in Action	1’000.00	
Total income	43’620.00	0
Expenses		
Salaries program		35’000.00
Annual Retreat		8’299.00
IT-Material		240.60
Total expenses		43’539.60
Balance as of December 31	80.40	

Program Activities 2020

-Annual Retreat in Meielisalp, Leissigen (BE), September 9-11

-BIO395 Concepts in Evolutionary Biology (held by PIs of the URPP Evolution in Action)

-BIO554 Survey Course: Topics in Evolutionary Biology

-BIO609 Introduction to UNIX/Linux and Bash Scripting (in cooperation with URPP Evolution in Action)

-BIO610 Next-Generation Sequencing for Model and Non-Model Species (in cooperation with URPP Evolution in Action)

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

-BIO624 Human Genetic, Demographic and Cultural Diversity (in cooperation with URPP Evolution in Action)

-BIO692 Introduction to Genome-Wide Association Studies (in cooperation with URPP Evolution in Action)

Outlook 2021

-Annual Retreat in September

-EvoBio visit of the Botanical Gardens and Institute

-BIO609 Introduction to UNIX/Linux and Bash Scripting (in cooperation with URPP Evolution in Action)

-BIO610 Next-Generation Sequencing for Model and Non-Model Species (in cooperation with URPP Evolution in Action)

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

-BIO395 Concepts in Evolutionary Biology (held by PIs of the URPP Evolution in Action)

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

-BIO624 Human Genetic, Demographic and Cultural Diversity (in cooperation with URPP Evolution in Action)

-BIO692 Introduction to Genome-Wide Association Studies (in cooperation with URPP Evolution in Action)

Microbiology and Immunology

The program in figures and numbers

Program statistics	as of December 31
Program students	222
UZH affiliation	140
ETH affiliation	82
Other institute (please specify)	0
Track I students	87
Track II students	135
Female students	141
Male students	81
International students	147
Swiss students	75
Program drop-outs	5
Completed PhD	31
Program Alumni	361
Faculty members	96

Recruitment Track I

Recruiting statistics	December 1	July 1
Complete applications	136	155
Invited candidates	13	25
Drop-outs before interview	1	4
Free slots (MIM priority program)	10	22
Occupied slots	6	16
Matches	4	13
Candidates without matches	0	7
Decision against program	6	1
Rejected candidates	0	0
Change to other LSZGS programs	2	0
Gained from LSZGS programs	2	3

Recruitment Track II

Recruiting statistics	
Complete applications	41
Candidates admitted	41
MD PhD	1

Finances

	Income	Expenses
Balance as of January 1		
Income		
ETHZ / UZH	64512	
Fees	51000	
Other	33725	
Total income	149237	0
Expenses		
Salaries program incl. Social Benefits		91274
Recruitment December & July		23238
Program activities (retreat, symposia, etc.)		28273
Overhead		
Total expenses	0	142785
Balance as of December 31	6452	0

Organization of the Program

The MIM Program is headed by two directors, Prof. Jörn Piel from ETHZ and Prof. Rolf Kümmerli from UZH, who co-chair the Program. The steering committee consists of the two directors and two additional members of the MIM Program, Prof. Salomé LeibundGut and Dr. Roman Spörri. The General Assembly, including all PIs of the Program, meets on an annual basis and decides about the admission of new members and changes of the regulations.
The duties of the admission committee members are to evaluate the applications, to lead the interviews and to decide on the admission to the MIM Program. Admission committee members are

- Prof. Cornel Fraefel (UZH)
- Prof. Urs Greber (UZH)
- Prof. Wolf-Dietrich Hardt (ETH)
- Prof. Nicole Joller (UZH)

- Prof. Markus Künzler (ETH)
- Dr. Silvia Monticelli (IRB)
- Prof. Christian Münz (UZH)
- Prof. Emma Slack (ETH)
- Prof. Silke Stertz (UZH)
- Prof. Alexandra Trkola (UZH)

Two MIM PhD students (Susanne Meile (ETH) and Daniel Kirchmeier (UZH) represent the students' interest towards the MIM PhD Program by participating in the Steering Committee and the General Assembly.

Program Activities

Program-specific courses for doctoral students

14th Microbiology and Immunology Introductory Course
January 15-17, 2020
ETH Hönggerberg

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

The scientific program of the 14th MIM Introductory Course included 15 oral presentations of PIs and 52 of PhD students, covering the fields of general and medicinal Microbiology, Virology and Immunology, additionally Dr. Claudia Dumrese (Cytometry Facility), Dr. Ralph Schlapbach (FGCZ), and Dr. Urs Ziegler (ZMB) gave an insight talk about the methods and services of the facilities.
Prof. Hans-Martin Fischer and Prof. Emma Slack held an interactive workshop on Scientific Integrity. Additionally, Prof. em. Hauke Hennecke (MIM Ombudsperson) introduced himself, and two thematically different Zürich sightseeing tours were offered to the participants.

Responsible for the organization of the course was Dr. Carmen Faso.

13th MIM Student Retreat
August 26-28, 2020
Morschach

The MIM Student Retreat is an opportunity to exchange ideas and get to know colleagues of the MIM PhD Program as well as some excellent guest speakers. It offered the students a chance to increase their presentation skills in a friendly atmosphere and to discuss the research projects with fellow PhD students. The broad scientific program of the 13th MIM Student Retreat included 14 oral and 45 poster presentations. Special events were the talk of the external guest speaker Prof. Alban Ramette (Institute for Infectious Diseases, University of Bern) and a workshop on research ethics held by Dr. Gérald Achermann (ETH Board).

