

SURVIVAL GUIDE

*HANDBOOK FOR PH.D. STUDENTS
AT ETH ZURICH*



Dear Ph.D. student
Dear Ph.D. candidate

You are starting a new phase in your life. You have graduated and are interested in research – congratulations! And you are thinking about doing or you have already started a Ph.D. at ETH Zurich, the Swiss Federal Institute of Technology in Zurich. Some interesting years lie before you, years filled with thrilling topics of your research field, contacts with other researchers, international conferences, and, hopefully, friendship. At the same time you are probably new at ETH, perhaps new in Zurich, or even new in Switzerland. Things might seem complicated to you. In fact, ETH with its approximately 10000 students and 7000 employees may resemble a big labyrinth at first sight.

That is why we created the Survival Guide for you. This book is meant to support doctoral students in discovering the objectives, possibilities and consequences of being an ETH employee, a researcher and a teaching assistant. It will give you information about ETH and about writing your Ph.D. thesis, but also provide practical hints and support. As a large number of Ph.D. students comes from abroad, an effort was made to ease their start in Zurich and Switzerland. Therefore, the Survival Guide is written in English.

The Survival Guide consists of three parts:

- **Beginning your Ph.D.:** The first chapters are on how to start your Ph.D., e.g. finding a supervisor, moving to Zurich and dealing with immigration issues in case you are not from Switzerland.
- **Doing your Ph.D.:** This part is about your life as a Ph.D. student. It introduces ETH and discusses your duties and opportunities as well as finding help in case you have any problems. It also covers the social parts about doing a Ph.D.: life in Zurich and Switzerland, clubs and housing.
- **Finishing your Ph.D.:** How to finish your Ph.D.? What do you have to consider before leaving Switzerland? This last part gives you some important tips about the final tasks.

We are very happy to present you the second edition of the Survival Guide. The first edition was published in 1998, after a survey demonstrated the need for a handbook for Ph.D. students. After only three years the first edition was out of print. For this reason we at AVETH, the Academic Association of Scientific Staff at ETH Zurich, decided to revise the old edition and to add some new chapters. The AVETH as well as other volunteers put a lot of work and effort into this book. We hope that we reached our goal: to provide you with the necessary information and to contribute to your successful Ph.D.!

We wish you good luck and hope to meet you in person at some stage!

Your AVETH Survival Guide team

WELCOME TO ETH!

You have decided to start a Ph.D. or perhaps you are still thinking about it, and have been looking for a highly interesting topic and/or the right professor. We hope you will find both at ETH Zurich or at one of its related research institutes. Even then you will probably still have a large number of questions. For Ph.D. does not mean just writing a thesis: it stands for a very special part of your life with its own rules and challenges. To help prevent these becoming excessively demanding, the AVETH took the initiative to write this Survival Guide. It provides answers to many questions, points out various pitfalls and at the same time gives practical advice for avoiding them.

Every year around 500 students start their doctorate at ETH, approximately half of them coming from countries outside Switzerland. They have active roles to play since their contributions to teaching and research at this institution are both important and valuable. In return, ETH provides excellent working conditions: an innovative and competitive atmosphere, superbly-equipped work areas and laboratories and an environment that promotes access to the world's best scientists, engineers, architects and mathematicians.

A Ph.D. at ETH should not only lead to specialisation but also to a reasonable relationship between breadth and depth. There is a myriad of opportunities open to Ph.D. students to attend lectures, seminars and workshops in their own research areas, in neighbouring fields and in the social sciences and humanities. ETH is in addi-

tion more than just a place where research, learning and teaching go hand in hand: located in a lively city, many facilities are available for pursuing sports and music, as is membership to a variety of clubs and associations.

Since the beginning of this century, generations of students have received their doctorates from ETH, among them no lesser celebrities than the Nobel Prize winners Tadeusz Reichstein (Ph.D. in 1922), Alexander Müller (1958), Heinrich Rohrer (1960), Richard Ernst (1963) and Georg Bednorz (1982). At their own graduation ceremonies, their thoughts and feelings were probably similar to those of all the young men and women who reach this goal at ETH: reflection on an intensive and creative time, during which they had made their first contacts and taken their first steps in the world of research, but at the same time not knowing exactly what the future had in store for them. What they could be sure of was that they held a highly reputable degree in their hands, a degree that proved they had “survived” at ETH and above all that they were able to complete a complex research project.

The skills acquired and the knowledge gained in Ph.D. work are basic requirements for the pursuit of a career in academia and are becoming increasingly important for success on the international job market.

We wish you well as you embark on this exciting and challenging period of your life.

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*PH.D. MOTIVES AND IMPLICATIONS:
REFLECTIONS ON SURVIVING*



*HOW TO BECOME A RESEARCHER:
THE MAKING OF PROFESSIONAL IDENTITIES*

Nobody is born a researcher. You have to become one. Studying for a Ph.D. will probably be the last, but the most decisive stage in the life of a young person who wants to devote him- or herself to the organised search for a greater understanding of the natural and social world. This includes the ability to produce, control and manipulate new phenomena, instruments and other artefacts. Studying for a Ph.D. is the crucial phase in which a professional identity is formed and when socialisation takes place. Up to this point, much of one's life has already been dedicated to learning. But the previous experience differs from what happens now. For the first time Ph.D. students are challenged to actively intervene in the observation and manipulation of a physical reality. In previous stages of their education, students had to show their mastery of the content of an object world and the appropriate methods for examining it, essentially by digesting knowledge that had been didactically prepared for them. They learned how to put it to use. But in order to do so, the problems had to be carefully defined and purposefully selected by their teachers. In general, solutions were known, the conceptual frameworks of reliable knowledge were given, methods and procedures were standardised and had only to be learned.

[*HELGA NOWOTNY* Professor of Philosophy and Social Studies of Science
at ETH Zurich and Director of Collegium Helveticum]

PH.D. MOTIVES: << Is it still worth doing a Ph.D. these days? Is there any profit compared to a lucrative job in the “real job world”? These were the questions I asked myself before beginning my Ph.D.. In the end I answered them with “yes”, with the following points in mind:

- *As a Ph.D. student, you have the opportunity to meet a lot of interesting people from different disciplines and from around the world. Be open, profit from ETH clubs, conferences, and talk courageously to people who might be interesting.*

- *ETH offers a great variety of courses and formation. Do not hesitate, learn a new language, inscribe for a Nachdiplomkurs, attend a course that you have always wanted to follow. Your supervisor should give you this freedom.*

- *A Ph.D. offers you the freedom to do research in a fascinating field. These are some of my personal benefits from my Ph.D.. Ask yourself about your benefits by doing a Ph.D.! Do not forget: A Ph.D. takes at least 3 years, and your salary is not likely to be comparable to a professional salary. Your cost-benefit-analysis must add up in the end. >>*

*Katja Wirth, Psychologist, Ph.D. student at
Institute for Hygiene and Applied Work Physiology*

Students were introduced to a world of research in which their teachers had laid out for them the pathways through which the known destinations could be reached by well proven and validated means.

Entering the Ph.D. stage means that learning through imitation is to be left behind. Students are now expected to do research on their own. They are no longer supposed to act within a frame of knowledge which is given, but to strive for an active synthesis, which includes what is already known, but also what has yet to be found. Method and meaning of learning change. Studying for a Ph.D. means to become an active producer of new scientific knowledge and technological artefacts. It is easy to see why this can be such a frightening experience at times. It marks the shift from the “mere” reproduction of knowledge to production, from dependence on those who have selected for you what you are supposed to know to a state of independence which requires and results in originality of ideas, finding new approaches or trying out

new methods. Students are expected to become similar to those whom they identify with as top researchers. Their most proximate role models are their supervisors. For the students, the supervisors represent at the same time the professional audience and the wider scientific community who will evaluate their future work.

Socialisation is a process in which previous experiences and an identity are actively reconstituted. At the end, a different set of attitudes, skills and behaviour will emerge, more suitable to the norms and constraints of the professional world, membership into which the Ph.D. students aspire. Empirical studies into how Ph.D. students

internalise their future profession as researchers demonstrate the difference in attitudes between students beginning Ph.D. work and attitudes held by those who are near completion. The most striking change between early vs. late students, one study concluded, was the way in which the students integrated their sense of being an autonomous individual into their overall new identity. Initially, their sense of self was in conflict with a “personal morality” dimension of values. By the end of training, the sense of self became increasingly associated with drive, ambition, competitiveness and willingness to assume responsibility, and less with flexibility and pursuit of scientific curiosity for its own sake. The students had learned that failure was their own responsibility (Hill, 1995). Another study examined the effects of socialisation on male and female students in technology. The results show that while significant differences between female and male students remained, with female students emphasizing caring norms more strongly, students initially emphasized caring-related norms more strongly than junior researchers who had completed their studies. In other words, socialisation continues at the work-place, making men and women more alike. This is a gendered process in the sense that masculine values were promoted, while caring values lost out (Sørensen, 1992). Yet, this must not necessarily remain so in the future.

CHANGES IN KNOWLEDGE PRODUCTION

Working for a Ph.D. is not an aim in itself, despite the intrinsic gratification it may confer. It is supposed to prepare graduate students for what was once meant to be the only desirable career as a scientist: a life dedicated to science and research, preferably within the university or in a comparable research-intensive setting like an industrial lab. But the times in which there was a reasonable expectation that a Ph.D. would open up predictable and secure avenues and in which scientific careers came with the prospect of life-long employment, are changing all too rapidly. Only a small fraction of those studying for a Ph.D. will end up in what used to be a traditional university career structure which itself is undergoing profound change. The vast majority of Ph.D.s will find themselves distributed throughout society across an increasing number of sites where recognizably competent research is being carried out. The interactions among these sites have set the stage for an explosion in possible configurations of knowledge and skills. The result

can be described as a socially distributed knowledge production system in which communication increasingly takes place across existing institutional boundaries and where knowledge production takes place in specific contexts of application (Gibbons et al, 1994). Ph.D. students are rapidly becoming part of this new mode of knowledge production and there is a growing awareness that many problems demand a more interdisciplinary or even transdisciplinary approach. If training inside universities, including training for a Ph.D., does not seem to accommodate or encourage more interdisciplinary interaction and communication, it is mainly for the reason that university teaching is still predominantly organized according to disciplinary boundaries. Students are supposed to become socialized into what is still felt to be most important, namely to acquire a professional identity which is discipline-based. However, it is becoming increasingly obvious that a cognitive identity rooted within one discipline must be accompanied by a capacity for inter- or transdisciplinary cooperation.

Within ETH these tendencies have long been recognized, although a densely-packed curriculum and severe time constraints do not easily lend themselves to the accommodation of the need nor the desire of many students for greater exposure to inter- or transdisciplinary studies. The Collegium Helveticum of ETH, located in the Semper-Sternwarte, offers an excellent intellectual space for a small group of highly motivated and competent Ph.D. students to continue work on their doctoral dissertation in a stimulating atmosphere where different research cultures meet. If you are looking for more than survival – join us.

LITERATURE

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*PH.D. MOTIVES AND IMPLICATIONS:
ACADEMIC CAREER PLANNING*



It is obvious that at the top of the academic career ladder there is the position of the university professor and that the doctorate is the first step towards a career in independent research. Can an academic career be planned in such a way that your Ph.D. studies lead you straight up that ladder?

Surely not, since there are a number of circumstances on which you can exert no influence at all. Whether desirable chairs at acceptable universities become vacant just at the time your qualifications and your age make you most eligible is not something you can pre-arrange, nor are the basic career patterns or the changing demands of science and universities.

Always bear in mind that next to a convincing research record and the ability to teach and to lead a research group, a good portion of luck always plays a part in finally climbing onto that professorial chair. Nevertheless, there are a number of factors to consider that can boost your academic career:

Concentrate on finishing your dissertation quickly. Ph.D. graduates in Switzerland and also in other, mostly German-speaking, countries tend to be older than their colleagues, most notably in the Anglo-American world. Therefore, it is important not to lose additional ground due to prolonged Ph.D. studies. In the United States and Great Britain, faculty positions at the level of assistant professor or lecturer are traditionally attained at a rather young age, and universities from the German university tradition are increas-

ingly adopting the Anglo-American model, of which ETH is one of its most prominent advocates. Whereas the Swiss National Science Foundation prescribes an age limit of 40 for their programmes for the promotion of young scientists (SNF-Förderungsprofessuren), ETH operates with an (informal) age limit of 35 for assistant professor positions. Moreover, the average age of full professors entering ETH has been continually decreasing over the past few years. Therefore, the period of time during which people can be regarded as 'young scientists' is gradually becoming shorter. Thus, there is a higher risk of established, but nevertheless not quite successful scientists becoming increasingly frustrated, or having to abandon their academic career at a point in time where their options on the job market are heavily limited.

See to it that you can start publishing original work as early as possible. Both the quality and quantity of your publications as evidence of original research are still the crucial element for the evaluation of a scientist. When publishing as a collective, be sure to have your contributions sufficiently credited to your name.

Look beyond the boundaries of your laboratory, broaden your background by attending events at the Institute, the Department and all of ETH. This will take up some time but is well worth the effort. In addition, participate on all accounts in international conferences. The primary goal here is not necessarily to systematically establish international contacts at an early stage, but to get to know the great big world of the international academic community in order to find out whether it appeals to you personally. In view of the increasing specialisation of dissertation topics, you will often find adequate experts only outside of your own research group or of ETH. In the long run, your peers will no longer be located within your research group, but all over the world. Being the best computational fluid dynamics specialist or the best cell biologist in your group or even in Zurich may be a nice, though only intermediate asset, since what ultimately counts is comparison by and within international standards. If there are any possibilities to spend some time at a laboratory abroad during your Ph.D. studies, such opportunities should be seized.

Think about life after your doctorate when bringing your dissertation to a close. Look for suitable positions if you are planning to work as a postdoc; remaining at ETHZ should be the absolute exception. Plan on spending time elsewhere. Certainly, a big advantage would be if your Ph.D. advisor has numerous contacts to leading research laboratories the world over. In addition, there

are several ranking systems, mostly in Anglo-American academia, which allow you to check whether a favoured university or research group really belongs to those within the field which are internationally renowned. In general, be prepared to move, and if possible do so while you are still young, when your private life still allows for it. To become an assistant professor at ETH, it is practically indispensable for an ETH graduate to have spent at least two years elsewhere.

Update your CV regularly. Even if scientific research, documented in a growing list of publications, is the core of a scientific career, other activities – such as teaching, supervision of studies, further education, public relation work, etc. – are to be listed as well since they round off an academic CV.

Some final advice: Professors are increasingly stuck with administrative duties and are continuously in danger of becoming pure science managers. Therefore, enjoy conducting research while you can, as a Ph.D. student. At this level, you can still carry out hands on research, and as you move up the career ladder, you move away from the laboratory and spend less time with actual research.



*PH.D. MOTIVES AND IMPLICATIONS:
NON-ACADEMIC CAREER PLANNING*



POTENTIAL EMPLOYERS

There are many possible non-academic employers that could be of interest for a career after your Ph.D. Typical working fields include:

- Industry (e.g. research & development, manufacturing & logistics, marketing & sales, finance & administration, general management, engineering)
- Economy (e.g. banking, insurance, trade, tourism, forest and agriculture)
- Public Administration, Professional Federations, International Organizations, NGO's
- Consulting
- Legal firms
- Non-academic teaching

WHAT COMPANIES AND ORGANIZATIONS EXPECT

Initially, ETH Ph.D.s are employed in the management of projects, groups, departments or sectors of a company or organization. After having gained experience with the company's products and services and after becoming familiarized with the company or business atmosphere, General Management positions may be considered.

Such companies and organizations tend to be directly or indirectly active in global markets. Their products or services need to differ from those of competitive firms.

Therefore, your job qualifications will be enhanced if, in addition to your professional and technical know-how, you can offer the following knowledge and experience:

- Knowledge and experience in finance and administration.
- Communication skills.
- Knowledge and experience in project management.
- Knowledge in planning and leadership.
- Basic knowledge and interest in management know-how.
- Knowledge and experience in teamwork and leadership.

FACTORS TO CONSIDER

In certain fields, such as in the chemical and pharmaceutical industry, a Ph.D. degree is of great importance. In other cases the knowledge of “soft skills”, i.e. the know-how and implementation of professional management processes, is equally important when seeking employment.

Therefore, you should consider carefully how to optimize your time during your Ph.D. and focus on the development of professional and special subjects as well as on gaining know-how in business procedures.

The successful completion of a Ph.D. degree at ETH will provide you with skills, capabilities and experience, such as:

- Having worked systematically with initiative and with perseverance towards clearly defined objectives.
- Having attained specialized knowledge about a research topic, dealing with it to great detail and becoming an expert.
- Having learned to convince and motivate other people.

HOW TO BOOST YOUR CAREER

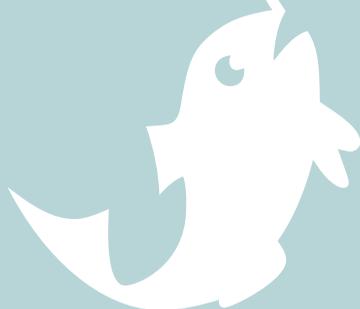
- Take advantage of opportunities to gain practical experience with successful companies or organizations during your time at ETH.
- Plan extensive professionally oriented stays abroad during or immediately after your studies in order to be exposed to peers from

other universities as well as to different cultural and business environments. The successful completion of projects and development of leadership with successful companies or organizations in foreign countries is of special value as an initial step in your professional development.

- During and after your studies take courses that help you gain basic knowledge of business procedures as well as of finance and administration (an MBA degree can, in certain cases, further enhance your career opportunities).
- Participate in activities involving the development of leadership skills and responsibility toward others (active participation in organizations, committees, project groups, community work, task forces, hobbies, sport activities, etc.)
- Take advantage of products and services offered by the ETH Alumni Association (International Alumni Network, Database, Business Events, Career Services, etc.)
- Learn how to professionally compose your Curriculum Vitae and how to present yourself in an interview. Develop your skills in the presentation and communication of ideas.
- Prepare for the TOEFL English language test, if you consider working in the USA.

Whether you choose an academic or non-academic career: We wish you good luck!

HOW TO FIND A PH.D. SUPERVISOR





Nowadays, approximately half of the Ph.D. students at ETH are foreign, and most of them did not obtain their first degree at ETH. In case you are not familiar with the degree system in the German-speaking parts of Europe an explanation of what doing a Ph.D. means at ETH might be convenient. Doing your “Doktorat” means that you work for a certain time span, typically three to four years, as a research and teaching assistant (“Assistent”) for a professor, thus gaining research and teaching experience. Doing a Ph.D. at ETH does not mean you are part of a so called “Ph.D. program” like the ones typically offered in the U.S. which usually consist of two years of course work and three years of work as a research assistant.

The system at ETH requires two things: First, you have to find a supervisor to work for (and to get paid by). At ETH, you do not apply on the department level to join a Ph.D. program. You apply directly to the Professor you want to work for.

Second, the normal requirement to start a Ph.D. at ETH is a “Diplom”, “Magister” (again, two of those German words) or a Master’s degree. An Honours might do, but most Bachelor titles obtained in a three years’ program without doing some kind of small thesis in the end will not get you into the Doktorat. In this case, you may have to take some exams before starting or otherwise prove your title to be equivalent to an ETH Diplom (see chapter “Rules, Regulations and Funding”). As ETH is currently introducing

the Bachelor/Master degree system, you may also join a yearlong master's course at ETH and then proceed to doing a Ph.D.

With the necessary academic degree and a good portion of enthusi-

PH.D. REALITIES: PART-TIME PH.D., PART-TIME INDUSTRY ◀◀ *In my field of research (microbiology), I think that my arrangement of dissertation work and studies is somewhat special. Most of my workweek (about 70%) is spent on the dissertation in the laboratory of EAWAG (Swiss Federal Institute for Environmental Science and Technology). For the other 30%, I am involved in the daily routine of small-scale, private enterprise in environmental analytics. The firm I work for pays my entire salary (according to the usual payments for Ph.D. students at EAWAG). My Ph.D. project is in the interest of both institutions involved. A clear contract has been set up for my Ph.D. project between the ETH research institute and the private firm, which outlines the details (who pays for what, how long the salary of the Ph.D. student is assured, who provides what kinds of material, etc.). The arrangement has been running quite well for two and a half years now. I appreciate already participating in the routine work of a private company and gaining some experience with the problems of profit-making enterprises, which sometimes differ from those in government-funded research. Furthermore, it is expected that I stay with the firm after my studies, so I do not have to look for a job afterwards. This might be considered a disadvantage if one prefers to choose employment freely at a later date, or an advantage in terms of job security.*

With this arrangement, the private company has the possibility to acquire specific know-how at low cost (also at low speed,

ism, there should be no problem for you to become a doctoral student. Basically, there are two options to find your Ph.D. position; you either look for a position publicly posted, or you make your own proposal.

In the first case, the best solution will be to consult the institutes' billboards, virtual or real. Yet there are also a number of Ph.D. positions posted on the Telejob web page (www.telejob.ethz.ch). Furthermore, you can scan the last pages of leading scientific journals in your field, where you may find advertisements concerning Ph.D. scholarships and graduate programs. Be prepared that some of the scholarships posted in journals may have restricted eligibility and differ in the income offered. You can also ask your undergraduate diploma supervisor about suitable Ph.D. supervisors; researchers often use networking, bulletins of scientific societies or scientific workshops to find new Ph.D. students.

The alternative approach to find a Ph.D. position is choosing an area of research, looking for a research group and funding on your own. This sounds very demanding, but it is well worth the effort, since a project based on your personal preferences and ideas will be a great source of fun and energy. If you know a

but there are situations where this does not matter too much) and to be in close contact with a leading research institute.

Close contact to private industry is appreciated by ETH. The financing of my Ph.D. work is externally provided.

The disadvantages for me are that by working 70% on the dissertation, I progress more slowly. It would be more desirable to use the common fields of the two institutions I am involved in, and to work synergistically. This is not so simple to do. There are different expectations from each institute, and they are difficult to reconcile.

All in all: such an arrangement is perhaps not the most ideal start for a career in research. Though, as this is not my aim, I appreciate the arrangement: involvement in the private sector and room and time for research (digging to the roots of a problem). I have frustrating moments due to failed experiments (which seems to be not too unusual among Ph.D. students working experimentally in the fields of natural sciences) and the feeling that I advance much more slowly than my colleagues at their Ph.D. projects. Depending on how well the co-operation is set up, you may experience some difficulties in reconciling all the expectations in the beginning (including your own). >>> Annette Rust, EAWAG

research group you would like to join, do not hesitate to approach a member or the leader of the group! They will not mind, but are rather likely to feel flattered. You will find that once researchers have become interested in you they uncover hidden resources of funding. Additionally, the group leaders often know of the imminent approval of some of their pending grant applications. Your demonstrable, sound interest in their research may bring out unexpected opportunities. In the ultimate case, they may know about a reputed colleague looking for Ph.D. students – and may provide you with his or her address and perhaps even a recommendation. Remember: Good staff is rare, and good staff with initiative and passion for a certain field of research is even rarer.

In case you are an ETH graduate, it may be of interest to you that ETH provides a limited number of Ph.D. scholarships for ETH graduates who would like to do their Ph.D. abroad. If you intend to obtain such a Ph.D. scholarship, you will need a supervisor at ETH

in addition to the one abroad, and in the end you graduate from ETH. This could give you the opportunity to do a three-year doctorate in the USA, for instance.

Your field of research should solely depend on your personal preferences. To complete a Ph.D. requires strong personal interest and commitment. An attempt to foresee what kind of scientific specialization will provide you with an advantage on the job market after your Ph.D. is clearly legitimate, but often proves to be difficult.

You have to negotiate the exact topic of your thesis with your supervisor. Usually, he or she will propose a number of projects in

the line of the group's research. Thus, the choice of the topic and the choice of the supervisor are somewhat linked. Be aware that a highly reputed professor may be an often absent, busy professor. However, you may be assigned a post doc or an "Oberassistent" in the group as your immediate supervisor, who will have more time and will probably be more familiar with your problems and needs as a Ph.D. student.

