



**Universität
Zürich** UZH

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

LIFE SCIENCE ZÜRICH

LIFE SCIENCE ZÜRICH GRADUATE SCHOOL ANNUAL REPORT 2022

DR. SUSANNA BACHMANN



Photos: ETH Zürich

1 EXECUTIVE SUMMARY.....	3
2 INTRODUCTION	4
2.1 MISSION.....	4
2.2 STRATEGY AND PRODUCTS OF THE LSZ GS	5
3 ACTIVITIES.....	11
3.1 RECRUITMENTS.....	11
3.2 DATA SYSTEMS AND WEBPAGES	16
3.3 TRANSFERABLE SKILLS COURSES	17
4 ON-GOING PROJECTS.....	20
5 FINANCES.....	21
6 OUTLOOK	24
APPENDIX 1: FINANCIAL DISTRIBUTION KEY	25
APPENDIX 2: GRADUATE SCHOOL STUDENT BODY	26
APPENDIX 3: STATISTICS INTAKE ROUNDS	27
APPENDIX 4: PHD PROGRAMS ANNUAL REPORTS	34
BIOMEDICINE.....	35
BIOMOLECULAR AND STRUCTURE MECHANISM	40
CLINICAL SCIENCE	43
CANCER BIOLOGY	46
ECOLOGY.....	53
EPIDEMIOLOGY AND BIostatISTICS.....	57
EVOLUTIONARY BIOLOGY	61
MICROBIOLOGY AND IMMUNOLOGY	65
MOLECULAR LIFE SCIENCES.....	72
MOLECULAR TRANSLATIONAL BIOSCIENCE	82
NEUROSCIENCE	84
PLANT SCIENCES	87
RNA BIOLOGY	103
SCIENCE AND POLICY.....	106
SYSTEMS BIOLOGY	113

1 Executive summary

While the Covid-19 pandemic phased out and was officially declared as “ended” in Spring 2022, the next disaster had already surged: with Russia waging war against Ukraine, a lurking energy crisis and soaring inflation rates, there was no return to “normality” as it was known before the Corona virus hit. Though the daily business of the Life Science Zurich Graduate School (LSZ GS) was not affected in the same direct way as during the pandemic, there was also no atmosphere of departure to be experienced, as we might have hoped for.

In the year 2022, 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, 1'664 early stage researchers are performing their doctorate in a program affiliated with the LSZ GS (as of 31 December 2022). Compared to 2021, the number of doctoral students increased within the usual scope of the last years (1'655). 60% of our doctoral students are female and more than 71% came from abroad. 66% of them are enrolled at the University of Zurich, 32,5% at ETH Zurich and 1.5% at other academic institutions in Switzerland (mainly at the Universities of Basel and Berne).

The LSZ GS had already gained quite some experience with the organization of the two-step recruitment with a first, virtual round of “lab visits” and a second, optional round of in-person meetings. On-site visits were for both rounds clearly more numerous than the year before with travel and gathering restrictions in place, and the LSZ GS stuck to its established scheme of individual lab visits instead of inviting all candidates for the same dates to Zurich as it was usual before the pandemic. Although the Program Directors' Conference (PDC) had already decided unanimously in November 2021 to keep the 2-step intake in place for the time being, PIs and candidates are not entirely satisfied with the individual lab visits, which elongates the already long-lasting intake process unnecessarily. Therefore, the recruitment shall again undergo some adaptations in the coming year, but it is not yet determined whether minor changes will suffice or whether the course of action needs a profound overhaul.

In general, the recruitment numbers are a bit a mixed bag of downward and upward trends. In 2022, the application numbers (1'458) were slightly higher for the 1 July deadline compared to the previous December 2021 round (1'259) and the following December 2022 intake (1'300). Overall, the numbers were a bit lower than the year before. Nevertheless, the LSZ GS is not too concerned about this trend. On the one hand, many competitor programs in Europe experienced the same dip in 2022, for some of them it was in fact rather pronounced. On the other hand, fluctuating numbers seem to be the only stable continuum of the recruitment process. All in all, the matching rates and those of the filled positions are a bit on the lower side but still within the average of past years. We shall see whether the planned adaptations of the recruitment process will have positive effects on these rates.

With 41 transferable skills courses and 696 participants the LSZ GS reached again the level of the pre-pandemic years. 12 courses were jointly offered together with a doctoral program or another university institution. After the pandemic years, many participants enjoyed the personal exchange and the possibility to meet again on campus. Nevertheless, the Graduate School will continue to offer some of its courses in online format. Mainly so, if the topic is well suited for remote teaching and the facilitator can save a trip, and with this carbon emission, to come to Zurich.

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**

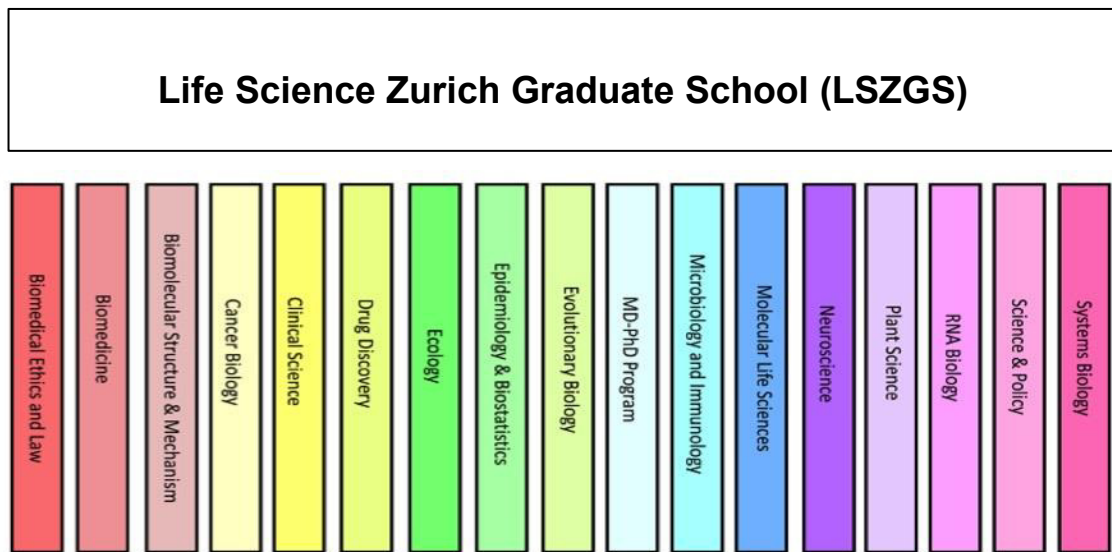


Figure 1: Chart of the LSZ Graduate School PhD programs

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	<ul style="list-style-type: none"> • Strategic development of LSZ GS • Advice and support for the PhD programs and GS administration • Development of common criteria for quality assurance of the PhD programs • Promotion of relevant contacts within the scientific community of life sciences • Identification of common course needs • Development of a transferable skills curriculum • Identification and development of joint funding initiatives
PhD programs	<ul style="list-style-type: none"> • Evaluation and acceptance of students into the program • Development, implementation and funding of a discipline-specific graduate curriculum • Quality assurance • Fundraising for a specific PhD program • Tracking development of the students within each program • Funding travel expenses and accommodation for interview candidates from abroad
Graduate School office	<ul style="list-style-type: none"> • Increasing visibility of the PhD programs world-wide • Advertising the graduate school and its recruitment procedure (advertisements 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 <i>independent</i> of a specific research field (e.g. for common activities or for fellowships for students from a specific country) • Development and organization of a centralized Transferable Skills Course Program for all graduate students, including acquisition, commitment and support of internal and external facilitators, advertising the courses (GS web site) and coordinating sign-up • Support for the career development of graduate students (courses, activities, web-information) • Assurance of quality and sustainability of the services and products of the LSZ GS office • Exchange and collaboration with other units of the 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 2022, 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. Katrien de Bock (as of 2023) Prof. Christian Wolfrum (until end of 2022) (Institute of Food, Nutrition and Health, ETH)
Biomolecular Structure and Mechanism (BSM)	Prof. Martin Jinek (Institute of Biochemistry, UZH)
Cancer Biology	Prof. Maries van den Broek (Institute of Experimental Immunology, UZH)
Clinical Science	Prof. Dr. med. Beatrix Latal (Children's hospital Zurich)
Drug Discovery	Prof. Michael Arand (Institute of Pharmacology and Toxicology, UZH)
Ecology	Prof. Anna-Liisa Laine (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)

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. Ohad Medalia (Department of Biochemistry, UZH)
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) Cancer Biology	Judita Tillova (Institute of Biochemistry, UZH) Bettina Rausch (Institute of Molecular Cancer Research, UZH)
Clinical Science	Lea Schwab (Dean's Office of the Faculty of Medicine 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. Marco Kaufmann (since July 2022) Dr. Sarah Ziegler (until July 2022) (Institute of Social and Preventive Medicine, UZH)
Evolutionary Biology	Dr. Tony Weingrill (Anthropological Institute, UZH)
MD-PhD Program	Artemi Bendandi (since July 2022) Jacqueline Wiedler (until July 2022) (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)
Neurosciences (ZNZ)	Heidi Gauss (Neuroscience Center Zurich, UZH & ETH)

Program	Administrator
Plant Science (PSC)	Dr. Melanie Paschke Dr. Luisa Last Dr. Yvonne Steinbach (Institute of Plant Science, ETH)
RNA Biology (RNA)	Rahel Büchi (Institute of Biochemistry, ETH)
Science and Policy	Dr. Luisa Last (Institute of Plant Science, ETH)
Systems Biology	Dr. Andrea Huber Brösamle Swantje Pless (until February 2022) Simone Zuber (since February 2022) (Department of Biosystems Science and Engineering, ETH)

Graduate School student body 2022

Table 4: Graduate School Student Body

Details of each program are published in the appendix 2.

Total numbers as of 31 December 2022

Total students	1664
Affiliated at UZH	1095
Affiliated at ETH	539
Other affiliation	31
Track I students	568
Track II students	1096
Female students	801*
Male students	540*
International students	952*
Swiss students	378*
Program drop-outs	82*
Completed PhD	247*
Program alumni	2909*

* - without the data from Neuroscience Program

2.2 b) Graduate School office

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

The school administrator attended the coordinator meeting in Barcelona from 10 to 11 November. Furthermore, she met in Frankfurt with the other members of the GRADE (Goethe Research Academy for Early Career Researchers) advisory board on 28 November for the annual encounter.

In addition, she attended a webinar on "Virtual Conferences" organized by the Graduate Campus of the University of Zurich on 17 March. Later that month she followed as a guest the LERU Doctoral Studies Policy Group Meeting that was held in Zurich. As in the years before the pandemic she participated in the D-BIOL symposium in Davos from 13-15 June. Towards the end of the year, on 23 November, she took part in the PRIDE webinar on Scientific Integrity.

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 China, Iran Italy, Nigeria and Germany in varying order for the two deadlines (see appendix 3).

Table 5: Complete applications per PhD program in 2022

	1 Dec. 2021	1 July 2022	1 Dec. 2022
Biomedical Ethics and Law (med. Track)	no data	no data	no data
Biomedicine	79	108	90
Biomolecular Structure and Mechanism	56	33	37
Cancer Biology	203	186	210
Clinical Science	20	63	12
Drug Discovery	80	88	99
Ecology	28	39	37
Epidemiology and Biostatistics	63	149	64
Evolutionary Biology	12	12	17
Microbiology and Immunology	172	222	210
Molecular Life Sciences	176	187	200
Neuroscience	170	138	153
Plant Science	75	121	56
RNA Biology	24	28	23
Science and Policy	34	20	12
Systems Biology	66	58	76
TOTAL	1258	1452	1296

A glance at the total of application numbers in figure 2 makes it obvious that these numbers are constantly varying and it is difficult to find a satisfying answer why there is such steady boom and bust. Nevertheless, the constant up and down moved for the past two years in more or less the same range of 1'200 complete applications for the winter round and roughly 200 applications more for the summer round. From other European programs in the Life Sciences we know that many of them experienced a pronounced dip of application numbers in 2022. Although the Life Science Zurich Graduate School was spared dramatic decreases, we clearly did not reach the peaks of 2020, the first pandemic year. Whether the following dips have to do with the difficulties of planning and travelling or whether they are rather an expression of a general depression or fatigue caused by the imponderabilities of the pandemic for this cohort of applicants is difficult to know for sure.

Interestingly, the phenomenon of high numbers of unfinished or not submitted applications could also be observed in 2022. Maybe it has to simply be accepted as a fact that in the course

of an application round, more than half of the students give up their initial plans to apply with the Life Science Zurich Graduate School and abandon their candidature. This might, of course, have many different reasons. Though it can sometimes be observed that students “come back” and apply again six or twelve months later, it is difficult to find convincing explanations why half of the applicants of a given round decide against submitting their application.

In any case, the reviewers and members of the interview panels often had to evaluate the skills and experiences of Master students who had spent in the lab very few to no hours at all. Many Masters theses were literature studies carried out at home with more or less guidance from a remote supervisor. This made it obviously utterly difficult for the committee members to appropriately assess how trained the applicants were. Having said that, the recruiting PIs were, by and large, quite satisfied with the quality of the applicants in the past years.

With the pandemic, the whole recruitment process underwent in summer 2020 for the first time a fundamental re-organisation. The LSZ GS switched to a two-step recruitment with a first virtual round of admission interviews and online meetings with PIs and group members. This first round was carried out during the same time as usual (Wednesday to Friday of week 6 and 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. This two-step process remained in place in 2021 and 2022 although in most countries the pandemic restrictions were entirely relieved in Spring 2022 when it became clear that the Corona virus had largely become endemic. In fact, the Directors' Conference had already decided in November 2021 that the LSZ GS will keep for the time being this two-step process. Main driver for this decision was at that time actually not the pandemic situation anymore or the saved costs but the aspirations of the Faculty of Science to reduce carbon emissions of the unit. However, this project has no defined outlines up to date or it lost priority with the war in Ukraine, the threatening energy crisis and the soaring prices caused by rampant inflation rates.

Although drop-out and matching rates were also during pandemic times within the range of previous years, a considerable number of PIs and applicants are unhappy with individual lab visits extending over several months. As results and statements in the different recruitment questionnaires show, applicants miss the cohort feeling and the possibility to exchange experiences with other candidates. Many PIs prefer meeting all candidates within three to four days, so that job offers can be made after a week and the slots are filled relatively quickly. A working group of the LSZ GS attended these requests and suggested two main changes to find a good timely succession of virtual and on-site events: Firstly, the entire recruitment process should be shortened. The programs should carry out the evaluation of the applications in two instead of four weeks. That would it make possible to have the virtual round of interviews roughly one month after the application deadline (instead of currently approximately 9-10 weeks later). Secondly, the in-person lab visits should again happen for all candidates at the same time. Ideally, the visits can take place four weeks after the virtual interviews, though this time span might have to be extended to six weeks, if it turns out to be too short for obtaining a visa for applicants residing outside Europe. As in past years, only applicants who are invited by at least one PI will be asked to come to Switzerland. In this way, the Life Science Zurich Graduate School is still making a contribution to carbon reduction and it might help to keep the budgets of the programs within limits. Even though it is currently difficult to predict whether costs for flights and other means of transportation continue to rise and which impact the energy shortage in Europe might have on our mobility. Most likely the LSZ GS will have to further adapt and amend the whole recruitment process, if it wants to remain an attractive player with a good visibility in order to recruit a satisfactory number of excellent PhD applicants.

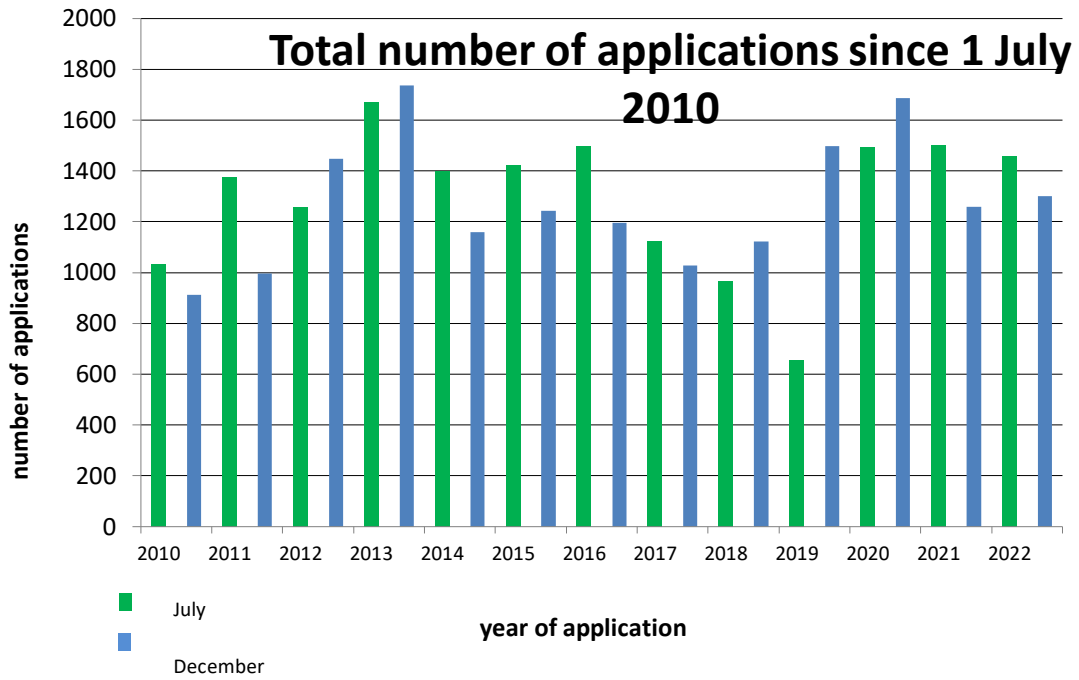


Figure 2: Total number of applications since 1 July 2010.