Bioinformatics Course
April & May 2020
by Dr. Christopher Field
8 participants

General Principles of Scientific Writing
September 8 & 9, 2020
by Prof. Shinichi Sunagawa

12 participants

Basic Presentation Course
November 26 & 27, 2020
by Prof. Emmanuella Guenova, Prof. Nicole Borel, Dr. Cory Leonard

12 participants

Research Data Management: Basics and how to apply them

October 28, November 4, 11 & 18, 2020

in collaboration with Scientific IT Services & ETH Library

7 participants

Program-specific offerings for Principal Investigators

Welcome event for new MIM PIs
14.1.2020

(Team) Coaching
Team or individual coaching sessions were offered to MIM PIs thanks to funding provided by the Graduate Campus of UZH (funding for quality assurance and development at the doctoral level).

MIM career events and other activities

In 2020, a series of events was offered for current students & alumni on various topics, organized by MIM student representatives (events held in digital format are marked with an asterisk):

14.1.2020 *MIM social event*

New Year's Reception Alumni Lounge, ETH

6.2.2020 *MIM social event*

Pub crawl with new candidates

7.4.2020 *MIM Career Event **

Consulting and Pharma Industry: how to move from one to the other

Host: Daniel Kirchmeier

Guest speakers: Dr. Heike Nowag & Dr. Boas Felmy

8.9.2020 *MIM Career Event*

Career Opportunities for Life Scientists in Academia

Host: Prof. Salomé LeibundGut,

Panel members: Prof. Manuela Hospenthal, Prof. Christoph Schneider, Dr. Johannes vom Berg, Dr. Jonas Grossmann

3.9.2020 *MIM social event **

Pub crawl with new candidates

29.9.2020 *MIM social event*

BBQ at Medizinerhof, UZH

The events could be carried out thanks to funding from SHK (former SUK) program "Doktoratsprogramm" (Swiss University Conference).

Advisory Services

Mentoring Program

The demand for getting a mentor (senior PhD or Alumnus/a) was high, and 14 doctoral students can newly benefit of being assigned to a mentor. We are committed to sustain and improve our one-to-one mentorship program. Therefore, coaching supervision by Dr. Monika Clausen have been offered to the mentors twice (16.6. & 22.9.2020).

Ombudsperson

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

Travel Grants

Due to the COVID-19 pandemic, the travel activities of the doctoral students were very limited and no applications for travel grants have been submitted.

Outlook

The MIM activities, including career and social events and the program's core activities (MIM PhD student retreat, MIM Introductory Course) were well attended and will therefore be continued in 2021.

There has been a sharp increase in the number of MIM PhD students (by 12%). Associated therewith, additional administrative work arises, and it will be challenging for the Program to handle any tasks satisfactorily, as the coordination of the Program remains a part-time post.

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

Molecular Life Sciences

Program Motivation

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

Overview

Founded in 2003, the MLS program has currently 91 faculty members (compared to 93 faculty members in 2019), who are associated with over a dozen different departments/institutes at the ETH Zurich (ETH) and the University of Zurich (UZH). 187 graduate students were enrolled in the MLS program by the end of 2020 compared to 172 students at the end of 2019. 113 (61%) of our students are women and 74 men. 26 MLS students graduated in 2020. The program has now 517 alumni in total. The average time to successfully complete a Ph.D. thesis in the MLS program remains with 4 years and 7 months unchanged.

The program in figures and numbers 2020

Program statistics	as of December 31
Program students	188
UZH affiliation	106
ETH affiliation	82
Other institute (please specify)	
Track I students	121
Track II students	57
Female students	114
Male students	74
International students	148
Swiss students	40
Program drop-outs	5
Completed PhD	26
Program Alumni	517
Faculty members	91

Student Body

Of the 188 students, 106 are enrolled at the UZH and 82 at ETH. German students (42) and Swiss (40) account for close to half of all students. The next larger groups are the Italians (12) followed by Austrians (10), Chinese (10), Indians (7), Poles (6), British (5), Dutchmen/ Dutchwoman (5), Russians (5), Greeks (4) and Spaniards (4). Three students come from Portugal and Turkey and two from America, Belgium, Estonia and Iceland. In addition, we have one student each from Brazil, Colombia, Croatia, Finland, France, Grenada, Hungary, Japan, Latvia, Lebanon, Lithuania, Malaysia, Mexico, Norway, Pakistan, Peru, Serbia, Slovenia, Sri Lanka, Sweden, Taiwan, Uruguay, Venezuela and Vietnam in the MLS program.

Recruitment 2020

Recruiting statistics	December 1	July 1
Complete applications	149	144
Invited candidates	40	18
Drop-outs before interview	4	9
Free slots (MLS priority program)	24	14
Matches	14	5
Candidates without matches	7	6
Decision against program/ no list	6/4	0/2
Rejected candidates		1
Change to other LSZGS programs	8	7
Gained from LSZGS programs	3	0

Program Organization

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

SC Members
Prof. Yves Barral (ETH – vice chair)

Prof. Konrad Basler (UZH – since December 20)

Prof. Stefanie Jonas (ETH - representative of junior faculty members, since June 20)

Prof. Christian Lehner (UZH – chair, until December 20)

Prof. Joao Matos (ETH - representative of junior faculty members, until June 20)

Prof. Ohad Medalia (UZH – chair since December 20)

Prof. Francesca Peri (UZH – since June 20)

PD Dr. Raffaella Santoro (UZH)

Prof. Anton Wutz (ETH)

Prof. Oliver Zerbe (UZH, until June 20)

Claudia Gafko (ETH – student representative)

Kim Marquart (UZH/ETH – student representative)

In 2020, the SC met 3 times to discuss and decide on various program activities. After the meeting in March, the reunions were held online.