In assessing a potential supervisor, trust your gut feelings and do not neglect your very first impressions! They will probably turn out as to be the "true" ones with respect to your personal needs. Ultimately, it is not only the supervisor's intellectual capacity you will rely on, but also his or her communication skills and personality. Do not forget: You will have to get along with each other for years! This requires a good portion of mutual respect and appreciation. If a first talk leaves you with a vague dislike of your immediate supervisor, take this seriously and look for another person.

Talk to other members of the group. They will be your future colleagues, with whom you will have to co-operate in daily life. Their attitudes, habits and behaviour reflect the way your supervisor has shaped his or her group. Find out what they think about the supervision, how frequently they meet their professor, what he or she provides and what not – read between the lines! Inform yourself about the current thesis projects. Check whether your proposed Ph.D. project is realistic with respect to the available resources and the given time frame. Check which kind of expertise is available in the group to get an impression of how the group will be able to support you, and where you will need additional support from outside. Is somebody in your lab competent in your field of research and willing to coach you in the early stages of your work? Alternatively, check whether you are allowed to work in a collaborating group or lab for some time.

Interdisciplinary projects require initiative and networking, a strong competence in your home discipline and the ability to communicate with experts from other disciplines. Interdisciplinary research is a demanding task. Nevertheless, a number of today's most interesting scientific fields are interdisciplinary. There is a fair chance that your career may take a turn towards new modes of knowledge production most of which are interdisciplinary (see the text of Prof. Nowotny in the first chapter).

Find out whether your personal expectations about doing a Ph.D. thesis match those of the supervisor. Some Ph.D. students prefer close supervision, while others do best when they are allowed

considerable independence. Both will require very different modes of supervision. The way your supervisor talks to you on a potential thesis project can tell you a lot about his or her personal notion of a doctoral thesis.

STRUCTURE AND ORGANIZATION OF ETH





The Federal Institute of Technology in Zurich (ETH) was founded by the Swiss government in 1854 as a polytechnic and opened its doors in 1855. Until 1969 it was the only national university in Switzerland. Today, it is part of the Federal Research and Teaching Institutions (ETH domain), which includes the two universities in Zurich (ETHZ) and Lausanne (EPFL) and four national research institutes. All other universities in Switzerland are governed by the Cantons.

ETH Zurich is comprised of 83 institutes and laboratories, 330 professorships and about 840 lecturers who fulfill teaching obligations and conduct research. A staff of more than 7500 – 25% of which are women – works in teaching, research and administration. Current statistics of ETH show 11700 registered students. Each year about 1250 students receive an ETH diploma and another 530 complete a doctoral thesis. Current annual expenditure has reached 1 billion Swiss francs.

The ETH executive board strives to maintain ETH's status as one among the group of worldwide leading universities. It is their aim to “compete with the world's best universities” (official profile of ETH). This aim has some effects on the working and studying conditions. The international orientation does not always fit the second aim of the university: to qualify students for the Swiss labor market. As a technical university in a small country, ETH recruits its academic and research staff worldwide. Nearly 50% of all Ph.D. students in

2000 were foreigners, while just about 10% of the undergraduate students were from abroad. Nonetheless, classroom language is almost exclusively German, although English, French and Italian are also sometimes used.

OVERALL GOVERNANCE

ETH is governed by an Executive Board which is headed by a President. Another member of the board is the Vice-President for Academic Affairs or Rector, who is responsible for all issues related to teaching and learning. He heads a team of three Prorectors: one for Undergraduates, one for Doctoral Students and one for Continuing Education.

Furthermore, there are the Vice-President of Research who is responsible for research projects and the Vice-President of Planning who develops strategies concerning the long-term development of the institution and oversees their implementation.

DEPARTMENTS, RESEARCH AND TEACHING

Teaching and Research is conducted, organised and administered within 17 Departments (“Departemente”) under the auspices of the Vice-President of Research and the Vice-President of Academic Affairs.

Diploma courses are typically assigned to one main department, but there are exceptions. For example, the diploma course Computational Science and Engineering is offered by the Computer Science Department and the Mathematics Department. On the other hand, some departments offer more than one diploma course (e.g. the Department Civil, Environmental and Geomatics Engineering is responsible for the diploma courses Civil Engineering, Environmental Engineering and Geomatics Engineering). Heads of Department are ETH Professors elected from within their respective units for a renewable two-year term. In addition to more than 80 institutes (“Institute”), which are assigned to the Departments, there are several independent professorships.

Being a technical university, it is no surprise that ETH concentrates on natural science and engineering. Due to the lower percentage of

women in these subjects, only 27% of the undergraduate students and 24% of the Ph.D. students are female.

After finishing their final exams, undergraduate students receive a diploma which is equivalent to a Master's degree. Ph.D. students receive the degree of a Dr. sc. ETH.

ETH is currently restructuring its diploma courses. A bachelor/master scheme, which is compatible with the rest of Europe and the US, will replace the current system. Changes include the introduction of a credit system throughout ETH as well as new specialized master tracks.

PARTICIPATION

On departmental and ETH level, ETH governance has strong participative elements. The participation of the different groups – professors, scientific and technical/administrative staff and students – in decision-making is sought and encouraged. Before important decisions are taken, the representative bodies of each group are invited to comment on the proposal. This procedure is somewhat formalized and is called “Vernehmlassungsverfahren” (consultation procedure).

A lot of decisions are taken in conferences where the different groups have major influence, e.g. the “Hochschulversammlung” or “HV”, ETH's general assembly. Thus, it is well worth to get involved. The representative body of the scientific staff, including Ph.D. students and post docs, is AVETH, the Academic Association of Scientific Staff at ETH Zurich. You are most welcome to participate! Generally, ETH politics (like Swiss politics) is consensus-oriented. The consultation procedures and conferences may slow down the decision-making process a bit, but the decisions taken at the end of the day are pretty much acceptable for everybody.

Departments

D-AGRL	Agricultural and Food Science
D-ANBI	Applied Bioscience
D-ARCH	Architecture
D-BAUG	Civil Environmental and Geomatics Engineering
D-BEPR	Industrial Management and Manufacturing
D-BIOL	Biology
D-CHEM	Chemistry
D-ITET	Information Technology and Electrical Engineering
D-ERDW	Earth Science
D-FOWI	Forest Science
D-GESS	Humanities, Social and Political Science
D-INFK	Computer Science
D-MATH	Mathematics
D-MAVT	Mechanical and Process Engineering
D-PHYS	Physics
D-UMNW	Environmental Sciences
D-WERK	Material Sciences

Diploma Courses

Agricultural Sciences
Architecture
Biology
Chemical Engineering
Chemistry
Civil Engineering
Computational Science and Engineering
Computer Sciences
Earth Science
Electrical Engineering
Environmental Engineering
Environmental Sciences
Food Sciences
Forest Sciences
Geomatics Engineering
Human Movement Sciences
Industrial Management and Manufacturing
Materials Science
Mathematics
Mechanical and Process Engineering
Pharmacy
Physical Education and Sports
Physics
Professional Officer (of the Swiss Armed Forces)



RULES, REGULATIONS AND FUNDING

A professor, a post doc, and a research assistant were walking together to the lab one morning when one of them picked up a brass lamp and out came a genie! “Three wishes I grant,” he said, “and since you found me together, that is one apiece.” “I wish to live on a tropical island, where I can lie on the beach all day and eat good food,” said the research assistant. Poof—he was gone. “I wish to own a mansion on a hilltop with a garage full of cars and a basement filled with money,” said the post doc. Poof—she was gone too. “I want them both back after lunch,” said the professor.

A Ph.D. programme should not be started haphazardly – it is not something that will be over in a fortnight. Starting a Ph.D. dissertation is a decision that will essentially govern how you direct your energies over the next few years, and at times may preoccupy most of your waking hours and conversations. Being aware of ETH structures and policy can help you to start out on the right foot. When in doubt, you should consult the yellow booklet “Das Doktorat an der ETH Zürich: Rechtsgrundlagen”, a detailed document that outlines all legal regulations, procedures and policies concerning the Ph.D. studies. Unfortunately, there is no English translation. However, references to the appropriate sections have been made below so that you can ask for advice from a colleague (Ph.D. regulations of ETH, “Doktoratsverordnung ETHZ” from December 16, 2000, abbreviated as “DV”, and the Rector’s instructions of application, “Ausführungsbestimmungen des Rektors” from April 1, 2000, abbreviated as “AB”). The booklet is available at the Office for Doctoral studies (“Doktorats-Administration”).

→ Office for Doctoral Studies (“Doktorats-Administration”)

HG F 68.2, ETH Zentrum

Rämistr. 101, CH-8092 Zürich

Tel ++41 1 632 20 77 or ++41 1 632 39 60

Fax ++41 1 632 11 57

baechtold@rektorat.ethz.ch

<http://www.doktorat.ethz.ch>

STARTING YOUR PH.D. : APPLICATION

Prior to beginning a Ph.D., certain procedures must be followed to apply as a Ph.D. student at ETH Zurich. The necessary requirements and conditions differ according to your educational background. Some applicants are admitted without having to meet further conditions, whereas others will be required to meet additional criteria that prove their suitability for the chosen Ph.D. course. The general guidelines are listed below. Any further questions should be directed to the Office for Doctoral Studies.

REGISTRATION AS A PH.D. STUDENT

(DV Art.6-12, AB Punkt 2 & 4) Registration takes place at the Office for Doctoral Studies (address see above), where you can get the registration form Application for Doctoral Studies (“Anmeldung zum Doktorat”). The research group or institute you will be working in may also have copies. This form contains a list of required documents and will be given to you together with the other forms that have to be completed to register as a Ph.D. student as well as useful information, for instance, on registration fees. Graduates of universities outside Switzerland should ask for the memo in English, which will help them to compose the necessary documents in time. Depending on which university you come from, you will need a different set of documents. Only those concerning non-Swiss universities will be mentioned here.

Your application should be accompanied by:

- Your complete curriculum vitae
- Examination results from your university
- List of subjects with content and marks
- Two letters of recommendation from scientists working in the corresponding field, confirming your capacity for independent scientific work
- Official documentation from your university describing their requirements for Ph.D. students
- Two small photographs of you
- For Swiss citizens: “Personenstandsausweis”
- For the rest: certificate of birth (“Geburtsurkunde”)
- Receipt of the paid registration fee
- Completed Personal Data Form

Please note that required copies of legal documents in languages other than German, French, Italian, or English, should be accompanied by an Officially Attested Translation. Copies should be Officially Authenticated.

DEFINITIONS

- **Officially Attested Translation** (“Amtlich beglaubigte Übersetzung”) A translation of the document certified by a governmental office of your country or by your university.
- **Officially Authenticated Copy** (“Amtlich beglaubigte Kopie”) Since it is not a good idea to send the originals of your important documents throughout the world, you are required to send copies authenticated by your former university, by the examination office or by a notary.

Important Notice: Please be sure that you have all required documents before you submit your application. You will not get a residence permit or a visa for Switzerland before your application is accepted. Going to Switzerland and applying once there is not recommended.

Each semester you will receive a Personal Data Form (“Personalien-Datenblatt”) for the following semester. If this form is not returned within two weeks of the beginning of the new semester, you are required to pay an additional fee of CHF 50.

In order to be admitted as a Ph.D. student, an ETH professor must make a written statement that he/she will supervise the project, most simply by signing the completed registration form ‘Anmeldung zum Doktorat’.

Applicants without an ETH-Diploma or a degree from a Swiss university may have to pass an Entrance Exam (see below). Students from universities outside of Switzerland with degrees that are not considered equivalent to an ETH degree will not be allowed to the Entrance Exam. In such cases, it might be possible to enter a higher semester of the undergraduate degree program and continue on from there.

Before final admittance, a Research Plan (“Forschungsplan”) has to be written and accepted, describing the main research questions to be addressed by your Ph.D. project. The supervisor is legally committed when the research plan is submitted to the Office for Doctoral Studies (“Doktorats-Administration”).

ENTRANCE EXAM

(DV Art.7-9,11, AB Punkt 2-4) The following degrees allow acceptance as a Ph.D. student without any further conditions:

- ETH degree (Diploma = Masters)
 - Swiss Federal apothecary diploma
 - Swiss university degrees in natural and technical sciences (lic. phil. II)
- Foreign degrees recognised as being equivalent to an ETH degree are evaluated by the Prorector for Doctoral Studies who makes a recommendation to the advisory committee of the appropriate department on whether additional conditions have to be fulfilled or not. The content of the entrance exam is determined on a case-by-case basis depending on the university where the candidate has completed his/her previous studies. Consideration is also given to the actual qualifications of the candidate. The breadth and depth of the Entrance Exam is determined by the Rector, upon recommendation of the applicant's future Ph.D. supervisor. In some cases, a lecture presentation that covers the research completed for the qualifying degree is possible.

International agreements on degree recognition exist between Switzerland, Austria and Germany; however in some cases an additional Entrance Exam may be required. Note that this is general information. Many departments have additional internal regulations that may apply for your chosen field of study.

If admission is contingent on one or more additional examinations, the following guidelines apply:

The subjects tested in the Entrance Exam will correspond to the level of knowledge expected for the qualifying degree. The range of the exam can be as extensive as that of a final diploma at ETH. This is reflected by the fees: an Entrance Exam of the extent of a final exam costs CHF 380, one of the extent of a partial exam CHF 80. The Entrance Exam must be completed within one year after beginning the Ph.D. studies. The Rector determines the deadline and decides whether the exam has been passed or not. In order to pass, a grade of at least "4" must be attained on all parts of the examination (on a scale ranging from "6" as the best to "1" as the worst grade). A failed exam can be repeated within six months, but only if the supervisor attests to continue supervising the student if the exam is passed.

Ph.D. candidates who are required to pass an exam for final admittance have at all times the same rights and responsibilities as Ph.D. students admitted without further examination.

RESEARCH PLAN (“FORSCHUNGSPLAN”)

(DV Art. 10, AB Punkt 3) The Research Plan describes the main research questions to be addressed by your Ph.D. project. This plan should outline the proposed content of the dissertation and set a tentative time schedule according to which the research should be carried out. The maximum time to finish your Ph.D. is defined to be three years. If you need more time you will have to specify the reasons. Any specific agreement between the student and the supervisor – e.g. one day off a week to care for a child – should be included in this document. It is essential that both parties agree to the Research Plan at the outset of the doctoral study. Failure to do so is an invitation for endless conflicts.

Who actually writes the Research Plan depends on the supervisor and the student. In some cases the supervisor designs the plan, in others it is left entirely up to the student. Ideally, the Research Plan is designed in a co-operative effort between the two parties. This can set the foundation for a good collaborative relationship right from the outset. Of key importance in any case is that both student and supervisor are in agreement concerning contents and conditions. Before signing the document, ask yourself if you can live with these arrangements for several years.

If the Ph.D. student writes the Research Plan, he/she will have the opportunity to control the direction in which the project is going to go, at the same time gaining a deeper and clearer knowledge of what the research is about. It is important to seek advice from experienced people (e.g. other group members) in order to get a realistic idea of what can actually be accomplished within the set time frame. The knowledge gained could be of great benefit as one progresses in the field, since the Research Plan is not unlike a template for a grant proposal. Assistance from the supervisor is a must (review of literature, language, final version, etc.). You can also expect to be employed during the time you are writing the Research Plan.

The supervisor, on the other hand, would be familiar with the specific literature and should already have an idea of where the project should lead to. This may save time at the outset of the Ph.D. project

and you can gain some work experience before developing your research on your own. Working on a question that really interests your supervisor ensures you of his/her attention for the project, which can be advantageous in terms of amount and promptness of feedback.

The Research Plan should contain:

- Name and signature of the Ph.D. student, supervisor and if possible co-supervisor(s) (definition see below).
- Title of the project, description of the project with emphasis on the main research interests and open questions, time frame, special agreements between supervisor and Ph.D. student, grant and funding conditions.
- Regulation stating when and how often the student should hand in a progress report, which in turn means getting feedback from the supervisor.
- General responsibilities within the group and teaching assignments may also be mentioned in the Research Plan, if not mentioned in the List of Responsibilities (“Pflichtenheft”, see below).
- Research projects outside ETH: If your projects mainly take place outside of ETH this has to be specified and explained (see AB Punkt 6). Once completed, the Research Plan is sent to the Office for Doctoral Studies (“Doktorats-Administration”). This should take place within six months after the start of your Ph.D. registration. If an entrance examination (“Zulassungsprüfung”) is required, the deadline for submission is twelve months after beginning.

After having been accepted and signed by your supervisor and yourself, the Research Plan has to be submitted to your department’s Doctoral Committee (“Doktorats-Ausschuss”), which has a look at it. If it is accepted, this has to be confirmed on the official form to the Office for Doctoral Studies.

A lot of formalities are attached to this document, but there is a real purpose behind it: The intention is to set down in writing the expected responsibilities and main research questions from the outset of the study. This should help the Ph.D. student to avoid the following errors:

- Grossly exceeding the time-frame allowed for a Ph.D., usually three years.
- Carrying out the research work without a clear concept of its goal, thus ending up with insubstantial or minimal material that you have to compile into a dissertation.
- Being assigned excessive extra responsibilities by the supervisor.

The Research Plan is not intended to be followed verbatim, but serves as a guideline. It is not unusual that time schedules have to be changed due to practical problems you may encounter, i.e. rainy field seasons, delay of industrial equipment or developments, technical problems, and so on. It might be a good idea to mention such possible risk factors in the Research Plan. This could help to get funding in case the Ph.D. project exceeds the three-year time frame. If the individual stages of research get off-track, the Research Plan provides something by which one can re-focus. Although the plan is an “official” document, it is not considered as legally binding.

HOW TO FIND A CO-SUPERVISOR

(DV Art. 14) Your Ph.D. dissertation will be approved by your supervisor and at least one additional person, the “Koreferent”. We will furtheron call this person the co-supervisor, although it is not compulsory that he really acts as a second supervisor for your project. Alternative translations would be co-examiner, co-referee, co-reviewer, since she/he will be in the oral examination committee and assesses your dissertation.

To ensure an objective opinion about your work, it is mandatory that at least one co-supervisor is independent from your supervisor’s research group.

Possible co-supervisors are

- Professors at ETH Zurich, EPF Lausanne or the University of Zurich.
- Lecturers (“Privatdozenten”, PD) who have a contract for teaching at ETH
- Suitably qualified persons from other universities in Switzerland or abroad
- A postdoctoral assistant directly involved in supervising the Ph.D. research (one is normally appointed as a co-supervisor).

Some departments have their own policy concerning co-supervisors. With the exception of elected ETH Professors, all co-supervisors must be approved at the Department Conference (“Departmentskonferenz”).

Principally, the Ph.D. student is not entitled to choose the co-supervisor him/herself. In many cases, the person supervising the Ph.D. project will approach a potential co-supervisor. If he/she agrees to serve in this capacity, his/her nomination is presented at the

Department Conference and reported to the Prorector for Doctoral Studies. In most cases the nomination will be approved.

It is desirable to select and have a co-supervisor appointed at the very beginning of the project. This helps in building up a good working relationship, and can prove to be extremely helpful later on, as the main supervisor may be less able to give you and your project all the time and attention you might feel you need. If the co-supervisor is not associated with ETH, but is appointed as a qualified person from outside, it is highly recommendable that you ask your Ph.D. supervisor before you ask the potential external co-supervisor for advice. This reduces the potential danger of ideas or data being “stolen”. The likelihood of this happening should not be underestimated.

SPECIAL CASE: PH.D. DISSERTATION AT ETH WITH A DEGREE IN HUMANITIES, SOCIAL AND POLITICAL SCIENCES

ETH Zurich is a technical university, and therefore normally accepts only Ph.D. students with a degree in technical or natural sciences. If you do not have such a degree, but a degree in another discipline such as psychology or languages, you will not be able to register as a Ph.D. student at ETH. You can try, but normally you will not be accepted.

This does not mean that you cannot do your Ph.D. dissertation at ETH. The solution is just a little bit more complicated: You simply apply as a Ph.D. student at a Swiss university.

What do you have to do?

- The important thing is that you are employed at ETH as an assistant, and that you have a Ph.D. research project at ETH. Your supervisor at ETH will officially only be your co-supervisor. The next step is to find a supervisor (“Doktorvater”) who must be professor at a Swiss university – without one, you cannot register. If you are Swiss, you can probably ask a professor from your home university you already know. If you are from abroad or do not know a potential candidate, ask your supervisor at ETH. He or she is probably familiar with the problem from previous Ph.D. students and may have a colleague at the University of Zurich who would be willing to be your official supervisor.
- This supervisor has to be from the discipline you graduated in (if you have, for example, a degree in Psychology, your supervisor has to be a Psychologist), and you have to register in the respective fac-

ulty (for Psychologists it would be the faculty of Philosophy). Your Ph.D. degree will not be an ETH degree, but a university degree (for example Dr. Phil. I or Dr. jur), which is nevertheless equal to an ETH doctoral degree.

- The registration formalities depend on the university you choose. At the University of Zurich, you have to go to the university office (“Universitäts-Kanzlei”, Rämistr.71), where you get an information leaflet and a registration sheet. You will have to submit several documents along with the registration sheet (your diploma, a letter of acknowledgement from your university supervisor, etc). Copies of your documents (e.g. a copy of your diploma) must be officially or legally authenticated (“amtlich beglaubigt”). Either the issuer of the document (e.g. your home university) or any notary can verify your copies.

- If you have a diploma from a Swiss university, acceptance is simpler, and the next steps depend on the faculty you register with. If you do not have a Swiss university degree, the university decides if your university diploma is acknowledged or not. Sometimes you have to pass one or two exams.

- Mind the minimal registration period the university requires for Ph.D. students! At the University of Zurich for example, you have to be registered for at least two semesters before the defense of your dissertation. Moreover, if you are from abroad and have a residence permit, you should register not later than one year after your arrival. Otherwise you lose your residence permit.

Does this sound complicated? You will need patience to go through all these formalities. But do not be put off, and insist when you have questions. Try to find other Ph.D. students who are or were in the same situation and might be able to help you.

RIGHTS AND DUTIES AS A PH.D. STUDENT

Doktoratsstudium (Ph.D. studies) (DV Art. 19-22) Since 1999 new Ph.D. students have to fulfill a so called Doktoratsstudium (Ph.D. studies) in addition to the work on their research project. The reason for this is to insure the continuing education of Ph.D. students, and consequently to broaden their scientific and general horizon.

There is some disagreement concerning the importance of such Ph.D. studies, since some people argue that Ph.D. students were experienced enough to plan their education themselves. They should be serious enough to attend lectures or other events with-

out being forced to do so. On the other hand such an obligation gives Ph.D. students a strong argument to be allowed to leave their work for some hours a week in order to attend a lecture.

At the moment there is still a lack of special lectures for Ph.D. students. Only few departments run special Ph.D. courses. Though the department of humanities, social and political sciences also offers a set of lectures from different non-technical areas, the choice is still not very large and rather arbitrary.

The Doktoratsstudium (Ph.D. studies) consists of a credit point system. The minimum amount of points is twelve. If you finish your Ph.D. in less than three years, you need proportionally less points (eight points in two years for example). A third of your credit points must be accomplished outside your research area. A lecture provides one point per hour and semester, but you must be able to verify your contribution (e.g. exercises). As a Ph.D. student you receive a form on which to list the lectures you attended. Active participation in ETH organisations may also be rewarded with points. Each entry has to be signed by the corresponding professor or another person in charge. Detailed regulations exist for each department and they also describe which other events (i.e. scientific conferences and congresses, excursions, language courses) are accepted and how many points they are worth.

Normally you will not have problems getting your credit points. In most cases it is enough to attend the lectures, courses and conferences necessary for your research. In the worst case, you will need to take a lecture of two hours per week, during six semesters.

Feedback from your supervisor (DV Art. 14.5) The supervisor is obligated to give the Ph.D. student “immediate” feedback after having received a written progress report. It is therefore advisable to agree on a general period of time in which your supervisor has to provide you with feedback, preferably in written form, after you have submitted a written progress report.

RIGHTS AND DUTIES AS AN ASSISTANT

List of Responsibilities (“Pflichtenheft”) This document belongs to your contract as an assistant, in other words as an employee, at ETH Zurich. It outlines your responsibilities within the research group, i.e. general activities within the group and teaching assignments. Sometimes these responsibilities will be indicated as a percentage

of time or maximum number of hours per week to be dedicated to this work. When this document is completed and agreed upon, it is sent to the Personnel Department (“Personalbüro”) where it is kept in your file. Whether or not you will receive a List of Responsibilities depends on the institute or department.