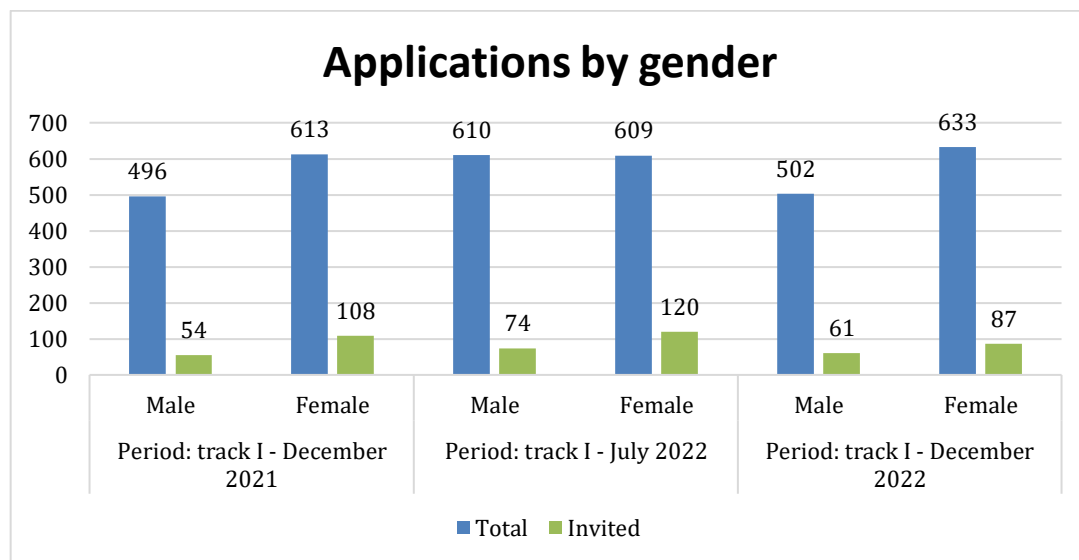


Figure 3: Total number of applications by gender

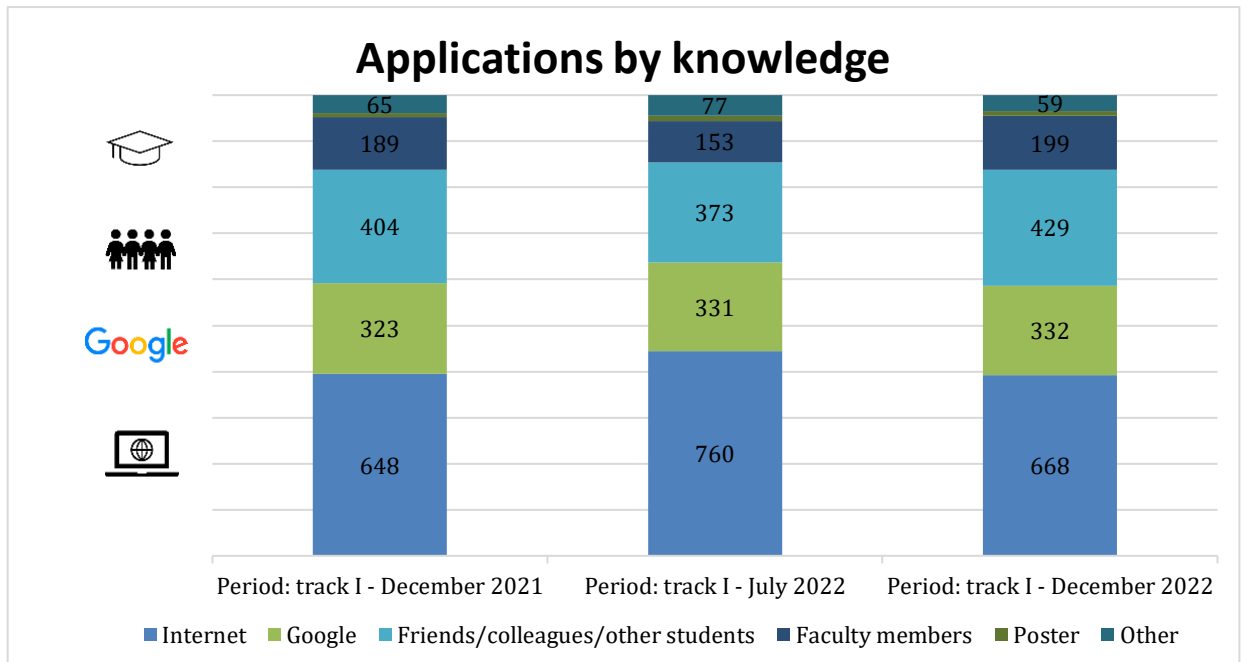


Figure 4: Total number of applications by knowledge

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 2021, we obtained 63 applications more from female than from male students. In July 2022 the male applicants outnumbered the females by a difference of 47. As for the previous recruitment rounds, with a ratio of nearly 2:1 we invited clearly 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. While the Graduate School definitely gave up the poster as a recruiting tool with the pandemic, the staff was several times present at online recruiting fairs organised by the recruiting platform “FindAUniversity”. It is difficult to quantify the outreach of this marketing tool, namely so, because we informed all applicants that we would be present there in case they have questions about the application process or the Life Science Zurich Graduate School in general.

After the admission committees of the different programs had reviewed the applications, the top 12-14% of the applicants were invited to virtual admission interviews. Whereas in December, only 41% of the interviewed candidates were offered a position in Zurich, this rate was with 46% a bit higher in July. Both rounds were on the average side of recruitment success compared to previous years. In the winter round, 21% of the accepted candidates rejected a position offered by our group leaders, dropped out of the recruitment process after the virtual interview or the in-person visit. In contrast, with 10% this ratio was quite a bit lower in summer and just 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 19% for the December deadline rather on the high side and with 17% for the July deadline within the average of former recruitment rounds (15-20%).

Table 6: LSZ GS recruiting statistics in 2022

	Dec. 1, 2021	July 1, 2022	Dec. 1, 2022
Complete applications	1259	1458	1300
Invited candidates	163	200	*
Drop-outs before interview	31	35	*
Candidates at interview	132	165	*
Free slots	94	128	*
Occupied slots	54	76	*
Matches	52	73	*
Candidates without matches	37	60	*
Decision against LSZ GS	28	16	*
Rejected candidates	7	10	*

*data will be included in 2023 annual report

In February 2022 (December 2021 deadline), we managed to fill 57% of the open positions – clearly less than the 70% we had achieved a year before. With 60% this ratio was about the same in September 2022. Still both rates correspond to the average of the last years. Compared to the year 2021 when especially during the February interviews only 18 of the 151 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) because of travel restrictions, again more matches happened after a personal meeting of the doctoral candidate with the prospective supervisor. Nevertheless, a few matches – mainly, but not only with oversea candidates - occurred without PI and applicant meeting personally.

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

Databases play a crucial role for accomplishing the different administrative processes of the Life Science Zurich Graduate School. Coping with the many tasks the office has to handle nowadays seems more or less impossible without all the bespoke tools we have at our disposal. However, the tools get quickly useless, if the data systems are not professionally serviced and updated. The LSZ GS learned this the hard way with DissGo, the database to administer the doctoral process from the beginning to the end. The tool is a collaborative project with an external company that is responsible for the programming and technical aspects. 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, the service and further developments have been reduced to an absolute minimum. While the company still put in place essential security updates and maintained the most basic services in the early days of the pandemic, communication with them stopped completely at the beginning of 2022. Thanks to the support of different IT staff at UZH and ETH, the Graduate School could keep the system running more rough than ready but had to find several times awkward workarounds for annoying problems. It became quickly clear that the only the solution to all the trouble was to give up the datasystem – the faster the better. Fortunately, the Faculty of Science was very obliging and offered the LSZ GS to use the studentadmin as a basis for a new tool with some add-ons for the UZH students and a separate login and access for the ETH students. Much to our relieve, Carsten Rose, IT manager at the Department of Mathematics, and his very cooperative team offered us to set up the DissGo “follower”. They have also programmed the highly sophisticated “join” application database for us. Collaborating with them has not only provided us with excellent online tools but has also been a great pleasure over the years. The switch of databases is now planned for – hopefully early - 2023.

Things got also actuated in the case of the course database the LSZ GS has been using for many years. Programmed by a meanwhile emerited professor, the tool was very solid but also got a bit long in the tooth. Luckily, the Graduate School got informed by the current service person that other units of UZH were testing a course administration tool developed by a third party. Eventually, the University of Zurich decided to acquire the licence for the TrainingPlus course administration software. Except for a one-time fee for setting up the database and get it running there are no costs involved in the use of this professional course administration tool for the Life Science Zurich Graduate School. Hopefully, the necessary adjustments will be completed by the beginning of 2023, so that the courses running in Spring can already be administrated in the new data system.

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 Communication as well as Social and Self-Management Skills.

Nearly 700 PhD students took part in one or several of the 41 courses that were organized by the LSZ GS in 2022. 12 of the offered courses were organized together with a PhD program or another unit of the universities, such as the Functional Genomics Center Zurich or the Animal Welfare and 3R. 3 course formats 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 organizational reasons, the LSZ GS also offers a few methodological courses within the TSC: DNA Next Generation Sequencing and Transcriptomics RNA Sequencing. 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.

At the end of February 2022, most of the coronavirus restrictions were dropped and Switzerland has been taking a decisive and important step towards normality. After two years of online and remote work, most of the educational institutions were allowed to go fully back to the live format. The Graduate School also decided to move back from online format to on-site for their transferable skills course program. However, still the third part of the courses were conducted online and in hybrid format in 2022. During the pandemic most of the professional trainers changed and adopted their courses to specific settings of remote teaching and learning.

In fact, several trainers offer in the meantime very sophisticated webinars in which self-study parts, plenum discussions and Q/A sessions with the trainer are ideally balanced. It is therefore to expect that courses without a strong focus on social interactions of the participants may remain online for the time being. Actually, a choice of different formats – in-person, embedded, online or hybrid – will make the TSC even more attractive and most likely the enormous impulse the pandemic had on the digitalization of society will have a continuous impact on how we teach and learn – also at the Life Science Zurich Graduate School.

Table 7: Courses offered by the LSZ Graduate School from January to December 2022

Transferable skills courses for PhD students 2022	Number of courses	Number of participants	UZH affiliation (+USZ&Kispi)	ETH affiliation	other
Best scientific practice & ethics	8	255	153	93	9
BIO 663 The Impact of Ethics on Doing Science (2 x on-site)	2	35	21	14	
Intro to Scientific Integrity lecture (2 x online, 1 x on-site)	3	168	99	62	7
BioEntrepreneurship & Innovation Program (BEI) Module A: Kickoff, From Scientist to BioEntrepreneur. Creation of a marketable product (on-site)	2	46	33	11	2
Value-based design; Enhancing value-sensitivity in use and development of emerging technologies	1	6		6	
Communication & presentation skills	10	128	84	38	6
Effective Visual Communication for Science (2 x online)	2	40	26	14	
Logic and Reasoning for Scientists (online)	1	15	8	6	1
Self-presentation & networking (online)	1	15	8	5	2
Oral Presentation (online)	1	15	10	5	
Storytelling & Storyboarding Science (2 x on-site)	2	13	10	2	1
6th Science Filmmaking Marathon (on-site)	1	13	7	4	2
Presenting Science (on-site and online)	1	9	8	1	
Science Events Planning (on-site)	1	8	7	1	
Methodical skills	3	24	19	5	0
BIO 680 DNA Next Generation Sequencing (on-site)	1	8	7	1	
BIO 675 Transcriptomics RNA Sequencing (2 x on-site)	2	16	12	4	
Scientific writing & publishing	6	97	65	30	2
BIO661 Scientific Writing (2 x on-site)	2	34	21	11	2
Writing Fellow Training (on-site and online)	1	16	12	4	
Scientific Writing and Publication in the Life Sciences (2 x online)	2	32	21	11	
Argumentation in Scientific Writing (online)	1	15	11	4	

Social & self-management skills	14	192	127	61	4
The Successful Start of a Professional Career (2 x on-site)	2	25	16	8	1
Project Management for Advanced Stage researcher (on-site)	1	13	11	2	
Career Cornerstones (on-site)	1	12	8	4	
Time & Career Management (online)	1	12	5	7	
Unfolding your Self-Confidence (2 x on-site)	2	22	12	10	
Managing difficult working relationships (on-site)	1	12	9	2	1
Teaching Science at the University (on-site and online)	1	12	9	2	1
Networking for Conferences, Collaboration & Career (on-site)	1	10	4	5	1
Academic Track (online)	1	24	19	5	
Mindfulness & Meditation: a beginner's guide (on-site)	1	16	8	8	
The postdoc workshop: getting funded, choosing the right lab, and understanding the academic job market (on-site)	1	18	15	3	
Project Management for early-stage researchers (on-site)	1	16	11	5	
Total of all courses	41	696	448	227	21

4 On-going projects

We have just pointed out in one of the previous chapters that the different databases are absolutely crucial for the Graduate School to perform its tasks and to render the desired services for all costumers in a timely and reliable manner.

It is still an utmost concern of the LSZ GS to bring the disconcerting and for the students of the Faculty of Science rather confusing situation of two parallel data systems to an early end. Even more so that DissGo is going stale and it dose not make much sense to put time and money in a database, which has to be given up rather sooner than later. For these reasons, the Graduate School is very grateful to the Dean of Studies that he as allowed adding additional data and certain features from DissGo also in the studentadmin database and - even more important – to make it possible that also the doctoral students from ETH can get separate access to the studentadmin. This way all the data will be again stored in one and the same system offering the LSZ GS the possibility to also manage data in its own right that is not needed by the other graduate schools of the faculty of science. It is definitely in the LSZ GS's best interest to make good use of this window of opportunity and to press ahead with the project.

In contrast, the project to implement a new course database is already more advanced and the tool is expected to be up and running at the beginning of the coming year. Although the course administration is running quite solidly, many details are still done manually. Hence, the

micromanagement of cancellations, operating the waitlist and fining late cancellations as well as no-shows is very time-consuming.

Last but not least, the application database “join” constitutes the very core of our application process and we will be continuously improving or adding features in order to keep the entire process as smooth as possible. By all means, we should avoid running into troubles caused by missing system and security updates. Although there are at the moment no major extensions planned, it is evident that smaller or bigger changes in the recruitment process may require rearrangements or adaptations. Depending on how satisfying the planned changes of the application deadlines and the recruitment process will work out, things might be in a state of flux for a longer while.

Another persisting issue will be the quest for stable and long-term funding for the Graduate School and its PhD programs. Despite the extra support of ETH and UZH that partially makes up for the losses caused by the ending of the swissuniversities scheme, the financial adversities are only deferred for a short while – officially the aid is granted until the end of 2024. Since the negotiations failed to obtain support for the coordinators’ salaries from the faculties, the structural funding problems of the LSZ GS need still to be addressed. Although chances are minimal that new funding sources will be available in the short run, we need to keep taps on this issue in order to seize any opportunity that may show up. Maybe the working group who has assumed office in summer 2022 can dedicate some of their time and energy to find a convincing solution for this everlasting issue.

Appointing a working group was one of the recommendations that resulted of the third cycle evaluation initiated in 2020. There were no official meetings between the evaluation office and the graduate school taking place in 2022, as we are still in the implementation phase. However, the most central recommendation from the point of view of the LSZ GS – the increase of the FTE from 65% to 100% by the faculty of science – still remains unacknowledged and most likely we will have to put more effort in this utmost concern, if we would like to get in approved.

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 2022 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.

As detailed above, the UZH headship delivered its promise to compensate those programs that had obtained swissuniversities money in the last years. Even though the UZH support is on a relatively small scale – the seven LSZ GS programs entitled to these benefits obtain a total of CHF 102'000 – it helped to keep the cutting of services momentarily at bay. In fact, ETH followed suit in 2022 and offered to match the UZH funds accordingly as of 2023.

However, irrespectively of whether the two universities are assisting a few programs with a bit of extra money, 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 slightly growing at the moment (it rose from 1071 funded PhD students (year 1 to 4) in 2011 to 1'257 in 2016, dropped to 1'178 in 2020 and has raised to 1'288 in 2022), 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.

It is a central interest of the LSZ GS to get raised the human resources for the school's office to 1 FTE – mainly so because the current tasks can hardly be tackled with the 0.65 FTE currently available for school assistance and management. Whether the incorporation of DissGo into the studentadmin database can be covered with own funding will highly depend on how extensive the adaptations will be. The graduate school could still economise a bit on the courses of the transferable skills program, as the offer has steadily grown during the pandemic years and clearly exceeded last year the allotted share of CHF 70'000. For the programs, by contrast, saving might be much more demanding than for the graduate school. On the one hand, some of them face already certain budget holes because the swissuniversities support is only marginally compensated by the universities. On the other hand, increasing inflation and energy costs lead to soaring travel fares and render the recruitment very costly. As a fully virtual recruitment is not entirely satisfying, cutting costs is not an easy task to accomplish.

Table 8: Annual Account LSZ Graduate School 2022

Earnings 2022	CHF
Contribution UZH	130'326
Contribution ETH	11'410
Reimbursement recruitment costs PhD-programs (Sep. 2020 & Feb. 2021)	56'193
Annual support MD-PhD program	5'000
Annual support Clinical Science Program	14'656
Surcharges courses	3'140
Total earnings	220'725

Costs 2022	CHF
Recruitment rounds (Feb & Sep 2021)	78'206
Transferable skills course program	85'249
Databases (join, TrainingPlus) & Computer Services (servers etc.)	13'755
Marketing (online ads & listings)	15'944
Salary administrator	48'257
Overhead	2'500
Total costs	243'911

Balance as of 31 December 2022	-23'186
---------------------------------------	----------------

The social benefit costs for Susanna Bachmann (CHF 10'841) were covered by the Faculty of Science of the UZH.