The MLS program faculty consists of principal investigators (PIs) from several different institutes of the UZH and the ETH. Since Fall 2005 all group leaders who want to become member of the MLS faculty, have to submit their application to the SC, irrespective of their affiliation. Six new faculty members joined the MLS program in 2020. MLS program faculty members support the program by serving on admission or travel grant committees as well as by teaching course modules or tutorials.

PIs leaving:

Ruedi Aebersold, Institute of Molecular Systems Biology, ETH

Markus Aebi, Institute of Microbiology, ETH

Wilhelm Gruissem, Institute of Plant Science, ETH

Silvio Hemmi, Department of Molecular Life Sciences, UZH

Joao Matos, Institute of Biochemistry, ETH

New PIs:

Helmuth Gehart, Institute of Molecular Health Sciences, ETH

Hubert Hilbi, Institute of Medical Microbiology, UZH

Manuela Hospenthal, Institute of Molecular Biology and Biophysics, ETH

Gabriel Neurohr, Institute of Biochemistry, ETH

Tommaso Patriarchi, Institute of Pharmacology and Toxicology, UZH

Ralph Schlapbach, Functional Genomics Center Zurich, ETH & 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 2020.

Finances 2020 (in CHF)

		Income	Expenses
Balance as of January 1			
Income			
ETH		34’584	
UZH		25’000	
SUK ETH		41’300	
SUK UZH		20’000	
Fees		12’000	
Sponsoring Retreat		900	
Total income		133’784	0
Expenses			
Salaries program (with social benefits)			48’699
Recruitment September 2019			23’192
Recruitment February 2020			19’914
Program activities:	Retreat		813
	Grants (travel/ online events)		8’365
	Leap Year Party		2’099
	Alumni (1 Career Event)		200
Program Teaching			53
Overhead			431
Total expenses		0	103’766
Balance as of December 31		30’018	

Program Activities

Teaching

Module	Length	Dates	Participants	Facilitator/Remarks
Scientific Writing	4x1/2 day	13, 18, 20 & 25 March 2020	20 students	George Hausmann
1st-year-Presentations	4x1/2 day	24 & 28 February, 6 & 13 March 2020	15 students & 4 moderators	Susanna Bachmann
Impact of Ethics on Doing Science	4x1/2 day	10, 12, 17 & 19 August 2020	18 students	Anna Deplazes & George Hausmann
The 3Rs and the Ethics of Animal Research	2x 1 day	15 & 16 September 2020	12 students	Matthias Eggel & Paulin Jirkof
Scientific Writing	4x1/2 day	17, 22, 24 & 29 September 2020	20 students	George Hausmann
The 3Rs and the Ethics of Animal Research	2x 1 day	14 & 15 October 2020	12 students	Matthias Eggel & Paulin Jirkof
1st-year-Presentations	4x1/2 day	13, 20, & 27 November, 4 December 2020	20 students & 5 moderators	Susanna Bachmann

The Covid-19 pandemic had unfortunately a great impact on the program's activities in 2020. Between March and June everything came to a complete standstill because of the lockdown. When it became clear that the universities' premises would also not open for in-person courses and bigger gatherings later in the year, the program switched to online formats and as of July 2020 most of the activities were carried out virtually.

Tutorials

Also in 2020, several tutorials were offered by faculty members of the MLS program and external trainers to a small group of students (usually not more than 6 participants). The workload for the students is approx. 25-30 hours. The tutor and the participants decide when and how often they meet. A minimum of 6 contact hours with the tutor is required per tutorial by the MLS program.

Topic	Tutor
Insights into Regulatory Affairs in Pharma	Paolo Dametto
Project Management in Clinical Research (run twice)	Dmitry Linde
Sequence Analysis & Phylogenetics	Stephan Neuhauss & Domino Schlegel
Computational Methods in System Biology for omics Analysis	Andrea Fossati & Cyril Statzer
Microfluids: fundamentals and applications in biology	Sung Lee
Experimental Design, Creativitiy and Communication	Francisco Verdeguer & Zyanya Diaz Hirashi

On of the few highlights in 2020 was that the new tutorial platform could be launched as planned in December 2020: https://www.lsz.uzh.ch/phd/ Thanks to the efforts of the IT staff at the Department of Molecular Life Sciences, Marco Schmidli and Fabio Snozzi, we dispose now of a very user-friendly and, most important, secure platform to organize the tutorials.

Retreat

The 17th MLS retreat was planned to take place from 1 to 3 October 2020 but it had to be cancelled because of the pandemic. Luckily an alternative date could be fixed for March 2021 when things still looked like life would go back to normal in 2021. However, with the repeated increase of Covid-19 infections and harsh restrictions for social gatherings, it is doubtful whether the event can happen as planned in Spring 2021.

Lecture Series

Much to our regret also the lecture series came to a – hopefully – temporary standstill. Actually, the series "Growing up in Science", which some engaged students and alumni of the program had established in Switzerland, quickly changed to a virtual format with global online events. However, there were no further activities of the Swiss group and it might be taken care of in the future by students affiliated with other academic institutions.

Awarded Travel Grants 2020

With all conferences and symposia being cancelled because of the pandemic, the MLS program decided to newly support also the attendance of online events such as congresses and meetings but also webinars and virtual courses.