Perhaps you see yourself more as a student – after all, you are here to earn a degree. Other people, however, see themselves as people having earned a university degree already, and now working as an employed scientist. With this in mind there are several things to be discussed with your supervisor and preferably agreed upon in writing, as with in any contract of employment. Consider the following questions before talking to your future supervisor:

- What are your expected general tasks to be performed within the group, expressed as a percentage or maximum number of hours per week in average. Although there must be some room for flexibility, it will be very beneficial to have some guidelines, preferably in writing.
- Are your salary and the number of hours spent working acceptable compared to general Ph.D. conditions in your field of research in Switzerland? In order to get an idea of the general situation at ETH you should try to speak with other Ph.D. students, preferably members of the group in which you want to work. They can inform you on their view of life as a Ph.D. student – which can be very interesting contrasted with your future supervisor’s view. Be aware that Ph.D. conditions do vary considerably depending on the department, or even from institute to institute. The adage “life is not fair” can also apply to life at ETH. Thus, base salaries per month vary in a broad range, between CHF 2400 for six days a week and CHF 4000 for five days a week, depending on how difficult it is for the professors to find Ph.D. students. More than CHF 4000 (100% of salary class 15) is not allowed (if it were, some institutes would pay more immediately).
- Is there any allowance for a trial period – just in case it turns out to be a bad match? How much notice is one expected to give to terminate the contract? The official ETH policy for an ETH employee is the following: During the first two months of employment, the period of notice is one month. During the first three to twelve months of employment the period of notice is two months. After being employed at ETH for one year or more, one must give three months’ notice to terminate the contract. This is in accordance with Swiss laws.
- Is there any freedom to pursue continuing education, either related or not related to the research work? Even with the newly

introduced ‘Doctoral Studies’ (see above), it might be a good idea to have this matter clarified in your contract.

- Are there any limitations or constraints as to when holidays may be taken (e.g., not during the semester) or as to the maximum days of holiday you are allowed to take or expected to take at one time?

Conditions of Employment (“Anstellung”) Depending on the research grant your position is funded by, the financial conditions of your Ph.D. position can vary considerably. All positions funded by the Swiss National Science Foundation (hereafter SNSF) must adhere to very specific guidelines that govern salaries (see below). In any case, ask for the conditions of your funding to be specifically explained in order to avoid any uncertainties (e.g. whether you receive an additional 13th month salary or not).

If you become pregnant during the course of the Ph.D. program, you are advised to contact the Office of Equal Opportunities for Men and Women (“Stelle für Chancengleichheit”, SCG) early in your pregnancy for details about how to avoid affecting the time restraints of the grant while you take maternity leave (especially important if you are funded by SNSF, see below).

If your research project, and your position in particular, is funded by the SNSF, there are very specific rules which apply to your contract of employment, the amount of your salary, and the duration of your research position.

The SNSF regulations for Ph.D. students as of 1.1.1997 are as follows (see <http://www.snf.ch>):

- Every Ph.D. student who is collaborating on a project funded by the SNSF is entitled to monetary compensation, in so far as the original application for the grant specified the position and was approved by the Foundation Board.
- The person supervising the Ph.D. student’s dissertation must be specified (someone with a Ph.D. required).
- The compensation is normally limited to a period of three years. In certain cases, if it can be justified by the dissertation supervisor, the contract may be extended by one year. In no case can the contract be extended beyond a four-year time period.
- The compensation and the additional benefits are set by the SNSF in comparison with the cost of living. The standard used is the average of the Swiss confederation. 1st year CHF 31800, 2nd year CHF 34800 and 3rd year CHF 37800 (Starting from October 1, 2001). Social benefits (e.g., child allowance) are calculated according to

local standards (canton, confederation, etc.). All compensation is taxable.

- In the case that the compensation described above is supplemented by funding from another source, the total salary must not exceed the salary that would be awarded to an assistant position at the same university.

The general conditions and standard benefits associated with your employment are not dependent upon the grant which is funding your project, but are the same for all persons enrolled as Ph.D. students at ETH. This applies to financial support in case of illness or accidents, periods of notice to terminate contracts, etc. For any questions contact your group's or institute's secretary and ask for advice.

Be aware that the contract under which you will be working is often time limited! This means that your supervisor must regularly extend the contract. If he/she does not, you will not be paid. Shocking as this may sound, this is legal under the conditions of the Ph.D. because the supervisor is not required to guarantee your salary, only the supervision of your project. Therefore, keep an eye on your contracts and remind your supervisor in good time to prolong them. For difficulties with financial questions, you will find helpful addresses listed in front of the cashier at the Office for Finance ("Kasse Finanzabteilung"), main building, HG F 66. You should be notified by the Personnel Department four months before your contract runs out.

FINISHING YOUR PH.D.

Submission of the Ph.D. dissertation (DV Art. 23-30, AB Punkt 7-9)

There are a number of guidelines and regulations that must be followed to complete a Ph.D. dissertation acceptable for submission. To begin with, your work must of course be understandable. Accepted languages are German, French, Italian or English; other languages require a written application to the Rector justifying the request. The abstract has to be written in German, French or Italian and English. Published articles can be used as part(s) of the dissertation when

- they are accompanied by a suitable text (Introduction, Abstract).
- they are accepted by the examination committee as worthy scientific contributions.

- the entire dissertation is of a unified nature and is written in one language.
- the person submitting the dissertation is the first author or an important co-author of the article.

It is also important to follow the required format – either bound or in an acceptable notebook (“Klemmordner”). The guidelines for the layout of the Ph.D. dissertation (“Gestaltung der Doktorarbeit”) are given in the already mentioned yellow booklet. One copy — the examination copy (“Prüfungsexemplar”) — has to be handed over to the Office for Doctoral Studies, accompanied by the following documents:

- Application for the Ph.D. degree (template “Anmeldung zur Doktorprüfung” in the booklet).
- Declaration that the dissertation is the Ph.D. candidate’s own work, written by himself, and has not been submitted to any other educational institution/university.
- Current curriculum vitae.
- Confirmation of the Dean of Department of the fulfilled requirements of the Ph.D. studies (ask in your department’s administration office).
- If applicable, a statement from the office for scholarship services (“Stipendiendienst”) waiving the exam fee (see below).

Oral Ph.D. Examination Some departments provide information sheets to guide you in preparing for the oral examination. Ask!

The date of the oral examination must be set in agreement with the Administration Office of your department. Do not underestimate the difficulty of finding a day on which all members of your committee will be able to attend. The oral examination cannot be held earlier than twelve working days after the submission of your dissertation to the Office of Doctoral Studies (“Doktorats-Administration”). This will be done by the Administration Office of the department. The oral examination will normally only take place once the dissertation has been accepted and recommended by both the supervisor and the co-supervisor(s).

Other details to clarify at this stage include the language in which the oral examination will take place, whether the oral examination must be held during the official dates of a semester, who is going to represent the department (e.g., the dean of the department), and of course the location of the examination.

The Administration Office of the department will make arrangements to reserve a room. The department decides whether the oral

examination will be public or not. The responsibility of the Ph.D. student is to notify the Administrative Offices of all co-supervisors as well as to distribute a copy of the dissertation to each member of the oral examination committee, i.e. the supervisor, the co-supervisors. The dean of the department (or a substitute) receives a copy directly from the Office for Doctoral Studies.

In order to minimise unnecessary stress on the actual examination day, one should check such details as whether or not the designated room will have been cleaned, if the furniture in the room needs to be rearranged, and if the necessary audio-visual equipment is available and operational.

ETH charges a flat-rate fee of CHF 1200 (“Schulgeld”), which covers semester fees and the doctoral examination fee. The fee is billed shortly after the oral examination is scheduled. However, the candidate is not required to pay the fee in advance in order for the oral examination to proceed. If you believe you could be exempt from paying this fee, the necessary forms can be obtained from the office for scholarship services (“Stipendiendienst”).

The oral exam is based on the scientific field of your dissertation. The examination committee consists of your supervisor, your co-supervisor(s) and the dean of department. Whether public audience is to be admitted depends on the department.

There is only a pass/fail possibility – i.e. no provisional pass. Even if revisions of your dissertation are required (see below) the exam does not need to be repeated. The Ph.D. candidate will receive the decision of the oral examination committee at the end of the exam. Based on the report of the examination committee, the department conference of your department will request a pass or fail of your dissertation at the study conference (“Studienkonferenz”) at which the official decision is made. A Ph.D. candidate who is refused the Ph.D. degree may have to revise the dissertation, to submit a new dissertation, or to repeat the oral examination. The candidate should set a deadline with the supervisor and the dean of the department immediately after the oral examination. The Rector determines the time limitations for each possibility (six months maximum). Once the dissertation has been accepted, the title and content must not be changed anymore except for required revisions.

Last steps The designation of a dissertation with the “Medal of ETH” is only possible upon recommendation of the supervisor to the department committee. If the committee is in agreement with the recommendation, the dissertation will be examined by an exter-

nal party for another opinion. On the basis of these results, the Prorector for Doctoral Studies has the final decision as to whether or not the medal should be awarded.

After you have been designated to receive the Ph.D. degree, you are requested to hand in several copies of your dissertation (the so called “Pflichtexemplare”) to the Office for Doctoral Studies: one unbound print-out on A4 paper and six bound copies. Before you do this, you have to give one copy to your supervisor, which he has to accept by signing it on the first page. Three copies and the original unbound A4 version go to the main library of ETH and one to the federal library in Bern. One is for your co-supervisor. If you have more than one co-supervisor you need to hand in more copies, of course. The unbound print-out will be used to produce a PDF version of your Ph.D. dissertation, which will be available online. The ETH library will ask you for an electronic version of your dissertation too, to directly produce the PDF version. The required copies must be submitted within six months after the decision to award the Ph.D. degree (revisions must be completed within this time). After the required copies of the dissertation have been submitted you will receive a confirmation by the Rector that you are entitled to carry the Ph.D. title. The conferment of the Ph.D. degree takes place at a special ceremony (“Promotionsfeier”), shortly before the end of each semester. [Congratulations!](#)

EXCHANGE PROGRAMMES AND FUNDING

In the course of your Ph.D. you may encounter the possibility of carrying out parts of your research at another institution. There might be a visiting scientist in your group who has connections to an outside institution, or perhaps your supervisor knows someone working in a similar area of research who would be interested in supervising your work for a period of time.

Such an opportunity provides you with a chance to see how other people work on a project, to share ideas and experiences, and to initiate collaborations. As networking is one of the best methods of becoming known in the field, it is very important for your future job search and for a scientific career in general.

Of course such an undertaking must be done with the approval of your supervisor, and you will need to show substantial evidence that the time spent somewhere else would benefit your Ph.D. project, and perhaps even the research activities of your whole group.

It should be noted that, if you intend to take advantage of such an opportunity, additional funding will be needed and should be arranged in advance (see below).

→ **ETH Office for Exchange and Mobility**
Austauschdienst/Mobilitätsstelle
<http://www.mobilitaet.ethz.ch>

Depending on your specific interests or situation, you may need additional funding. Fortunately there are several sources to help locating possible funding sources.

When you cannot make use of your normal salary for your planned research exchange, a good place to start looking is the ETH office for exchange and mobility (“Austauschdienst/Mobilitätsstelle”). They can inform you of official exchange programmes run by ETH or give you information on where else to look for financial support.

Funding is often linked to a specific interest: a geographical area, a type of project, gender of applicants, qualifications and field of study. There are local financial programmes administered by ETH, as well as programmes operating at the national, European and international level. Other programmes exist, designed especially to encourage international interaction and exchange among young scientists and scholars. There is a documentation facility at the ETH office for exchange and mobility where information on opportunities for studies at other universities in- and outside of Switzerland is available. More information can be received by sending an e-mail to

→ doc.exchange@rektorat.ethz.ch.
→ **Staff for Research and Economic Relations of ETH**
<http://www.verw.ethz.ch/sfw/>

European and International Research Programmes A number of international organisations support research in various fields by offering grants. Switzerland is a member of many of them and therefore is entitled to take part in the respective research programmes. Among others you can raise funding from are Human Frontier Science Programme (HFSP), EUREKA initiative, COST, EURATOM, European Laboratories for Molecular Biology (EMBL), CERN. The European Union also provides funding. More comprehensive information may be found at the following sites:

→ **Euro-Beratung Zürich**
<http://www.eb.unizh.ch>

State Office for Education and Science
("Bundesamt für Bildung und Wissenschaft")

→ Hallwylstrasse 4, CH-3003 Bern
Tel 031 322 96 91
Fax 031 322 78 54

Scientific Section, Dept. for Foreign Affairs

→ Eigerplatz 1, CH-3003 Bern
Tel 031 324 24 17
Fax 031 324 10 73

Other sources The Scholarship Information Office for ETH Students
("Stipendienkommission")

→ StipeKo, c/o StuZ
Leonhardstrasse 19, CH-8001 Zürich
Tel 01 632 54 88
stipeko@vseth.ethz.ch

Swiss Academy of Engineering Sciences (SATW) For Swiss citizens or permanent residents in Switzerland younger than 35 years of age, funding can be raised from the Swiss Academy of Engineering Sciences (SATW). For further requirements and information contact SATW:

→ <http://www.satw.ch>

NATO, NASA Military organisations like NATO and scientific bodies such as NASA are known to support many projects in natural science, medicine and technology, as well as other less directly related fields.

Industry There may also be opportunities to obtain sponsorship through industry. Large national and multi-national companies are often eager to sponsor all or part of a Ph.D. However, in such cases you need to be certain of the restrictions that govern the right of information and patents in co-ordination with your co-workers at ETH. Most companies will retain the rights to any information that arises from research sponsored solely with their funds. One must be careful that this does not result in a conflict-of-interest situation with other people participating in the same or related projects, who may be receiving funding from other sources.

Books A book helpful in finding addresses for grants is:
“Ausbildung – Wer hilft bei der Finanzierung?
Das Stipendienhandbuch” Schweizerischer Verband für
Berufsberatung SVB, Verlag Pro-Juventute, Zürich 2001,
ISBN: 3-7152-1030-3

MOVING TO ZÜRICH





During the first few weeks in Switzerland, you will most likely feel a bit overwhelmed and disoriented. There are countless details to be considered when settling into a new job and home, not to mention the challenge of assimilating oneself into a country where it may seem that there is a standard method or procedure for doing things that everyone seems to be aware of except you. Do not despair, after a few months of some effort and patience, you will feel more settled in your new home and find yourself answering the same questions for other new arrivals that you were asking. A good information source to consult before leaving is the Swiss embassy or consulate. They can be very helpful in addressing specific questions, and may have information printed in your native language or in English. Furthermore, in addition to resources available on web sites, there are reference books which deal with the issues of living and working in a foreign country, and some are specifically about Switzerland. Some of the key issues you will need to be aware of as a foreigner are addressed here.

RESIDENCE PERMIT

To live and work legally in Switzerland, you must be in possession of a valid residence permit, the “Aufenthaltsbewilligung”. Application for this permit must be made through the employer two

to three months prior to your arrival to Switzerland. In order for the application to be processed by the Personnel Department, the following documents must be provided by yourself and the institute where you will be employed:

- personal information form (“Personalbogen”).
- employment contract.
- statement of confirmation from the Ph.D. supervisor.
- application for permission to enter Switzerland. (A form for the immigration authorities)
- copies of transcripts and diplomas.

A verification of your student status will be required after your arrival in Switzerland.

If your application for the residence permit is approved, a document (Assurance of a Residence Permit – “Zusicherung der Aufenthaltbewilligung”) will be issued verifying this status. This document will be sent to your home address before you can enter Switzerland. You have to show it to customs if you want to bring part of your household equipment into Switzerland. If you are a citizen of a non-European country, a health clearing at the border post or the airport might be required to enter Switzerland for employment. If this is required it will be mentioned on the assurance of a residence permit.

Special case: If your country of origin requires you to have a visa to enter Switzerland (required either by your country or, more likely, by Switzerland), you must contact your local Swiss embassy or consulate about two months before your intended arrival in Switzerland and fill out the appropriate forms. You will not get an assurance of a residence permit, but after your application has been processed, the consulate will receive permission to deliver an entry visa. Under no circumstances should you try to enter Switzerland with a tourist visa as you can not get a residence permit with it.

Attention: A residence permit is only valid for taking up residence in the Canton of Zurich. If you intend to live in another canton, you should contact ETH in advance and they will help you with the necessary procedures.

REGISTRATION AS A RESIDENT

Within eight days of arriving in Switzerland, you must register with the local office responsible for resident records (“Einwohnerkontrolle”, “Kreisbüro”). In the city of Zurich, this is at the district

office (“Kreisbüro”) for the specific city district (“Kreis”) in which you are living (Zurich is divided into twelve districts). For residential addresses in communities outside the city of Zurich, but within the canton of Zurich, the registration of foreigners takes place at the local city hall (“Gemeindehaus” or “Stadthaus”). You must appear in person before the process for the actual issuing of the permit is initiated. To register you will need your passport, the Assurance of a Residence Permit document (or the entry visa issued by the Swiss embassy in your country), two passport photos and, if applicable, your rental agreement. You will be required to pay a registration fee of CHF 30. After you have registered it will take approximately one to two months before the actual permit is ready. You will be notified by letter to pick up the residence permit at the same office where you registered. At this time you will have to pay a fee, which is about CHF 112 for the first year. Renewal costs CHF 76 every year.

EVERYTHING YOU NEED TO KNOW ABOUT THE RESIDENCE PERMIT

The B permit issued to Ph.D. students

- should always be carried with you as proof of legal residency – if stopped by the police late at night in the wrong part of town this could help to avoid a lot of hassle. You may also need to show the permit to re-enter the country after travel abroad (depending on your nationality).
- allows you to reside legally in Switzerland for one year. As long as you continue to be employed in good standing, the Personnel Department will verify its extension.
- must be renewed each year, two weeks before it expires.
- can normally not be renewed after the official time allowed for a Ph.D. study (6 years) has passed. Exceptions are possible.
- is issued without counting to BIGA contingent (BIGA = “Bundesamt für Industrie, Gewerbe und Arbeit”, Federal office for industry and labour). This means that you will not be counted among the limited number of foreigners allowed to move to Switzerland every year for employment.

For you, this has the following consequences:

- The years spent as a Ph.D. student do not count towards the number of years required for a permanent resident permit (Permit C).
- You have no right to bring your family with you. However if your revenue is high enough and you have at least a two room apartment, you can get permission to bring your spouse or children with

you. However they are not allowed to work in Switzerland. If you have a child during the course of your Ph.D. you might have difficulties getting a residence permit for the baby.

— It does not allow any other employment than that specified in the Ph.D. contract with ETH.

— If you would like to get employment outside ETH, the employer has to get you a permit within the BIGA contingent. In order to do this, he must prove that he can not find any qualified Swiss person for the job. However, if you work in a field with many employment opportunities (like computer science), this may not be a problem.

- must be relinquished. Although you may wonder what could happen if you do not de-register, failure to annul the permit could potentially cause unnecessary problems later if you ever return to Switzerland, or when claiming the portion of pension funds you are entitled to if permanently leaving the country. When you de-register you should request an official letter stating this information (“Abmeldebestätigung”). This costs CHF 15 and is required to claim any funds from the pension to which you are entitled to.

Nationals of certain countries may also be required to register with their local embassy or consulate upon arrival in Switzerland. Any specific regulations should be verified with the authorities in your home country before leaving. In some cases, consulates may have useful information about resources in and around Zurich, specifically for your nationality – including lists of physicians who speak your language and information about clubs for foreigners/expatriates.

All questions concerning the residence and work permit and issues involving the immigration authorities should be directed to the Personnel Department of ETH (“Personalabteilung”). The Personnel Department is organized according to the ETH departments. You should contact the administrators who deal with these issues in your department.

→ <http://www.pa.ethz.ch/Ansprechpersonen/>

TYPES OF RESIDENCE PERMITS IN SWITZERLAND

A Seasoner A Person coming to Switzerland each year for a maximum of 9 month. (For people working in seasonal business like tourism and building industry). According to the federal government, this type of permit will no longer be available in the near future.

B Yearly resident Person who remains in Switzerland for at least one year. This permit is renewed every year and is based on a speci-

fied reason for staying in Switzerland (i.e. employment, study, living with Swiss spouse). Change in employment or moving to another canton requires permission from the authorities. You do not need any authorisation for short time stays of up to 90 days in other cantons.

C Permanent resident Those in possession of this permit have the same rights as Swiss people do in the labour market. This means that they can take any job they want without needing a special permit or permission. They are allowed to move freely to any Swiss Canton. The C permit is issued after 10 years (5 years for EU citizens) of regular employment in Switzerland (unfortunately, the time as a Ph.D. student does not count toward this). The permit is revoked upon leaving Switzerland for more than 6 months at a time (this can be extended to 2 years in certain cases).

F Refugee For political refugees.

G International commuter For persons living in a neighboring country and commuting to Switzerland on a daily basis. In fact, you can also have this permit as a Ph.D. student if you would like to commute from southern Germany (district of Waldshut).

L Short term resident For persons taking residence in Switzerland for less than one year (i.e. summer internship, exchange students...) Normally this permit is not renewable.

RADIO AND TELEVISION LICENSE

While signing up at the Kreisbüro, it is a good idea to pick up the booklet on signing up for your radio and television license. You have to pay monthly fees for Swiss radio and television if you own a functioning radio or television (in 2001, CHF 13.20 for radio and CHF 22 for television). It does not matter whether you watch or listen to other stations or you do not use your radio at all, you still have to pay these fees. The fine for not doing so can be as much as CHF 5000.

→ <http://www.billag.ch>

INSURANCE: ACCIDENT, HEALTH AND OTHER INSURANCE

Accident insurance Insurance coverage for accidents is provided by the Swiss National Accident Insurance Fund (SUVA “Schweizerische Unfallversicherunganstalt”) through ETH and will be paid directly

from your salary. If you are employed more than twelve hours per week it is valid at all times for accidents that occur both on and off ETH premises. The coverage also provides for recreational mishaps; if you are injured while participating in a sport activity, you are still covered. If your employment contract is for less than twelve hours per week, then SUVA coverage is only valid during official working hours and not during the weekends. However, you are covered for accidents that occur while travelling to and from work.

Health insurance Swiss law requires that every person living in Switzerland has health insurance. As there is no state insurance, this must be acquired from a private insurance company. There are three important concepts concerning health insurance and the optimal amount of money to spend for it:

The coverage – The cheapest insurance policies offer the basic coverage defined by law. Smaller and greater luxuries, like fancy therapies (e.g. homeopathies), choice of medication, choice of hospital at which you are to be treated, or a new pair of glasses every year will be at best partially covered. Every insurance features top-up policies to make illness more comfortable, e.g. to let you choose the hospital at which you will be treated, but this can quickly get quite expensive. Dental care is always a top-up insurance item, so do not be astonished to see your colleagues cleaning their teeth after every coffee-break.

The 'Franchise' – If you feel rather confident about your health, you can decide to take a share of risk on your own account by telling your insurance that you yourself intend to pay a fixed amount of money per year for health issues. The insurance will then only step in after this deductible is exceeded. This will make the insurance much cheaper. Some insurance companies offer a split Franchise which is lower for the more costly hospital treatment and higher for the less common ambulance treatment.

The 'Selbstbehalt' – Another way of lowering insurance fees is to pay a fixed share of the costs for any treatment on your own account (e.g., 10%). After the maximum annual sum of Selbstbehalt paid is exceeded, the insurance will take over any additional costs completely. For basic coverage, the Selbstbehalt is always 10% of the first CHF 6000 per year. All further claims in this year are fully covered by the insurance.

Example: You have chosen a franchise of CHF 1500 per year and you need treatment in a hospital which amounts to CHF 10000. You will have to pay CHF 2100 (Franchise + 10% of the next CHF 6000 = 1500

+ 600). If you have any other medical treatment in the same calendar year, your insurance will pay 100% of it.

By law, every insurance company must accept you for basic coverage, but they may refuse you for top-up insurance.

Some weeks after your registration in Zurich, you will automatically receive a letter from the city of Zurich's public health office ("Städtische Gesundheitsdienste"). They want to be sure that you are going to get basic health insurance. They also offer a list of the most reasonable insurance companies. If you fail to get a basic health insurance, or if you only fail to answer the letter for three months, the public health office will force you in a standard health insurance – which will probably not be the optimum solution.