Life Science Zurich Graduate School: Recruitment costs 2022 in CHF

	February (132 Stud.)	September (165 Stud.)
General costs	CHF	CHF
Rent gather town platform	631	415
Total	631	415

	February (82 Stud.)	September (88 Stud.)
Travel & accommodation costs for external students	CHF	CHF
Accommodation	9'585	12'765
Travel costs (includes public transport and meals)	25'196	27'660
Total	34'780	40'424
Costs per student	424	459
Total costs recruitment	34'780	40'425

6 Outlook

As shown in the previous paragraphs, a substantial and sustainable improvement of the financial situation of the Graduate School and its programs has again become a distant perspective. In the light of the current global crisis with Russia waging war against Ukraine, a lurking energy crisis in Europe and with many a country up to their ears in debts, financial prospects are dire. In times of growing military spending, educational budgets are usually freezing, if not shrinking. For these reasons, it is rather obvious that the LSZ GS and their PhD programs cannot hope for a budget increase but they will have to go over their expenses 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. Cutting expenses should also be possible, if a switch to fully virtual recruitments is not actionable because – understandably - PIs and candidates wish to meet in person before they decide to embark on a doctorate and work together for the next four to five years.

It will be worthwhile for the Graduate School not to focus too much on financial matters but rather to rivet on improving the quality of their services without increasing the budget. Hopefully, the merge of the studentadmin and DissGo database as well as the introduction of the new course administration tool will be a success and allow the LSZ GS to tackle other projects. Since the working group has now assumed office, it is to expect that they will throw light on some aspects they consider to be worth improving. This might well concern internal structures and processes but also the core business of the Graduate School: the quality assurance of the doctorate. After the pandemic years and in the view of new global crisis, things feel again in a state of flux. Though it is not clear where these imminent changes will take us, the Life Science Zurich Graduate School has to make sure that its early stage researchers can get prepared in the best way to meet future challenges.

Appendix 1: Financial distribution key

Financial support of ETH and UZH in 2022							
Annual contribution ETH: 300'000 CHF				Allowances: up to 10 students: CHF 5,000			
Annual contribution UZH: 400'000 CHF				11-20 students: CHF 10,000			
Total contribution: 700'000 CHF				more than 20 students: CHF 14,000			
Programs	Allowance	ETH students	UZH (MNF) students	Other uni/ faculty	Students total	303 CHF per student	Total amount
Biomedicine	14,000	12	72		84	25,452	39,452
Biomolecular Structure and Mechanism	14,000	30	38		68	20,604	34,604
Cancer Biology	14,000	12	120		132	39,996	53,996
Ecology	14,000	22	41		63	19,089	33,089
Epidemiology & Biostatistics	14,000	4	47		51	15,453	29,453
Evolutionary Biology	14,000	1	58		59	17,877	31,877
Integrative Molecular Medicine			24		24	7,272	7,272
Microbiology & Immunology	14,000	76	137		213	64,539	78,539
Molecular Life Sciences	14,000	69	81		150	45,450	59,450
Molecular & Translational Biomedicine		7	8		15	4,545	4,545
Plant Science	14,000	45	34	11	79	23,937	37,937
RNA Biology		10	6	5	16	4,848	4,848
Sciences and Policy	14,000	32	14	3	46	13,938	27,938
Systems Biology	14,000	52	12		64	19,392	33,392
ZNZ/Neuroscience	14,000	80	144	29	224	67,872	81,872
TOTAL CHF	168,000	452	836	48	1,288	390,264	558,264

Life Science Zurich Graduate School

161,392 (= approx. 1305 x 108.61 CHF plus CHF 19,656 membership fees)

This support covers 1st - 4th year of PhD

Appendix 2: Graduate School student body

As of 31 December 2022	Total number of 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 *	1664	1095	539	31	568	1096	801*	540*	952*	378*	82*	247*	2909
Biomolecular Structure & Mechanism	81	59	22	1	36	45	41	40	61	20	1	9	164
Biomedicine	126	106	20	0	53	73	85	41	92	34	8	21	301
Cancer Biology	141	125	16	0	90	51	95	46	104	37	6	25	343
Clinical Science	54	54	0	0	13	41	35	19	36	18	6	7	19
Drug Discovery **	14	8	6	0	7	7	7	7	9	5	2	7	12
Ecology	94	54	40	0	8	86	61	33	44	38	3	10	217
Epidemiology & Biostatistics	49	45	4	0	19	30	30	19	31	18	1	14	74
Evolutionary Biology	73	72	1	0	4	69	35	38	52	21	3	14	168
Microbiology & Immunology	253	171	82	0	89	164	154	99	166	87	15	46	459
Molecular Life Sciences	180	100	80	0	119	61	103	77	147	33	3	33	590
Molecular & Translational Biomedicine	9	4	5	0	4	5	6	3	8	1	0	9	87
Neuroscience	323	212	107	4	40	283	-	-	-	-	-	-	136
Plant Science	113	41	56	15 Basel+ 1	9	104	68	45	81	32	29	9	139
RNA Biology	29	16	7	6	13	16	17	12	24	5	0	36	36
Science & Policy	56	15	37	4 Basel	30	26	32	24	42	14	5	1	53
Systems Biology	69	13	56	0	34	35	32	37	54	15	0	6	111

* Without the data from Neuroscience Program; ** Numbers extracted from the DissGo

Appendix 3: Statistics intake rounds

LSZ GS Intake round 1 July 2022, number of applicants by nationality

(Figures include more data groups than shown in table 5)

Country	Not invited	Invited	Total
All countries	1076	200	1276
India	249	17	266
Pakistan	115	2	117
China	78	19	97
Iran	80	2	82
Italy	42	26	68
Nigeria	66	2	68
Germany	23	26	49
Turkey	26	7	33
Ghana	30	1	31
Spain	20	11	31
Switzerland	9	21	30
Ethiopia	27	0	27
Greece	20	5	25
Russian Federation	15	2	17
Egypt	12	1	13
Bangladesh	12	0	12
Kenya	12	0	12
Democratic Republic of the Congo	11	0	11
France	8	3	11
USA	8	2	10
Netherlands	4	5	9
Poland	5	4	9
Portugal	6	3	9
Uganda	7	2	9
Canada	4	4	8
Lebanon	6	2	8
Romania	8	0	8
Mexico	6	1	7
Philippines	6	1	7

Austria	3	3	6
Cyprus	6	0	6
Malaysia	5	1	6
Nepal	6	0	6
Sudan	6	0	6
UK	4	2	6
Benin	5	0	5
Kazakhstan	5	0	5
Rwanda	5	0	5
Sri Lanka	5	0	5
Taiwan	5	0	5
Viet Nam	3	2	5
Belgium	3	1	4
Czech Republic	2	2	4
Peru	4	0	4
Republic of Korea	2	2	4
Senegal	4	0	4
South Africa	4	0	4
United Republic of Tanzania	3	1	4
Algeria	2	1	3
Brazil	3	0	3
Cameroon	2	1	3
Côte d'Ivoire	2	1	3
Indonesia	3	0	3
Ireland	2	1	3
Jordan	3	0	3
Serbia and Montenegro	2	1	3
Slovenia	0	3	3
Syrian Arab Republic	3	0	3
Zambia	3	0	3
Zimbabwe	3	0	3
Albania	2	0	2
Argentina	1	1	2
Azerbaijan	1	1	2
Burkina Faso	2	0	2
Colombia	1	1	2
Croatia	1	1	2

Ecuador	2	0	2
Eritrea	2	0	2
Finland	1	1	2
Guinea	2	0	2
Hungary	2	0	2
Kosovo	2	0	2
Lithuania	2	0	2
Madagascar	2	0	2
Malawi	2	0	2
Morocco	2	0	2
Singapore	1	1	2
Thailand	2	0	2
Tunisia	2	0	2
Afghanistan	1	0	1
Armenia	1	0	1
Australia	1	0	1
Bhutan	1	0	1
Bosnia and Herzegovina	0	1	1
Chad	1	0	1
Estonia	1	0	1
Georgia	1	0	1
Guatemala	1	0	1
Honduras	1	0	1
Iraq	1	0	1
Israel	1	0	1
Libyan Arab Jamahiriya	1	0	1
Myanmar	1	0	1
Namibia	1	0	1
Republic of Moldova	1	0	1
Saudi Arabia	1	0	1
Sierra Leone	1	0	1
Slovakia	0	1	1

LSZ GS Intake round 1 December 2022, number of applicants by nationality

(Figures include more data groups than shown in table 5)

Country	Not invited	Invited	Total
All countries	1012	149	1161
India	267	8	275
China	163	16	179
Germany	41	29	70
Pakistan	56	0	56
Iran	51	1	52
Italy	38	14	52
Turkey	35	6	41
Switzerland	23	15	38
Nigeria	26	1	27
Spain	17	6	23
UK	15	7	22
France	18	3	21
Russian Federation	14	5	19
Egypt	18	0	18
Ghana	16	0	16
Greece	14	1	15
USA	12	2	14
Poland	10	3	13
Canada	6	4	10
Brazil	8	0	8
Ethiopia	8	0	8
Philippines	8	0	8
Cyprus	7	0	7
Netherlands	4	3	7
Romania	5	2	7
Sri Lanka	7	0	7
Bangladesh	6	0	6
Hungary	4	2	6
Kenya	6	0	6
Lebanon	6	0	6
Kazakhstan	5	0	5

Portugal	4	1	5
Republic of Korea	4	1	5
Serbia and Montenegro	4	1	5
Taiwan	5	0	5
Zimbabwe	5	0	5
Austria	1	3	4
Indonesia	4	0	4
Mexico	3	1	4
Albania	3	0	3
Bulgaria	1	2	3
Lithuania	1	2	3
Singapore	2	1	3
Slovenia	2	1	3
Sudan	3	0	3
Uganda	3	0	3
Ukraine	2	1	3
Belarus	2	0	2
Cameroon	2	0	2
Gambia	2	0	2
Iraq	2	0	2
Kosovo	2	0	2
Morocco	2	0	2
Namibia	2	0	2
New Zealand	1	1	2
Peru	2	0	2
Syrian Arab Republic	2	0	2
Tunisia	2	0	2
Viet Nam	1	1	2
Zambia	2	0	2
Angola	1	0	1
Australia	1	0	1
Belgium	1	0	1
Belize	1	0	1
Benin	1	0	1
Colombia	1	0	1
Croatia	1	0	1
Cuba	1	0	1

Czech Republic	1	0	1
Denmark	0	1	1
Eritrea	1	0	1
Estonia	0	1	1
Finland	1	0	1
Ireland	1	0	1
Jordan	1	0	1
Latvia	1	0	1
Luxembourg	0	1	1
Malaysia	1	0	1
Mali	1	0	1
Mauritius	1	0	1
Mongolia	1	0	1
Myanmar	0	1	1
Nepal	1	0	1
Norway	1	0	1
Oman	1	0	1
Rwanda	1	0	1
Sweden	0	1	1
Thailand	1	0	1
The former Yugoslav Republic of Macedonia	1	0	1
Togo	1	0	1
Trinidad and Tobago	1	0	1
Uzbekistan	1	0	1

TOP 5 LSZ GS Intake round 1 July 2022

Country	Not invited	Invited	Total
Asia			
India	249	17	266
Pakistan	115	2	117
China	78	19	97
Iran	80	2	82
Turkey	26	7	33
Europe			
Italy	42	26	68
Germany	23	26	49
Spain	20	11	31
Switzerland	9	21	30
Greece	20	5	25
Africa			
Nigeria	66	2	68
Ghana	30	1	31
Ethiopia	27	0	27
Egypt	12	1	13
Kenya	12	0	12

TOP 5 LSZ GS Intake round 1 Dec. 2022

Country	Not invited	Invited	Total
Asia			
India	267	8	275
China	163	16	179
Pakistan	56	0	56
Iran	51	1	52
Turkey	35	6	41
Europe			
Germany	41	29	70
Italy	38	14	52
Switzerland	23	15	38
Spain	17	6	23
UK	15	7	22
Africa			
Nigeria	26	1	27
Egypt	18	0	18
Ghana	16	0	16
Ethiopia	8	0	8
Kenya	6	0	6

Appendix 4: PhD Programs Annual Reports

Biomedicine

The program in figures and numbers

Program statistics	as of December 31, (imMed + BioMed)
Program students	12 + 114 = 126
UZH	12 + 94 = 106
ETH	0 + 20 = 20
Other affiliation	0*
Track I students	2 + 51 = 53
Track II students	10 + 63 = 73
Female students	8 + 77 = 85
Male students	4 + 37 = 41
International students	8 + 84 = 92
Swiss students	4 + 30 = 34
Program drop-outs	2 + 6 = 8
Completed PhD	21 + 0 = 21
Program Alumni	300 + 1 = 301
Faculty members	45 + 99 = 144

*1 doctoral student is enrolled at the UZH but doing her PhD at CUTISS AG

Recruitment

Recruiting statistics	December 1, 2021	July 1, 2022
Complete applications	76	90
Invited candidates	24	28
Drop-outs before interview	3	3
Free slots (BioMed priority program)	15	23
Matches ¹	3	5
Candidates without matches	9	14
Decision against program	5	2
Rejected candidates	0	2
Change to other LSZGS programs	4	0
Gained from other LSZGS programs	3	6

¹ without cross recruitment

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ		
UZH	46'724	
Fees	36'000	
Other	900	
Expenses		
Salaries program		55'124
Ueberbrückungsrente H. Preisig bis Aug 2022		5'546
Social benefits		900
Recruitment December 1		3'412
Recruitment July 1		8'487
Program activities (Retreat, Christmas event, PC, Screen, Spesen, SBB Gutschein)		9'181
Overhead		
Total	83'624	82'651
Balance as of December 31	973	

Program Activities

Graduate courses of the BioMed PhD Program

- February 22/24, 2022: Introduction to human physiology: Respiration and blood
- June 9/10, 2022: Mouse physiology and pathophysiology
- September 5/6, 2022: Molecular Biology Methods
- October/November, 2022 (6 full days): Bioinformatics Next Generation Sequencing (via Zoom)
- December 5/6, 2022: Masterclass in Scientific Writing and Publishing in High-Impact Journals

Seminar series “From Vision 2020 to Future Perspectives”

The new organization committee led by Dominika Brchnelova organized the first vision 2020 event in 2022 (since the pandemic):

- March 17, 2022: Guest speaker: David Nutt, an English neuropsychopharmacologist specializing in the research of drugs that affect the brain and conditions such as addiction, anxiety, and sleep. The talk was followed by an aperitif. More than 80 people took part on campus and over 80 people joined virtually.

The Vision 2020 events are supported by Post - SUK money from the MNF/UZH.

Retreat of the Bio Med PhD Program

September 18/19, 2022: The second BioMed Retreat took place in the Kartause Ittingen. Program: Plenary Lectures I-III by different PI's, Student Sessions I-III, Poster Sessions I-III, Career Panel with LSZGS Alumni, Prizes for best presentation and poster.

The retreat was supported by the former MTB PhD program, the BioMed PhD program and Post - SUK money from the MNF/UZH.

Events PhD Program BioMed

December 3, 2022: BioMed/MIM Christmas event in the Irchelbar. Program: scientific slammer, social networking, quizzes, magic show, gingerbread decorating, games and food and drinks.

The events were financed by the BioMed and MIM PhD programs.

New PI members of BioMed

As of end of 2022, 99 PIs were members of BioMed. 6 new BioMed PIs were accepted by the BioMed commission during 2022. One PI went to another University and is no longer member of the BioMed program.

Resignation from the BioMed Commission

Co-director Christian Wolfrum retired from the BioMed commission due to his new appointment as Vice President for Research at the ETHZ end of 2022. He remains PI of the PhD program in BioMed.

Katrien de Bock (already member of the Biomed commission) is Christian Wolfrum's successor as co-director of the program and was formally elected at the BioMed commission meeting on March 7, 2023.

Sean Froese, BioMed PI from the Children's hospital will join the BioMed commission.

New BioMed regulations

Based on the new ETHZ regulations (effective since January 1, 2022) and the subsequent discussion of how our two current BioMed regulations may violate these new regulations we made an effort to transform our slightly different BioMed regulations for UZH and ETH students into one single version, which is the same for all our students, independent of their affiliation (UZH or ETHZ).

These new regulations are more user friendly. We have unified and rewritten the structure, outline and wording. The content is almost the same with some few adaptations.

The new BioMed regulations were approved by the Assembly of the Science Faculty on September 26, 2022 and entered into force on January 1, 2023.

Travel grants

The BioMed Travel Grants support PhD students to participate in a conference, symposia or summer school but also in online courses/conferences and webinars in their field. Two calls are announced per year with deadlines 1st of March and 1st of September.

In 2022, the BioMed program awarded 10 doctoral students with a travel grant.

Outlook

Following topics will be discussed in the BioMed Commission in the next few months:

- Financial situation of the program in future
- Follow-up financing option after Post-SUK will expire in 2024. Solution thereafter?
- Planning and Organization of the 3rd retreat and/or other scientific and social events.