The deadlines for application were 1 March and thereafter always the 1st day of every month

Student	Attended conference/summer school/ course/ workshop
Salome Brütsch	Matrix Biology
Aleksandra Fergin	The Allied Genetics Conference
Luca Ferrarese	Using Python for Research from HarvardX
Claudia Gafko	Introduction to Python for Biology
Qingyao Huang	Intelligent Systems for Molecular Biology
Khanh Huynh	Glia in Health & Disease
Jonas Kapp	Python Machine Learning in Biology
Lisa Koch	ISREC-SCCL Symposium
Jonas Kolibius	Introduction to Python for Biology
Maria Landinez	Forum of Neuroscience
Pawel Laskowski	Good Manufacturing Praxis
Anna Marzelliusardottir	Introduction to Python for Biology
Rahel Paloots	Develop the skills and confidence to apply mathematical concepts in the real world
Catharina Sänger	Tissue Repair, Regeneration and Fibrosis
Laura Schenkel	Genome Organization and Nuclear Function
Daniela Sequeira	Adeno Virus Meeting
Miriam Weber	Intermediate Filaments
Till Wüstemann	Using Python for Research from HarvardX

Travel grant committee: Martin Müller (PI, UZH), Madhav Jagannathan (PI, ETH), Tanja Eberhart (MLS student). In total, the program awarded CHF 8’365 as travel grants.

Social and Other Activities

Newsletter: We dispatched two newsletters on 8 June and on 2 December 2020. Among other items the newsletter contains a presentation of a faculty member or a member of the steering committee, information about past and forthcoming events, feedback about one or several tutorials from the organizing PI (tutor) and/or the participants and an overview which students have started in the program and left it in the past six months. The letter is sent out to current and former program students as well as to all faculty members. It is planned to issue the MLS newsletter also in 2021 twice per year.

Students in charge in 2020: Stephanie Lüthi, Alexandra Noble, Daniela Sequeira

Career and Networking event 2020: Because of the pandemic the event only took place once and it had to be carried online. While the presentations of the alumni did work well in zoom, the socializing part was difficult to put in place online. We will definitely have to find a more suitable platform/ program to foster the networking between program students and alumni. On 19 November the following 4 alumni provided insights in their current job or depicted their career steps after they had finished their PhD:

Carina Derrer, AstraZeneca, Medical Science Liaison Oncology

Michael Schmitz, AstraZeneca, Oncology Medical Affairs Head

Andrea Spinnler, Novartis/Sandoz, PMO Nitrosamine Taskforce

Deni Subasic, Accenture, Management Consulting Manager

As the name implies the Leap Year Party took place on 29 February 2020. The restrictions introduced because of the pandemic situation did not allow us to organize any other social events later in the year.

Outlook

As long as the Covid-19 pandemic is keeping its grip on nearly all parts of our social lives, planning and more so realizing events and activities remains challenging. We hope that we can have an in-person retreat in late summer or early fall. In order not to put all the eggs in one basket, we may offer the PhD students a virtual retreat or symposium earlier in the year. Not only because many students need to obtain the compulsory credit point but also because the feeling of cohesion within the students of the program is vanishing quickly, if they cannot meet and exchange scientifically and personally from time to time.

As it was to expect but still much to our regret, the financial outlook has also not profoundly brightened up in 2020. Discussions the LSZGS carried out with the Schulleitung of UZH were to no avail. The issue was also extensively addressed in the self-evaluation and the discussions with the experts in the evaluation process the LSZGS is undergoing, however, there are no quick results to be expected – if there are any at all. The only “positive” effect of the pandemic was on our budget: as most of the planned events had to be cancelled and the fall recruitment was carried out with very few in-person visits, we hardly could spend any money except for the salaries. Luckily swissuniversities first extended the deadline for using up the remaining funding until end of June and later until end of December 2021. This means that the coming year should not yet have a great impact on our financial situation and we hopefully gain another year for finding a sustainable solution for our financial constraints.

Given the tense situation because of the pandemic, it is rather unlikely that the – already several times postponed - meeting with our program alumni is going to happen in 2021. We will, however, think of finding some ways to remain at least virtually in contact with the steadily growing bunch of former program students.

Molecular Translational Bioscience

Mission Statement

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

The program in figures and numbers

Program statistics	as of December 31
Program students	37
UZH affiliation	14
ETH affiliation	23
Other institute (please specify)	-
Track I students	17
Track II students	20
Female students	22
Male students	15
International students	26
Swiss students	11
Program drop-outs	0
Completed PhD	6
Program Alumni	63
Faculty members	49

Recruitment

As the program is phasing out, there are no further students recruited anymore.

Finances

	Income	Expenses
Balance as of January 1	162’986	
Income		
SUK UZH	1’105	
Total income	1’105	0
Expenses		
Salaries program (including social benefits)		40’373
Recruitment July/ Sept 19		2’676
Program activities (virtual courses)		8’728
Overhead		
Total expenses	164’091	51’777
Balance as of December 31	112’314	0

Program Activities

Due to the Corona pandemic several events that had been planned had to be cancelled or postponed for an undefined lapse of time, like the student retreat. Once it became evident that gatherings of (small) groups would be banned for a longer period of time the program organized a few online courses that were held towards the end of 2020.

Molecular Methods, Dr. Pedro A. Ruiz-Castro, 19 & 20 October (2020), joint with BioMed

Scientific Writing & Publishing in Life Sciences, Dr. Martina Michalikova, 5, 12, 19 & 26 November 2020

Project Management for Early Stage Researchers, Dr. Verena Lütschg, 7-10 December 2020

Outlook

In 2019, the PhD programs in Integrative Molecular Medicine and the Molecular and Translational Biomedicine decided to fuse to a new program called Biomedicine (BioMed). This program started in Fall 2019 and since that moment no more students are accepted into the MTB program. For the coming years courses and retreats will be run commonly among the three programs to make sure that there is a critical mass of students. Thus the MTB program

is slowly going to phase out and will be closed down as soon as the last doctoral student has obtained his or her PhD degree.