Some of your health insurance fees may be refunded by the city of Zurich in a process called something like individual fee reduction ("Individuelle Prämienverbilligung", IPV), but only if

- your income is low enough (there are several income levels corresponding to several yearly refunding sums);
- you are insured via a swiss health insurance company;
- for people who move to Zurich not from a foreign country, but just from another Swiss Canton: IPV only if you live in Zurich from the 1st of January of the current year.

To apply for the IPV, write another letter to the public health office stating the expected duration of your stay in Switzerland and which health insurance you are in. Enclose a copy of your working contract. The public health office decides whether you are entitled to an IPV, but the IPV will be paid by the social insurance agency of Zurich ("Sozialversicherungsanstalt", SVA). Note that you will not get the money directly, but it will be paid to your insurance company, which will consequently lower your insurance fees by this amount. The regulations for the IPV changed just at the time of writing and thus the way things are carried out in practice might deviate from the routine described above.

Insurance prices change frequently, and it is a good idea to compare prices and change insurance companies from time to time. This can be done comfortably via the internet:

→ <http://www.comparis.ch>

→ <http://www.krankenversicherer.ch>

Social insurances Your employer will automatically pay fees to

- the insurance for the elderly (AHV),
- retirement insurance (PK, "Pensionskasse des Bundes"), and
- unemployment ("Arbeitslosenversicherung", ALV).

The AHV is obligatory for everybody and deducts around 5% of your gross monthly income. The same amount is also paid by your employer without you noticing it. A share of this AHV fee is used for invalidity-insurance (IV). An additional share covers leave from work for Swiss military or civil service (which is compulsory for all Swiss men). The AHV will send you an A6-format, grey insurance card with your AHV-number on. You will need this little piece of paper if you ever want to profit from your insurance fees. Your AHV-number serves as an important identifier in many administrative affairs.

The PK is for government employees only and its fee is also calculated by percent (by law every employer is required to offer a kind of pension fund to its employees). However, the base is not your gross income, but rather a special share of your income called "versicherter Verdienst". This is your annual income minus the part secured by the AHV (at the moment CHF 24000 per year), and you should ask the Personnel Department if you have any questions about it. The basic fee is 6.5 to 7.5% of the secured revenue (depending on your age) and if your salary has increased, 50% of the amount your salary has increased for a 12 month period. Some time after your first PK-payments, the PK will ask you by letter whether you would like to invest more money than is obligatory in this state insurance. If you do not react to this letter, you will still be able to make a buy-in later (but the conditions are slightly better at the beginning).

The PK is being restructured and will be renamed "Publica" in 2002. It is possible that this reform will be mostly internal without much change for the people insured, though this remains to be seen.

The idea of the whole insurance system for the elderly is that everyone pays/receives obligatory insurance (AHV) which provides a basic pension. Together with the PK-insurance, pensioners should receive 60% of the income they were last making as pension. And last but not most importantly, everybody should make their own private insurance for retirement. The latter option is motivated by tax deductions on investments in private pension-funds. If you plan to stay in Switzerland after your Ph.D., or if you are able to save money, it is a good idea to think about profiting from these tax deductions. If you leave Switzerland after your Ph.D., you can get most of the AHV and PK fees back (see Leaving Switzerland, below).

The Unemployment Insurance ("Arbeitslosenversicherung", ALV) in Switzerland deducts around 2% of your gross salary. This money cannot be reclaimed upon leaving Switzerland. However, if your home country has got an agreement on social security with Switzerland (a list of these states can be found in the AHV-leaflet,

see Addresses-section), you may be entitled to this money from the unemployment insurance in your home country.

FINANCES

Ph.D. students find themselves in between the worlds of education and working. This is reflected in your receiving a salary which, in many cases, is not very high for the amount of work you will be doing.

Salaries are directly deposited regularly around the 26th of the month to the bank account you specify. For those who cannot afford living their first working month in Switzerland while waiting for the salary, there is the possibility of getting an advance payment at the cash desk in the ETH main building. Ask advice on the detailed proceedings from your working group's secretary.

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SALARY AND TAXES

You can get your salary from a number of sources: a few Ph.D. students per professor are paid directly by ETH, which makes life quite easy for them. If your research project is financed by the Swiss National Science Foundation (SNSF), it might be necessary for you to write an application for your funding. Others are financed by the professional industry which necessitates a special agreement. Whether you have to manage your funding quite by yourself, or whether your supervisor or the workgroup's secretary do all the administrative work for you depends highly on the style of your professor. According to ETH regulations, there are salary classes ranging from 1 to 30. A Ph.D. usually receives 60 or more percent of a class 15 salary. The salary for state employees is fixed depending on education and age. People with a university degree (like Ph.D. students) have to be employed with a salary of at least class 15. As many professors (especially in natural sciences and chemistry) do not have enough funding for 100% of a class 15 salary, the employment will be part time employment. As of January 2002, the minimum employment rate for Ph.D. students is 60%. Nevertheless most professors will still require a 100% work load.

→ For more information about funding see chapter "Rules, Regulations and Funding".

What you will find on your monthly salary statement A starting point for questions on income tax or Quellensteuer is the “Steueramt” of the City of Zurich (see addresses). The responsibilities, especially for foreigners, are shared by offices of the Canton and the city you live in, and you will have to find out who is responsible for each individual question. As a foreigner you do not need to worry much about taxes as it is deducted directly from your salary. The only reason you might get a tax refund is that you pay extra money into the pension fund (PK) or into a private pension fund (Called “Säule 3a”). If you made such payments, you have to send proof of the payments together with your annual salary statement and an informal letter indicating a bank account to the cantonal tax office (Kantonales Steueramt, Abteilung Quellensteuer) within the first 3 months of the year following the payments.

→ See table on next page

BANKING

Shortly after your arrival in Switzerland, you should open an account at either a bank or the post office. Despite the mystique of the Swiss banks, this is relatively easy. Some banks may hesitate to open an account for you if you only have the “Zusicherung der Aufenthaltsbewilligung”, and not a regular “Ausländerausweis”. Tell them they are about to lose a future manager as customer, and go to another bank if they remain stubborn.

Some banks offer a special student account with favourable conditions like reduced fees. The quality of the Swiss post’s banking services is comparable to that of ordinary banks. EC-card or Postcard payments are the most widely accepted forms of direct debit payments in Switzerland. However you will get these cards only after some money has been deposited in your account (e.g. the first salary).

Give your account details to the secretary in your working group or department as soon as possible so that your salary payments can be made to the right place.

If you are able to save money, you will need to file a simple application form to the tax authorities every two years to claim back the 35% tax (“Verrechnungssteuer”) levied against any earned interest. For Swiss citizens, this form automatically comes with the income tax forms. Foreigners are entitled to the refund if they have been liv-

Description	Meaning	Further Comments
Besoldung 1/13 Basis	your yearly salary, which is paid in 13 instalments (one for each month and one “Christmas salary”)	Christmas salary is paid in special shares in November and December
Besoldung 1/13	this month’s share of your yearly salary	depends on the number of working days in the month
Ortszuschlag	a special component of your salary, the amount of which depends on the general living-costs in the city you work in	this should compensate for the higher living-costs of inhabitants of Zürich compared to those living in some lonely alpine valley
BRUTTO	the gross amount of money you get	see what the insurances and taxes leave you with...
Nichtberufsunfall	SUVA accident insurance	percentage of your gross income given in row three
AHV-Beitrag	your share due the obligatory pension fund	percentage of your gross income given in row three
ALV-Beitrag	Arbeitslosigkeitsversicherung	calculated on the basis of the “versicherter Verdienst” (see text)
Ordentl. Beiträge PK	federal pension fund	all of these are paid for you by your employer
Sozialabzüge	the sum of all social insurance fees	
NETTO	your income before taxes	
Quellensteuer	the income tax for foreign workers	paid for you by your employer
Einkommensteuer	the income tax for Swiss people	the rather complex rules for income taxing are not reviewed here
Bezüge/Abzüge	sum of all taxes	
Auszahlungsbetrag	your net income this month!	any francs left for going to the movies?

ing in Zurich since January 1st of the current year. They need to fetch the form at the “Formularkanzlei” of the “Steueramt” (the City of Zurich’s tax office). Having applied once, foreigners will also receive the form automatically in the following years.

A short additional word on financial matters: Sooner or later, you will be confronted with a blue or red payment slip (“Einzahlungsschein”). The first one will most probably come with your ETH admission papers. You can go to a Swiss bank or post office with this form and pay the dues. If you are not in Switzerland, try to ask a group member to ‘loan’ the money to you and take care of the “Einzahlungsschein”, because it can be extremely expensive to pay the dues from abroad.

HOUSING

Do not expect your employer to arrange or provide you with accommodation when you arrive in Zurich. Unless you have made other arrangements, you will probably need to stay in the city's youth hostel (Mutschellenstrasse 114, 8038 Zürich, +41 1 480 17 27), a backpacker’s residence (e.g. Hotel Biber, Niederdorfstrasse 5, +41 1 251 90 15, or Martahaus, Zähringerstrasse 36, +41 1 251 45 50) or some more expensive hotel (<http://www.zuerich.ch>). Ask before coming whether somebody from the group you are going to work in can offer lodging for a few days.

Be prepared to spend some time finding suitable accommodation as the demand for reasonably priced housing in Zurich is high. The most common housing possibilities in Zurich are a room in a “Wohngemeinschaft” (WG, a flat shared by several people), your own flat, or a room in a family’s house.

Locations to find advertisements for housing:

Location	on offer
Public bulletin boards in ETH and University, especially those in the Polyterrasse-building	mostly WG rooms
The “Zimmervermittlungsstelle” of ETH and University: http://www.wohnen.ethz.ch	WG and single rooms
WOKO – social housing (salary must not be above 50% of class 15)	WG rooms (few flats and single rooms)
Newspapers like “Tagesanzeiger” and “WoZ”	flats, rooms, fewer WG rooms
Internet blackboard of ETH: http://www.marktplatz.ethz.ch	WG rooms and other stuff students might be looking for
Bulletin board in the entrance of the “Reithalle” restaurant in Gessnerallee	mostly WG rooms

In any rental agreement (“Mietvertrag”), there should be clear rules on what costs are included in the rent and what is to be paid additionally (e.g. water, electricity, heating). The usual notification time for vacating a flat (“Kündigungsfrist”) is 3 months. In most buildings a washing machine is provided by the landlord. Swiss caretakers are generally very creative in making up complicated reservation procedures for the washing machine. Rules of conduct in the washing and drying cellar can be as strictly defined as any important law.

The application process for renting a flat can be quite tedious: apart from proving that you can pay the rent, you might have to show an excerpt of the Swiss debtor’s register (“Betreibungsauszug”), available at the Kreisbüro. Additionally, you might have to present some references, from people living in Switzerland, e.g. your professor or supervisor, stating that you are of trustworthy and charming character.

For the actual process of moving to Zurich (or inside Zurich) it can be useful to hire “Parking-prohibited” signs from the city police to

prevent others from parking in the space you need for your car for some hours. The cost is about CHF 60. Just call the police department of the district (“Kreis”) where you live

→ <http://www.stadt-zuerich.ch>

A low price alternative for buying household goods and all kind of stuff are the second-hand department-stores called “Brockenhaus”, or the flea-market at Helvetiaplatz every Saturday.

LEAVING SWITZERLAND

After your employment contract runs out, you have to leave Switzerland within the amount of time for which your residence permit is valid. If you plan to get a new contract in Switzerland, you should arrange your contract quite in advance as obtaining a regular work permit requires the same procedures as those for a foreigner moving to Switzerland for the first time. This can take up to two months. The employer has to prove that he is not able to find a suitable applicant locally, you must have qualifications that are in high demand in Switzerland and the contingent of newly arriving foreigners (about 2000 per year for Zurich) should not have reached its limit.

Before departing you should give back your residence permit at the office you got it from (“Kreisbüro”). They should in turn give you a confirmation that you have given back the permit, which is important for retrieving PK- and AHV-money.

ETH-issues You must give back all your keys, your Student card (‘Legi’) and, unfortunately, the Halbtax-Abo as well.

Health insurance Do not forget to cancel your contract.

Accident insurance Within a month after the end of your contract, your obligatory accident insurance (SUVA) will run out. If you plan to stay in Switzerland longer, you must prolong your SUVA-insurance (ask at the Personnel Department) or get a private one, e.g. from your health insurance company.

PK-fees At the Personnel Department of ETH, you should receive a form that enables you to retrieve your PK fees. If you fail to act within 90 days, your money will be transferred to the “Stiftung Auffangeinrichtung BVG” in Zurich, where you can claim it later. You must open a special account (“Freizügigkeitskonto”) at a Swiss bank and mail the opening contract along with a confirmation from the Kreisbüro that you have given back your residence permit and the form you received from the Personnel Department to the PK. If

you are married you need the signature of your spouse to retrieve the PK-fees.

AHV-fees You are also entitled to a refund of a share of the AHV-fees you have paid. The procedure is similar to that for retrieval of the PK-money. More information can be found on the web-page.

→ <http://www.ahv.ch>

If your country of origin has got an agreement on social security with Switzerland (EU-countries, most other central European countries, USA; a list of these states can also be found in the AHV-leaflet), you can also decide to leave your AHV- and PK-fees in Switzerland and claim the pension you have accumulated when you satisfy the conditions. If your country of origin has no such agreement with Switzerland and you do not claim your money back within a month after leaving the country, you will simply lose it.

ADDRESSES AND SOURCES OF FURTHER INFORMATION

Department of Motor Vehicles (“Strassenverkehrsamt”)

→ Uetlibergstr. 301, 8036 Zürich
Tel 01 468 32 73

“Alters- und Hinterbliebenenversicherung” (AHV) Order the information leaflet for foreign residents (no. 11.02.; English, German, French, and Italian version all in one)

For employees of ETH:

→ AHV-Ausgleichskasse 26.1
(Eidgenössische Ausgleichskasse)
Holzikofenweg 36, 3003 Bern
Tel 031 322 64 25
ak26@zas.admin.ch

For foreigners no longer in possession of a residence permit:

→ Zentrale Ausgleichsstelle, Genf
postmaster@zas.admin.ch

Migrationsamt des Kantons Zürich

→ Berninastrasse 45, 8090 Zürich
Tel 043 259 88 00
<http://www.ds.zh.ch/aemter/fremdenpolizei.htm>
info@repo.zh.ch

PH. D. MOTIVATIONS: « In thinking about my Ph.D. the first point that comes to mind is that the main difference between Ph.D. work and working outside ETH lies in method. But what does it mean? My projects are aimed at long-term success, while I believe that there is much more “daily business” in industry. This gives more room and freedom to simply try out some ideas, work them out and see if they are useful in the end, even if sometimes they turn out not to be. This goes together with the possibility of having flexible working hours and utilizing the huge selection of courses, language courses and sports at ETH. Another aspect is the responsibility for the student’s exercises. The confrontation with all the possible and impossible questions has turned out to be a very interesting task. Summing up all these points there is no way I could regret having started the Ph.D. » Thomas Brauner, Ph.D. student at the Institute for Electromagnetic Fields and Microwave Electronics

Pensionskasse des Bundes (PK)
→ Holzikofenweg 36, 3003 Bern
Tel 031 322 64 11

Stiftung Auffangeinrichtung BVG
→ Zweigstelle Zürich
Limmatquai 94,
Postfach 859, 8025 Zürich
Tel 01 267 73 73
Fax 01 207 73 90
zweigstelle.zuerich@aeis.ch
<http://www.aeis.ch>

Städtische Gesundheitsdienste
→ Walchestr. 31, 8035 Zürich
Tel 01 216 51 11

Information on renting jurisdiction:
→ <http://www.migros.ch/micasa/infos/infos.htm>

Tax office of the City of Zurich (“Steueramt”):
→ Börsenstr. 10, Zürich
Tel 01 216 33 35

Tax office of the Kanton of Zurich,

→ Abteilung Quellensteuer
Neumühle, 8092 Zürich
Tel 01 259 40 50

Sozialversicherungsagentur (SVA) Zürich

→ <http://www.svazurich.ch>

Contact via www-form on the website; no addresses given.

Bibliography

“The Rough Guide to Switzerland” by Matthew Teller,
ISBN: 1-85828538-0

“Living Among the Swiss” by Michael Wells Glueck,
ISBN: 0-75410489-3

“Why Switzerland?” by Jonathan Steinberg,
ISBN: 0-52148453-7



*EXPECTATIONS OF PH.D.
STUDENTS AND SUPERVISORS*





What does your supervisor expect from you?	What should you expect from your supervisor?
The supervisor expects you to be independent.	You should expect to be supervised.
The supervisor does not want you to always ask “what am I going to do next?”	You should be supervised regularly as opposed to whenever it is convenient for your supervisor or once you have nearly completed your dissertation.
The supervisor would like you to have ideas and proposals.	You should expect the supervisor to make (written) comments not only on the details of the work but also on the overall progress of the study.
The supervisor would like you to show original thought and incentive.	

Our tip: The Ph.D. is personal. Your supervisor should not be looking over your shoulder all the time. It is your research, and you should be independent to choose methods, style, resources, etc. Nevertheless, you belong to an institute and a research group, and your supervisor is in a powerful position concerning your work and progress. You have to stay within the framework defined by the ETH

policies and those aspects that your supervisor considers to be important.

If you find out you are supervised too little or too much, do not hesitate to raise the issue in discussion. Take responsibility for ensuring that regular meetings take place between you and your supervisor. Be sure that these meetings include the following:

- a definition of aims for the next stage of your work.
- a review and an evaluation of previous goals.
- an evaluation of your work in the framework of the total Ph.D. project and according to your supervisor's standards.

The supervisor expects you to produce written work.

You should expect your supervisor to read your work in advance of a meeting.

For minor problems, a discussion based on notes, data and diagrams, or an oral presentation of your work may be sufficient, though the supervisor expects to receive something written at regular intervals, and especially prior to discussions concerning central themes and advances within your project. Furthermore, the written work presented to your supervisor should not be in draft form, but rather developed and well written.

Expect your supervisor to correct and comment on your written work and not only assure you that s/he has read it. Expect her/him to read all of the work submitted, and to allocate an appropriate amount of time to discuss it with you.

Our tip: Ask your supervisor to make written comments on the manuscript or proposal and to include an overall evaluation, to give you a clear perspective of your achievements thus far.

Write progress reports for describing recent experimental or other research work, as well as for commenting on and concluding parts of your research project. Primarily, it helps you to scrutinize your own work.

Show the first draft to somebody else first and ask for advice and comments. This person can be either another academic or a fellow

research student with whom you can create a mutual self-help relationship. Consider all constructive criticism. Writing your progress reports in a comprehensive and easily readable way is good practice for writing your publications and finally the dissertation.

The supervisor expects to have regular meetings with you.

Regular meetings concerning the actual work can occur weekly, monthly or even half-yearly. It is important that they are regular. Formal tutorial meetings / progress reports are less frequent and are expected to be well prepared and accompanied by a written report.

You should expect the supervisor to be available when needed.

You should not restrict yourself to the scheduled meetings alone. If you feel the need to talk with your supervisor about something urgent or important, do not hesitate to request a meeting.

Our tip: If you get “stuck” or find yourself at a dead-end, do not waste time waiting for the next scheduled meeting.

Clarify how often you will meet in the beginning of your cooperation with your supervisor, how you should arrange other urgent meetings, what kind of progress reports are useful and when you are to submit them etc.

Give your supervisor time to prepare herself/himself for the meeting (especially for formal tutorials) by allowing a reasonable amount of time between arranging the date and the actual date.

Do not skip meetings! They are intended for you to test out ideas and to obtain guidance when you need it. If things are not going well, talk about it with your supervisor instead of hoping that everything will be sorted out before the next meeting.

To avoid misunderstandings, keep a written record of points agreed upon during a meeting and actions to be taken and send your supervisor a copy. Fix the goals to be aimed for in the following period.

The supervisor expects you to be honest when reporting on your progress.

Of course, a supervisor prefers that everything goes on well, but s/he also prefers to be informed if something goes wrong.

You should expect your supervisor to be an advisor and not a judge.

The supervisor is not only there to praise you for your excellent work or condemn you for your poor progress. She / he should be able to ask the right questions and make useful suggestions.

Our tip: If there is a problem, if you are blocked, if you have personal or any other kind of problems which interfere with the continuation of your work, then let your supervisor know about it now.

Do not cheat. Your supervisor will not be fooled if you pretend that everything is fine and talk about work done, new ideas, next steps to be done without ever presenting anything tangible in the form of precise figures, graphs, results or written work.

You will most certainly be judged instead of helped if your supervisor finds out that s/he has been treated as a fool.

The supervisor expects you to follow her/his advice when you ask for it.

As obvious and reasonable as this expectation may seem, it is often not followed. The supervisor wants to see that you make good use of the help offered to you and that her/his opinion is taken seriously.

You should expect your supervisor to be constructively critical.

The supervisor should criticize and provide feedback in a constructive way supported by reasonable arguments.

Our tip: Do not be too defensive when receiving criticism from your supervisor. Both of you must defend and substantiate your arguments and opinions. Ask for explanations in more detail for those criticisms you disagree with. All feedback is useful!

If your supervisor suggests something and you have a different opinion, talk about it. Decide upon a solution together rather than ignoring the suggestion.

Accept praise, too, and allow it to give you a positive feeling about your work. Do not simply accept it if you get no comments on major achievements you have made. Ask why!

The supervisor expects you to surprise her/him and become an expert in your field.

The supervisor expects you to be excited about your research and convey your energy and enthusiasm to the people working with you. You are expected to become an expert in your research topic and to know, at the end of your dissertation, more than your supervisor about your own topic. You are expected to contribute new ideas.

You should expect your supervisor to have a good knowledge of the research area.

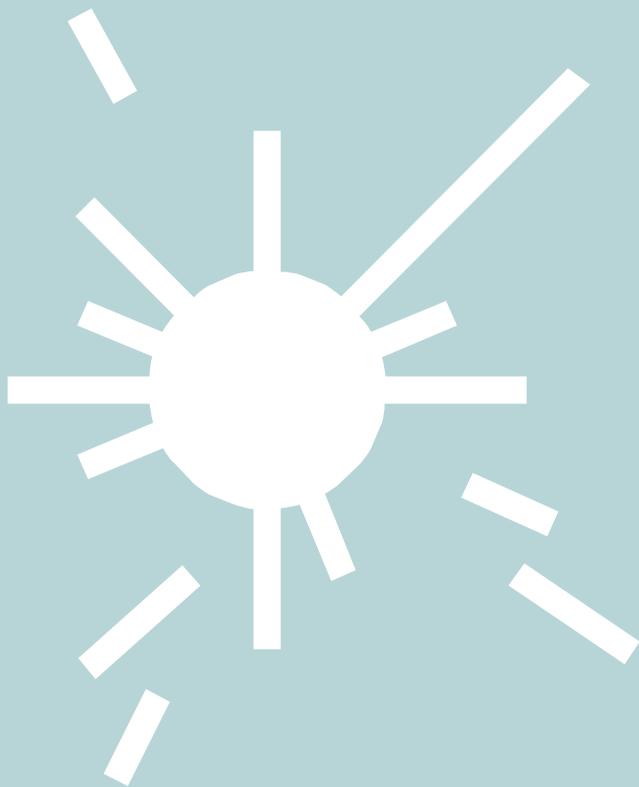
Your supervisor should have a good knowledge of the research area you are working in and to be able to understand what you are doing and supervise you effectively. Your supervisor should be able to introduce you to experimental work.

Our tip: If your supervisor is not an expert in your research area, find out who is and how you can get access to these people. Often, the supervisor has lost contact with laboratory work and cannot provide you with technical help. Do not hesitate to ask for help from other Ph.D. students or researchers who have the expertise you need.

As your research proceeds, you should expect the balance in the relationship to your supervisor to change from one where the supervisor is guiding and directing your work to one where you are in control of what you are doing.

As you gradually get more expertise, become better informed and perhaps more skilled in specific techniques, methods and areas of investigation, you must show it to demonstrate the progress you are making. Do not hesitate to sell yourself!