Biomolecular and Structure Mechanism

The program in figures and numbers

Program statistics	as of December 31
Program students	81
UZH	59
ETH	22
Other affiliation. 1 (Basel)	1
Track I students	36
Track II students.	45
Female students.	41
Male students	40
International students.	61
Swiss students.	20
Program drop-outs.	1
Completed PhD	9
Program Alumni.	164
Faculty members.	27

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	60	63
Invited candidates	13	14
Drop-outs before interview	0	5
Free slots (XX priority program)	13	12
Matches	7	2
Candidates without matches	3	7
Decision against program	3	0
Rejected candidates	0	0
Change to other LSZGS programs	1	0
Gained from LSZGS programs	1	0

Finances

	Income	Expenses
Balance January 1		
Income	34'604.00	
ETHZ		
UZH		
Fees		
Other		
Expenses		
Salaries program		22'560
Social benefits		
Recruitment December 1		557.40
Recruitment July 1		1'335.40
Program activities (retreat, symposia, etc.)		14'081.20
Overhead		
Total		
Balance as of December 31		-4'346.00

Program Activities

Retreat 2022

Mattli Antoniushaus, Morschach 5-7.Sept.2022

Structural biology course

Monday, February 7, 2022, 8:10am - 4:30pm ONLINE
Tuesday, February 8, 2022, 8:30am - 5:45pm ONLINE

Current topics in structural biology – online

Thursday, September 29, 2022, online via zoom

Annual meeting – in person

Thursday, May 12, 2022 at 4pm, Lecture hall: Y03-G-91,UZH Irchel

Clinical Science

The program in figures and numbers

Program statistics	as of December 31, 2022
Program students	54
Track I students	13
Track II students	41
Female students	35
Male students	19
International students	36
Swiss students	18
Program drop-outs	6
Completed PhD	19
Program Alumni	19
Faculty members	36

Recruitment

Recruiting statistics	December 1, 2021	July 1, 2022
Complete applications (<i>Track II</i> , <i>Track I</i>)	7 20	7 63
Invited candidates	4 3	6 3
Drop-outs before interview	0	0
Free slots (XX priority program)	4 1	6 2
Matches	4 1	6 2
Candidates without matches	0 2	0 1
Decision against program	0	0
Rejected candidates	2 17	0 60
Change to other LSZGS programs	0	1 0
Gained from LSZGS programs	1 0	0

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ		
UZH	71'648 (real and virtual money)	
Fees		
Other	14'656	
Expenses		
Salaries program		47'817
Social benefits		
Recruitment December 1		
Recruitment July 1		
Program activities (retreat, symposia etc.)		18'501
Overhead		0
Total	66'318	66'318
Balance as of December 31	0	

Program Activities

Retreat on September 9, 2022

Annual Members Meeting on October 28, 2022

Outlook

Retreat on September 22, 2023

Annual Members Meeting on October 27, 2023

Cancer Biology

The aim of the international PhD program in Cancer Biology (CB) is recruiting excellent young scientists and training them at an advanced level for their future careers in science and society. Since PhD students enrolled in the program work in both basic and clinical research groups, the emphasis of the program is to actively promote and foster interaction between the students and research groups to facilitate the exchange of research ideas and to encourage interdisciplinary research.

The program offers a choice of courses covering molecular and cell biology of cancer and clinical cancer research, as well as courses in scientific writing and ethics. In addition, students are asked to attend advanced specialized courses and transferable skill courses, as well as conferences and student retreats.

The program in figures and numbers

Program statistics	as of December 31
Program students	141
UZH	125
ETH	-
Other affiliation	90
Track I students	
Track II students	51
Female students	95
Male students	46
International students	104
Swiss students	37
Program drop-outs	6
Completed PhD	25
Program Alumni	343
Faculty members	74

Recruitment

Recruiting statistics	December 1, 2021	July 1, 2022
Complete applications	198	166
Invited candidates	20	38
Drop-outs before interview	2	12
Free slots (CB priority program)	12	19
Matches	7	13
Candidates without matches	6	8
Decision against program	6	2
Rejected candidates	1	2
Change to other LSZGS programs	1	3
Gained from LSZGS programs	2	2

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ	14'000.00	
UZH	39'996.00	
Fees	32'000.00	
Post SUK	18'000.00	
C3Z	85'601.60	
Expenses		
Salaries program		70'259.00
Social benefits		15'342.60
Recruitment December 1		3'656.20
Recruitment July 1		5'541.20
Program retreat (retreat, travel grants, courses etc.)		78'581.14
Total	189'597.60	173'380.14
Balance as of December 31	16'217.46	

Program Overview

Director:

Prof. Maries van den Broek (UZH)

Steering Committee:

Prof. Beat Schäfer, Oncology Department, Kispi

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:

Nina Desboeufs, Institute of Molecular Cancer Research, UZH

Harini Lakshminarayana, Institute of Pathology and Molecular Pathology, USZ

Laura Leuenberger, Department of Medical Oncology and Hematology, USZ

Program coordinator:

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

Program Meetings:

Steering committee meeting took place on 13.01.2022 in zoom.

Assembly of the Faculty Members took place on 09.06.2022 in zoom.

Program Activities

Review/Admission Committee:

Dec/Feb:

Prof. Nicola Aceto, Institute of Molecular Health Sciences, ETHZ

Prof. Lubor Borsig, Institute of Physiology, UZH

Dr. Ralph Fritsch, Department of Oncology and Hematology, USZ

Prof. Chiara Magnani, Department of Oncology and Hematology, USZ

Prof. Anne Müller, Institute of Molecular Cancer Research, UZH

Prof. Beat Schäfer, Oncology Department, Kisp

Prof. Didier Surdez, Pediatric Oncology, Balgrist

Prof. Thorsten Zenz, Department of Oncology and Hematology, USZ

July/Sep:

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

Prof. Lubor Borsig, Institute of Physiology, UZH

Dr. Ralph Fritsch, Department of Oncology and Hematology, USZ

Prof. Ana Guerreiro Stüecklin, Oncology, University Children's Hospital Zurich

Prof. Enni Markkanen, Institute of Veterinary Pharmacology and Toxicology, UZH

PD Dr. Cristina Müller, Center for Radiopharmaceutical Sciences, Paul Scherrer Institute

Prof. Javad Nazarian, Oncology, University Children's Hospital Zurich

Prof. Lorenza Penengo, Institute of Molecular Cancer Research, UZH

Prof. Patrick Roth, Department of Neurology, USZ

Prof. Michael Scharl, Department of Gastroenterology and Hepatology, USZ

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

Prof. Peter Schraml, Institute of Pathology and Molecular Pathology, USZ

Dr. Karina Silina, Institute of Pharmaceutical Sciences, ETH Zurich

Prof. Didier Surdez, Pediatric Oncology, Balgrist

Prof. Michael Weller, Department of Neurology, USZ

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

Course days / lecturers:

Module B – Tumors and the immune system

Introduction to the immune system / Maries van den Broek, Christian Münz / 04.04.2022

Hematologic malignancies / Jean-Pierre Bourquin, Stefan Balabanov, Thorsten Zenz, Beat Schäfer / 05.04.2022

Tumor immunology (basics and therapy) / Onur Boyman, Alessandra Curioni, Reinhard Dummer, Patrick Roth / 06.04.2022

High dimensional spatial profiling of tumour microenvironment / Karina Silina, Nils Eling / 07.04.2022

Infection-induced cancers / Anne Müller, Roberto Speck, Achim Weber / 08.04.2022

Module C – Mechanisms of cancer induction and progression

Genome instability / Andreas Panagopoulos, Antonio Porro, Manuel Stucki / 20.06.2022
Oncogenes and tumor suppressor genes / Beat Schäfer, Martin Baumgartner, Michele Bernasconi, Beat Bornhauser, Marco Wachtel / 21.06.2022
Metastasis / Lubor Borsig, Maries van den Broek / 22.06.2022
Cell signalling molecules as therapeutic targets / Philipp Berger, Martin Béhé / 23.06.2022
Circulating tumor cells and metastasis / Nicola Aceto / 24.06.2022

Module D – Cancer treatments

Personalized chemotherapy / Ralph Fritsch / 26.09.2022
Cancer surgery / Kuno Lehmann, Anurag Gupta / 27.09.2022
Cancer radiotherapy / Martin Pruschy / 28.09.2022
Tumor pathology / Hella Bolck, Peter Schraml, Achim Weber / 29.09.2022
Precision Oncology: targeted and immuno-therapy in cancer patients / Andreas Wicki / 30.09.2022

Module A – Cancer biology

Modes of cell death / Christian Münz, Martin Pruschy, Lynn Wong / 31.10.2022
Colon cancer: inflammation and epigenetics / Michael Scharl Gerhard Rogler, Stephan Vavricka / 01.11.2022
Functional genomics / FGCZ Ralph Schlapbach / 02.11.2022
Cell biology / Jana Krietsch, Jan Krützfeld, Roland Wenger / 03.11.2022
Model systems for cancer research / Martin Baumgartner, Maries van den Broek, Mitch Levesques, Anne Müller / 04.11.2022

NEW Module E – Translational cancer biology

Encoded library technology and generation/testing of prototypes / Dario Neri / 31.01.2022
Cancer immunotherapy / Christian Klein / 01.02.2022
Small molecule anticancer therapeutics / Karsten Meissner / 02.02.2022
Gene and Cell-Based Therapies / Christian Pellegrino, Renier Myburg, Tobias Weiss / 03.02.2022
Regulatory aspects and entrepreneurial activities / Dario Neri / 04.02.2022

Scientific Writing Course

Proposal and Grant Writing, Pavel Janscak, 05.02. + 05.07.2022
Paper Writing, Isabelle Arnold, 04.02. + 22.07.2022

Science Ethics Courses – online

Dr. Verena Lütschg, About Tomorrow Consulting, 18.05.+01.06.2022 and 19.10.+09.11.2022
Dr. Jacky Leach Scully, Professor of Bioethics and Director, Disability Innovation Institute, UNSW, Australia, 23.05-25.05.2022

Additional courses:

Introduction to R

5 places 15.-16.06.2022

R4All: An introduction to the basics of R

5 places 12-13.05.2022 / 06.-07.10.2022

9th Student retreat of the Cancer Biology PhD Program

It took place from 13.–15.06.2022 at the Waldhotel Unspunnen and the Brauerei Rugenbräu in Interlaken. 89 PhD students participated, 68 of whom presented a poster, 12 students presented their project during a talk.

The retreat was a great success. After a long time, the doctoral students again had the opportunity to exchange ideas in a suitable setting and, above all, on site, and to hold lively, constructive and intensive discussions, which was greatly appreciated.

The following people were invited as research experts and keynote speakers:

Prof. Jannie Borst, Department of Immunology of Leiden University Medical Center (LUMC), The Netherlands.

Dr Karina Silina, Institute of Pharmaceutical Sciences, ETH Zurich

Prof. Didier Surdez, Bone Sarcoma Research Laboratory, Balgrist University Hospital

The keynote speakers actively participated in the awarding of the poster prizes.

Poster prizes were won by the following doctoral students:

Anna Laura Calvanese, Institute of Experimental Immunology, UZH

Ece Su Ildiz, Institute of Molecular Health Sciences, ETHZ

Iria Jimenez, Oncology, KISPI

Gioele Medici, Neuro-oncology Lab, USZ

Maria Spataro, Institute of Molecular Health Sciences, ETHZ

Marijne Vermeer, Institute of Experimental Immunology, UZH

Other students received a prize for the best presentations:

Alessandra Gurtner, Institute of Experimental Immunology, UZH

Nancy Klemm, Experimental Hematology Lab, USZ

Cyril Dördelmann, Institute of Molecular Cancer Research, UZH

The event was organised by the following PhD students:

Beckers Claire, Laboratory of Applied Radiobiology, USZ

Yanjiang Chen, Department of Pathology and Molecular Pathology, USZ

Lisa Dietsch, Department of Medical Oncology and Hematology, USZ

Angelique Fokkema, Institute of Molecular Health Sciences, ETH

Anne-Franziska Guthörl, Department of Molecular Life Sciences, UZH

Paulo Pereira, Institute of Experimental Immunology, UZH

Travel Grants: travel expenses for congresses, meetings, symposia, workshops and courses.

Deadlines for applications: 15.1. and 1.5. and 1.9.2022

Following students have received a travel grant:

Brügger Michael, EMBO/EMBL Symposium, 19.- 22.06.22, EMBL Heidelberg

Bühler Marcel, FEBS 22 Advanced course: 11.-16.09.22, Stockholm, Karolinska Institute

Calvanese Anna Laura, ENII-EFIS/EJI Immunology Summer School, 06-13.05.2022, Italy

Danielli Sara, AACR Annual Meeting 2022, 8.-13.04.2022, New Orleans, USA

Herbst Michael, ENII-EFIS/EJI Immunology Summer School, 06-13.05.2022, Italy

Look Thomas, 2022 SNO Annual Meeting, 17.-20.11.2022, Tampa, Florida, USA

Medici Gioele, 2022 SNO Annual Meeting, 17.-20.11.2022, Tampa, Florida, USA

Moonamale Devmini, AACR Annual Meeting 2022, April 8-13, 2022, New Orleans, USA

Mozaffari Nour, EMBO workshop, 10.-14.10.2022, Greece

Nater Marc, ENII-EFIS/EJI Immunology Summer School, 06-13.05.2022, Italy

Palumbieri Maria Dilia, Cold Spring Harbor Laboratory Symposium 01.-06.06.2022, NY, USA

Pereira Paulo, ENII-EFIS/EJI Immunology Summer School, 06-13.05.2022, Italy

Rao Satyajeet, ICGEB Arturo Falaschi Conference, 05.-07.07.2022, Trieste, Italy

Sparano Colin, ILC4 - 4th International Conference, 20.-23.09.2022, Hawaii, USA

Vermeer Marijne, ILC4 - 4th International Conference, 20.-23.09.2022, Hawaii, USA

Villars Danielle, EANO Meeting 2022, 15.9.-18.9.2022, Vienna, Austria

Vivalda Francesca, Responses to DNA damage, 27.03.-01.04.2022, The Netherlands

Weber Remi, 2022 SNO Annual Meeting, 17.-20.11.22, Tampa, Florida, USA

Social Activities

* BBQ at Irchel Park on 28.07.2022

* X-Mas Event on 07.12.2022: ice skating at the Dolder sports

Outlook 2023

Courses:

Module E – **Translational Cancer Biology** – 31.01.-04.02.2023

Module B – **Tumors and the immune system** – 04.04.-08.04.2023

Module C – **Mechanisms of cancer induction and progression** – 20.06.-24.06.2023

Module D – **Cancer treatments** – 26.09.-30.09.2023

Module A – **Cancer biology** – 31.10.-04.11.2023

Scientific Writing Course – January and June 2023

Science Ethics Course – July and November 2023

10th Cancer Biology PhD Students Retreat

Emmetten, Höhenhotel Seeblick

Travel Reimbursement Grants: travel expenses for congresses, meetings, workshops and courses. Deadlines: 15.1. and 1.5. and 1.9.2023

Social Activities:

Round tables in February and September

Summer BBQ in August

X-Mas event in December

Ecology

The program in figures and numbers

Program statistics	as of December 31
Program students	94
Track I students	8
Track II students	86
Female students	61
Male students	33
International students	44
Swiss students	38
Program drop-outs	3
Completed PhD	10
Program Alumni	217
Faculty members	69

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	32	33
Invited candidates	2	1
Drop-outs before interview	0	0
Free slots (XX priority program)	0	0
Matches	0	0
Candidates without matches	2	0
Decision against program	0	0
Rejected candidates	30	32
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Balance January 1 2022	12000,00 (post-SUK)	
Income		
ETHZ	0	
UZH	33089,00	
Fees	19280,00	
Other, Post SUK funding UZH	12000,00	
Expenses		
Salaries program		
UZH		36466,30
Post SUK		6724,00
Social benefits		
UZH		7399,40
Post SUK		1172,95
Recruitment December 1		0
Recruitment July 1		0
Program activities (retreat, symposia, etc.)		26971,01
Overhead		600
Total		79333,66
Balance as of December 31		-2964,66

Program Activities

Student meet-up activities continued in 2022. We organised a student lunch meet-up in March. We held our biennial mini-symposium, 25 of the program's students presented their research first with an elevator pitches and then during the poster session. 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](#) each semester.

The PhD Program in Ecology welcomed 18 new students and three new affiliated research groups in 2022.

Teaching

In 2022 the PhD Program in Ecology organized the following courses:

Subject-specific matters –

ECO 340 Ecological Theories 2,

ECO 360 Ecological Theories 3,

ECO 338 Ecological Controversies: Humans and Nature Summer School,

ECO 397 Cutting Edge Research Club,

ECO 398 Interdisciplinary research in global change and biodiversity.

Methods –

ECO 331 General linear and linear mixed models in R,

ECO 345 Online Landscape Genetics Graduate Student Course,

ECO 353 Introduction to Structural Equation Modeling (SEM).

Transferable Skills – ECO 303 Teaching Science at University,

ECO 311 Writing a Scientific Manuscript,

ECO 312 Navigating the Publishing Process.

Students were reserved places on the following course:

UWW 252 Spatial Ecology and Remote Sensing

UWW 271 Contemporary analysis for ecology,

Compositional Data Analysis.

Outreach

The Program Manager and Director did not have much opportunity to promote the program in 2022.

Outlook

The biannual PhD student lunch meet-up will continue in 2023.

The PhD Program in Ecology will offer the following courses in 2023:

Ecological Theories 4,

Ecological Theories 5,

Cutting Edge Research Club,

Interdisciplinary Research in Global Change and Biodiversity,
Introduction to Structural Equation Modeling,
General Linear and Linear Mixed Models in R,
Teaching Science at University,
Scientific writing with Stephen Heard,
Scientific writing for ecologists.

Some of the courses we offer our students are organized through collaborators:

UWW 252 Spatial Ecology and Remote Sensing,
UWW 271 Contemporary analysis for ecology and Ethics in Biological Research,
Reporting using R Markdown & Shiny,
Advanced Data Management and Manipulation using R,
Statistical modelling.