Neuroscience

The program in figures and numbers

Program statistics	as of December 31
Program students	299
UZH affiliation	203
ETH affiliation	94
Other institute (please specify)	2 (University of Basel, University of Bern)
Track I students	49
Track II students	250
Female students	166
Male students	133
International students	217
Swiss students	82
Program drop-outs	44
Completed PhD	106 (Alumni 2017-2020)
Program Alumni	682 (since 2001)
Faculty members	160

Recruitment

Recruiting statistics	**Interviews Feb. 20**	**Interviews Sept. 20**
Complete applications	n.a.	n.a.
Invited candidates	22	15
Drop-outs before interview	1	1
Free slots (XX priority program)	10	8
Matches	6	6
Candidates without matches	15	8
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	1	0
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Balance as of January 1		
Income		
ETHZ	40’726	
UZH	40’726	
Fees		
Other	921	
Total income	82’373	0

Expenses	**UZH**	**ETH**
Salaries program	15’739	37’894
Social benefits	2’361	
Student travel grants	1’777	3’753
Ethic course	435	
Recruitment Sept 19	6’348	
Recruitment Feb 20	9’344	
Thesis Award	2’000	
Program activities (retreat, symposia, etc.)	2’685	
Total	40’689	41’647
Total expenses	0	82’336
Balance as of December 31	0	37

Program Activities

1) Courses

- Introductory Course in Neuroscience I (Fall term 2020)
- Introductory Course in Neuroscience II (Spring term 2020)
- Neuroimaging Blockkurs (26-27 October 2020)
- Course in Science Ethics for Cancer Biologists and Neuroscientists, (6-8 July 2020)
- Crash Course in Statistics for Neuroscientists (27 - 31 July 2020)
- Writing Neuroscience Research Papers (*15/18/22/25/29 June and 2 July 2020*)

2) Symposia, conferences and other scientific activities

- ZNZ PhD Retreat, 8-9 May 2020, online
- ZNZ Symposium and Best PhD Thesis Award (10 September 2020)

3) Outlook 2021

- New Advanced Course: "My thesis and beyond: Developing an Interdisciplinary Research Idea*", 16 February - 17 June 2021*

Plant Sciences

The program in figures and numbers

Program statistics	as of December 31
Program students	120
UZH affiliation	50
ETH affiliation	62
Other institute (please specify)	8
Track I students	19
Track II students	101
Female students	67
Male students	53
International students	86
Swiss students	34
Program drop-outs	28
Completed PhD	10
Program Alumni	110
Faculty members	5

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	49	51
Invited candidates	0	1
Drop-outs before interview	0	0
Free slots (1 priority program)	3	1
Matches	1	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	0	0

Finances

	Income	Expenses
Balance as of January 1	9’033	
Income	41’104	
ETHZ		
UZH		
Fees	4’870	
Other	Suk income is reported elsewhere	
Total income	55’007	0
Expenses		
Salaries program		5675
Social benefits		incl social benefits
Recruitment December 1		6222
Recruitment July 1		
Program activities (retreat, symposia, etc.)		5764
Overhead		As reported by LSZGS
Total expenses	17661	17661
Balance as of December 31	37’345	0

Program Activities

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

The PSC educational programs are embedded in several educational platforms that operate nationally and internationally and make the course offer of the PSC and of corresponding programs fully transferable: Life Science Zurich (www.lifesciences.ch), an international graduate school in life sciences, Swiss Plant Science Web (www.swissplantsciencwweb.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	Other	female	male	national	international
2020	120	50	62	7	1	67	53	34	86

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**
Compulsory Activity: Colloquium "Challenges in Plant Sciences"	2
Elective Activities: Remainder of 12 ECTS may be chosen from*: • Technical Courses (in all areas of Plant Sciences): Intensive workshops on skills, methods and techniques • Courses on Statistical Methods • Transferable Skill Courses • Participation in international scientific symposium with own scientific contribution (oral or poster presentation) (max. 1 ECTS) • Organization of PSC PhD Symposium (max. 3 ECTS) • ECTS from the offer of the program of technical and scientific courses and Transferable skill courses. Transferable skill course can also be visited at GRACE and other continuing education offers at University of Basel.	4-10
	12

* 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 2020.

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

Supervision: The supervision is following the regulation of the partner universities and includes: doctoral agreement between supervisor and PhD students is set up 6 months after arrival of student. Set up of a research plan, establishing of thesis committee with internal and external experts, thesis committee meeting all 12 month and documentation of the meeting and the feedback in the thesis committee meeting protocol. The protocol is part of the documentation that is sent to the doctoral program coordination. The coordination is communicating to the universities' management (dean of faculties) if thesis committee meetings are not carried out regular. Establishment of these processes in 2020 we can currently report.