*HOW TO SUCCESSFULLY
COMPLETE A PH.D.*



During your Ph.D., you will probably encounter the feeling that there is never enough time for everything. You should do research, read up on your subject, teach as well as find time to eat, sleep, meet friends, do sports and have hobbies. It is not easy. However, if you manage to organise your Ph.D. well you will save yourself a lot of time for your private life. Your time management – especially in research – has much to do with finding a healthy progression from first “swimming” and not knowing which direction to take to then clearly defining topics, goals and working stages, setting deadlines and not wasting time.

There is usually a lot of stress within groups working scientifically. People seem to work 24 hours a day, weekends included. Do not believe you are expected to do the same! You can save a lot of time by organising yourself efficiently and avoiding work or tasks that are not really important. After all, everybody “works” in a different manner. Find out your own working technique and, once it has turned out to be successful, be confident that it is appropriate for you. Try to work efficiently and continuously, but at the same time, keep up a private life. You will need it for maintaining your inner balance and not being too dependent on the ups and downs in your work.

The following sections comprise a list of good ideas compiled by Ph.D. students who have just started and others who are already



well into their Ph.D.s. Some of the ideas may be meaningful for you, others may not – so feel free to pick and choose!

NETWORKING IN ACADEMIC LIFE

Find one or several colleagues with whom you can discuss your progress, and who is willing to give you personal feedback. This need not necessarily be your supervisor or even somebody in your research field, but anybody who is experienced in scientific work, who respects you personally, and who is willing to share his or her experience and judgement with you. – Perhaps you will do the same for one of your colleagues in the future!

Doctoral seminars, workshops or conferences are good opportunities to meet other researchers, talk about your own project and develop your personal sense of scientific quality. Join them as soon as possible in your postgraduate career. Make a presentation of your work planned or your work in progress. It will need some personal initiative and a portion of courage, but it pays!

Additionally, you can contact the author of a paper when you realise he or she is dealing with the same subject you are. This could be useful to your work. You can be sure to find similar work taking place in your own field and discover names of researchers working on problems similar to yours. If you think a person could help you, tell your supervisor, and if he or she agrees, collect all your courage and contact him or her whoever it may be... Most people will feel honoured by your well-prepared and well-thought out questions and will help you.

Finally, take advantage of those not so new at ETH. If not asked, they might not jump out to help, but if you ask they will probably share their experiences with you. You do not need to work and proceed in the same manner as they do, but combined with your own personal judgement, you will be able to profit from their expertise.

RESEARCH PLANNING

Allow some time for settling in. If you choose a research topic on your own, you will certainly need more time at the beginning in order to get a rough idea of the area of research you will be working in and to define a gap of knowledge you would like to fill.

Make a plan of your work – you will not need to follow it exactly, but making a plan helps you to constructively think of the future of your work and divide seemingly huge tasks into manageable pieces. Defining short-term goals will help you to have better control over the progress of your work. Determine the point at which you intend to be with your work in one year’s time, for example, imagining what you should have done, and what you would still have to do. You will sometimes have to change or modify your plan because something did not work the way you thought it would, or due to a discovery of a new way of treating a problem or a new tool. This is very natural and truly a part of good research!

If you are ahead of schedule (rare case, but it happens) do not sit back. Instead double check important points and do things you always wanted to do but never had the time for (e. g. read theoretical literature or recent papers). On the other hand, do not panic if you get behind. You are doing research, and there are many factors you cannot predict or control. A schedule is made to help, not to terrorize you!

Do the easy things or things you know well first. This might be a search for specific literature, designing a piece of apparatus or learning how to use a software package. Make sure, though, that you do things needed for your dissertation.

TIME MANAGEMENT

Set deadlines even if they are only for your own purposes. They will help you to define priorities and encourage you to write “to do” lists. Keep “to do” lists, but do it right. This means you should only list things, which are of a “done/not yet done” nature. Moreover, the list should be easily available to check and update. You will get a feeling of satisfaction crossing off things you have done!

Structure your day and/or week so that you do specific tasks at specific times. On one hand, this will help you to manage your time better without postponing things. On the other hand, you can make better use of your time, e.g. by avoiding rush hours at the library, reserving an instrument you need to use, letting people know when to contact you, etc. Find the best time of the day (often the morning) for work that needs all your energy, e.g. creative work or radically new tasks.

If you work well at home, think of whether one day a week at home could make your work more effective or more efficient (e.g. reading

and writing). If so, ask your supervisor whether she or he would allow you to be out of your office or laboratory one day a week. “Procrastination is the thief of time”, as Ghandi used to say. That is, do not wait for inspiration when you have to plan or write something. Do it now and bring it to an end, since you can always revise and improve it later if needed. Do not work on the same task for too long. Vary your day (or, if it helps, your room), take a break, e.g. by reading an interesting article or doing sports at ASVZ (in hard times, if there will be any, this can clear up your mind – try it!).

ACTIVITY LOGGING (FOR LABORATORY ACTIVITIES)

Log whatever you do in detail. You cannot imagine how many times you will need to trace back details of your experiments or analyses and how many of the details you will forget! Label everything, from samples and diskettes to folders and printed data or results, together with the date (sometimes we overestimate our memory...). Store all your data in computer files (lists, databases, text files) as it will be easier to look for something you need later. Find a good consistent way to name your files and print the file’s name on every printed version. Keep duplicate records of all data, maybe in two different places (you never know what may happen!).

STUDYING

Studying for a Ph.D. is completely different from studying for an undergraduate degree. Nobody will expect you to study anything particular; you are fully responsible for what, how and when you are learning. Do not learn everything that sounds interesting- there are too many interesting things. Set your own priorities; the focus of your work will naturally become more and more narrow during the course of your Ph.D. work.

At the very end of your work, come back to the initial scientific questions. Ask yourself: what is the meaning of my results with respect to my initial scientific questions? What can I conclude from my results (– what can I not conclude)? What questions might be further analysed after my work? It might be helpful to test your personal knowledge by explaining your results to somebody who is not from your field (maybe even a lay person, e.g. your parents!).

There will be times where you will have more time to read and work on something new and there will be times filled with repetitive, less creative work. Enjoy each of them – they can both be very satisfying!

LITERATURE RESEARCH

To push the limits of knowledge further (as a Ph.D. dissertation requires) you have to know what these limits are. You have to be aware of and refer to previous relevant work and stay up to date with new developments. The key to this task is the literature search. Allow sufficient time to study the literature pertinent to your subject. Basically, there are three ways of doing literature research; you either read some selected papers and check those references that sound promising to you, screen the annual indexes of some journals that appear to be relevant, or you do a systematic literature search based on professional databases (see <http://www.ethbib.ethz.ch> or go to the ETH library help desk and let them show you how this works). Build up your personal database for the literature you have collected by means of suitable software (e.g. EndNote) with all the fields needed to make a complete reference later when you are writing your dissertation. It will be very helpful to maintain a particular field for key words under which you might look for a certain reference. Record many key words rather than few – you never know which could be the particular key word that should lead you to a certain reference. For papers which are of particular interest, it could be useful to write a summary. This will also help you to read the paper more carefully and check points and arguments that are not fully clear to you. Write personal notes in the text (only in your copies, not in library books!) and use personal symbols in order to highlight significant – surprising – funny – contradicting etc. parts in the text. This will also help you to find a particular passage within the text in order to refer to it later.

Ask your supervisor to recommend journals, authors, monographs and review articles for the information relevant to your work. Find the relevant abstract and index services and computer databases. Use computer search facilities available at your institute.

WRITING

Writing a dissertation is not an easy task even for people who are experienced writers. Writing is always a “reality check” of what it is you want to explain, which means that if you have a problem with formulating something, this could point to the fact that you are not fully clear about the matter you want to express. Thus, writing will also show you what is clear to you, and what might not be clear. So, start writing early.

Generally, the text you are writing should have a well-defined purpose. This may sound trivial, but one source of problems in writing can be that you are not fully conscious of the purpose of the text, whether it be a short description for lay people (e. g. for potential sponsors), a conference paper or a chapter of your dissertation.

Do not try to create a perfect version from the beginning (nobody can do this). Start with a first draft (or maybe with an outline) and revise the draft until you get to the desired result. Ask for feedback from your supervisor and your colleagues. Make a visual plan of your dissertation and try to build your text according to that plan. Change the plan during the writing process if necessary.

Take extra care with the introduction and the conclusion sections. They might cost you the greatest effort (relative to their length) because they should be precise, self-explanatory and easy to read. Be aware that based on the introduction and the conclusion, a potential reader will probably decide on whether he or she will continue to read your dissertation or not. The introduction should demonstrate the context of your work and give a clear explanation of its purpose, whereas the conclusions should demonstrate what you conclude from your results and maybe give some suggestions for further research. Be aware that neither the introduction nor the conclusion should simply summarise the results, and that a reader is not so much interested in what you have done as in what the outcome is. Write a short summary at the end of each chapter.

Be careful with the bibliography and double-check all references, especially all quotations. Find a good editor in order to avoid minor errors and have correct figures. If you plan to publish the dissertation, a professional editor might be worthwhile.

Keep the following principles in mind when writing:

- Write only about things you know well.
- Write only what you know precisely.
- Leave enough space for the reader to make note of his or her own thoughts.
- Be confident that the reader has a positive attitude towards your work.
- Do not write into an open end; follow a given structure.
- Stop writing when you find that you are occupied with a certain sentence for too long.

A great book (with subtle humour) on the subject is “The Art of Scientific Writing” (1987) by Ebel, Bliefert and Rusey, VCH. As writing is going to be one of your main tasks, it is well worth studying and practising it as you have studied your field of science.

MEETINGS AND CONFERENCES

The ability to conduct good and innovative research is something you will learn gradually during your Ph.D. work. It is not easy and requires first and foremost a thorough knowledge in your research field, but also an ability to identify key problems. Communication with colleagues and other researchers is crucial in successful research. In addition to interaction with researchers in your immediate surroundings at ETH, you will have opportunities to expand your network of professional acquaintances by attending meetings and conferences where the latest work is being presented. Attending a meeting or a conference can refresh your enthusiasm for research and create new insights. Additionally, it will help you to construct or build up your own perception of the scientific community you belong to and position your own work within the field. Presenting your own work at a conference is a great chance to experience other people’s interest in your work and get feedback. Even if the latter is not of immediate use, a presentation will help you to find other people working on similar questions and allow you to discuss problems with them. A presentation will significantly effect your progress.

WHAT MAKES A GOOD PAPER?

Writing a scientific paper requires some skills that will incrementally increase as you use them. Before you write your first paper, you will certainly have read a couple of other publications. Ask yourself what you appreciate in these papers, and what you would like to do better. It can even be useful to keep a well written, personally favoured paper as a model paper and consult it when you are in doubt concerning technical issues regarding your own paper (e.g. structure or typical expressions). If you intend to write regularly, the courses in scientific writing offered at ETH or the university are highly recommended (see chapter Continuing Education).

A good paper contains something of merit. This merit should be well presented. Good structure is the first element of a good publication. A standard structure is: Abstract – Introduction – Body of the paper (background, methodology and results) – Conclusions – References.

Even if a paper is written in a standard structure, major problems may exist. Here are some common errors found in each of the sections.

- Read the **Abstract** again after you have finished the paper. Does it actually summarise the paper? Does it include the conclusions as well as the statement of the original problem? Avoid referring to results not presented in the body of the paper.
- The **Introduction** should explain why the topic is important. Chose the scope of the introduction according to the audience for the paper (many technical papers suffer from excessively broad introductions). Do not only cite your own writings as examples of past work.
- **Body** of the paper:
 - Describe the approach and analysis clearly. Carefully determine what you want to focus on and what you can eliminate. Choose a reasonable level of detail. Integrate discussions and uncertainties in your analysis at suitable points. Do not present too much data in one paper.
 - Use tables and figures thoughtfully. Drop tables and graphs that are not necessary. Do not use more digits in tables than are actually significant. Substitute tables by graphs whenever possible. Caption appropriately and refer to all tables and figures in the text.
- **Results** are generally written in past tense, general statements in present tense.

- **Conclusions** should follow directly from the body of the paper. There should not be any surprises, and most important, no new material introduced.
- Be aware that the **References** will give the reader many clues to your approach. The paper will be considered immediately suspect if all of the references are old.

ETH RESOURCES

ETH offers quite a number of services which can help you a lot doing your Ph.D. Among those are the library, ETH Transfer and the VPP distributed printing system. Other services dealing with continuing education and personal development such as the Center for Teaching and Learning are listed in the chapter “Continuing Education”.

ETH Library The ETH Library is the national center for information regarding technology and natural sciences with about 5,2 million items. It is public and free of charge to all registered users; the registration can be done at the counter in the main library at ETH Zentrum. As a registered user, you can order books, documents, maps, discs, etc. via the internet-based NEBIS and get your items at the individual ETHICS-Network libraries (e.g., ETH Zentrum, Hönggerberg, Irchel), by mail or via courier. As the ETH Library cannot be held responsible for losses, possible delays or other difficulties in the shipping or transporting of books, it is highly recommended that you return your books by registered mail and keep the postal receipt, or take the books directly to the ETH Library yourself.

The departmental libraries and the main library generally are well linked via the NEBIS system. Be aware although that some departmental libraries are not accessible via NEBIS, e.g. the Biology and Chemistry Information Center in the HCI building at Hönggerberg. The Biology and Chemistry Information Center has its own web-based information system. The homepages of the departmental libraries are accessible via the ETH homepage.

The libraries at ETH are pretty far into the information age. There are lots of online subscriptions to scientific journals, databases and the web of science, of course. Another very useful service offered are professional literature searches. Just check the libraries' webpages.

Regularly scheduled orientation sessions are held in the main ETH Library as well as departmental libraries giving orientation about the whole range of services offered by the libraries.

→ ETH Library
H-Floor, Main Building, ETH Zentrum
Rämistr. 101, 8092 Zürich
Tel 01 632 21 35, Fax 01 632 10 87
info@library.ethz.ch
<http://www.ethbib.ethz.ch>

VPP – Distributed Printing and Plotting (“Verteiltes Printen und Plotten”) In case you need to print a poster or other documents a special printer is needed for, you can do this using the Distributed Printing and Plotting service. They have VPP stations all over ETH so there should be one near your office. Normally, you send a postscript file containing your document via the web interface to a suitable VPP station near you and go fetch the printout later. Often you can create postscript versions of your document by using the “Print to File” function. The prn file format on Windows systems does actually contain postscript (ps). For further information check the homepage of VPP.

→ <http://www.vpp.ethz.ch>

ETH Transfer ETH supports and encourages the development of inventions and innovative products. The place for information and support is ETH Transfer, the technology transfer office of ETH Zurich. ETH Transfer presents itself using the following keywords:

If you want to collaborate with a company...

... we will help you to find the right partner and to draft an according contract.

If you have made an invention...

... we will inform you how to protect it and how to commercialise it.

If you want to commercialise a research result...

... we will support you in finding the right partner and in the negotiations as well as the drafting of the contracts.

If you want to found a company...

... we will advise you about the first steps and the offered promotion at ETH Zurich.

ETHtransfer

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

→ ETH Transfer
ETH main building, HG E 47-49
Rämistrasse 101, 8092 Zürich
Tel 01 632 23 82, Fax 01 632 11 84
transfer@sl.ethz.ch
<http://www.transfer.ethz.ch>

General Services (“Abteilung Dienste”): The “Abteilung Dienste” offers general services, such as the internal post and the gardening of the ETH grounds. Interesting services for you could be the Reprozentrale offering printing services. There is one at Zentrum and one at Hönggerberg. You can also get a car for a job-related task and furniture for your office from “Abteilung Dienste”. Unfortunately, their web page is in German only.

→ Abteilung Dienste
<http://www.dienste.ethz.ch>

*HOW TO SURVIVE
AS A TEACHING ASSISTANT*



Teaching at ETH depends a great deal on the work of teaching assistants (TAs): they are important for the quality of much student learning. TAs form an important link between the professors or lecturers and the students; they are not only closer in age but also remember better how it was like to be a student, and what sort of problems they experienced themselves at this stage. The contribution from TAs to student learning at ETH is therefore not to be underestimated!

For assistants themselves, this involvement with teaching presents an opportunity to practice and develop skills such as those needed for presentations, leading discussions or meetings, giving constructive feedback, sharing responsibility for a specific group of persons or a special task, and evaluating one's work and responding to the results. Such skills are not only valuable in the teaching and learning environment, but also in the research field and in "life after ETH", be this an academic setting or not.



INTRODUCTION: THE JOB

Many doctoral students sooner or later find themselves involved with teaching. For some this will be fairly minimal, such as supervising one or two students in an advanced class whilst they work on a particular experiment, but for others it could mean regular ses-

sions with groups of students, up to several hours per week, and accompanied by a fair amount of correction of students' written work. How much you are expected to teach will largely depend on the department you are in and on which courses your Ph.D. supervisor teaches. There is a variety of teaching situations at ETH that are led by TAs:

- **Laboratory classes ("Praktika")**: in the first two years of the undergraduate degree, a group of about 12 to 15 students is assigned to one TA in a laboratory class. The TA is responsible for introducing each section of the course, perhaps reviewing some of the experimental design, for organisation in the laboratory, helping the students with apparatus, etc. and for marking and correcting the lab reports. In advanced sections (years 3 and 4), TAs are more likely to have to supervise students on an individual basis.
- **Exercise classes ("Übungen")** (e.g. in mathematics, computer science, engineering): the role of the TA in this teaching situation could include running the weekly sessions, providing "tips" for the new set of exercises, asking good questions to check the students' understanding, writing the exercises, providing sample answers, marking the students' work and giving students constructive feedback.
- **Excursions and field trips ("Exkursionen")**: excursions may not take place every week, and if you are lucky, they might be limited to summer semester – although it can also rain and snow in summer in Switzerland! They are time-consuming and require thoughtful preparation if learning is to be effective. The amount of supervision varies greatly from department to department and you may find yourself alone with a group of 12 students for a whole day at a time.
- **Case studies ("Fallstudien") and project work ("Projektarbeit")**: this form of student learning is growing in popularity at ETH and TAs may well become involved with various aspects of it, such as helping to prepare the cases, leading discussions with groups of students working on the case and marking final reports.
- **Supervising a semester project ("Semesterarbeit")** (in many departments, especially engineering) or a **diploma project ("Diplomarbeit")**: supervision of semester projects requires the TA to work with one or several students at once, with the aim of helping the students to complete a specific project in a limited time, and to learn some of the skills of independent study habits that will stand them in good stead when they come to do their diploma projects. Supervising a diploma project is usually done on a one-to-one basis

with an assistant who originally “advertises” the diploma project. The secret of good supervision for the diploma project lies in finding a balance between helping the student, making sure they stay on the right track and within the time frame, and encouraging an independent approach to the work.

BEFORE YOU START

Right at the start of your Ph.D. work, when you discuss the research project with your supervisor, find out what your teaching duties are going to be – and not only for the first semester or first year, but for the whole time you are a doctoral student. Try to insist on the same teaching duties for at least three semesters so that the extensive preparation for the first time round is an investment that can be used more than once. Negotiate to be released from teaching duties, or at least to have them reduced, during the last phase of your research work and while writing your dissertation.

Find out how much time you are expected to spend on teaching, preparation, and grading papers and carefully consider whether this is reasonable or not. Be realistic, however; the first time you teach a new unit will require more preparation time than the times thereafter. It is also a good idea to find out from the other TAs what the general par for the department is; such facts are often useful in the early stages of negotiation. As soon as you sense that you are actually spending much more time than originally agreed on, run your own “time and motion study”, i.e. what you do when. Your supervisor, who is often the person with the overall responsibility for the lecture course or laboratory class you teach, is likely to take your case much more seriously if you can present him/her with some “hard facts and figures”.

Be aware of the fact that some institutes distribute administrative jobs as well as teaching duties to Ph.D. students. Whilst you clarify your teaching duties, find out what else is expected of you. It is particularly important for a healthy working environment that everyone gets their fair share and that it is clear “who does what”.

TEACHING: WHAT TO FOCUS ON

1. Are you “teacher-focussed” or “student-focussed”? Is it more important how and what you present or whether the students

understand the material and can apply concepts to new situations? Focussing on student learning provides the secret to your teaching success – and after all, why spend energy and time in teaching activities if you are not going to be successful? Concentrating on

*PH.D. REALITIES: FULLTIME
PH.D. STUDIES IN CELL BIOLOGY*

«I was born 1973 in South-Germany. I finished my studies in Biology at the University of Konstanz in 1999. Since April 2000 I have been working on my dissertation at the Institute of Cell Biology in Prof. Theo Wallimann's group. My main project is the identification of mitochondrial membrane proteins. I already got to know Theo Wallimann and the people working in his lab during my time in Konstanz. When I got the possibility to work in Zurich I decided rather quickly to take the chance. In comparison to other places I find the ICB on a relatively high level of research, infrastructure and technical equipment. In the building HPM most modern techniques needed are available. The open and interactive atmosphere at the ICB encourages the exchange of knowledge and ideas among Ph.D. students. It is easy to conceive new ideas and projects at least in terms of technical problems.

I receive 60 % of a class 15 position which amounts to around CHF 2300 after taxes. The position is secured for three and a half years, so I do not need to worry about contract prolongations.

Currently I am supervising one diploma student. Furthermore, we have to teach one week during a basic practicum for first year students and one to two weeks during another practicum for third year students.

Besides work, Zurich is a stimulating place for cultural activities as it offers a

the fact that your primary goal as a TA is to promote student learning, will automatically help you with your preparation and the way you interact with your students. Promotion of student learning can only be done if:

- the teaching (= learning) goals are clear (what will the students learn TODAY?)

- you can provide a reason for these goals (why do they need to learn this?)

- you know where your session fits into the lecture course and the whole curriculum. It is a good idea to know the week-by-week contents of the lecture course that accompanies your classes; this way you can link your teaching to what the students came across in the previous week's lecture. If possible, try to go to some of the lectures yourself, especially if you have never taken that particular course.

- each class is well-prepared and well-structured

- you know what the students already know (background knowledge), which is different from what you think the students should know

- you find the right level; this is not the place to show the students how brilliant you are! Concentrate on giving clear explanations in a vocabulary the students are familiar with and which take into consideration the students' background knowledge.

lot of concerts, art exhibitions, opera, theatre etc. Last but by far not least, the mountains are really close to Zurich. This means hiking, climbing, mountain biking and winter sports are easy to be done. And, important for me, Zurich has the largest climbing gym in Europe, check it out!!

There is one negative point: For the amount of work in this expensive city, our salary is far too low! Newcomers should take that into account. Cheers! >>

Oliver Speer, Ph.D. student, Institute of Cell Biology

- you regularly receive feedback from the students about where they are having difficulties, e.g., distribute A-5 papers at the end of a class with the sentence “The most unclear aspect of today’s class was...” and ask the students to complete it anonymously. Analyse the answers by the time you see the students again and go over what they found unclear.

II. Do not think you have to teach

perfectly, especially not the first time round (see: What students want) and do not assume you have to teach the way you were taught. By all means “steal” good techniques from others, but try to develop your own style. Prepare your classes well and work out the exercises or, ideally, do the experiments yourself. Take notes on where difficulties arise for the next time you teach the course. Make sure you can work all the lab equipment, as well as the visual aids (overhead projector, beamer, video recorder).

III. Try to anticipate where the students may have difficulties (where did YOU have difficulties with this topic as a student?) and get ready to offer special help. Even better, try to attend some of the lectures yourself to gain first-hand experience of the parts that are probably difficult or unclear for the students.

IV. Do not think you have to know all the answers. Do not be afraid to say, “I don’t know”. However, signal that you want to help the student by either saying you will have the answer by the following session or by asking more experienced TAs, e.g., in the same laboratory class.

V. Get to class early, before the students arrive. This will help you to gather your thoughts for the class, make last minute preparations, write something important on the blackboard or even clean it! If you find that students bombard you with lots of questions, and particularly if you find they start to visit your lab or office outside class time, consider setting up “office hours”: one or two hours per week when students can – without feeling they are disturbing you – officially visit and ask questions. This way, you signal that you offer help but also that you are a busy person with other important tasks! Choose the office hours with the students’ timetable in mind: there is no point offering an office hour when the students have an obligatory lecture.

VI. Although your efforts should be focused on student learning, nobody expects you to adapt your teaching to the slowest or most unmotivated student. Particularly in the first year of the degree course, you will have students in your classes that have chosen the wrong degree course or even the wrong higher education institution. Your job is not to sort out these students, nor should you count on all students being “super-learners”, but to help the majority of students between these two extremes to learn well.