Epidemiology and Biostatistics

The program in figures and numbers

Program statistics	as of December 31
Program students	49
UZH	45
ETH	4
Other affiliation	0
Track I students	19
Track II students	30
Female students	30
Male students	19
International students	31
Swiss students	18
Program drop-outs	1
Completed PhD in 2022	14
Program Alumni	74
Faculty members	7

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	55	126
Invited candidates	12	15
Drop-outs before interview	3	3
Free slots (first priority)	2	4
Free slots (not first priority)	0	1
Position retracted	0	1
Matches	3	4
Candidates without matches	4	6
Decision against program	1	0
Rejected candidates	2	2
Change to other LSZGS programs	0	0
Gained from LSZGS programs	1	0

Finances

	Income	Expenses
Balance January 1	0	
Income		
UZH	29'453	
Post SUK	3'000	
GC quality assurance grant	4310.45	
Other	11'600	
Expenses		
Salaries program		15'000
Recruitment December 1		1'872.60
Recruitment July 1		0
Program activities (retreat, career development program, etc.)		25'280.84
Total	48'363.45	42'153.44
Balance as of December 31	6'210.01	

Program Activities

The program organized academic career development and social events in close collaboration with the students, represented by the student representatives. Furthermore, based on the students' wishes and inputs, the program supported events which showed other perspectives in addition to the traditional academic path. These events were organized and carried out independently by the students.

The following major events took place (ordered by date):

- Scientific writing training with Jürgen Barth (January 14 and 21, 2022)
- EBPhD Zurich walking tour with Rolf Heusser (February 17, 2022)
- Post-award grant management with Dominik Menges and Antonia Banti (March 10, 2022)
- EBPhD visit to Kulturama (March 16, 2022)
- Cup of Coffee with Aletta Bonn (March 28, 2022)
- EBPhD BBQ (April 28, 2022)

- EBPhD mentoring lunch (June 16, 2022)
- EBPI open door day (July 9, 2022)
- EBPhD kickoff afternoon and BBQ (September 8, 2022)
- EBPhD Halloween movie night (October 26, 2022)
- Introduction to causal inference course (November 3 and 4, 2022)
- EBPhD game night (November 14, 2022)
- SNSF mobility applicant's meeting with Kelly Turner (November 17, 2022)
- Presentation Coaching with Sam Lagier (December 1 and 8, 2022)
- EBPhD winter ice skating (December 6, 2022)
- Visit to Christmas market (December 15, 2022)
- EBPhD holiday apero (December 21, 2022)
- Methods seminar (STA 880DP) in spring (topic: Personalised medicine with Milo Puhan) and fall (topic: Qualitative Research Methods in Epidemiology / Mixed-Methods with Felix Gille) semester 2022
- Introduction to Epidemiology (EPI 301) block course in fall semester 2022
- EBPhD research talks (all over the year)

In addition, we regularly informed our PhDs about lecture series, the Graduate Campus and LSZGS offerings.

Outlook

The following events have been planned for 2023:

- EBPhD retreat in Filzbach (January 23 and 24, 2023)
- Scientific writing training with Jürgen Barth (February 2023)
- Visit to museum of wax moulages (February 22, 2023)
- Coffee Connect with Muriel Buri and Henock Yebyo (February 27, 2023)
- Mental strength and motivation with Gayané Kedia (March 30, April 17, and June 1, 2023)
- SNSF mobility applicant's meeting with Kelly Turner (May 25, 2023)
- PostDoc mentoring picnic (June 6, 2023)
- Methods seminar (STA 880DP) in spring (topic: Causal inference methods in Epidemiology with Miquel Serra Burriel) and fall (topic: Bayes for everyone with Malgorzata Roos) semester 2023
- Infectious diseases: Health Governance and Public Trust (EPI 305) course in spring semester 2023
- Introduction to Epidemiology (EPI 301) block course in fall semester 2023
- EBPhD research talks (all over the year)

Evolutionary Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	73
UZH	72
ETH	1
Other affiliation	0
Track I students	4
Track II students	69
Female students	35
Male students	38
International students	52
Swiss students	21
Program drop-outs	3
Completed PhD	14
Program Alumni	168
Faculty members	33

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	11	10
Invited candidates	0	0
Drop-outs before interview	0	0
Free slots (EvoBio priority program)	1	1
Matches	0	0
Candidates without matches	0	0
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Balance as of January 1		0.00
Income		
ETHZ and ETH	31'877.00	
Member Fees	16'400.00	
URPP Evolution in Action	2'000.00	
Total income	50'277.00	
Expenses		
Salaries program		35'000.00
Annual Retreat		12'718.74
Annual EvoBio Institute Visit		2'069.60
Contribution Teaching in Science Course		600.00
Total expenses		50'388.34
Balance as of December 31		-111.34

Program Activities

- Annual Retreat in Gais, Appenzell (AR), June 13-15
- EvoBio Visit to the Botanical Gardens and Institute, September 22
- Teaching Science at University (together with Ecology PhD Program)
- BIO554 Survey Course: Topics in Evolutionary Biology
- BIO555 Scientific Writing and a Research (in cooperation with URPP Evolution in Action)
- BIO609 Introduction to UNIX/Linux and Bash Scripting (in cooperation with URPP Evolution in Action)
- BIO610 Next-Generation Sequencing for Model and Non-Model Species (in cooperation with URPP Evolution in Action)
- BIO624 Human Genetic, Demographic and Cultural Diversity (in cooperation with URPP Evolution in Action)

Outlook

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

Microbiology and Immunology

The program in figures and numbers

Program statistics	as of December 31
Program students	253
UZH	171
ETH	82
Other affiliation	0
Track I students	89
Track II students	164
Female students	154
Male students	99
International students	166
Swiss students	87
Program drop-outs	15
Completed PhD	46
Program Alumni	459
Faculty members	102

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	188	192
Invited candidates	28	30
Drop-outs before interview	6	6
Free slots (XX priority program)	18	20
Matches	10	13
Candidates without matches	6	7
Decision against program	1	0
Rejected candidates	0	0
Change to other LSZGS programs	5	4
Gained from LSZGS programs	1	2

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ / UZH	78540	
UZH	59040	
Fees	37300	
Other		
Expenses		
Salaries program		95330
Recruitment December 1 & July 1		6750
Program activities (retreat, symposia, etc.)		34900
Overhead		
Total	174880	136980
Balance as of December 31		

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 (UZH) and Dr. Roman Spörri (ETH). The General Assembly, including all PIs of the Program, meets on an annual basis and decides on 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. Silvio Brugger (UZH) from January 2023 on
- Prof. Cornel Fraefel (UZH)
- Prof. Urs Greber (UZH)
- Prof. Wolf-Dietrich Hardt (ETH) till end of 2022
- Prof. Nicole Joller (UZH)
- Dr. Mark Mellet (UZH) from mid-2022 on
- Dr. Silvia Monticelli (IRB)
- Prof. Christian Münz (UZH)

- Dr. Gabriella Pessi (UZH)
- Prof. Emma Slack (ETH)
- Prof. Silke Stertz (UZH)
- Prof. Alexandra Trkola (UZH) till mid-2022

Two MIM PhD students Corina Hadjicharalambous (ETH) and Daniel Kirchmeier (UZH) represent the students' interest towards the MIM PhD Program by participating in the Steering Committee, the General Assembly and the LSZGS Directors Conference. Juan Zilic (UZH) is going to take over the vacant seat from Daniel Kirchmeier (UZH) from January 2023 on. The coordinator of the MIM Program is Judith Zingg.

Program Activities

Program-specific courses for doctoral students

16th Microbiology and Immunology Introductory Course (BME 645)

January 19-21, 2022

remotely

In this yearly-offered three-day 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 16th MIM Introductory Course included 20 oral presentations of PIs and 63 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. Emma Slack and Prof. Christoph Schneider held an interactive workshop on Scientific Integrity, with support by the ETH confidants Prof. em. Rainer Schulin and Prof. Peter em. Widmayer, Prof. Monica Zwicky (Person of Trust, MNF) and MIM Ombudsperson Prof. em. Hauke Hennecke. The MIM student representatives have presented themselves and their role in a short talk and the co-directors Prof. Jörn Piel and Prof. Rolf Kümmerli gave a welcome and farewell speech.

Responsible for the organization of the course were Dr. Anna Vagstad and Judith Zingg.

15th MIM Student Retreat (BME 644)

September 18-20, 2022

Wildhaus

The MIM Student Retreat took place in Wildhaus (Gamplüt). Highlights were the workshop by Dr. Simon Milligan ("How to improve scientific writing") and the scientific talks by guest speakers Prof. Sonia Tugues and Prof. Rolf Kümmerli (both are MIM PIs), as well as career talks by Dr. Tobias Wertheimer (Institute of Experimental Immunology) and Dr. Fabian Junker (Bright Peak Therapeutics).

The MIM Student Retreat is an opportunity to exchange ideas and get to know colleagues of the MIM PhD Program and establish contacts with 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. Responsible for the organization of the retreat were the

following MIM PhD students: Julia Geschwend (group of Christoph Schneider), Pascal Flüchter (group of Christoph Schneider), Christian Ashworth (group of Sarah Mundt), Juan Villar Vesga (group of Sarah Mundt), Eduardo Gushiken (group of Salomé LeibundGut), Frederike Ridder (group of Burkhard Becher), Amrita Manchala (Roche), Valerio Anelli (group of Adrian Hehl), Daniela Rovito (group of Adrian Hehl), Suwannee Ganguillet (group of Emma Slack).

The MIM Student Retreat and the MIM Introductory Course were possible thanks to the financial support of the Graduate Campus UZH, ETH (project funding doctorate) and Post SUK funding UZH.

General Principles of Scientific Writing

September 13 & 14, 2022

by Prof. Shinichi Sunagawa

10 participants

Research Data Management and related topics

Fall 2022

In collaboration with Scientific IT Services, ETH Library conducted a series of consecutive workshops, which focus on the various elements of research data management along the research data life cycle.

Translational Medicine: Infection & Immunity (BIO 684)

Fall Semester 2022

by Karin Metzner and other MIM PIs

Basic Scientific Presentation Skills Course

December 5&6, 2022

by Prof. Emmanuella Guenova, Prof. Nicole Borel, Dr. Hanna Marti

8 participants

Webinars (2 hours each) offered by ETH Library

Fall 2022

- 1) Searching in Swisscovery, Web of Science & PubMed
- 2) Following research topics and trends & bibliometrics
- 3) EndNote - Reference management

Program-specific offerings for Principal Investigators

Welcome event for new MIM PIs

11.1.2022

The co-directors introduced the new MIM PIs to the organization of the doctoral program and the benefits of a membership, and thematized good mentoring of doctoral students.

MIM PI training: How to bring across difficult messages. From the thought to the message to the perception

12.7.2022

by Dr. Monika Clausen and Daniel Ludwig

The workshop is set up to improve the handling of challenges in communication issues (with co-workers, peers, superiors). Simulated dialogues – role plays with a professional actor – were used as a platform to evaluate success and potentials in communicative settings, to practice feedback techniques in verbal as well as in non-verbal issues and identify alternative ways of handling stressful situations.

MIM career events and other activities

In 2022, a series of events was offered for current students & alumni on various topics, organized by MIM student representatives:

9.2.-11.2.2022	LSZGS Recruitment Round – get-together with candidates
7.-9.9.2022	LSZGS Recruitment Round – get-together with candidates

Mentoring & Mental Health Events

16.8.2022	MIM Mentor training kick off with Dr. Annika Martin
4.10.2022	MIM Mentor training Nr. 2
14.11.2022	kick off "MIM Intervision Group" with Prof. Sophia Johler
15.11.2022	MIM Mentor training Nr. 3

Social Events

16.-18.1.2022	MIM Snow Weekend, Bergün
21.4.2022	MIM quiz and game night
24.6.2022	MIM Limmat floating event
22.8.2022	Summer BBQ
28.10.2022	MIM game night 2.0, incl. "The PhD" movie
3.12.2022	Biomed & MIM Christmas Event at Irchelbar

Career Events

8.6.2022	MIM company visit Novartis Basel
9.6.2022	MIM Career Event "Career opportunities for life scientists in academia"; Moderation Prof. Salomé LeibundGut, with Prof. Simona Huwiler, Dr. Patrick Kiefer, Dr. Alvar Gossert, Prof. Daniela Latorre
3.11.2022	MIM Career Event "MIM meets McKinsey"

The events could be carried out thanks to funding from UZH (Post SUK financing) and carryovers from SHK funding from recent years.

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 and therefore offered trainings to our newly recruited mentors (the trainings were led by Dr. Annika Martin on 16.8, 4.10. & 14.11.2022).

Ombudsperson

Various members of the program got in contact with Prof. em. Hauke Hennecke (MIM Ombudsperson), the MIM coordination office or / and the co-directors of the MIM PhD Program. The demand for consultations has reached a new maximum in 2022.

Travel Grants

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

Linda Schellhammer	<i>Quadrennial Meeting of the World Federation of Neuro-Oncology Societies (WFNOS)</i>
Fiorella Ruchti	<i>FEBS Advanced Lecture Course "Molecular Mechanisms of Host-pathogen Interactions and Virulence in Human Fungal Pathogens"</i>
Désirée Schmitz	<i>ISME18 - the 18th International Symposium on Microbial Ecology</i>
Katarina Schmidt	<i>EMBO Autophagy Workshop</i>
Sarah Klinnert	<i>Cold Spring Harbor Laboratory Meetings: Retroviruses</i>
Sarah Michaelis	<i>SSM Annual Meeting</i>
Daniel Kirchmeier	<i>Immunological Symposium 2022</i>
Simone Vormittag	<i>SSM Annual Meeting</i>
Delia Onorini	<i>SSM Annual Meeting</i>
Meret Tuor	<i>Immunology of Fungal Infections (Gordon Research Conference)</i>
Juliane Mietz	<i>Keystone Symposia "Emerging Cellular Therapies at The Forefront of Cancer Immunotherapy"</i>

Outlook

MIM activities, such as the 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 2023. Furthermore, the existing support services (MIM Mentoring Program, mental health self-help group, MIM Ombudsperson) will be made more visible and extended. In the medium term, MIM is planning to set up a helpline, where PhDs can get immediate support from fellow students on various topics. These are reactions to the high cancellation rate in the past year and to the striking result of the internal evaluation of the MIM PhD Program performed in 2022: almost half of the participating PhD students assess their mental health as fair, poor or even very poor.

In addition, a further survey will be performed to receive a clearer picture of what the possible causes of the psychological imbalance are and, more specifically, what impact the work environment has on the mental health of the doctoral students.

The ongoing uncertainty regarding the future funding of the LZSGS / the PhD Programs remains an issue, especially in view of the drying up of the bridging funds provided by UZH at the end of 2024.

Molecular Life Sciences

Program Motivation

The Molecular Life Sciences Ph.D. program is a 4-5 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 (the number remained unchanged compared to 2021), who are associated with over a dozen different departments/institutes at the ETH Zurich (ETH) and the University of Zurich (UZH). 180 graduate students were enrolled in the MLS program by the end of 2022 compared to 183 students at the end of 2021. 103 (57%) of our students are women and 77 men. 33 MLS students graduated in 2022. The program has now 590 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 2022

Program statistics	as of December 31
Program students	180
UZH affiliation	100
ETH affiliation	80
Other institute (please specify)	
Track I students	119
Track II students	61
Female students	103
Male students	77
International students	147
Swiss students	33
Program drop-outs	3
Completed PhD	33
Program Alumni	590
Faculty members	91

Student Body

Of the 180 students, 100 are enrolled at the UZH and 80 at ETH. German students (36) and Swiss (33) account for a bit more than one third of all students. The next larger groups are the Italians (13), Indians (11), Chinese (10) and Austrians (9), followed by the British (7), Greeks (6), Dutch (5) and Russians (4). Three students come from Poland, Portugal, Slovakia and Taiwan. Two students come from America, Belgium, Canada, Hungary, Japan, Spain and Sweden. In addition, we have one student each from Belarus, Brazil, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Grenada, Latvia, Lebanon, Malaysia, Peru, Serbia, Slovenia, Turkey, Ukraine and Venezuela in the MLS program.

Recruitment 2022

Recruiting statistics	December 1, 2021	July 1, 2022
Complete applications	176	187
Invited candidates	42	30
Drop-outs before interview	7	2
Free slots (MLS priority program)	17	17
Filled slots	11	11
Total matches	13	10
Candidates without matches	8	7
Drop-outs after virtual interview	7	2
Reject site visit invitation	0	2
Drop-out after site visit	5	1
Rejected candidates	0	1
Change to other LSZGS programs	2	5
Gained from LSZGS programs (included in total)	5	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)
Prof. Stefanie Jonas (ETH)
Prof. Ohad Medalia (UZH – chair)
Prof. Francesca Peri (UZH)
PD Dr. Raffaella Santoro (UZH)
Prof. Anton Wutz (ETH)
Moritz Schlapansky (ETH – student representative, until August 2022)
Merula Stout (UZH- student representative, until August 2022)
Michaela Remisova (ETH – student representative, since August 2022)
Benedikt Wimmer (UZH– student representative, since August 2022)

In 2022, the SC met 3 times to discuss and decide on various program activities. All 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 2022. 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:

Tuncay Baubec, Department of Molecular Mechanisms of Disease, UZH
Steven Brown, Institute of Pharmacology and Toxicology, UZH (deceased)
Constance Ciaudo, Institute of Molecular Health Sciences, ETH
Reinhard Dechant, Institute of Biochemistry, ETH
Christian Lehner, Department of Molecular Life Sciences, UZH
Olivier Urwyler, Department of Molecular Life Sciences, UZH
Francisco Vergdeguer, Department of Molecular Mechanisms of Disease, UZH

New PIs:

Tatjana Kleele, Institute of Biochemistry, ETH
Jinghui Luo, PSI
Thomas Michaels, Institute of Biochemistry, ETH
Andrea Pichler, Institute of Biochemistry, ETH
Sara Simonini, Department of Plant and Microbial Biology, UZH
Yohei Yamauchi, Institute of Pharmaceutical Sciences, ETH

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 2022.