- 90% of all scheduled thesis committee meetings in 2020 finished in time and 10% delayed by 3 – 6 months at University of Zurich
- 90% carried out in time and 10% delayed by 3-6 months at ETH Zurich.
- 80% carried out in time and 20% delayed (or submitted late to DissGo) by 3-6 months at University of Basel

Evaluation of the program is continuously done, see
http://www.plantsciences.uzh.ch/teaching/phdplantscience/evaluation.html

PSC Training Certifications

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

Dec 02, 2020: PSC PhD Symposium 2020 – Connectivity - Plant interactions reloaded; …. registered participants,

https://blogs.ethz.ch/psc2020/

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

Invited speakers: Prof. Jiri Friml (IST Austria), Prof. Christa Testerink (University of Wageningen), Prof. Susann Wick (Humboldt-University of Berlin), Prof. Heribert Hirt (KAUST), Prof. Julia Vorholt (ETHZ), Prof. Anna-Liisa Laine (UZH), Prof. Vivian Irish (Yale University), Prof. Rebecca E Irwin (NC State University), Prof. Jordi Bascompte (UZH), Prof. Bruno Studer (UZH, PSC)

Frontiers in Plant Sciences Courses Series: Between 2012 and 2020 the PSC received funding for a series of workshops at the frontiers in plant sciences by the SUK "Interuniversity Program" through University of Zurich, ETH Zurich and University of Basel. These workshops are dedicated to applications: i.e. concepts but also tools in these advanced areas:

5 „**Frontiers in Plant Sciences**" workshops in 2020:

- **Protein-coding evolution and detecting natural selection** (Dr. Maria Anisimova), 12 participants
- **How can you make Open Data work in your own research projects?** (Violeta Mezeklieva, Stefanie Strebel, Andrè Hoffmann, Melanie Paschke), 9 participants
- **Population genomics of diversity and adaptation** (Prof. Dr. Karl Schmid & Mireia Vidal-Villarejo), 11 participants
- **Get going with statistics in functional genomics** (Anne Roulin & Jean-Claude Walser), 18 Participants
- **Introduction to Genome-Wide Association Studies (GWAS)** (Matthew Horton & Ümit Seren), 11 Participants

Courses carried out in the reporting period

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

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

Year	Total Course Nr	Part. University of Zurich	Part. ETH Zurich	Part. University of Basel	Part. Other	Course Participations
2020	26	133	185	27	3	345

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

Course	**Speakers / case study supervisors**	**Participants**
Protein-coding Evolution and Detecting Natural Selection	Maria Anisimova, ZHAW	ETH (3) UZH (8) UNIBAS (1) OTHER (0)
The Microbiome of the Plant-Soil System: Part I (Theory, methods and case studies)	Hartmann Martin, Institute of Agricultural Sciences, ETH Zurich	ETH (27) UZH (2)
How can you make Open Data work in your own research projects?	Violeta Mezeklieva, Data Trainer, Open Data Institute Stefanie Strebel, Data Services & Open Access, University of Zurich Melanie Paschke, Zurich-Basel Plant Science Center, ETH Zurich	ETH (4) UZH (3) UNIBAS (2)

Responsible Conduct in Research	Prof. Nina Buchmann & Dr. Melanie Paschke	ETH (6)
Project Management for Research	Dr. Andrea Degen-Iseli (EUrelations)	ETH (5) UZH (6)
Scientific Writing Practice II	Dr. Jacopo Marino (Paul Scherrer Institute, Villigen)	ETH (11) UZH (4)
Dealing with the Publication Process	Dr. Philipp Mayer, André Hoffman, M.A., Stefanie Strebel, Dr. Melanie Paschke	ETH (6) UZH (5)
Genetic Diversity: Analysis	Dr. Jean-Claude Walser, Dr. Niklaus Zemp	ETH (2) UZH (1)
The Microbiome of the Plant-Soil System: Part II (Processing next-generation sequencing data to …)	Hartmann Martin, Institute of Agricultural Sciences, ETH Zurich	ETH (11) UZH (3)
Advanced Data Management and Manipulation using R	Dr. Jan Wunder	ETH (7) UZH (8) OTHER (1)
Scientific Writing I	Dr. Patrick Turko	ETHZ (11) ZUH (6)
Adaptomics – Population Genetics and Genomics of Adaptation	Prof. Karl Schmid, University of Hohenheim, Dr. Fabian Freund, University of Hohenheim	ETH (1) UZH (8) UNIBAS (2)
Writing a Post-Doctoral Grant	Dr. Andrea Degen, Eurelations AG, Dr. Melanie Paschke, PSC	ETH (4) UZH (1) OTHER (1)
Get going with statistics in functional genomics	Prof. Anne Roulin (UZH), Dr. Jean-Claude Walser (GDC, ETHZ)	ETH (7) UZH (10) OTHER (1)
PSC Colloquium	Jake Alexander (ETHZ), Helge Aasen (ETHZ), Aurélien Bailly (UZH), Kirsten Bomblies (ETHZ), Mark Mescher (ETHZ), Clára Sánchez Rodríguez (ETHZ), Joëlle Schläpfer (UZH), Kentaro Shimizu (UZH), Emily Solly (ETHZ), Thomas Boller (UniBas), Sylvia Martínez (PSC)	ETH (16) UZH (12) UNIBAS (5)
Filmmaking for Scientists	Dr. Samer Angelone	ETH (4) UZH (3) UNIBAS (5)
Seminar “Sustainable Plant Systems” (ETHZ: 51-0209-00L) as part of “Integrative Plant Sciences”	Dr. G. Singh Bhullar (FIBL); Dr. Frank Liebisch (ETHZ); Prof. Marcel van der Heijden (Agroscope), Dr. Melanie Paschke (ETHZ)	ETH (13) UZH (3) UNIBAS (9)
Concepts in Evolutionary Biology (BIO395)	Prof. Kentaro Shimizu, Prof. Dr. Wolf Blankenhorn, Prof. Dr. Barbara König, Prof. Dr.	ETH (1) UZH (4)

	Michael Krützen, Prof. Dr. Fred Guillaume, PD Dr. Anna Lindholm, Dr. Michael Matschiner, Dr. Simon Aeschbacher	
Scientific Presentation Practice	Dr. Barbara Hellermann, PhD	ETH (10) UZH (4) UNIBAS (1)