VII. Do not feel you have to do everything yourself. Encourage students to help each other. If a particular student has difficulties understanding your explanation, ask other students to explain the same thing in their words. Get students involved by asking them to explain solutions on the blackboard. Students would like the TA to do all the explaining, but getting the students to work things out for themselves will enable you to see where they are having difficulties.

WHAT STUDENTS WANT

ETH students were asked to define what they felt “good TA supervision” entailed in a teaching evaluation run by the Center for Teaching and Learning (DiZ). Here is the list of the six aspects that were most often mentioned:

1. The TA gives good explanations (takes time to explain things, is patient).
2. The TA is helpful (does not put us down when we ask questions).
3. The TA is motivating (praises us) and obviously likes the subject.
4. The TA knows his/her subject matter.
5. The TA is friendly, approachable and creates a good atmosphere in the classroom.
6. The TA gives a good introduction to the class or to a new experiment.

Of particular relevance are the highly rated qualities of “being helpful” and “giving praise”, neither of which has anything to do with factual knowledge but with the TA’s social competence; in particular the latter quality often gets overlooked in the classroom – just think how good YOU feel when you are told you have done something well!

WHERE TO GET HELP

I. Talk to your colleagues. Ask other TAs how they explain difficult concepts. Find out if there is such a thing as a TA-Information Folder for this particular course, containing not only answers to problems or typical measurements in experiments, but also “Things that have caused difficulties in the past” or “Special tricks with particular experiments” or “Successful demonstrations or ideas for explaining difficult topics” or “How to mark assignments”, etc. If such a TA-Course Information Folder does not exist, start one yourself.

II. Take advantage of the TA training courses run by ETH’s Center for Teaching and Learning (DiZ) and courses in the programme “didactica” (<http://www.didactica.ethz.ch>) that is run jointly by DiZ and the University Teaching and Learning Centre of the University of Zurich (AfH). Some of these courses are designed specifically for new TAs and, moreover, give you the opportunity to learn presentation skills that are useful for seminar and conference talks. Courses about teaching using information technology are also offered in “didactica”; these are organised by the Network for Educational Technology NET (ETH) and the ICT-Centre of the University of Zurich.

III. If you need specific help for your teaching e.g., how to get feedback from students, how to test the students’ background knowledge without appearing threatening, how to design course handouts, etc., contact ETH’s Center for Teaching and Learning (DiZ) directly. For special issues concerning information technology in teaching and learning, contact the NET Office of ETH.

HOW TO PROFIT FROM YOUR TEACHING EXPERIENCE

Many men and women are employed as teaching assistants either during their doctorate or during a time they are involved with other projects at ETH. At the end of this period what have they got to show for their work as teachers and the skills they have developed? Usually very little: perhaps a reference from their professor or a statement about the time they were employed as a TA and for which course(s). But where are the details about all the time, energy, ideas and academic skills that have been invested in and acquired during this period, and also about the quality of this work? The answer lies in the production of a “Teaching Portfolio”.

The compilation of a Teaching Portfolio has several goals:

- To make the activities undertaken as a teaching assistant more visible (for you too!)
- To encourage discussions between teaching assistants (exchange of ideas, how to solve problems, etc.)
- To produce a collection of material that shows what has been achieved. This can be most useful for job applications, even if you do not plan to stay in an academic setting. Evidence that you have been involved with activities that have required good preparation, didactic and communicative skills, leadership and which contains an element of self-evaluation, adds an additional and valuable dimension to your curriculum vitae.
- To clarify one's own pedagogical and didactic goals for one's own teaching activities.

A Teaching Portfolio can be compared to the visible products of research work (a list of publications and/or a thesis/dissertation) in that it is "evidence" of what and how much has been undertaken in teaching, at what level the work has been carried out and what has been achieved. Many US universities require the submission of a teaching portfolio in the application for academic positions (post doc. and above) and there are many TA training programmes in the US that culminate in the production of this document.

Think about collecting items for your own teaching portfolio right from the start of your teaching career at ETH.

Recommended Reading

"The Teaching Portfolio", Peter Seldin (1997). 2nd Edition.

Anker Publishing, Bolton MA

This book provides ideas for content and contains some examples of actual portfolios.

Useful web sites for information and inspiration

Washington State University, US

→ <http://www.wsu.edu/provost/teaching.htm>

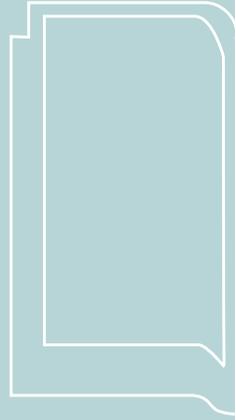
Griffiths University, Australia

→ http://www5.gu.edu.au/gihe/services/resources/teachprot/tp_exesum.htm

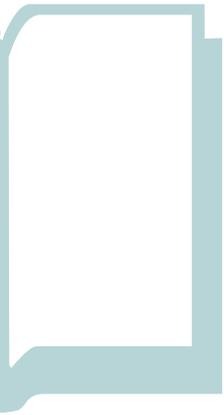
Penn State, US

→ <http://www.psu.edu/celt/portfoliolinks.html>





CONTINUING EDUCATION



Continuing education widens your horizon and gives you new experiences. Furthermore, concerning job applications, there are companies which appreciate knowledge acquired in addition to your Ph.D. work.

The Ph.D. education at ETH Zurich is ruled by a credit point system (“Kreditpunktesystem”, see “Doktoratsverordnung” in chapter “Rules, Regulations and Funding”). This credit point system ensures that the Ph.D. student takes courses for continuing education in the field of his Ph.D. work as well as in other fields of interest. You can acquire points by taking courses. The departments divide their lectures for Ph.D. education in credit units. Often group seminars also give credit points. As a way of encouraging Ph.D. students to involve themselves, participation in the administrative commissions of ETH is also acknowledged by credit points.

This chapter is divided into four parts that give you an overview of which courses you can attend during your Ph.D. work: Courses offered by ETH, ETH-External Courses, Other Opportunities and Grants and Exchange Programmes.

As you may be especially interested in language courses, you will also get an overview of where language courses in German or English are offered, namely ETH D-GESS, ETH Departments (only English), University of Zurich and various schools in Zurich which are mentioned in the section “Other Opportunities” (for details see the corresponding sections).



COURSES OFFERED BY ETH

Departments (“Departemente”) Every department has an ongoing programme of lecture courses open to all members of ETH. This is a great opportunity to expand your knowledge in the field of your Ph.D. or simply to explore other areas of interest. A complete listing of lectures offered at ETH can be found in the semester programme (also available on the internet) issued at the beginning of each semester.

Additionally, special seminars, colloquia and talks are organised during the semester within the different divisions and institutes. Upcoming talks and events are announced in the calendar of events in ETH-Life (also on the internet), as well as on bulletin boards.

As a registered Ph.D. student at ETH, there is no charge and you may attend as many lectures as you like. If you wish to have a confirmation that you visited the lecture and fulfilled the attendance requirements (“Testatbedingungen”), you can get the professor’s signature (“Testat”) on your “Einschreibebogen für Doktorierende”.

----> Semester programme

<http://www.sempro.ethz.ch>

----> Calendar of events (“Veranstungskalender”)

<http://www.verw.ethz.ch/vk/>

----> ETH-Life

<http://www.ethlife.ethz.ch>

D-GESS: Department of Humanities, Social and Political Sciences (“Departement Geistes-, Sozial- und Staatswissenschaften”)

D-GESS appears in the normal lecture programme, but as ETH is only entitled to give degrees in natural sciences, engineering and mathematics it does not provide courses leading to an ETH degree. With the intention of having their horizons widened, undergraduate students are required to choose one D-GESS lecture per semester. For some programs of study, some lectures offered by D-GESS (e.g. about law) are obligatory. The purpose of D-GESS is to give undergraduate students a complementary view to their studies, “to build a bridge” between natural sciences and humanities.

Lectures and seminars are offered in philosophy, psychology, education science, literature, languages, art, music, history, sociology, politics, economics, law, etc. There is also a special course programme called “Höheres Lehramt”, a teacher training course

leading to a qualification to teach at upper secondary school level in Switzerland (“Gymnasium”).

All courses are free for Ph.D. students. Additionally, for lectures or seminars in this department, you can get a professor’s signature (“Testat”) on your Einschreibebogen für Doktorierende. All courses are listed in the semester programme. Often details of lecture series or special events (e.g., which writer will have a reading when) can be found on bulletin boards.

At ETH Zentrum in the main building (HG), the boards are placed at level E near the entrance on Tannenstrasse and near the small entrance on Tannenstrasse/Rämistrasse, near room D 29. At ETH-Hönggerberg, they are placed at the HIL entrance near the post office, level D, and at the HPV side entrance, level F.

Language Courses: D-GESS offers a variety of language courses, at varying levels of ability and intensity in German, English, French, Italian, Spanish, Russian, Arabic, Japanese and Chinese. In addition to these, a course “Scientific and Technical English” is also offered as well as preparatory courses for TOEFL. Check the semester programme.

German as a Foreign Language: There are courses at all levels of proficiency. In addition, two special courses are offered. The first is a basic course in German for non-native speakers, taught over two semesters, which is offered for ETH academic guests. Ph.D. students may also attend. The second is an intensive course of three weeks’ duration, held during the semester breaks. A basic knowledge of German is a prerequisite for this intensive course.

→ <http://www.gess.ethz.ch>

DiZ: The Center for Teaching and Learning (“Didaktikzentrum”)

If you are going to be involved with teaching now or later in your career, the Center for Teaching and Learning is a great resource. This center’s primary function is to help train teaching faculty and teaching assistants to be effective instructors and improve student learning at ETH. The courses at the Center are free of charge and often take place during the semester holidays in March and September-October. The programme of workshops appears in ETH-Life print and on the DiZ web site. It is often a prerequisite that you have responsibilities for teaching or student supervision. The courses are held in German or English. Courses offered by DiZ include:

- 3-day introductory Newcomers' workshops in general teaching methods for new teaching assistants (highly recommended as preparation for any teaching activities).
- seminars on Presentations, Publishing and Communicating.
- several 1- or 2-day courses proposed by DiZ and The Office of University Didactics at the University of Zurich (AfH) in the didactica program (see internet address below).
- tailor-made workshops: if you have the need for a special workshop addressing issues specific to a particular topic being taught, a special request can be made to DiZ. The request should be accompanied by the names of approximately seven other people also interested in the topic, and a short statement outlining the reasons behind the request. Past examples include a workshop held in English that focused on general teaching methods, and an institute workshop in excursion didactics.

Other services offered by the Center for Teaching and Learning are:

- individual help with specific teaching problems.
- classroom visits, with feedback on what you are doing right and how you might improve your teaching methods.
- videotaping your teaching, with discussion.
- help on how to evaluate your teaching effectiveness.
- help with the construction of a teaching portfolio: a record of your efforts in teaching, which can be of great value when you are later seeking an academic position. In some countries (in particular the USA) a teaching portfolio may be considered an essential part of the dossier required to obtain a job.
- opportunities to practice important presentations with one of the DiZ staff, who will give you feedback (condition: only open to Ph.D. students who have already attended a presentation training in DiZ, e.g., in a Newcomers' workshop).

Note: All personal contacts are free of charge and treated with confidentiality. Please make an appointment if you want to take advantage of the Center's course offerings or other services. Keep an eye on the web site to get the latest information on courses being offered and pay attention to the fact that these courses often fill up quickly.

→ <http://www.diz.ethz.ch>

→ <http://www.didactica.ethz.ch>

NET: The Network for Educational Technology The NET is a partner of the Center of Teaching and Learning. NET promotes the use of information technology and electronic media in tertiary education,

supports developers and users and helps coordinate teaching projects. If you want to use modern information technology in teaching, NET has very competent people to help you. They also offer courses on the use of new media in teaching.

→ <http://www.net.ethz.ch>

The Office of University Didactics at the University of Zurich (“Arbeitsstelle für Hochschuldidaktik der Universität Zürich”, AfH)

Although physically situated at the University of Zurich, the AfH maintains close ties to ETH via the Center for Teaching and Learning (DiZ). Twice a year, they publish the joint didactica programme of courses in university teaching that are open to faculty and teaching assistants at both the University of Zurich and ETH. The didactica courses are free and take place throughout the year. The programme can be accessed at the didactica web site. Courses in the didactica programme include the following:

- how to assess students.
- rhetoric in the classroom.
- structuring lectures to optimise learning.
- conducting oral examinations.
- leadership at the university.

→ <http://www.afh.unizh.ch>

→ <http://www.didactica.ethz.ch>

Center for Continuing Education (“Zentrum für Weiterbildung”, ZfW)

Two types of postgraduate-level programmes are offered at ETH: “Nachdiplomstudium” and “Nachdiplomkurs” (see below). They are directed at those who have completed a first university degree and are interested in further qualifications in a specific field. The language of instruction for all of the courses is German. For an update in courses and studies offered, see the latest semester programme.

→ <http://www.zfw.ethz.ch>

Postgraduate Courses (“Nachdiplomkurse”) Completion of these courses usually requires up to 200 lecture hours. Although they are aimed at professionals already in employment who return to ETH for regular block courses, they are also open to qualified Ph.D. students. To be accepted into these courses, one must have a recognised degree from ETH, or an equivalent degree from another institution, as well as significant work experience in the proposed area of study.

Postgraduate courses include Risk and Safety, Electromechanics, Sanitary Engineering and Water Protection, Computer Science, Spatial Information Systems, Applied Statistics, Applied Earth Sciences and Radiopharmacy.

Postgraduate Studies (“Nachdiplomstudium”) This type of programme includes full- or part-time studies designed to provide further in-depth education in a particular field. The individual programmes vary, but usually require up to 600 lecture hours (approximately one to two year of coursework) and the completion of a project or mini-dissertation. The requirement for acceptance into one of these programmes is the prior completion of a diploma degree at ETH, or an equivalent degree (MSc) from a recognised institution, and normal work experience.

Postgraduate study programmes include Architecture, Urban Water Management and Water Pollution Control, Information Theory, Industrial Engineering and Management, Intellectual Property, Occupational Health, Human Nutrition, Local and Regional Planning, Medical Physics and Postgraduate Study for Developing Countries.

The programme fees range from CHF 2000 to CHF 6000 depending on the programme. Charged within the first two semesters, the fees are all-inclusive for the entire programme of postgraduate study. Upon successful completion of the programme, a postgraduate study certificate with an academic title or a degree of equal value is awarded.

Computing Courses (“Informatikdienste”) This center provides regularly scheduled courses designed to teach basic knowledge of computer use and standard software programmes. This is where you can learn to use or perfect your knowledge of programmes such as Excel, Word, Matlab or operating systems such as UNIX. The course programme is published at the beginning of June and December. Note that the signature of your supervisor on the registration is necessary. The costs vary for each course; some are free of charge for ETH members.

The courses concerning the Internet are organised in modules on several levels. When you have attended all modules of a level, you have the possibility of obtaining a certificate granted by computing services. Of interest for teaching assistants is the certificate “Web-Publishing im Lehrbetrieb”. To obtain this certificate you need

to attend some Internet modules and some courses proposed by didactica (<http://www.didactica.unizh.ch>).

→ <http://www.id.ethz.ch>

Personnel Department (“Personalabteilung”) A variety of courses are offered through this department including courses on project management, leadership and languages. English courses are offered on a variety of levels up to the Cambridge Proficiency level. “Writing English for Science” is a popular course that should be taken advantage of. The courses are announced three to four months in advance in ETH-Life print. No fees are charged for these courses; however, you must obtain the approval of your supervisor.

→ <http://www.pa.ethz.ch>

ETH Tools ETH tools was originally a course about how to start your own business, but it has emerged as an educational unit. While the ETH Tools programme has been shut down by the end of 2001, some courses are still provided by a company called Business Tools AG.

- **Business:** The courses cover topics such as how to start your own business, marketing, business plans and cash management.
- **Learning:** Courses about learning, e.g., learning how to learn, learning strategies, time management, preparing for exams, how to plan.
- **Communications:** Courses about oral and written communication, including communication skills, how to write a thesis, how to negotiate, how to give a talk, effective writing in business.

→ <http://www.ethtools.ethz.ch>

Collegium Helveticum The Collegium Helveticum was founded in 1997 by ETH as a forum for dialog between the sciences. The aim is to promote mutual understanding between the natural and technical sciences and the humanities and social sciences. Central to the idea of CH is its small postgraduate school (“Kolleg”) for young researchers from the Swiss Federal Institutes of Technology in Zurich (ETH) and Lausanne and the University of Zurich. They are selected on the basis of their interdisciplinary interests and academic qualifications. In general, the scholars spend one year at the Collegium Helveticum, usually while working on their dissertation or research projects, which continue to be supervised by their respective professors. They are encouraged to pose interdisciplinary questions and to learn about the epistemological, methodologi-

cal and substantive presuppositions of their work. An interdisciplinary environment is also created by inviting internationally renowned guests for one semester each, who come from the sciences, arts and literature. In addition, Collegium Helveticum organises workshops and symposia on topics which call for multiple perspectives and invite a fresh approach. These events are open to the public and have proven to be very attractive. Part of the intention is to promote lasting intellectual contacts and to build up a network that is open to interdisciplinary and intercultural debate, including links with related institutions in Switzerland and abroad.

The Collegium Helveticum offers all scholars a fellowship, a personal workstation in the Semper Observatory and active support in their interdisciplinary project. As a scholar, you will take part in seminars and events, be in close contact with international guests from science, literature and arts and collaborate with other Kollegiaten on common problems.

You can obtain application documentation for an academic year (October until July) at the administrative office of the Collegium Helveticum (the deadline for the application is in February).

....> <http://www.collegium.ethz.ch>

Cortona Week (“Cortona-Woche”) The Cortona Week “Natural Science and the Wholeness of Life” is an interdisciplinary educational week where Ph.D. students, undergraduate students, and professors of natural science meet and have discussions with philosophers, artists, musicians, psychologists, and theologians. In the morning, presentations from various fields of science are held. In the afternoons, there are theoretical (e.g. philosophical and humanistic topics) and experimental (e.g. painting, sculpturing, singing, pottery, mask making, dancing, Tai-Chi and meditation) workshops. The aim is to integrate the “two cultures” and specially to give young (and old) scientists the possibility of experiencing those humanistic or even spiritualistic aspects of life neglected during studying.

This course is open to all disciplines, is held in September break and announced in ETH-Life print. The fee is around CHF 600 per person, which covers double or quadruple rooms and meals. Participants not from ETH have to pay an additional fee of approximately CHF 350. The primary language is English.

....> <http://www.cortona.ch>

ETH-EXTERNAL COURSES AT THE UNIVERSITY OF ZÜRICH

Take a look at the course programme of the university, particularly the section Continuing Education. Ph.D. students may be interested in postgraduate courses as well as English language courses. For Ph.D. students with a student ID card (“Legi”), all courses are open and free of charge. Take your student ID card with you to prove your status if required. For special courses (e.g., seminars), there may be restrictions concerning the number of students who can attend. You may even get credits for courses you take at the university, but check with your supervisor.

→ <http://www.unizh.ch>

SWISS UNIVERSITIES AND POLYTECHNICS CONTINUING EDUCATION (SWISSUNI)

The on-line system SwissUni provides a database containing information about continuing education programmes at all universities and institutes of technology in Switzerland.

→ <http://www.swissuni.ch>

OTHER OPPORTUNITIES

There are other schools in Zurich that offer courses of relatively good quality in various subjects, especially language courses, at reasonable fees. New programmes generally begin in March and September and are announced in local newspapers. Published programmes are also available directly from the schools. In some cases, presentation of the “Legi” (student identification) may entitle you to a discount on the course fee. You may be interested in the following programmes:

→ **Berufsschule für Weiterbildung**

Abteilung Fremdsprachen, Ausstellungsstrasse 60, 8005 Zürich

Tel 01 446 97 90, Fax 01 446 97 93

→ **Volkshochschule des Kantons Zürich**

<http://www.vhszh.ch>

→ **Migros Klubschule**

<http://www.klubschule.ch>

There are also courses offered at different art schools around Zurich. Some may involve a series of evening lectures, while others may consist of a weekend of intense study. You should always ask if there is a reduction of fees with a “Legi”. An art school with a variety of courses is:

....☞ **Schule für Gestaltung**
Tel 01 446 21 11, Fax 01 446 21 22
<http://www.hgkz.ch>



Stiftung Studenten Discount
Postbüro ETH Zentrum
8092 Zürich
<http://ssd.ethz.ch>

PC-Shop
Tel: 01 632 47 21
Fax: 01 632 10 32

Tec-Shop
Tel: 01 632 42 41
Fax: 01 632 10 66

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PDA & Accessories



Calculators



Telephone/Telefax/Copiers



Foto/Video



Audio/Video/TV/HiFi



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(Polyterrasse) or visit our homepage at

<http://ssd.ethz.ch>

Stiftung Studenten-Discount – the non-profit-organization with students for students



EQUAL OPPORTUNITIES FOR WOMEN AND MEN

*“ETH Zurich does not tolerate discrimination of its members based on gender or social, ethnic, or religious background.”
(Leitbild der ETH, 1996)*



The University of Zurich and ETH were accepting women students long before women were admitted to universities in many other European countries: from 1867 and 1871, respectively. On the other hand, you will probably be shocked to learn that women in Switzerland were only granted suffrage (the right to vote and be elected) in 1971¹. This means that you might be faced with ideas and attitudes regarding women and their role in society that you find antiquated and would not expect in a university environment. Of course, there are many very modern-thinking people at ETH, both men and women, young and old. However, old-fashioned ideas may come from unexpected quarters. On the positive side, this means that it is very rewarding to actively engage in this area since, in some cases, it is still pioneering work. As a woman Ph.D. student you may also find that you serve as a role model for younger women, especially if you are in a “hard science” or engineering field.

If so inclined, you can help advance gender equality and equal opportunities by

- joining an ETH committee such as the Committee for Equal Opportunities for Women and Men (“Gleichstellungskommission”, see below);
- joining appointment committees for faculty and other positions and making sure that women applicants get fair treatment, and that both male and female candidates’ attitudes towards women



are taken into account. For example, you could ask him or her: “You know that ETH wants to increase the number of women in the research/teaching staff – Do you have a concept of how to achieve this goal? How many women have graduated under your guidance?”

- helping with or initiating activities aimed at increasing the number of female students at your department;
- insisting that female students and “Mittelbauerinnen” (female assistants/Ph.D. students) are delegated to the Departmental Committee (“Departementskonferenz”), and that women are fairly represented in all committees, i.e., according to the percentage of the sexes among the students.

If you come from abroad, your experience and different outlook on things may be very valuable to ETH.

MALE ABUNDANCE

With ETH being a technical university, it is not surprising that in many of its departments there are more male than female undergraduate and Ph.D. students. However, you may be a little taken aback at the extent of this “male domination”. For example, at the Computer Science (D-INFK) or Electrical Engineering (D-ITET) departments, it has been the norm for many years that among the first-years, there are only a handful of women but hundreds of male colleagues, and more often than not, only one or two are still around by the time they graduate.

There are, however, exceptions. These are Pharmacy (at the Department of Applied Biosciences, D-ANBI), with more than four times as many female as male diploma students, the Department of Agricultural and Food Sciences (D-AGRL), which boasts almost 50% female diploma students, and Environmental Sciences (D-UMNW), Architecture (D-ARCH), and Biology (D-BIOL), each with around 40% (winter semester 2000/2001²). All the rest have a female percentage of below 25%, and often even below 10%. There are numerous activities at some of the departments with low female enrolment intended to attract more female students, including weeklong courses and introductory days (“Mittelschülerinnentage”) for female high school students.

The tendency of male abundance carries over to Ph.D. students. However, at the Ph.D. level, there are more men than women in

all departments. And, predictably, the ratio is even worse in post-docs and professors. There also seems to be the tendency that few Swiss women get a Ph.D. here. For example, at the Department of Computer Science, at the time when there were 5% female undergraduates (1990's), around 10% of the Ph.D. students were women (i.e., 10 – 12); however, this was due to “foreign import”: at any given time, there was at most one Swiss female Ph.D. student. Which shows that of the few Swiss women who graduate from ETH, even fewer if any remain to get a Ph.D.