Finances 2022 (in CHF)

	Income	Expenses
Balance as of January 1		
Carry-over post-SUK 2021 UZH	20'000	
Income		
ETH	50'000	
UZH	9'450	
Post-SUK UZH	19'000	
Fees	11'000	
Sponsoring Retreat	5'250	
Total income	114'700	0
Expenses		
Salaries program (with social benefits)		50'422
Recruitment September 2021		4'705
Recruitment February 2022		12'876
Program activities: Retreat		29'498
Travel Grants		14'876
Christmas Party		2'356
Alumni (1 Career Event)		372
Program Teaching		3'770
Overhead		100
Total expenses		118'975
Balance as of December 31	-	4'275

Program Activities

Teaching

Module	Length	Dates	Participants	Facilitator/Remarks
The Impact of Ethics on Doing Science	2x 1 day	1 & 3 Feb	17 students	George Hausmann & Anna Deplazes
Scientific Writing – Effective Communication	4x ½ day	17, 22, 24 Feb & 1 Mar	20 students	George Hausmann
1 st -year-Presentations	4x ½ day	7, 11, 18 & 25 Mar	14 students & 4 moderators	Susanna Bachmann
MLS Retreat	3 days	11-13 Aug	48 students	7 organizers
Scientific Writing – Effective Communication	4x ½ day	18, 23, 25 & 30 Aug	14 students	George Hausmann
Impact of Ethics on Doing Science	2x 1 day	6 & 8 Sep	16 students	Anna Deplazes & George Hausmann
1 st -year-Presentations	4x ½ day	13, 16, 23 & 30 Sep	12 students & 3 moderators	Susanna Bachmann

In early 2022, all restrictions in relation to the Corona pandemic were lifted and we could eventually go back to classroom teaching. Though most courses are taught in-person and on-site, we have kept a few virtual sessions in the 1st-year presentation course in order to give the participants the opportunity to present in-person as well as online.

Because the SUK support ended in 2021, the program is not able to offer transferable skills courses in its own right. However, these courses are still organized by the Life Science Zurich Graduate School and other units of the University and ETH. Thus, the program student have a lot of possibilities to gain cross-disciplinary skills.

Tutorials

Also in 2022, 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
Interactive journal club in Big Data Bioinformatics	Michael Baudis & Christian von Mering
Tutorial on Protein degradation regulated by ADP-ribosylation	Michael Hottiger & Anka Güldenpfennig
Tutorial on Microfluidics - Fundamentals and applications in biology	Lee Sung Sik & Nevena Srejc
Tutorial on the Nuclear Envelope	Ohad Medalia
Tutorial on Scientific Concepts and Methods	Vivianne Otto
Tutorial on Microfluidics - Fundamentals and applications in biology	Christian Stockmann
Tutorial on Introduction to Data Visualisation, Exploration and Analysis in Python	Jana Wittmann & Max Brambach

To our satisfaction the tutorial platform is running smoothly and it has proven to be very user-friendly and easy to handle. As with the courses, once all pandemic restrictions were relieved, most tutors went back to in-person teaching, recurring to online sessions when indicated.

Retreat

The 18th MLS retreat was held from 11th to 13th August 2022 at the Park Hotel "Insel" at the lake Constance. The aim of the retreat is mainly to allow students to exchange knowledge, and to provide them an opportunity to improve their presentation skills. All first-year students who had started their Ph.D. before 1 June 2022 either gave a talk or presented a poster. Three external speakers, Dr. Rajwinder Lehal (Chief Scientific Officer, Cellestia), Prof. Gaudenz Danuser (UT Southwestern Medical Center, Texas), Dr. Jernej Zupanc (Communication Coach & Consultant at Seyens) provided the students insights into their respective fields of research. Apart from the poster presentations, talks and discussions, the retreat committee organized different leisure activities at the shore of lake Constance. The organizing committee was formed by: Charlie Beales, Steffi Engleitner, Denise Goly, Carla Rossell Dorca, Moritz Schlapansky and Merula Stout.



Awarded Travel Grants 2022

After two years with travel restrictions and limited freedom of assembly, the zoom fatigue was high and so was the craving for scientific exchange on a personal and at the same time more international level. Many conferences that had been suspended for two years were put back in place, which was immediately reflected in the number of travel grant applications the program obtained.

Though the funding of the travel grants was the part of the program's budget with the most severe cuts, the committee managed to fund most of the application but awarded often less than the required maximum of CHF 1'000.

The deadlines for application were as before the pandemic: 1 March, 1 July and 1 November:

Student	Attended conference/summer school/ course/ workshop
Tilde Andersson	ENII summer school of advanced immunology
Charlie Beales	Intermediate Filaments Gordon Research Conference and Seminar
Evangelos Bonis	Hydra XV European Summer School on Stem Cell Biology and Regenerative Medicine
Franziska Brändle	EMBO workshop – The yin and yang of chromosomal and extrachromosomal DNA
Ankita Chavan	Cold Spring Harbor: Germ Cells meeting
Wen-Lu Chung	European Cytoskeletal Forum
Steffi Engleitner	European Worm Meeting
Jasmin Frey	Gordon Research Conference (GRC) on Lymphatics 2022

Benjamin Frühbauer	Gordon Research Conference (GRC) on Intrinsically Disordered Proteins
Anka Güldenpfennig	FASEB "NAD+ Metabolism and Signaling Conference
Adrian Henggeler	Gordon Research Conference (GRC) on Meiosis
Agnese Kocere	Regional Southwest Meeting Society for Developmental Biology
Michael Koch	2022 Annual Meeting of the European Society for Dermatological Research
Désirée Marchand	EMBO workshop on Ribosome synthesis
Sandro Meier	The Physical Basis of Cellular Memory and Adaptation Meeting
Abigaëlle Pelletier	19 th Meeting of the Society for Natural Immunity
Carla Rosell Dorca	XV European Summer School on Stem Cell Biology and Regenerative Medicine
Tanja Rothgangel	CSHL Meeting: Genome Engineering: CRISPR Frontiers
Giulia Silvestrelli	ISEV (International Society of Extracellular Vesicles) annual meeting 2022
Lena Skrutl	CSHL Germ Cell Conference
Maria Stavrou	EMBO Workshop: 'Ubiquitin and ubiquitin-like proteins in health and disease
Taiyo Yamamoto	CSHL Cell & Developmental Biology of Xenopus: Gene Discovery & Disease

Travel grant committee: Martin Müller (PI, UZH), Madhav Jagannathan (PI, ETH), Irina Ferapontova (MLS student). In total, the program awarded CHF 14'876 as travel grants.

Social and Other Activities

Newsletter: We dispatched two newsletters on 6 June and on 1 December 2022. 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 2023 twice per year.

Students in charge in 2022: Whitney Jordaan, Eleonora Ioannidi, Abigaëlle Pelletier, Taiyo Yamamoto.

Career and Networking event 2022: Because of the pandemic the event only took place once, but luckily it could again take place in person. The discussion in the group was very animated and beneficial for the attending doctoral students. On 6 December the following 4 alumni provided insights in their current job or depicted their career steps after they had finished their PhD:

Mingcong Wang – consultant (Deloitte)
Ralph Schiess – spin off founder (ProteoMedix)
Edyta Siergiejuk – Head of regulatory affairs (Biogen)
Benjamin Farnung – Senior clinical territory account manager (Illumina)

With the Christmas Party another “traditional” event could again take place in 2022. It was celebrated on 12 December in the “Loch Ness” on the ETH Hönggerberg Campus.

Outlook

With the ease of all pandemic restrictions in early Spring 2022 most of the activities in the Molecular Life Sciences program could be organized and run the same way as in pre-pandemic times. Nevertheless, a few traces will definitely remain. The program’s steering meetings will continue to be held in zoom, some of the courses might have hybrid or online elements and the first part of the recruitment process will remain virtual, as the directors of the Life Science Zurich Graduate School decided already in 2021. While we feared that new policies to reduce carbon emission might have an impact on applicant and student mobility, the universities have not (yet) communicated and put in place any new rules. However, with the war in Ukraine and the subsequent shortage of energy supply, the general focus shifted to other threats. In fact, high inflation rates and soaring prices are currently more in the focus than the impact of humankind on the climate.

The increased prices will most likely also have repercussions on the – already limited – budget of the program. This will mainly be the case with the travel costs of the applicants, which account already now for a substantial share of the available funds. As all the institutions are forced to pinch and scrape, chances for the program to find alternative or additional funding sources are very small. In fact, the longsome negotiations the director of the Cancer Biology program has been carrying out with the faculties of Medicine, Science and the VetSuisse came to an unfruitful end. The faculties are not able or not willing to take over the coordinators’ salaries. The program directors are still discussing whether the graduate school should ask for a centralized membership fee, but it is likely that a majority of the programs does not want to let go the possibility to collect charges directly from their members.

Notwithstanding, there were also some positive news in regard to the budget. The office of the ETH rector decided to match the post-SUK funding the Schulleitung of UZH is offering until the end of 2024. Though the share the Faculty of Science obtained for its programs is moderate in comparison of the former support by swissuniversities, we are very grateful that also ETH is rewarding our efforts to deliver excellent services for our program members and doctoral students. Furthermore, the steering committee is also discussing a modest increase of the commission fees in order to plug the emerging holes in our budget. All in all, the program will have to do a little belt tightening in the coming year, but there will still be sufficient funding available to maintain our core services at the accustomed high quality.

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	10
UZH affiliation	4
ETH affiliation	6
Other institute (please specify)	-
Track I students	5
Track II students	5
Female students	7
Male students	3
International students	9
Swiss students	1
Program drop-outs	0
Completed PhD	8
Program Alumni	86
Faculty members	46

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

And as the program is phasing out and only 10 doctoral students remain, the 20% employment for the program coordination have generously been offered to support the office of the Life Science Zurich Graduate School.

Program Activities

There are no specific program activities for the students of the Molecular Medicine and the Molecular and Translational Biomedicine organized anymore, as the student body is too. The students are, however, welcome to participate in the events the Biomedicine program is offering to their doctoral candidates. Furthermore, the students may also join the courses of the Life Science Zurich Graduate School or any other affiliated PhD program.

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	323
UZH	212
ETH	107
Other affiliation	4
Track I students	40
Track II students	283
Female students	-
Male students	-
International students	-
Swiss students	-
Program drop-outs	-
Completed PhD	-
Program Alumni	136 (aus Student Admin)
Faculty members	160

Recruitment

Recruiting statistics	Interviews Feb. 22	Interviews Sept. 22
Complete applications	-	122
Invited candidates	11	12
Drop-outs before interview	1	1
Free slots (ZMZ priority program)	7	4
Matches	3	2
Candidates without matches	7	5
Decision against program	1	-
Rejected candidates	-	-
Change to other LSZGS programs	1	2
Gained from LSZGS programs	1	2 (ZMZ candidates accepted position in another PhD program, however ended up registering for the ZMZ PhD program)

Finances

	Income	Expenses
Balance January 1		
Income		
ETHZ	40936	
UZH	40936	
Fees	-	
Other	-	
Expenses		
Salaries program		29402
Social benefits		
Recruitment December 1		1496
Recruitment July 1		1464
Program activities (retreat, symposia, etc.)		49510
Overhead		
Total		
Balance as of December 31	81872	

Program Activities

1) Courses

- Introductory Course in Neuroscience I (Fall term 2022)
- Introductory Course in Neuroscience II (Spring term 2022)
- Neuroimaging Blockkurs
- Course in Science Ethics for Cancer Biologists and Neuroscientists,
- Crash Course in Statistics for Neuroscientists
- Writing Neuroscience Research Papers
- New Advanced Course: "My thesis and beyond: Developing an Interdisciplinary Research Idea"

2) Symposia, conferences and other scientific activities

- ZNZ PhD Retreat in Valens and second Retreat at Roche Basel
- ZNZ Symposium and Best PhD Thesis Award

Plant Sciences

The program in figures and numbers

Program statistics	as of December 31
Program students	113
UZH affiliation	41
ETH affiliation	56
Uni Basel affiliation	15
Other institutions	1
Track I students	9
Track II students	104
Female students	68
Male students	45
International students	81
Swiss students	32
Program drop-outs	29
Completed PhD	9 in 2022 at UZH
Program Alumni	139 (total until 2022)
Faculty members	14

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	46	90
Invited candidates	0	5
Drop-outs before interview	0	2
Free slots (Plant Sciences priority program)	0	2
Matches	0	2
Candidates without matches	0	1
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 January 1	84338.45	
Income	37'937	
ETHZ		
UZH		
Fees		
Other	SUK income is reported elsewhere	
Expenses		
Salaries program		4445.28 (Kordinatorin 1)
		36780.90 (Kordinatorin 2)
Social benefits		
Recruitment December 1		0
Recruitment July 1		722.40
Program activities (retreat, symposia, etc.)		10472.51
Overhead		reported elsewhere
Total		10472.51
Balance as of December 31		69854.36

* Saläre total für beide PSC PhD Programme (50%) = CHF 7'408.80 (Kordinatorin 1) und CHF 61'301.50 (Kordinatorin 2)

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.swissplantsciencweb.ch), housing 9 national PhD programs in Plant Sciences, Graduate Campus University of Zurich (www.grc.uzh.ch), bringing together all PhD students of the University of Zurich.

Students registered in the program in the reporting period, as of Dec 31

Year	TOTAL	University of Zürich	ETHZ	University of Basel	Other	Female	Male	National	International
2022	113	41	56	15	2	1	68	32	81

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

Module	ECTS
Compulsory Activity: Colloquium “Challenges in Plant Sciences”	2
Elective Activities: Remainder of 12 ECTS may be chosen from*: <ul style="list-style-type: none"> • 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. 2 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

* 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 2 of the 29 PhD students recruited to the program in 2022.

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 27 of the 30 PhD student recruited to the program in 2022.

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 2022 we can currently report.

- 90% of all scheduled thesis committee meetings in 2022 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.
- 60% carried out in time and 40% delayed (or submitted late to DissGo) by 3-6 months at University of Basel

Revision of the ETH Zurich Ordinance of the Doctorate:

On January 1, 2022, the new ETH Zurich Ordinance on the Doctorate (<https://rechtssammlung.sp.ethz.ch/Dokumente/340.31en.pdf>) entered into force. The new Ordinance on the Doctorate applies to all doctoral candidates who enroll in a doctorate from January onwards. It also applies – with some transitional provisions – to those who have already been accepted for a doctorate.

Doctoral students at ETHZ are supervised by at least two persons. The (1) official supervisor of the doctoral thesis (professor at the Department) and (2) the second advisor (an adjunct professor or Privatdozent/in, provided that (a) she or he works full-time at the ETHZ, and (b) both institutes have agreed). The second supervisor must be defined latest till submission of the doctoral plan. The doctoral administration (dokorat@ethz.ch) must be notified of the second advisor before the aptitude colloquium. Doctoral students have the right throughout the doctoral study to request another person to be available for additional professional or nonprofessional advice and support as needed.

Information about your doctoral studies at ETHZ and particular requirements of different ETHZ departments are available here:

<https://ethz.ch/students/en/doctorate.html>

<https://ethz.ch/en/doctorate/legal-basis.html>.

Template for registration of second supervisor is available here:

<https://ethz.ch/students/en/doctorate/second-advisor.html>

Departments D-USYS and D-BIOL

Doctoral Plan (replaces Research Plan):

A written research proposal, including the research plan and teaching requirements, is to be defined minimum 15 working days before the Aptitude Colloquium (D-USYS) and latest 10 months (D-BIOL) after registration. Should a thesis be carried out outside the ETHZ domain, it should be specified in the doctoral plan. The doctoral plan needs to be submitted to the aptitude committee and the doctoral studies panel (Deadline, see ETHZ MyStudies).

Aptitude Colloquium: The aptitude colloquium is an oral defense of the research plan to be held latest 12 months after registration at ETHZ (see MyStudies). The defense lasts around 60 minutes including a presentation by the doctoral student (max 30 minutes) and a discussion between the doctoral student and the aptitude committee about the doctoral plan. The aptitude committee is composed by the chairperson and the Thesis Committee. The chairperson must be (a) a member of the doctoral studies panel (Doktoratsausschuss) or (b) a person appointed by the doctoral studies panel who must be a full or associate professor at ETHZ department. The PhD-Student is responsible to organize the aptitude colloquium, which can be conducted with partial or full physical presence of the aptitude committee and the doctoral student or entirely by video conference.

Information on the Doctoral Plan and Aptitude Colloquium:

<https://ethz.ch/students/en/doctorate/doktoratsplan.html>

<https://ethz.ch/en/doctorate/legal-basis.html>

Information for submission of the Doctoral Plan:

D-BIOL: <https://biol.ethz.ch/en/doctoral-studies/doktoratsplan--eignungskolloquium.html>

D-USYS: <https://usys.ethz.ch/en/doctorate.html>

Progress report (replaces Thesis Committee Meeting Protocol): All doctoral students must complete a progress reports. This is due after the appointment of a second supervisor. The PSC recommends involving external partners or supervisors. The progress report must be completed annually. The progress report forms the basis for the annual status conversation. The document must be kept for the entire duration of the doctorate. The duty of safekeeping is incumbent on the persons involved (doctoral students, dissertation supervisors, second advisors)!

Annual status conversation: All doctoral students must have an annual status conversation with the supervisor of their doctoral thesis. This is due after the appointment of the second supervisor. The supervisor of the doctoral thesis will determine the date. It consists of 2 parts and covers the following topics: Part 1 (Scientific Progress) and Part 2 (performance assessment, career and personal development).