Table 3: Course Evaluation 2020: 4 = fully agree, 1 = fully disagree

	Number of Questionnaires	The Course was well organized?	The topics covered met my expectations?	The instructor explained clearly?	Manual was helpful & useful also for future?	Good balance between theoretical & practical?	level of course was according to my needs?	working atmosphere was good?	I learnded & benefited from this course?	The instructor meet an appropriate pace? 1 = too slow/too fast, 2 = just right
Scientific Visualisation in R	6	3.83	4.00	3.83	4.00	3.67	3.50	3.67	3.67	2.00
Next-generation Sequencing 2 - Continuation Course: Transcriptomes, Variant Calling and Biological Interpretation (BIO634)	3	3.67	4.00	3.33	4.00	3.33	3.67	4.00	3.67	2.00
Introduction to Genome-Wide Association Studies (GWAS)	4	3.75	2.75	3.25	3.75	2.75	2.25	3.50	2.50	1.75
Next-Generation Sequencing for Model and Non-Model Species (BIO610)	5	4.00	3.60	3.60	3.80	3.80	3.60	3.80	3.60	2.00

Introduction to UNIX/Linux and Bash Scripting (BIO609)	5	2.80	3.20	3.20	3.60	3.60	3.60	3.40	3.00	1.80
Research with biological material from abroad – International regulations and due diligence in research	5	3.80	3.60	3.40	3.25	3.60	3.40	3.80	3.80	1.80
Genetic Diversity: Techniques	4	4.00	3.75	3.75	3.75	3.75	3.75	4.00	4.00	2.00
Scientific Presentation Practice	9	3.78	3.44	3.78	3.56	3.78	3.33	3.67	3.78	1.86
Concepts in Evolutionary Biology (BIO395)	4	3.50	3.50	3.50	3.25	3.50	3.75	3.25	3.50	2.00
Seminar “Sustainable Plant Systems” (ETHZ: 51-0209-00L) as part of “Integrative Plant Sciences”	8	3.13	3.63	2.88	3.00	3.00	3.13	3.88	3.50	2.00
Filmmaking for Scientists	7	3.71	3.71	3.86	3.71	3.86	3.86	4.00	3.86	2.00
Get going with statistics in functional genomics	7	3.43	3.14	3.57	3.86	3.71	2.71	3.00	3.43	1.29
Writing a Post-Doctoral Grant	3	3.67	3.33	3.67	3.67	3.67	3.67	4.00	3.67	2.00
Adaptomics – Population Genetics and Genomics of Adaptation	8	3.88	3.75	3.88	3.75	3.75	3.38	3.63	3.88	1.00
Scientific Writing I	4	3.50	3.75	4.00	3.50	3.50	3.50	3.75	3.75	2.00

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	36
UZH affiliation	9
ETH affiliation	17
Other institute (please specify)	10 (University of Berne)
Track I students	13
Track II students	23
Female students	19
Male students	17
International students	29
Swiss students	7
Program drop-outs	-
Completed PhD	
Program Alumni	17
Faculty members	28

Recruitment

Recruiting statistics	December 1 2020	July 1 2020
Complete applications	15	11
Invited candidates	9	2
Drop-outs before interview	1	1
Free slots (XX priority program)		
Matches	2	1
Candidates without matches		
Decision against program	2	
Rejected candidates		
Change to other LSZGS programs	1	
Gained from LSZGS programs	1	

Finances

	Income	Expenses
Balance as of January 1	54’599.25	
Income		
ETHZ	7’700.00	
UZH		
Fees		
Other (Uni Bern)	20’000.00	
Total income	27’700.00	0
Expenses		
Salaries program		
Social benefits		
Recruitment December 1		2’524.00
Recruitment July 1		2’988.80
Program activities (retreat, symposia, etc.)		4’468.90
Overhead		
Balancing to “reserve”		30’000.00
Total expenses	0	39’981.70
Balance as of December 31	0	42’317.55

Program Activities

Outlook

Science and Policy

The program in figures and numbers

Program statistics	as of December 31
Program students	47
UZH affiliation	16
ETH affiliation	27
Other institute (University of Basel)	4
Track I students	17
Track II students	30
Female students	29
Male students	18
International students	29
Swiss students	18
Program drop-outs	5
Completed PhD	2
Program Alumni	41
Faculty members	10

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	208	213
Invited candidates	22	16
Drop-outs before interview	2	2
Free slots (1 priority program)	9	8
Matches	9	8
Candidates without matches	10	6
Decision against program	0	0
Rejected candidates	187	197
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Balance as of January 1	119858	
Income	20'468.00	
ETHZ		
UZH		
Fees		
Other	SUK contribution is separately reported	
Total income	139’327	0
Expenses		
Salaries program		27’803
Social benefits		Social Benefits included above
Recruitment December 1		
Recruitment July 1		
Program activities (retreat, symposia, etc.)		
Overhead		
Total expenses	27802	27802
Balance as of December 31	111’525	0

Excellent capacities and experience for carrying out training

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

educational platforms that operate nationally and internationally and make the course offer of the PSC and of corresponding programs fully transferable: Life Science Zurich (http://www.lifescience-graduateschool.uzh.ch/en/about-LSZGS/phd-programs.html), an international grad ate school in life sciences, hosting 18 PhD programs, the Swiss Plant Science Web (www.swissplantsciencwweb.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	Other	female	male	national	international
2020	47	16	27	3	1	29	18	18	29