Chances are, then, that as a female Ph.D. student, you will be in an environment where you are one of very few women.

CONTACTS

There is an office for addressing questions related to women and equal opportunities at ETH. You can consult them when seeking information on special programmes, if you experience any problems you think may be related to gender, if you are or feel sexually harassed, or if you encounter a gender issue you think should be dealt with officially.

→ Office of Equal Opportunities for Women and Men at ETH
 (“Stelle fuer Chancengleichheit von Frau und Mann an der ETH”, SCG)

ETH Zentrum, HG F 37.3
Rämistrasse 101, CH-8092 Zürich
Tel 01 632 60 26
equal@pa.ethz.ch
<http://www.equal.ethz.ch>

The Equal Opportunities Committee at ETH (“Gleichstellungskommission”) was founded in May 2000. Like all other ETH committees, it has representatives from all different ETH-bodies: faculty, assistants, administrative and technical staff, undergraduate students, and the ETH board. Its tasks include evaluating the work of the Office of Equal Opportunities for Women and Men (SCG), and isolating areas of further development in gender issues at ETH. It remains to be seen how active and influential this committee will become. You can find the names of its members on the SCG web pages (see above).

OPPORTUNITIES

In 1999, a large sum was allocated by the Swiss government for the purpose of doubling the percentage of female professors at Swiss universities by 2006, from 7% to 14%. This includes mentoring programmes (not necessarily solely for women) and other offers. It is likely that another similar programme will be approved for the period of 2004-2007. You may be able to benefit from some of these – and do not worry, you do not have to sell your soul and promise to remain in Switzerland to become a professor here! Information can be found on the SCG web pages. For example, ETH has its own mentoring programme for female and male Ph.D. students. In addition, the Equal Opportunities Office of the University of Basel is very active and regularly offers special courses for female Ph.D. students, such as career planning.

PH. D. REALITIES: DOING A PH. D. WITH TWO CHILDREN AT ETH ZURICH «At the beginning of my doctorate, I unintentionally got pregnant – but fortunately my supervisor, Professor Meyer, reacted in a positive way. I had 6 months of parental leave which could also be considered as work at home. Getting a place in a day nursery was pretty hard, especially for a baby of 6 months: out of 15 places, just one accepted Adrian. Thus, 6 months old he came to the child pavilion (Kinderpavillon) of EMPA and EAWAG in Dübendorf. As it is very hard for students to afford a non-subsidized crèche, I asked for financial help at the youth secretary (Jugendsekretariat) of Schwammendingen. Due to a change in legislation, financial help was given only for one year – applications for financial help to the welfare department (Sozialamt) Zurich, youth secretary Dübendorf, and the scholarship office (Stipendienstelle) at ETH were unsuccessful. At that time, we had been on the waiting list of the subsidized ETH crèche for one year but they still did not accept Adrian. Phoning the people at the Office for Equal Opportunities (Gleichstellungsstelle) and the day

mentoring programme for female and male Ph.D. students. In addition, the Equal Opportunities Office of the University of Basel is very active and regularly offers special courses for female Ph.D. students, such as career planning.

You can also find out more about such projects by entering the search terms “Gleichstellung”, “Frauenförderung”, “Hochschule”, “Schweiz” in a good WWW search engine.

PROBLEMS

Sexual harassment happens at universities just like in all other places. The Office of Equal Opportunities for Women and Men (SCG) reported six cases in the course of the academic year 2000/2001. In their experience, women tend to come and seek help at a very late stage. Guidelines have recently been passed at the University of Basel (spring 2001), and the University of Zurich and ETH Zurich are in the process of jointly passing

nursery representative was unsuccessful. When Professor Meyer got to know about the situation he supported my matter with letters to the day nursery, the day nursery representatives and the Personnel Department, but nobody was entitled to help in such a situation. The Institute of Automated Production paid a part of the costs for the day nursery until I received a higher salary after completing my Ph.D.. Now, I'm still working at the Institute and my two boys are in a more expensive private day nursery in Wetzikon – we never heard again from the ETH day nursery.

My advice: Be ready to fight and do a lot of reorganization – ETH Zurich is not prepared for Ph.D. students with children.

Try to get good conditions at work so you have space for toys in your office or see if it is possible to work at home part-time.

You should have the courage (and the patience) to bring your child to ETH whenever possible. >>>

*Dr. sc. tech. Andrea Weber Marin,
Studies: Environmental Sciences, Doctorate at the Institute
for Automated Production, Children: Adrian 3,5 years, Nikolas
7 months*

similar ones. If you encounter sexual harassment, consult either the SCG or AVETH (Academic Association of Scientific Staff at ETH Zurich) for help as early as possible. See also the chapter “Troubleshooting” for other places that might be of help.

Discrimination of Mothers If you have small children, or if you get pregnant, you may find that your supervisor, and even your Swiss colleagues, may have an antiquated picture of the role of women in academia and expect you to quit your Ph.D. You may be told that little children need to be with their mother 24 hours a day, quite irrespective of psychological evidence to the contrary. This is no reason to give up though. Consider the fact that at ETH, there are female professors with little children (quite apart from all the male professors with little children!). There is also an ETH

consultation office for professors with dual careers (Dual Career Advice Office), and there are ETH child care facilities (even if not nearly sufficient in number).³

At a panel discussion at ETH, Prof. H. Würigler, a retired professor of economy, once advised women at ETH never to work for an advisor whose wife is not working, too. This is still good advice.

Foreign and Female In general, the residence permit most foreign Ph.D. students have (“Aufenthaltsbewilligung B ohne Familiennachzug”) excludes bringing along members of their family to live in Switzerland. But apparently the foreigner’s police decide on a case-to-case basis, especially with Ph.D. students who get pregnant.

At least one case was reported where, in the late 90’s, a female Ph.D. student had a baby while in Switzerland and the baby was refused a residence permit. Later it was granted it, but this was by no means clear from the outset. In general, the information avail-

able is conflicting, to say the least. For example, it can happen (and has happened before) that foreign female applicants are told by professors – who remember cases such as the one quoted – that while in Switzerland, they may not have a baby.

Postdocs are allowed to bring along their spouses and children – at least in theory. However, they, too, often encounter problems, in particular if they are women and want to bring a child alone. For example, a female postdoc was once refused a place in a nursery because the child did not have a residence permit, while it was not to be granted a residence permit without having a place in a nursery. In another case, a female postdoc was told that the child should stay with the father, who was living in Germany.

In general, whether or not you and members of your family receive residence permits seems to depend on your personal and financial situation. This uncertainty can create real problems. It has been suggested that these potential problems should be pointed out to people considering a post here.

Should you encounter difficulties when trying to bring along your family, or should you get pregnant while getting a Ph.D. at ETH, contact the SCG, AVETH and/or the Personnel Department as early as possible for advice.

NETWORKING FOR WOMEN

It can be very helpful to know people in situations similar to yours (in this case, if you are female, other women Ph.D. students), and to hear about their experiences, to exchange information, etc. Here are two mailing lists you can subscribe to; the first one is open to both men and women, while the second is for women only:

equal@inf.ethz.ch This is an active list where you can find out about things related to women, ask questions if you have a problem, get advice. The list is maintained by the Office of Equal Opportunities for Women and Men (SCG). As of mid-2001, it has around 300 subscribers, mainly Ph.D. students, postdocs, and other academic staff at ETH and the University of Zurich, but also some from other places in Switzerland and abroad. Most of the subscribers are women, but it is also open to men. It is mainly a platform for exchanging information (interesting articles in newspapers, conferences, job openings, data referring to women in academia). However, sometimes some discussions also take place on the list. The language is mainly

German, but it is perfectly alright to write in English as well. You can subscribe by writing an email to

→ equal@pa.ethz.ch

doktorandin@lists.unibas.ch This is a mailing list for female Ph.D. students. It is based at the University of Basel, but anyone from the German part of Switzerland who is working on a Ph.D. project can subscribe to it. It was initiated in 2000, and it remains to be seen what will become of it. So far, it has mainly been a platform for female Ph.D. students across disciplines to find out about and get to know each other. There are also occasional meetings, both in Basel and in Zurich. You can subscribe by writing to:

→ doktorandin-owner@lists.unibas.ch

There are many associations of women in particular vocational areas, and you can usually join as a Ph.D. student. For example, FachFrauen Umwelt is an association of women working in areas related to ecology and environment, and SVIN one of women in engineering. You can find links to more associations on the SCG web pages.

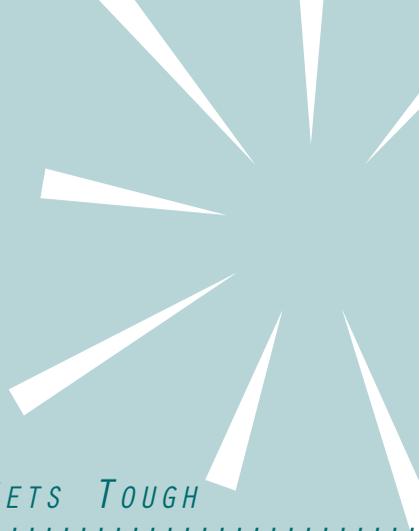
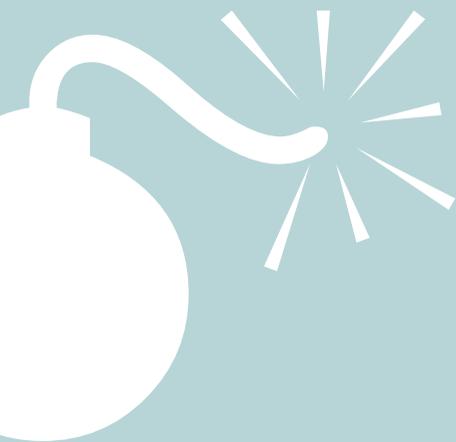
Find out if there are any special mailing lists, newsgroups, or regular meetings for women at your department. If you are in a department with few women assistants/Ph.D. students, you may be surprised at how helpful it can be to talk to other women every now and then. If there is no such thing as a women's meeting or mailing list, why not initiate one?

¹ This had followed a long women-suffrage-campaign, the likes of which had failed several times in the course of the 20th century. Worse still: Women in the canton Appenzell had to wait until 1989 resp. 1990 before they were allowed to vote on a cantonal level. Hereby, one part of the canton (Halbkanton Appenzell-Innerrhoden) had to actually be forced by the federal courts to adopt women's suffrage.

² Source: Information Management and Controlling (IMC) of ETH Zurich

³ A Mexican Ph.D. student once said that she was shocked when she first saw this chapter in the Survival Guide, not so much by its contents, but by the sheer fact that there should be the need for a chapter entitled "Discrimination of Mothers".

*TROUBLESHOOTING:
WHEN THE GOING GETS TOUGH*



Sometimes things simply do not work out as you had wished. Luckily, most (if not all) problems have solutions. This chapter will address a few topics related to problems that might show up during your Ph.D. study. The chapter may seem a bit depressing, but remember this is a troubleshooting chapter in which many of the potential “troubles” have been collected. Most of them will never apply to you...

In the beginning, try to adapt to your surroundings. Though keep in mind, this does NOT mean you should not take initiative. Find out what is appropriate in various situations. Going to lunch with members of the group can be very useful to get to know the do’s and don’ts of the group in an informal way.

Perhaps there is something like “A Guide to Happy Science” in your group, such as the one written by the Experimental Ecology Group. If so, read it carefully. If there is no such guide, try to find out about the unwritten rules. For example, ask people who know the department to give you a tour before you start working. Find out how new equipment is paid for. If you need to use space or a workstation repeatedly, make a reservation list and follow it. Ask for help when using unfamiliar equipment. Your colleagues will appreciate this attitude. Often, dissent about seemingly minor issues in daily work gives rise to major friction within groups. This can usually be avoided.



It needs to be stressed that it is always better to prevent problems from occurring than solving them afterwards. It is important that you talk to people if you feel a problem might arise. Somebody else's opinion might shed an entirely different light on the case. There are many people to turn to. The list below provides you with a range of possibilities, but there are of course many other persons you can address.

- other Ph.D. students.
- people in your group.
- AVETH: Here you will find Ph.D. students and assistants familiar with ETH.
- your supervisor/professor.
- your co-referee.
- the head of the department you are enrolled in as a Ph.D. student; she/he will know your supervisor and be familiar with how research groups operate. Name and office are listed in the semester programme.
- Office for Doctoral Studies (“Doktorandenbüro”)/Prorector for Doctoral Students: the Prorector for Doctoral Students is your representative in the administration. Be aware of the fact that she/he will probably be from another department.
- Psychological Counselling Service.
- Office for Equal Opportunities for Women and Men.

Good conduct in a group (your research group) is important. This will make you and your colleagues feel more comfortable.

If you have group meetings where you are able to present problems you are having with your projects, use these meetings to get input from the group. The group is “collected wisdom”. If you arrange a well-prepared proposal along with a treat like cake or croissants, you might arouse even more interest.

Criticism is not easy to accept when you first receive it. Do not take it personally! Constructive criticism is an essential element of quality control in research. Be the first one to raise questions and problems about your results and discuss them with your group!

If you plan to do or are doing an interdisciplinary project and are looking for a place where you can exchange information with others in similar situations, contact:

→ PIP, Platform for Interdisciplinary Projects

Voltastrasse 58, 8044 Zürich

Tel 01 350 24 50

Fax 01 350 24 51

pip@logon.ch

SUGGESTIONS FOR SOLVING PROBLEMS

Even if you try your very best to avoid them, problems will probably arise sooner or later. Very often they seem worse than they actually are and a solution might be nearer than you think.

To get you started, some possible problems and routes to solutions are discussed below.

YOUR SUPERVISOR SUGGESTS A PROJECT THAT DOES NOT APPEAL TO YOU

Listen to the suggestions. Do not say much at first, but do not give the impression that you are tacitly consenting. Try not to get dragged down by unappealing aspects of the project. Maybe those ‘negative’ aspects are not as pronounced as you think and there just might be very appealing aspects you had not noticed at first!

Write a list of the project’s pros and cons. Point out the cons and suggest alternatives. Provide your supervisor with this list and discuss it together. If she/he does not agree, a group meeting might be helpful.

LACK OF FEEDBACK FROM YOUR SUPERVISOR

Dare to ask for feedback from time to time. You should have a clear idea of how your supervisor thinks your project is progressing. Often good ideas and suggestions emerge during conversation. Do not expect your supervisor to come and check on you every day. Your initiative is appreciated. Consult your supervisor.

If this does not work for whatever reason, there is a last resort. As a Ph.D. student at ETH, you have the right to submit a written progress report at any time of your dissertation, and your supervisor is formally obliged to comment on it (“Doktoratsverordnung”, Art. 14). Of course this is really the last thing you should try, since it is not the most congenial method. Personal approaches are usually quite sufficient.

CORRECTIONS ON YOUR DRAFT ARE NOT HANDED BACK

The draft of the dissertation usually requires laborious proof-reading by the supervisor. If this process takes a long time, do not openly complain. Rather, try to motivate her/him (e.g., by indicating that competitor is liable to publish soon; or that you are approaching deadlines such as meetings abroad; or that you will soon no longer be available because you are starting a new job).

TOTAL DISAGREEMENT BETWEEN YOU AND YOUR SUPERVISOR

Discuss the problem first with another professor in your department in whom you can trust. Close colleagues may be more easily accepted by your supervisor to mediate the dissent.

Talk to the Head of your Department. At ETH, they have the duty of mediating between Ph.D. students and their supervisors (“Doktoratsverordnung”, Art. 16).

If the going gets rough, find a solution together with the Prorector for Doctoral Students. Consider this to be the penultimate measure. If the mediation of the Head of the Department fails, the Rector has the power to decide on the matter (“Doktoratsverordnung”, Art. 16).

SUPERVISION OF YOUR PH.D. PROJECT CANNOT BE CONTINUED

The head of the Department is responsible for finding possibilities of how the Ph.D. project can be continued (“Doktoratsverordnung”, Art. 16).

AUTHORSHIP OF A PAPER IS UNCLEAR

Discuss authorship on a paper before the writing begins. Ask about the rules of authorship in the group. Usually, contribution of data entails authorship. Often, the ranking of the authors is a point of severe disagreement. There are mutually satisfying solutions to this, such as additional indices (“both authors contributed equally

to this work...”). Apart from the question of being first author, once you add a colleague to the list of authors, she/he might be willing to include your work in a forthcoming publication – and make you co-author. Such an attitude considerably fosters team spirit in a group.

MOBBING: YOUR GROUP IGNORES OR RIDICULES YOU

Contact the Personnel Department and find out who is responsible for the department to which your research institute belongs (“Personalchef/in”).

Utilize the Psychological Counselling Service, whose services are free.

(SEXUAL) HARASSMENT

Unwanted sexual advances, requests for sexual favours and other visual, verbal or physical conduct of a sexual nature are classified as Sexual Harassment when

- it is implicitly or explicitly suggested that submission or rejection has consequences in the professional field.
- the conduct interferes with the work performance by creating an uncomfortable work atmosphere.

Considering the multi-national body of staff at ETH, various misunderstandings may occur as to what is considered reasonable behaviour. In any case, use clear words both orally and in writing when you disagree with the behaviour of others towards you. Do not expect hints alone to be understood.

Contact:

- The Office of Equal Opportunities for Women and Men at ETH. Here you will get support and advice on how to deal with such situations.
- Nottelefon und Beratungsstelle für Frauen – gegen sexuelle Gewalt. Here, a group of female psychologists gives psychological advice, legal counselling, information on discussion groups and self-defence courses, etc.

→ Badenerstrasse 134, 8036 Zürich
Tel 01 291 46 46

- Mannebüro Züri. Here men can get help in crises and further information on discussion groups, etc.

→ Röntgenstrasse 4, 8005 Zurich
Tel 01 271 00 88

- A good book on the topic is “Peinlich berührt – sexuelle Belästigung von Frauen an Hochschulen” by Hadmond Bussmann & Katrin Lange (Eds.) 1996. It describes general aspects about sexual harassment and cases of sexual harassment at universities in Germany. The book is available at the Office of Equal Opportunities for Women and Men at ETH.

Furthermore, and potentially very helpful, ask people for advice, even if you yourself are not the one being harassed.

STRESS KEEPS YOU FROM SLEEPING

Find the right balance between professional and private life. Involve yourself in social activities, leisure, do some sports. Distract your mind. Do not forget – it happens to everybody at some stage of her/his Ph.D. work and it will pass.

If not, contact the Psychological Counselling Service.

WORKLOAD IS TOO HIGH

Try to avoid this by making a time schedule before starting a new project and try to plan for hiring a student-assistant (“Hilfsassistent”) right from the start.

Talk to your supervisor or use the group meeting for crying “help”... but never without a suggestion on how to solve the problem! Request a diploma student and delegate a small part of your project to her/him, acting as her/his supervisor.

EQUIPMENT GETS DAMAGED

It happens to everyone. Tell the others you did it. Approach the person responsible for the piece of equipment damaged. They can advise you on how to get the machine repaired or replaced. Usually,

ETH covers the expenses. There is, for example, a special credit for repair costs of equipment.

COMPUTER BREAKS DOWN

Consult the computer service personnel (“InformatikbetreuerIn”) in your group.

ETH has several computer services specialised in repairing different operating systems. Look up the phone numbers in the ETH phone book under Informatikdienste, Computerservice. ETH provides a hotline for software problems:

→ **Informatikdienste, Anwenderunterstützung**
Tel 01 632 21 22

PREGNANCY

For information about maternity leave etc., contact the Office for doctoral students and Office of Equal Opportunities for Women and Men at ETH.

DAY NURSERY

As the waiting lists at the two ETH day nursery centres are rather long (KIKRI Hönggerberg and KIKRI Zentrum, the latter one taking children from the age of two years only), it is a good idea to arrange for child care as early as possible, and preferably during pregnancy.

As of January 1998, ETH is a member of Childcare Service Zurich CSZ, which can be consulted free for advice about other day nursery possibilities, such as local day nursery centres, Tagesmütter, or professional nannies. Contact:

→ **Childcare Service Zurich CSZ**
Rennweg 23, 8023 Zürich
Tel 01 212 55 44
Fax 01 212 24 45

Also check the information on the web-site of the Office of Equal Opportunities for Men and Women at ETH.

EMPLOYMENT RUNS OUT

You will be notified four months prior to the termination of your contract. Often, Ph.D. students are employed on annual contracts which are routinely renewed. Unfortunately, professors are sometimes rather forgetful about renewals.

Try to avoid this by reminding your supervisor in good time about your contract. If, especially at the end of your dissertation, when the grant period is ending, a problem arises with renewal – ask if she/he wants you to start looking for an additional job, etc. Do not rely on vague promises but obtain a clear statement on how to proceed in the remaining time until your contract ends. Make suggestions for solutions.

There are scholarships for doctoral students available; your supervisor should write you a letter of reference (for Swiss and foreigners with a Swiss residence permit). Contact Stipendiendienst des Rektorats, HG F 12, Tel 01 632 20 40 for further information.

If you are no longer receiving payment (e.g., funding runs out before you can finish your dissertation, you do not find a job immediately after finishing, you want to enjoy a long holiday after finishing your dissertation) you should make arrangements for your insurances. With a salary, your contributions to the Professional Accident Insurance (“Berufsunfallversicherung”) and to the Non-professional Accident Insurance (“Nichtberufsunfallversicherung”, NBUV) are paid automatically, without a salary they are not. Without a salary, you will no longer have a legal position (“Anstellung”) at ETH, i.e., you will not need to have professional accident insurance. However, you need to have non-professional accident insurance (see next paragraph). For questions concerning insurances consult your contact person or “Personalchef/in” in the Personnel Department responsible for the department to which your research institute belongs.

Non-professional accident insurance (“Abredeversicherung”) You should have Non-professional Accident Insurance (“Nichtberufsunfallversicherung”). You can have this included with your private health insurance (“Krankenkasse”), but this is not recommended. It is better to arrange for the insurance through the Swiss National Accident Insurance Fund (“Schweizerische Unfallversicherungsanstalt”, SUVA) with the Abredeversicherung. With the “Abredeversicherung”, you can prolong the SUVA-insurance you had at ETH with the same benefits. It costs CHF 25 a month and the insurance

can be extended for a maximum of 6 months. For the first 30 days after your last paid working day you are still insured by ETH, so you can start the “Abreversicherung” after these 30 days (and save the fee for this time). After the maximum duration of six months, you have to include your non-professional accident insurance with your private health insurance (“Krankenkasse”). You can get the forms for the non-professional accident insurance and further information from:

....> **SUVA, Schweizerische Unfallversicherungsanstalt**
Dreikönigstrasse 7, 8022 Zürich
Tel 01 205 91 11
Fax 01 205 93 38

Allocation of workplace (“Zuteilung eines Arbeitsplatzes”) With the “Allocation of workplace” form, you get the permission to use the infrastructure of ETH, i.e., office and laboratory, in order to finish your dissertation. The form has to be signed by your supervisor.

Federal Pension Fund (“Pensionskasse des Bundes”, PKB, Publica) and AHV If you no longer receive a salary, the contributions to the Federal Pension Fund and to AHV (“Alters- und Hinterbliebenen-Versicherung”) will no longer be paid. For short periods it is recommended not to pay contributions to the PKB. For the AHV it is important that the minimum contribution of CHF 390 a year is paid (the employee’s and the employer’s parts together). In general this

is not a problem, because this contribution corresponds to a salary of approx. CHF 3850 a year. But if the contribution is less than CHF 390, the difference must be paid within five years, otherwise your AHV-pension will be reduced.