The minutes of the status conversation must be kept for the entire duration of the doctorate. The duty to keep the minutes is incumbent on the persons involved (doctoral students, dissertation supervisors, second advisors)!

Exam Registration and Doctoral Examination: The final degree is conferred by your home institution. For your registration at the doctoral administration, have a look at:
<https://ethz.ch/students/en/doctorate/doktorpruefung.html>

PSC Trainings and 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.

PSC PhD Symposium 2022 – Patterns in nature and plant science,

PSC Symposium 2022: From Place to Space: Tracing the Spatial Dimension of Plant Sciences, Dec 7, 2022, 160 participants, ETH Audimax

Invited speakers: Ass. Prof. Sara Simonini, University of Zurich, Switzerland; Prof. Markus Geisler, University of Fribourg, Switzerland; Dr. Stefania Giacomello, KTH Royal Institute of Technology, Stockholm, Sweden; Dr. Chrysoula Pantazopoulou, University of Utrecht, The Netherlands; Prof. Philippe Reymond, University of Lausanne, Switzerland; Dr. Desalegn Etalo, Netherlands Institute of Ecology, The Netherlands; Prof. Sabine Rumpf, University of Basel, Switzerland; Dr. Eliana M. Jimenez, National University of Colombia; Prof. Stefania di Pascale, University of Napoli, Italy.

Flash talks: Stephanie Ruaud, Department of Systematic and Evolutionary Botany, University of Zurich; Yuling Yue, Department of Systematic and Evolutionary Botany, University of Zurich; Aphrodite Kantsa, Department of Environmental Systems Science, ETH Zurich; Oliver Reutimann, Institute of Integrative Biology (IBZ), ETH Zurich.

38 Poster presentations, abstract booklet:

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

Poster awards: Aphrodite Kantsa, Department of Environmental Systems Science, ETH Zurich; Magdalena Wey, Agroscope; Manuel Waller, Department of Systematic and Evolutionary Botany, University of Zurich.

PhD Organising Committee: Trang Dang (Institute of Integrative Biology, ETH Zurich), Iciar Giménez (Institute of Agricultural Sciences, ETH Zurich), Charlotte Joller (Department of Environmental Sciences, University of Basel), Lucia Piro (Institute of Integrative Biology, ETH Zurich), Alexandra Siffert (Department of Plant and Microbial Biology, University of Zurich), Katja Stengele (Department of Environmental Sciences, University of Basel).

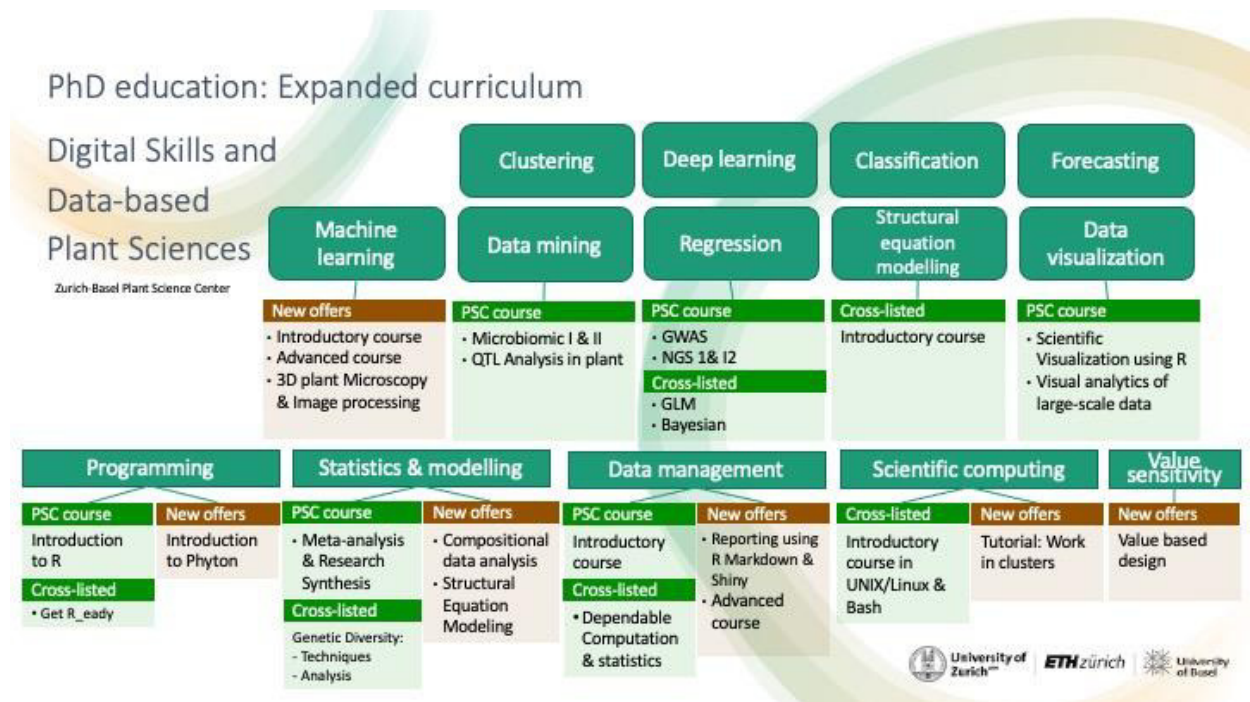
<https://www.plantsciences.uzh.ch/en/outreach/conferences/placetospace.html>

PhD education

Digital skills

In 2022/2023, the PSC has placed a focus on expanding courses in the field of digital skills and competencies in the field of doctoral training. In 2022, a summer school "Application of Machine Learning in Plant Sciences" was held. At the same time, the existing cross-university curriculum in digital skills was made more visible, described, consolidated and supplemented with the necessary courses. 2023 – FS 2024 this work will be completed. All new courses are then carried out once and included in the curriculum. The work here is based on third-party funds and is financed as part of a SUK project on digital skills at ETH Zurich. The courses are fully available to Basel doctoral students.

The Digital Skill Curricula in the PhD Program in Plant and Environmental Sciences (open to all related disciplines), Melanie Paschke, Barbara Templ (as of 2023 Yvonne Steinbach will replace Barbara Templ).



Programming

Intro to UNIX/Linux and Bash scripting BIO609, 1 ECTS, FS

Intro to R, 1 ECTS, HS

Genetic Diversity: Techniques (2 ECTS, HS) and Analysis (2 ECTS, FS)

Crosslinked: Intro to Phyton

Data Management

New: Reporting using Markdown (and Shiny) applications, 1 ECTS, biannually in FS

Advanced Data Management and Manipulation using R, 1 ECTS, annually in FS

Reproducibility

Crosslinked: Get R_ready: Dynamic Reporting & Reproducibility in Research

Crosslinked: Open and Reproducible Science: Dependable Computations and Statistics

Computation

New: Tutorial on how to work with clusters; no ECTS, will start in HS23

Imaging

Advanced course on 3D plant microscopy and image processing, 1 ECTS, FS

New: Machine learning and image processing in plant sciences and related disciplines, 1 ECTS, start in HS 23

Machine Learning

New: Introduction to machine learning methods in plant sciences, 1 ECTS, HS

Planned 2023: Deep learning methods in image processing, 1 ECTS, HS

Statistic, Modelling

New: Statistical modelling, 1 ECTS, FS

New: Compositional data analysis, 1 ECTS, biannually FS

Introduction to Genome-Wide Association Studies (GWAS), bi-annually in HS

Next generation sequencing 1 BIO610, HS

Next generation sequencing 2 BIO634, HS

General linear and linear mixed models in R, crosslinked, FS

Introduction to structural equation modeling, HS

Planned 2023: Bayesian Statistics and Application

Visualisation

Scientific visualisation using R, 1 ECTS, HS

Ethics

New: Value-based design processes in emerging technologies; 1 ECTS.

Courses carried out in the reporting period

In the reporting period, the PSC organized / co-organized 34 courses. We report 389 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
2022	34	142	210	23	14	389

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

Date	Course	Speakers / case study supervisors	Participants
20.1. / 27.1.2022	Introduction to R	Dr. Jan Wunder	ETH (7) UZH (9) UNIBAS (0) Other (0)
17.–19.1.2022	Chlorophyll Fluorescence – Principles and Applications	Prof. Diana Santelia (ETHZ), Klára Panzarová (PSI), Tracy Lawson (University of Essex (UK)), Fiamma Longoni (University of Neuchâtel)	ETH (9) UZH (1) UNIBAS (0) Other (0)
10.02. / 13.02. / 17.02.2022	Scientific Writing II	Dr. Jacopo Marino (Paul Scherrer Institute, Villigen)	ETH (10) UZH (0) UNIBAS (2) Other (0)
24.2.–2.6.2021	The Microbiome of the Plant-Soil System: Part I	Dr. Martin Hartmann, Institute of Agricultural Sciences, ETH Zurich	ETH (5) UZH (1) UNIBAS (0) Other (0)
25.02. - 03.06.2022	Crop Phenotyping (in ETHZ VV: 751-4106-00L)	Dr. Andreas Hund	ETH (3) UZH (0) UNIBAS (1) Other (0)
10.03. / 05.05.2022	Responsible Conduct in Research	Prof. Nina Buchmann (ETHZ), Dr. Melanie Paschke (PSC)	ETH (14) UZH (0) UNIBAS (0) Other (0)
14.03.- 15.03.2022	Project Management for Research	Dr. Andrea Degen (Eurelation AG)	ETH (6) UZH (4) UNIBAS (1) Other (0)

04.-06.04.2022	Advanced course on 3D microscopy imaging of plant tissues and image processing	PD Dr Celia Baroux (UZH), Prof. Alexis Maizel (University of Heidelberg)	ETH (2) UZH (4) UNIBAS (0) Other (0)
06.-08.04.2022	Statistical modelling	Prof. Matthias Templ (ZHAW) and Dr. Barbara Templ (ETH)	ETH (5) UZH (10) UNIBAS (0) Other (1)
20.04. / 03.05.2022	Scientific Presentation Practice	Dr. Barbara Hellermann	ETH (6) UZH (5) UNIBAS (1) Other (0)
09.06. / 16.06.2022	Advanced Data Management and Manipulation using R	Dr. Jan Wunder	ETH (6) UZH (5) UNIBAS (1) Other (1)
13.6. / 16.6. / 20.6. / 23.6. / 27.6. / 30.6.2022	General Linear and Linear Mixed Models in R	Prof. Pascal Niklaus, UZH	ETH (5) UZH (0) UNIBAS (0) Other (0)
13.-16.6.2022	The Microbiome of the Plant-Soil System: Part II	Dr. Martin Hartmann, Institute of Agricultural Sciences, ETH Zurich	ETH (2) UZH (6) UNIBAS (2) Other (0)
20.06.-01.07.2022	Genetic Diversity: Analysis (ETHZ VVZ: 701-1425-01L)	Dr. Jean-Claude Walser, Dr. Stefan Zoller (Genetic Diversity Center, ETHZ)	ETH (0) UZH (2) UNIBAS (0) Other (0)
07.07. / 14.07.2022	Reporting using R. Markdown & Shiny	Jan Wunder	ETH (2) UZH (9) UNIBAS (1) Other (0)

17.-23.07.2022	Alpine Plant Ecology - International Summer School 2022	Dr. Erika Hiltbrunner (U Basel), Prof. Christian Körner (U Basel), Prof. Sabine Rumpf (U Basel) and Dr. Gianalberto Losapio (U Lausanne)	ETH (5) UZH (1) UNIBAS (0) Other (0)
12.–16.9.2022	Summer School 2022: Application of Machine Learning in Plant Sciences	Dr. Barbara Templ (PSC), Melanie Paschke (PSC) et al.	ETH (11) UZH (2) UNIBAS (0) Other (7)
27.09. / 30.09. / 25.10.22	Value-based Design	Dr. Melanie Paschke (PSC), Dr Ning Wang (UZH), Verena Lütschg	ETH (6) UZH (0) UNIBAS (0) Other (0)
28.09. / 12.10. / 26.10. / 9.11. / 23.11.2022	Transdisciplinary Seminar on Research: Challenges of Interdisciplinarity and Stakeholder Engagement (ETH VVZ 701-0015-00L)	Prof. Michael Stauffacher, Prof. Christian Pohl, Dr Bianca Vienni Baptista	ETH (1) UZH (0) UNIBAS (0) Other (0)
5.10. / 26.10.2022	Scientific Writing I	Dr. Patrick Turko (FGCZ)	ETH (6) UZH (4) UNIBAS (1) Other (0)
07.10.22 / 02.12.22	Sustainable Plant Systems (ETH VVZ: 551-0209-00L)	Dr. G. Singh Bhullar, FIBL; S.F.Bender,; Dr. Frank Liebisch and Dr. Melanie Paschke, ETH Zurich & PSC	ETH (9) UZH (2) UNIBAS (7) Other (1)
31.10.2022	BIO609 - Introduction to UNIXLinux and Bash Scripting	Dr. Deebak Tanwar (UZH)	ETH (5) UZH (9) UNIBAS (1) Other (1)
01.-02.11.2022	BIO610 – Next-Generation Sequencing for Model and Non-Model species	Prof. Kentaro Shimizu (UZH); Prof. Jun Sese (Japan), Dr. Rie Inatsugi (UZH), Dr. Masaomi Hatakeyama (UZH), Dr. Jianqiang Sun (UZH)	ETH (4) UZH (11) UNIBAS (0)

			Other (1)
03.11. / 01.12.22	Colloquium: Challenges in Plant Sciences (in ETHZ VVZ: 551-0205-00L)	Organized by Sylvia Martinez (PSC): Luiz Domeignoz Horta, UZH; Beat Keller, UZH; Stefano Mintchev, ETHZ; Barbara Pfister, ETHZ; Klaus Schläppi, UniBas; Meredith Schuman UZH; Sara Simonini, UZH; Thomas Wicker, UZH; Tobias Züst, UZH; Thomas Boller, UniBas; Sylvia Martínez, UniBas	ETH (21) UZH (11) UNIBAS (2) Other (1)
04.11. / 25.01.22	Current Challenges in Plant Breeding, (ETHZ VVZ 751-3603-00L)	Prof. Bruno Studer (ETHZ), PD Dr. Andreas Hund (ETHZ)	ETH (2) UZH (1) UNIBAS (0) Other (0)
8.-10.11.2022	Introduction to Structural Equation Modeling	Frank Pennekamp (UZH)	ETH (2) UZH (0) UNIBAS (0) Other (0)
09.11. / 23.11.2022	Genetic Diversity: Techniques	Dr. Aria Minder (GDC)	ETH (3) UZH (1) UNIBAS (0) Other (0)
23-25.11.2022	Introduction to Machine learning for Plant Scientists	Prof. Jan Dirk Wegner (UZH)	ETH (5) UZH (4) UNIBAS (0) Other (0)
09.12. / 16.12.2022	Scientific Visualisations in R	Dr. Jan Wunder	ETH (8) UZH (8) UNIBAS (0) Other (0)

From 01.01.2022 to 31.12.2022, the evaluation of 29 of 34 courses were completed by the PSC directly: Participants rated these courses between 3 to 4 (= fully agree) in "I learned & benefited from this course" and several other aspects. Note: In the last column "The instructor moved at an appropriate pace" a different scale was used.

Course	Number of questionnaires	The course was well organized?	The topics covered met my expectations?	The instructor explained clearly?	Manual was helpful & useful also for future?	Good balance between theoretical & practical?	level of course was according to my needs?	working atmosphere was good?	I learned & benefited from this course?	The instructor moved at an appropriate pace? 1 = too slow/too fast, 2 = just right
Transdisciplinary Seminar on Research: Challenges of Interdisciplinarity and Stakeholder Engagement (ETH VVZ 701-0015-00L) (annually)	0*	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sustainable Plant Systems (in ETH VVZ: 551-0209-00L)	12	3.42	3.33	3.17	3.42	3.33	3.42	3.67	3.67	1.9 2
Value-based design: Enhancing value-sensitivity in use and development of emerging technologies	4	3.75	3.00	3.50	3.75	3.75	3.25	4.00	3.75	2.0 0
Scientific Writing I	9	3.78	3.89	3.89	4.00	3.78	3.67	4.00	3.78	1.7 8
Writing a Post-doctoral Grant	10	3.60	3.60	3.70	4.00	3.50	3.50	4.00	3.90	2.0 0
Genetic Diversity: Techniques (in ETH VVZ: 701-1425-01L)	4	3.75	3.13	4.00	3.67	3.25	3.63	4.00	3.75	2.0 0
Introduction to Machine Learning for Plant Scientists	15	3.30	3.33	3.27	3.53	3.23	2.80	3.87	3.40	1.6 3
Compositional data analysis (annually)	8	3.57	3.14	3.00	3.50	3.38	3.13	3.63	3.50	1.8 8
Colloquium: Challenges in Plant Sciences (in ETH VVZ: 551-0205-00L)	28	3.67	3.26	3.71	3.00	3.33	3.08	3.64	3.08	1.8 6
Introduction to Structural Equation Modeling	15	3.53	3.60	3.40	3.73	2.93	3.25	3.73	3.53	1.9 2
Introduction to UNIX/Linux and Bash scripting - BIO609	17	3.06	3.35	3.12	3.0	3.50	3.00	NA	3.59	1.5 3
Next generation sequencing 1 BIO610	16	3.13	3.38	3.19	3.06	3.50	3.06	NA	3.23	1.5 6
Scientific Visualisation Using R	0*	NA	NA	NA	NA	NA	NA	NA	NA	NA
Advanced course on 3D microscopy imaging of plant tissues and image processing	1	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	2.0 0
Advanced Data Management and Manipulation using R	13	3.92	3.46	3.62	3.77	3.38	3.31	3.92	3.62	1.9 2

Project Management for Research	10	3.78	3.56	3.56	3.22	3.56	3.11	3.56	3.22	1.89
Reporting using R Markdown & Shiny	12	3.83	3.58	3.42	3.92	3.83	3.50	3.92	3.75	2.00
Summer School 2022: Application of Machine Learning in Plant Sciences	19	3.20	3.37	3.26	3.47	3.30	2.95	3.89	3.42	1.59
Responsible Conduct in Research	13	3.31	3.77	3.23	3.31	3.77	3.85	4.00	3.46	1.83
Scientific Presentation Practice	12	3.58	3.58	3.85	3.54	4.00	3.83	4.00	4.00	1.92
Scientific Writing Practice II	11	3.82	3.82	3.70	3.64	3.64	3.55	3.73	3.73	1.64
Statistical modelling	16	3.53	3.60	3.40	3.73	2.93	3.27	3.73	3.53	1.80
The Microbiome of the Plant-Soil System: Part I (Theory, methods and case studies)	2	4.00	3.50	4.00	3.50	3.00	4.00	4.00	3.50	2.00
The Microbiome of the Plant-Soil System: Part II (Processing next-generation sequencing data to ...)	6	3.83	4.00	3.83	4.00	3.83	3.67	4.00	4.00	2.00
Alpine Plant Ecology - International Summer School 2022	0*	NA	NA	NA	NA	NA	NA	NA	NA	NA
Genetic Diversity: Analysis	0*	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Linear and Linear Mixed Models in R	0*	NA	NA	NA	NA	NA	NA	NA	NA	NA
Introduction to R (2022)	2	4.00	3.50	3.50	4.00	4.00	3.50	4.00	4.00	2.00
Chlorophyll fluorescence (2022)	8	3.50	3.86	3.88	3.88	3.63	3.50	3.88	3.88	2.00

* No PSC Evaluation form was used

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.