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

PhD Program in Science & Policy Curriculum

Module	ECTS
Compulsory Activity: 4 out of 6 modules - **Policy Workshops** (offered by PSC, 2 ECTS each): • Evidence-based Policy-making in Plant Sciences • Stakeholder Engagement • Communicating Science • Building Political Support • Contributing to Policy Action – Analyzing and Communicating Risks and Uncertainties • Understanding Policy Evaluation • Scenario Building and Modelling • Introduction to Political Sciences 1 Lecture in **Basics of Policy Sciences** (i.e. Introduction to Political Sciences, 1 ECTS)	9
Elective Activities: • **Technical Courses**: Intensive workshops on skills, methods and techniques • **Transferable Skill** Courses • PSC: Careers in Science or Policy, or both? (1 ECTS) • PSC: Scenario-building and modeling (1 ECTS) • PSC: System Thinking (1 ECTS) • Seminars, Colloquia	3
Other Elective Activities: • Participation in international scientific symposium with own scientific contribution (oral or poster presentation, preferentially with science-policy section) (max. 1 ECTS)	

• Organization of PSC PhD Symposium, preferentially with science-policy section (max. 3 ECTS) • ECTS from the PSC offer of technical and scientific courses and Transferable skill courses.	
	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 10 of the 34 PhD students recruited to the program until December 31, 2020.

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 2020 we can currently report:

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

Certification

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

Evaluation

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

Courses carried out

In the reporting period, the PSC organized 4 courses. We report 65 course visits of PhD students.

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

Year	Total Course Nr	Part. University of Zurich	Part. ETH Zurich	Part. University of Basel	Part. Other	Course Participations
2020	4	26	34	1	4	64

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

Date	**Course**	**Speakers / case study supervisors**	**Participants**
26.02.2020 - 28.02.2020	Scenario-building and modelling (i.e. participatory modelling approach)	Véronique Lamblin (Futuribles), Claude Garcia (ETHZ)	ETH (4) UZH (4)
07.09.2020 & 09.09.2020 (New)	Introduction to Political Sciences	Sarah Bütikofer, Global Governance (ETH Zürich	ETH (10) UZH (8) OTHER (4)
16.10.2020 & 30.10.2020 (New)	Science & Policy Workshop C: Communicating Science	Jacopo Pasotti	ETH (11) UZH (7)
11.11.2020 - 07.12.2020	Science & Policy Workshop D: Building Political Support	Sarah Bütikofer, Global Governance (ETH Zürich); Sebastian Koehler, Center for Data and Methods (University of Konstanz)	ETH (9) UZH (7) UNIBAS (1)

Table 3: Course Evaluation 2020: 4 = fully agree, 1 = fully disagree

	Number of Questionnaires	The Course was well organized?	The topics covered met my expectations?	The instructor explained clearly?	Manual was helpful & useful also for future?	Good balance between theoretical & practical?	level of course was according to my needs?	working atmosphere was good?	I learnded & benefited from this course?	The instructor meet an appropriate pace? 1 = too slow/too fast, 2 = just right
Science & Policy Workshop D: Building Political Support	5	3.80	3.40	3.60	3.40	3.80	3.60	3.60	3.60	2.00
Science & Policy Workshop C: Communicating Science	8	3.13	3.25	3.38	2.89	3.63	3.00	3.50	3.25	1.38
Science & Policy: Introduction to Political Sciences	20	3.45	3.21	3.59	3.21	3.67	3.11	3.68	3.37	1.16
Science & Policy: Scenario-building and modelling (i.e. participatory modelling approach)	0	NA	NA	NA	NA	NA	NA	NA	NA	NA

Outlook

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

The PSC EU-COFUND proposal «RESPONSE - to society and policy needs through plant, food and energy sciences» (Horizon 2020, MARIE SKŁODOWSKA-CURIE ACTIONS) submitted on September 27, 2018 was successful. RESPONSE started in February 2020. RESPONSE is recruiting of an additional cohort of PhD students of 28 within between February 2020 and November 2020.

Systems Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	84
UZH affiliation	17
ETH affiliation	67
Other institute (please specify)	
Track I students	50
Track II students	34
Female students	39
Male students	45
International students	71
Swiss students	13
Program drop-outs	0
Completed PhD	18
Program Alumni	
Faculty members	

Recruitment

Recruiting statistics	December 1 (2019)	July 1 (2020)
Complete applications	98	58
Invited candidates	18	14
Drop-outs before interview	2	3
Free slots (SysBio priority program)		
Matches	2	5
Candidates without matches	12	6
Decision against program	1	
Rejected candidates		
Change to other LSZGS programs		
Gained from LSZGS programs		1

Finances

	Income	Expenses
Balance as of January 1	104’443	
Income		
ETHZ	33’712	
UZH	0	
Fees	0	
Other	0	
Total income	33’712	0
Expenses		
Salaries program		20’725
Social benefits		4’436
Recruitment December 1		6’381
Recruitment July 1		8’556
Program activities (retreat, symposia, etc.)		0
Overhead		0
Total expenses	0	40’098
Balance as of December 31	98’057	0

Program Activities

(i) Compulsory intro course “Systems Approaches in Biology” (conducted by SB program, 14 participants in total, thereof 11 from SB and 3 from MTB/BioMed) two week full-time, online via Zoom, the aim of this course is to experience and understand systems biology as a scientific process for hypothesis generation in complex and dynamic situations and networks.

(ii) Advanced course “Computational Biology” (conducted by SB program, 23 participants from SB): two-week full-time, online via Zoom, 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).

(iii) No student retreat in 2020 due to the COVID-19 pandemic.