In 2023, the PSC will continue focussing on expanding courses in the field of digital skills and competencies in the field of doctoral training. From 2023 to spring 2024 this work will be completed. All new courses will then be carried out once and included in the curriculum.

RNA Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	29
Track I students	13
Track II students	16
Female students	17
Male students	12
International students	24
Swiss students	5
Program drop-outs	0
Completed PhD	36
Program Alumni	36
Faculty members	28

Recruitment

Recruiting statistics	December 1 2021	July 1 2022
Complete applications	18	28
Invited candidates	4	4
Drop-outs before interview	2	0
Free slots (RNA Biol priority program)	3	3
Matches	0	3
Candidates without matches	1	1
Decision against program	0	1
Rejected candidates	0	0
Change to other LSZGS programs	1	0
Gained from LSZGS programs	0	1

Number of program students

ETHZ	16
University of Berne	6
UZH	7

Finances

	Income	Expenses
Balance January 1	48'293.35	
Income		
ETHZ		
UZH	4'848.00	
Fees		
Other		
Expenses		
Salaries program		
Social benefits		
Recruitment December 1		4'629.40
Recruitment July 1		2'162.20
Program activities (retreat, symposia, etc.)		
Overhead		
Balance as of December 31	46'349.75	

Program Activities

- **NCCR RNA & Disease Seminar Series 2022**
there is a PhD Luncheon with the speakers at the day of the Seminar

March 2022: Gisela Storz - National Institutes of Health, Bethesda, USA

May 2022: Geraldine Seydoux - Johns Hopkins University, Baltimore, USA
Amy Pasquinelli - University of San Diego, USA

Aug 2022: Paul Walton – University of York, UK

Oct 2022: Juli Feigon – University of California, Los Angeles, USA
Archa Fox – The University of Western Australia, Perth, Australia

Nov 2022: Clemens Plaschka – Institute of Molecular Pathology, Vienna, Austria
Mary O' Connell – Ceitec, Brno, Czech Republic
Jeannie Lee – Harvard Medical School, Cambridge, USA

Dec 2022: Clotilde Lagier-Tourenne – MassGeneral Institute, Charlestown, USA
- **Swiss RNA Workshop 2022, January 28**
online
- **6th Annual NCCR Retreat 2022, March 21-23**
Engelberg, Switzerland
- **Summer School 2022, August 23 – 27, "RNA & Entrepreneurship"**
Saas-Fee, Switzerland

- **Autumn Semester 2022**
RNA Biology Lecture Series I: Splicing, alternative splicing & RNA editing; Transcription; Ribozymes & Translational Regulation; RNP biogenesis & nuclear export; Rhythmic transcriptome and proteome; The ribosome structure & translation; Coronavirus replication; 3' end formation & minor intron splicing; Nonsense-mediated mRNA decay & mRNA turnover.

RNA Biology Lecture Series II: Micro RNA function in metabolism; RNA and neurodegeneration; Epigenetic programming of genome remodelling in ciliates; Nucleic acid-based drugs; CRISPR-Cas genome editing; RNA processing code; Telomerase and telomeres; piRNA biogenesis & function; Signal transduction & RNA; tRNA biology; Mitochondrial tRNA import

Outlook

- **NCCR RNA & Disease Seminar Series 2023**
there is a PhD Luncheon with the speakers at the day of the Seminar

Apr 2023 Maria Carmo-Fonseca – Instituto de Medicina Molecular, University of Lisbon, Portugal

May 2023 Anna Marie Pyle – Yale University, New Haven, USA
- **Swiss RNA Workshop 2023, January 27**
Bern, Switzerland
- **7th Annual NCCR Retreat 2023, January 30 – February 1**
Kandersteg, Switzerland

Science and Policy

The program in figures and numbers

Program statistics	as of December 31
Program students	56
UZH affiliation	15
ETH affiliation	37
Uni Basel affiliation	4
Other institutions	0
Track I students	30
Track II students	26
Female students	32
Male students	24
International students	42
Swiss students	14
Program drop-outs	5
Completed PhD	1 in 2022 at UZH
Program Alumni	53 (total until 2022)
Faculty members	14

Recruitment

Recruiting statistics	December 1	July 1
Complete applications	11	17
Invited candidates	0	0
Drop-outs before interview	0	0
Free slots (0 priority program)	0	0
Matches	0	0
Candidates without matches	0	0
Decision against program	0	0
Rejected candidates	0	0
Change to other LSZGS programs	0	0
Gained from LSZGS programs	0	0

Finances

	Income	Expenses
Balance January 1	60815	
Income	27'938	
ETHZ		
UZH		
Fees		
Other		
Expenses		
Salaries program		2963.52 (Koordinatorin 1) 24520.60 (Koordinatorin 2)
Social benefits		
Recruitment December 1		0
Recruitment July 1		0
Program activities (retreat, symposia, etc.)		15989.67
Overhead		reported elsewhere
Total		43473.79
Balance as of December 31		45.279.21

* Saläre total für beide PSC PhD Programme (50%) = CHF 7'408.80 (Koordinatorin 1) und CHF 61'301.50 (Koordinatorin 2)

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.swissplantsciencweb.ch), housing 9 national PhD programs in Plant Sciences, Graduate Campus University of Zurich (www.grc.uzh.ch), bringing together all PhD students of the University of Zurich.

Students registered in the program in the reporting period, as of Dec 31

Year	TOTAL	University of Zürich	ETHZ	University of Basel	Other	Female	Male	National	International
2022	56	15	37	4	0	32	24	14	42

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.

Module	ECTS
<p><u>Compulsory Activity:</u> 4 out of 6 modules - Policy Workshops (offered by PSC, 2 ECTS each):</p> <ul style="list-style-type: none"> • 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 <p>1 Lecture in Basics of Policy Sciences (i.e. Introduction to Political Sciences, 1 ECTS)</p>	9
<p><u>Elective Activities:</u></p> <ul style="list-style-type: none"> • 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) <p>Seminars, Colloquia</p>	3
<p><u>Other Elective Activities:</u></p> <ul style="list-style-type: none"> • 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. 2 ECTS) <p>ECTS from the PSC offer of technical and scientific courses and Transferable skill courses.</p>	
	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 8 of the 8 PhD students recruited to the program in 2022.

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 0 of the 8 PhD student recruited to the program in 2022.

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 2021 we can currently report.

- 90% of all scheduled thesis committee meetings in 2022 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.
- 60% carried out in time and 40% delayed (or submitted late to DissGo) by 3-6 months at University of Basel

Revision of the ETH Zurich Ordinance of the Doctorate:

On January 1, 2022, the new ETH Zurich Ordinance on the Doctorate (<https://rechtssammlung.sp.ethz.ch/Dokumente/340.31en.pdf>) entered into force. The new Ordinance on the Doctorate applies to all doctoral candidates who enroll in a doctorate from January onwards. It also applies – with some transitional provisions – to those who have already been accepted for a doctorate.

Doctoral students at ETHZ are supervised by at least two persons. The (1) official supervisor of the doctoral thesis (professor at the Department) and (2) the second advisor (an adjunct professor or Privatdozent/in, provided that (a) she or he works full-time at the ETHZ, and (b) both institutes have agreed). The second supervisor must be defined latest till submission of the doctoral plan. The doctoral administration (doktorat@ethz.ch) must be notified of the second advisor before the aptitude colloquium. Doctoral students have the right throughout the doctoral study to request another person to be available for additional professional or nonprofessional advice and support as needed.

Information about your doctoral studies at ETHZ and particular requirements of different ETHZ departments are available here:

<https://ethz.ch/students/en/doctorate.html>

<https://ethz.ch/en/doctorate/legal-basis.html>.

Template for registration of second supervisor is available here:

<https://ethz.ch/students/en/doctorate/second-advisor.html>

Departments D-USYS and D-BIOL

Doctoral Plan (replaces Research Plan):

A written research proposal, including the research plan and teaching requirements, is to be defined minimum 15 working days before the Aptitude Colloquium (D-USYS) and latest 10 months (D-BIOL) after registration. Should a thesis be carried out outside the ETHZ domain, it should be specified in the doctoral plan. The doctoral plan needs to be submitted to the aptitude committee and the doctoral studies panel (Deadline, see ETHZ MyStudies).

Aptitude Colloquium: The aptitude colloquium is an oral defense of the research plan to be held latest 12 months after registration at ETHZ (see MyStudies). The defense lasts around 60 minutes including a presentation by the doctoral student (max 30 minutes) and a discussion between the doctoral student and the aptitude committee about the doctoral plan. The aptitude committee is composed by the chairperson and the Thesis Committee. The chairperson must be (a) a member of the doctoral studies panel (Doktoratsausschuss) or (b) a person appointed

by the doctoral studies panel who must be a full or associate professor at ETHZ department. The PhD-Student is responsible to organize the aptitude colloquium, which can be conducted with partial or full physical presence of the aptitude committee and the doctoral student or entirely by video conference.

Information on the Doctoral Plan and Aptitude Colloquium:

<https://ethz.ch/students/en/doctorate/doktoratsplan.html>

<https://ethz.ch/en/doctorate/legal-basis.html>

Information for submission of the Doctoral Plan:

D-BIOL: <https://biol.ethz.ch/en/doctoral-studies/doktoratsplan--eignungskolloquium.html>

D-USYS: <https://usys.ethz.ch/en/doctorate.html>

Progress report (replaces Thesis Committee Meeting Protocol): All doctoral students must complete a progress reports. This is due after the appointment of a second supervisor. The PSC recommends involving external partners or supervisors. The progress report must be completed annually. The progress report forms the basis for the annual status conversation. The document must be kept for the entire duration of the doctorate. The duty of safekeeping is incumbent on the persons involved (doctoral students, dissertation supervisors, second advisors)!

Annual status conversation: All doctoral students must have an annual status conversation with the supervisor of their doctoral thesis. This is due after the appointment of the second supervisor. The supervisor of the doctoral thesis will determine the date. It consists of 2 parts and covers the following topics: Part 1 (Scientific Progress) and Part 2 (performance assessment, career and personal development).

The minutes of the status conversation must be kept for the entire duration of the doctorate. The duty to keep the minutes is incumbent on the persons involved (doctoral students, dissertation supervisors, second advisors)!

Exam Registration and Doctoral Examination: The final degree is conferred by your home institution. For your registration at the doctoral administration, have a look at:

<https://ethz.ch/students/en/doctorate/doktorpruefung.html>

PSC Trainings and Certifications

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

PhD education

Courses carried out in the reporting period

In the reporting period, the PSC organized / co-organized 35 courses. We report 389 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
2022	6	44	45	3	1	93

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

Date	Course	Speakers / case study supervisors	Participants
8.03. / 15.03.2022	Introduction to Political Sciences	Dr. Sarah Bütikofer, Global Governance (ETHZ)	ETH (8) UZH (9) UNIBAS (1) Other (0)
26.04-28.04.2022	Stakeholder Engagement	Minu Hemmati (Berlin)	ETH (7) UZH (6) UNIBAS (1) Other (0)
10.05. / 11.05. / 17.06.2022	Building Political Support	Dr. Sarah Bütikofer, Global Governance (ETHZ); Dr. Sebastian Koehler (King's College, London)	ETH (8) UZH (7) UNIBAS (0) Other (0)
22.08. / 19.08.2022	Policy Evaluation	Dr. Tobias Arnold (Interface, Lucerne)	ETH (10) UZH (4) UNIBAS (0) Other (0)
2.11-4.11.2022	Contributing to policy action – Analysis and communication of risks and uncertainties	Dr. Cornelius Senf (TU Munich), Dr. Melanie Paschke (Zurich-Basel Plant Science Center), Dr. Christoph Beuttler (Risk-Dialogue Foundation, St. Gallen), Dr. Benedicte Bonnet-Eymard (TA-SWISS), Dr. Benedikt Knüsel (ETHZ)	ETH (7) UZH (5) UNIBAS (0) Other (0)
16.11.2022	Science & Policy Talks	Dr. Sascha Ismail (SCNAT)	ETH (5) UZH (3) UNIBAS (1) Other (1)

From 01.01.2022 to 31.12.2022, the evaluation of 5 of 5 courses were completed by the PSC directly: Participants rated these courses between 3 to 4 (= fully agree) in “I learned & benefited from this course” and several other aspects. Note: In the last column “The instructor moved at an appropriate pace” a different scale was used.

Course	Number of questionnaires	The course was well organized?	The topics covered met my expectations?	The instructor explained clearly?	Manual was helpful & useful also for future?	Good balance between theoretical & practical?	level of course was according to my needs?	working atmosphere was good?	I learned & benefited from this course?	The instructor moved at an appropriate pace?
Science and Policy: Understanding Policy Evaluation	12	3.17	2.83	3.25	3.33	2.54	2.92	3.42	3.08	1.50
Science and Policy: Contributing to Policy Action – Analysis and Communication of Risks and Uncertainties	9	3.44	3.44	3.78	3.67	3.78	3.44	3.78	3.56	2.00
Science and Policy: Building Political Support	10	3.56	3.33	3.33	3.33	3.44	3.22	3.89	3.44	1.78
Science and Policy: Introduction to Political Science	16	2.82	3.00	3.38	2.81	3.25	3.13	3.63	3.25	1.87
Science and Policy: Stakeholder Engagement	14	3.93	3.86	4.00	3.57	3.71	3.93	4.00	3.64	2.00

In 2022, the PSC offered 2 Science and Policy Talks focusing on OpenAIRE and Open Access – Increase the Uptake and Impact of RESPONSE Research Results (November 18, 2022) and Communicating Science and Policy by Fact Sheets (November 16, 2022).

Feedback from all those involved over the past few years confirms that this program (i.e. in particular with the specialization Science and Policy) is a unique, interdisciplinary offer in Europe. We are convinced that by supporting this innovative program we have maintained and even improved the necessary quality in order to be an outstanding flagship program, especially at the science and policy interface for all participating partner universities.

Outlook

For 2023, the PSC is planning to offer 2 Science and Policy Talks per year focusing on such as Politics scholarship for academics – Prepare yourself and submit a successful science and policy application (May 24, 2023) or Working at the Interface of Science and Policy – Innovation Transfer.

Systems Biology

The program in figures and numbers

Program statistics	as of December 31
Program students	69
UZH	13
ETH	56
Other affiliation	
Track I students	34
Track II students	35
Female students	32
Male students	37
International students	54
Swiss students	15
Program drop-outs	0
Completed PhD	6
Program Alumni	111
Faculty members	39

Recruitment

Recruiting statistics	December 1, 2021	July 1, 2022
Complete applications	61	49
Invited candidates	10	14
Drop-outs before interview	2	2
Free slots	0	0
Matches	4	5
Candidates without matches	4	7
Decision against program	2	2
Rejected candidates	1	1
Change to other LSZGS programs	1	0
Gained from LSZGS programs	0	2

Finances

	Income	Expenses
Balance January 1	98'217	
Income		
ETHZ	33'392	
UZH	0	
Fees	0	
Other	0	
Expenses		
Salaries program		14'700
Social benefits		2'325
Recruitment December 1		1'604
Recruitment July 1		1'905
Program activities (retreat, symposia, etc.)		7'140
Overhead		0
Total		27'675
Balance as of December 31		103'934

Program Activities

- (i) The compulsory introduction course “Systems Approaches in Biology”, conducted by the Systems Biology program, took place on November 21-30, 2022. 14 Systems Biology PhD students attended the course, which was held on-site again after some iterations that had to be held virtually.
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) The advanced course “Computational Biology”, conducted by the Systems Biology program, was held on June 13-24, 2022. 13 PhD students completed the course, of which 12 from the Systems Biology program and 1 from the Biomedicine program. The 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) The 10th Systems Biology PhD program retreat, organized by the Systems Biology PhD student community, took place on September 28-30, 2022, in Niederwangen, close to Bern. Participants and speakers stayed at Landguet Ried, Center for Mindful Living, a homey retreat center surrounded by a wonderful garden (incl. a fireplace) amidst Bernese forests. The retreat program revolved around interactive sessions and workshops between the PhD students and the respective experts.