....> **PKB, Pensionskasse des Bundes**
Bundesgasse 32, 3003 Bern
Tel 031 322 64 11
Fax 031 322 47 01

....> **AHV, Eidgenössische Ausgleichskasse**
Monbijoustrasse 5, 3003 Bern
Tel 031 322 64 25
Fax 031 322 88 71

PH. D. MOTIVATIONS <<During my diploma thesis in the graphics lab at ETH I was asked to participate in an interdisciplinary project and to make a Ph.D. dissertation therein. The aim of the project was so interesting and challenging that I almost immediately accepted the offer. I have been working now for two years on this project and on my Ph.D. dissertation and still enjoy the talks with my colleagues from the other participating departments. I have not only learned and practiced technical but also social and communication skills both in teaching and research. And the best part is that I still go to work with pleasure every morning. >> Stephan Würmlin, Institute of

Scientific Computing

Unemployment Insurance (“Arbeitslosenversicherung”, ALV) If you cannot find a job, it is possible to get unemployment benefits. If you live in the same place (town or city district) where your residence documents are kept, you should contact the respective municipal office (“Kreisbüro” in Zurich). However, if you have been living as an official weekday resident (“WochenaufenthalterIn”), the place to contact is the office where you have registered each year as “WochenaufenthalterIn”. The basis for your unemployment benefits is the gross salary (“Bruttolohn”) of the previous 12 working months (time when you did not earn money, e.g., unpaid vacations, is not considered), irrespective of your degree of employment (e.g., a 60% salary as a Ph.D. student will not be converted into the salary of 100% employment). For general information contact:

....> **KIGA, Kantonales Amt für Industrie, Gewerbe und Arbeit**
Neumühlequai 10, 8001 Zürich
Tel 01 259 11 11
Fax 01 259 51 04

TRANSPORT VEHICLE

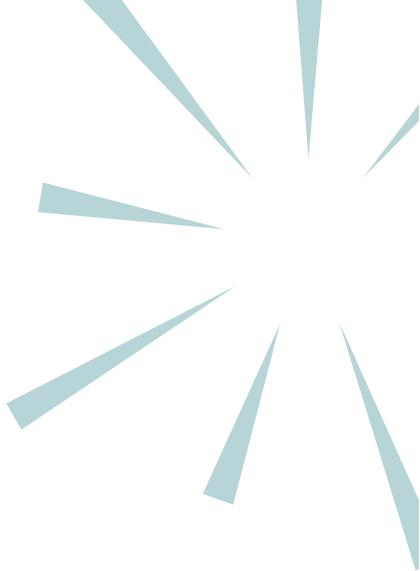
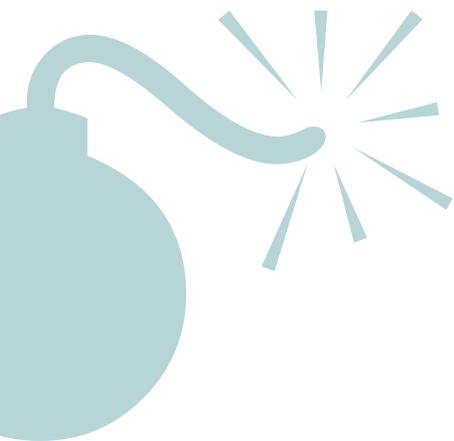
Cars can be rented via ETH. Before using an ETH car or even a private car for your work, find out who is insured if she/he rides with you and how you are insured in case of an accident. You have to register your car to be used for business trips in order for the insurance to cover you, receive a refund, etc. You should get this information by asking “older” Ph.D. students in your group or the group’s secretary.

Interesting options for private car renting can be found with Europcar, which provides special offers for ETH people and with Mobility.

....> <http://www.mobility.ch>

CAR ACCIDENT

Fill in a European Accident Protocol (“Europäisches Unfallprotokoll”) and have all the people involved in the accident sign it. Federal insurance covers all business travel in connection with ETH work. If in doubt, do not hesitate to call the local police and have them write an official report.



SWITZERLAND

A large white cross graphic is centered on a teal background. A horizontal dotted line passes through the center of the cross. The word "SWITZERLAND" is written in a teal, italicized serif font across the top arm of the cross.

GEOGRAPHY

Switzerland is located in the middle of Western Europe and is surrounded clockwise by Germany, Austria, Liechtenstein, Italy and France. Switzerland is 41285 km² large (or small). It is 348 km from the east to the west and 220 km from the north to the south. By comparison, it is about twice as big as the US-State of Massachusetts or 1/3 the size of the Asian country of Bangladesh. In spite of its small dimensions it has very diverse landscapes which could be separated into three main parts. The flat or hilly, heavily populated Midland-Belt (“Mittelland”) with the cities Geneva, Lausanne, Berne, Basel, Lucerne, Zurich, Winterthur and St. Gallen. The Mountain-Belt situated in the Alps to the south of the Midland-Belt. The mountain part is less populated, but hosts some famous natural sites (the Mount Matterhorn is the most well known). More or less at the border of these two parts are some very nice lakes such as Lake Geneva, Neuenburgersee, Thunersee, Brienersee, Vierwaldstättersee. These lakes and some other typical landscape features are a leftover of the last ice age. The third area is the Jura mountains in the north-west of Switzerland along the boarder to France.



POPULATION AND LANGUAGES

Switzerland is populated by a bit more than 7 million people which speak four different languages: German, French, Italian and Romansch. All four languages are official languages, but do not expect Swiss people to speak all of them. Most people have at least basic knowledge of a second one of the four languages. In addition to these languages, the 20% of the population in Switzerland which is foreign speaks almost every language you can think of. French is spoken in the western part of the country (e.g. in Geneva, Lausanne, Neuchâtel) by more than a million people. Italian is spoken in the southern part (Ticino/Tessin with its best known cities Lugano and Locarno) by about 400000 native speakers. Romansch, a very special language directly derived from the Romans, is spoken in the very eastern part by about 70000 people. The rest and the vast majority of the Swiss population speaks the so called Swiss German, which is something between an individual language and a German dialect. To make matters even worse, there are huge differences between the various Swiss German dialects. But do not be disappointed by wasted efforts learning standard German: the official language is standard German, and Swiss people are always willing and able to talk in standard German with you. Additionally, virtually all courses at ETH and written material are in standard German. If you have no knowledge of any German at your arrival, learning at least some standard German in one of ETH's German courses or in a private German courses will make your life a lot easier. Understanding Swiss German might be quite difficult in the beginning but it is worth trying; it may be a big help specifically in non work related and non academic things, though with a fair command of the German language, comprehension is only a question of a bit of effort. Speaking the dialect is an entirely different question and not really necessary. Swiss people do not expect you to speak Swiss German and will always hear that you are not a native speaker (unless you are really talented).

The four language areas differ not only in language, but also in mentality and culture. This led and still leads to problems in political affairs. In 1992 for example, when the Swiss voted on joining the EWR (first step towards joining the European Union), the French speaking areas were in favor of it, but the German speaking areas voted against entry into the EWR. As the German speaking population is much larger, the proposition was rejected. In such matters,

French speaking people feel dominated by the Swiss-Germans. And of course, the relationship between these two populations are not without tensions. Even in daily life, you can easily see differences between the Swiss-Germans, the French Swiss (the so called “Romands” or “die Welschen”), and the Italian Swiss. You can see this in dining customs such as lunch and dinner times (which are influenced in the “Romandie” by France and in the Ticino by Italy, respectively), and simply in the behavior of the people.

POLITICS

Switzerland has had its current democratic system with few changes since 1848. From this, one might already guess that Swiss people must be very conservative, which they sometimes really are. Some words about this system, which is quite unique: Small Switzerland is a federation of 26 even smaller states, provinces or “Kantone” as they are called here. These “Kantone” have various individual rights, as well as their own government and constitution. In terms of population, Zurich is the biggest “Kanton” with more than one million inhabitants. Appenzell Innerrhoden is the smallest one with about 15000 inhabitants.

The capital of Switzerland is Berne. The parliament consists of two chambers. The bigger one, the “Nationalrat”, consists of 200 MPs elected in the “Kantone”. The number of MPs a “Kanton” may elect for the “Nationalrat” is proportional to the population of the canton. The smaller chamber, the “Ständerat”, consists of two MPs for each canton. The government consists of seven Ministers or “Bundesräte” as they are called here, which are elected by the parliament every year. There is no prime-minister or president. The seven “Bundesräte” are all equal. Still, one of them is the so-called “Bundespräsident” for one year and is responsible for all the representative jobs (like welcoming presidents of other countries) during this time. After one year, one of the other Bundesräte takes this position.

Another special aspect of government is the so-called “direct democracy”. This means that political decisions are made directly by the Swiss people by means of voting on something. Some examples of decisions that are to be made or have been made are whether Switzerland should join the U.N. or not and whether a new railway tunnel through the alps should be built or not. “Direct

democracy” is not only used on the national level, but also on the Kanton and even city or village level to decide about matters of less national importance (like new schools in Zurich).

These explanations may help in understanding something about Swiss Politics for those interested. Both Switzerland and the “Kantone” have the power to make decisions. Consider, for example, the University of Zurich and ETH in the “little big city” of Zurich. The University is owned and run by the “Kanton” Zurich while ETH is one of two universities owned and run directly by the Swiss government (the other one is the EPF in Lausanne).

PEOPLE

As mentioned earlier, Swiss people are sometimes very conservative in political questions, as can be seen by the fact that Switzerland is currently not member of the European Union and has joined the U.N. as late as in 2002. A majority of Switzerland’s population wants to retain complete power in making political decisions without external interference. That is perhaps the most dominant reason for the fear of joining the EU. Beside this, many Swiss are also convinced that things here are simply better than anywhere else.

Since Switzerland is a small country, it has depended on the rest of the world for a long time. From this point of view, it has been internationally oriented for much longer than other countries. That is also part of the reason why big international enterprises like Nestlé and ABB developed in Switzerland. There is the contradictory situation that many Swiss firms compete in the global market successfully, while a substantial part of the Swiss still prefer to be separated from the rest of the world as much as possible. What does this mean on a personal level for a foreigner coming to Switzerland now? Hard to say, because there are 7 million inhabitants here and about 7 million different points of view about the country and the rest of the world. But in general, it cannot be too difficult to come here and live here as foreigner, considering that about 20% of the population are not Swiss. Due to this diversity, rules about what is acceptable and what not are somewhat vague and often flexible. Nevertheless and as mentioned earlier, the Swiss can be quite conservative and, as in any society, if you want to fit in, be aware of your surroundings and respect them.

Let's start with an easy bit about Swiss culture – eating and food. Traditionally, the Swiss take some kind of breakfast at home, like coffee, milk, bread, butter and cereals. If they are employed, they go to work afterwards and take their first 15-minute break, which they call “Znüni”, sometime between 9 and 10 a.m. when they get another coffee, a “Gipfeli” (croissant) or some biscuits. Lunch-break

PH. D. REALITIES: «After completing my diploma degree in chemistry at ETH Zurich, I decided to also do my Ph.D. here. My main motivation was to work independently on a topic of current research. In April 1998, I started at the Laboratory of Organic Chemistry and now, in January 2002, I am finishing up my work. My position was a so-called 50% position and it was financed from ETH directly.

Besides working on my research topic, I have been teaching students in lab courses, I supervised a diploma student doing his thesis and worked as a lecture assistant.

To me, my work at ETH never felt like a 50% part-time job but rather like a 150% position. The workload can be quite heavy at times and sometimes the research can be very frustrating because nothing works. Especially during such periods it is very important to balance the job with other activities. I personally enjoyed sports, literature and social events very much and it helped me going through the difficult times of my Ph.D. work.

Therefore my recommendation to all Ph.D. students is not to forget other activities besides the job, which often is very rewarding but at times frustrating. There is life outside of ETH! »

» Richard

Quaderer, Laboratory of Organic Chemistry

normally goes from 12 a.m. to 1 p.m. and this is the time for the main meal of the day. “Znüni” and lunch-break are normally good opportunities to talk with people about non work-related things. In the evening people normally go home and have dinner there.

Food – you can get almost everything here in restaurants or in the shops to cook at home. For special needs, there are a lot of specialty shops run by people of different ethnicities. What you get in a Swiss restaurants (e.g. the canteens of ETH) is a bit of everything (Italy, Germany, France, Asia) adjusted to the Swiss palate. Prominent Swiss specialties are Züri-Gschneztlets, Röstli, Raclette and Cheese Fondue.

In Zurich and various other towns there are many museums, theatres and operas. International pop- and rock-stars normally stop off in Zurich, Basel or Geneva on their tours through Europe. Worth mentioning are the open-air festivals during summer. There are big festivals in Nyon (Paléo Festival), Bern (Gurten-Festival), Winterthur (Out in the green) and St. Gallen (Openair St. Gallen) every sum-

mer. Normally they last several days and you can camp out there. There are also smaller and less mainstream orientated festivals all over Switzerland. If you are interested in Swiss folk-culture (like Yodeling), you have to leave the big towns and look for these festivals in the countryside.

SPORTS

Sports are very popular in Switzerland. Football (or soccer), ice hockey and skiing are the most popular spectator sports. There are stadiums and halls where you can see live sporting events in Zurich. For being more than a spectator, there are also many possibilities here. For starting something new or something you are already experienced in, the ASVZ (sports-union of ETH and the University of Zurich – see also the chapter “Organizations and Clubs within ETH” – and <http://www.asvz.ch>) is surely a good organization for all ETH-members and their partners to begin with. Additionally, Switzerland is perfect for fun and adventures on skis, snowboards, cross-country skis, hiking boots, racing and mountain-bikes... The ‘hills’ surrounding Zurich are a perfect place for practice and exercise. The real mountains are not far either. There is actually no excuse for leaving the country after some years without at least having tried hiking! Hiking is very popular and you can hardly get lost because there are many people doing the same on a sunny day. To see a sight in the mountains by means of cable car is not to be compared with reaching the same point after a long hike – try it!

SIGHTS

There is more than the Matterhorn and Kappelbrücke in Lucerne to see here. If you are not on holiday here, you should have some time to find out what you like and what not. It might be of interest to visit less famous places. In addition to the bigger towns like Geneva, Lausanne, Berne, Lucerne and Basel there are also some smaller towns like Neuchâtel, La Chaux-de-Fonds, Fribourg, Interlaken, Baden, Brugg, Rapperswil, Schaffhausen, St. Gallen, Chur, Locarno and Lugano which have their own charm and are definitely worth visiting. Many of them still have their old city centers which are home to interesting churches and museums. The many natural

sites you can see here are very interesting as well. Many of them can already be seen traveling by train. For example by traveling from Zurich to Chur by train, you pass two lakes, “Zürichsee” and “Walensee”, and you might go back by boat on Zürichsee from Rapperswil to Zurich on your way home. The lakes in general are very beautiful and you can normally travel on them by boat, e.g. by steamboat on the “Vierwaldstättersee” from Lucerne. The various mountains you can climb by cable car or small trains (if you do not want to walk) to enjoy the view are also very nice. Some mountains which can be visited on day trips from Zurich are: Rigi, Pilatus and Säntis, or to start with, even Uetliberg right here in Zurich.

TRANSPORT

By air Zurich has an international airport (Zurich-Kloten), providing access to and from almost everywhere. The airport is about 15 km from the city-center and easily accessible by public transport or car. There are also international flights from the airports of Geneva, Berne and Basel as well.

By car Getting around in Switzerland by car is no problem. There are highways to all parts of the country – but like everything here, it has its price. You need to buy a sticker for your front window before driving on highways – there are hefty fees if you forget to put it on your front window.

By train, bus and tramway By far, the cheapest way to travel (though ‘cheapest’ does not mean cheap) is to travel by public transport.

Switzerland has one of the best public transport systems in the world. You can reach almost every little village by train or bus. Switzerland is also well connected to the other European railway lines.

Using public transport is expensive – it becomes cheaper if you know some tricks – the most important trick in cutting transport costs is the “Halbtaxabonnement”, which is provided free for all ETH-employees. As the name indicates, the credit-card like “Halbtaxabonnement” allows you to pay half the price for almost all public transport tickets. It is valid in all trains, trams, most buses, boats and many cable cars (always ask about it). If you are not asked about it upon your arrival at ETH ask for it and you will get a voucher which you can exchange for a “Halbtaxabonnement” at

any railway station. Anyone can also buy a “Halbtaxabonnement” at stations currently for CHF 150 for a year or CHF 222 for two years. Some of the other tricks you will have to find out yourself, but they are not as important as this one. Normally trains run regularly every hour to various towns and are normally quite punctual. For information about the transportation system in Zurich, please see the next chapter.

PRICES IN SWITZERLAND

Briefly – prices here are high for almost everything compared to almost every other country. Take it or leave it, but try not to be one of those people who always complain about the high prices here. When you think about it, not only do you (if you are not a low-salary Ph.D. student in certain ETH-Departments) earn more than you would earn in another country, but so do workers in shops and all other places. The cost of living is high, but so is the standard, and thus the wages.





ZURICH

SOME HISTORY ABOUT ZURICH

- 15. B.C. “Turicum”, Roman customs post on the Lindenhof.
- Fortified and described as a town since 10th century A.D.
- 1218, free imperial city, part of the medieval German empire.
- 1336, Rudolf Brun’s Guild Constitution.
- Founding of the Swiss Confederation in 1351. Increasing importance, especially with the mayoralty of Hans Waldmann (end of 15th century).
- 1523, beginning of Reformation by Huldrych Zwingli. The city becomes protestant and the Swiss confederation goes through a period of religious war between protestant and catholic cantons.
- 1848, after a very short and relatively bloodless civil war Switzerland as we know it is founded and a constitution is given providing the legal basis for the beginning of the industrialization of the country.
- 19th century, during the lifetime of Alfred Escher (died 1882), Zurich becomes Switzerland’s leading commercial and economic center (machine and textile industries, banking, insurance and tourism).



CITY SETTING

1342 ft (409 m) above sea level, it covers an area of 35,5 square miles (92 km²) and has 361000 inhabitants, which makes it Switzerland's largest city. The average temperature in January is between -10°C and +5°C and between +16°C and +30°C in July.

ORIENTATION

Zurich is at the northern end of Lake Zurich ("Zürichsee"), with the city center split by the Limmat River. Like many Swiss cities, it is compact and conveniently laid out. The main train station ("Hauptbahnhof") is on the west (or left) bank of the river, close to the old city center.

PUBLIC TRANSPORT

The "Verkehrsbetriebe Zürich" (VBZ, Zurich public transport system) works in tandem with the "Zürcher Verkehrsverbund" (ZVV – greater Zurich transport system). Both systems are equipped with a modern tram and bus network. Daily services are in operation from 5.30 a.m. to midnight, and, at peak hour, a connection is possible every 6 minutes. There are additional busses ("Nachtbus") available after midnight on Friday and Saturday evenings. Within the tariff zone and the time allotted (designated on each ticket), use of any of the public modes of transport is allowed. Detours, round-trips, stop-overs and transfers to another line and type of vehicle is possible.

Day Tickets (CHF 7.20, valid for a 24 hour period) are available at any ticket machine and are recommended particularly for tourists because they allow an unrestricted number of trips. 9-o'clock-passes provide free access to all means of public transport throughout the canton of Zurich.

Tickets for numerous transport lines operate on a self-service basis. The tickets (one-day tickets, single fares – for longer or shorter distances and round-trip fares, as well as for all zones within the network) must be purchased before the trip commences and can be obtained at any tram or bus stop from the automatic ticket machine.

Once in the tram or bus, tickets cannot be purchased. Riding without a ticket is punishable by a fine of CHF 60. The Public Transportation Information Booths are located at most major transfer points. Schedules and prospectuses are available without charge.

Best are monthly/annual passes, which can be purchased at the counters and cost about CHF 70 per month or around CHF 600 per year.

It may be a good idea to join Mobility car sharing. They provide cars all over Zurich. After paying an annual fee you can rent several types of cars at reasonable rates. This way you can enjoy the advantages of using a car without such hassles as taxes, parking problems, etc.

PARKING IN ZURICH

Parking in Zurich can be an adventure on its own with limited blue (for local parking or parking meters only) and white zones (very rare, here everybody can park freely) and with lots of regulations (and hefty fees for infractions). If you really want to own a car it is a good idea to rent some parking space on your own or to get the “Anwohnerparkausweis” which entitles you to park in the blue zones of your neighborhood. This costs about CHF 240 per year and lets you park in and around your residential zone.

In case you have guests who travel by car, things will be somewhat less complicated if you buy a “Tagesparkausweis” (CHF 15 per day). This entitles the car be parked in any blue zone in the city of Zurich for one day.

Both the “Anwohnerparkausweis” and the “Tagesparkausweis” are available at the city police.

→ <http://www.stadt-zuerich.ch>

CULTURE AND SIGHTS IN ZURICH

Museum of Fine Arts The Museum of Fine Arts (“Kunsthhaus”) is one of the most important of Zurich’s museums. The large permanent collection ranges from 15th-century religious art to the various schools of modern art. The work of big names such as Dali, Arp, Man Ray, Hockney, Bacon, Cézanne, Renoir, Manet, Monet and Gauguin is on display. There is a fair sprinkling of Picassos, a whole

room devoted to Marc Chagall and the largest Edvard Munch collection outside of Scandinavia.

Swiss National Museum Housed in a pseudo-castle built in 1898, the Swiss National Museum (“Landesmuseum”) gives the ultimate rundown on Swiss life and times from the prehistoric to the present. It exhibits a good selection of church art, weapons, coins, room interiors, clothing and utensils. In the basement there is an interesting section on books from the Middle Ages (you will discover that the color purple was extracted from snails), including some fine facsimiles of 14th-century books which you can leaf through.

Fraumünster Church Dating from the 13th century, the Fraumünster Church is noted for the distinctive stained-glass windows in its choir section created by Marc Chagall. The building itself dates from the 13th century. It is closed at lunchtime.

Dolder Zoo Located in Zürichberg, Dolder Zoo is the largest and the most important zoo in Switzerland. There are 350 animal species from all over the world; in all about 2500 animals. Two of the most famous residents are the Asian elephant Ceyla-Himali and her son, whose birth in June 2000 was broadcast live on the Internet. The pleasant zoo backs onto the Zürichberg woods, an ideal place for walks away from the noise of the city.

Uetliberg One of the best short excursions out of Zurich starts off with the train to Uetliberg. From here, there is a panoramic two-hour Planetary Path running along the mountain ridge overlooking the lake to Felsenegg. En route you pass models of the planets in the solar system: these and the distances between them are on a scale of one to 1000 million.

FESTIVALS AND LOCAL CUSTOMS

Zürcher Sechseläuten Sechseläuten – Zurich’s traditional spring festival – begins on a Sunday with a big parade featuring more than 2000 children. The actual festival takes place on a Monday. Guild members have an early start with a lunch at their respective guild-halls, and follow it with the big Parade of the Guilds. Thousands of spectators line the streets along the parade route through the Old City. The highlight is Burning the Böögg, an effigy of winter, on the Sechseläuten field near the Zurich Opera. The Böögg woodpile is lit when the bells of St. Peter sound at 6 o’clock. The Böögg turning to ashes signals final departure of winter.

Open-air cinema Every year, the legendary lakeside cinema at the Zürichhorn shows 30 spectacular and gripping films on its 300 m² screen. Good food and drink, seeing and being seen are just as inseparable from the cinema experience beneath the Zurich night sky, as Stan Laurel and Oliver Hardy, or a stirred but not shaken Martini and James Bond.

...→ <http://www.orangecinema.ch>

Street Parade Thirty colorfully decorated floats, noisy house and techno music and hundreds of thousands of dancers have helped this demonstration for love, peace, freedom, generosity and tolerance to evolve from underground event to major public spectacle with 750000 participants. The parade route wends its way along Zurich's lake basin via Bürkliplatz and Bellevue, ends at Hornbachstrasse.

More than 40 parties before and after the parade, throughout the weekend, will once again make Zurich Europe's party Mecca.

...→ <http://www.street-parade.ch>

Knabenschiessen One of Zurich's oldest festivals is the prize-shooting on the Albigütli for 12 to 17 year old boys and girls in September. A marksman king or queen is chosen every year. For the public there is a colorful 3 day market, the largest of its kind in Switzerland.

...→ <http://www.knabenschiessen.ch>

The Zurich Carnival Should you run into odd-looking characters, at times to the accompaniment of terribly dissonant, out-of-tune music, fear not. What you encountered, perhaps unwittingly, are carnival participants on their way to a particular event. Zurich celebrates its annual carnival in February or March. The many "Guggen" bands that parade up and down the city streets, to the strains of their God-awful musical offerings, are a major attraction for young and old. The climax, the main carnival parade, takes place on a Sunday.

SHOPPING IN ZÜRICH

Zurich's pedestrian-friendly main shopping area is located in the center of the city. Bahnhofstrasse – one of Europe's most beauti-

ful shopping streets – is considered a must with its elegant fashion emporiums, department stores, retailers selling high-quality shoes, furs, accessories, porcelain, jewelry, watches and more, not to mention its banks and pastry shops. In the Old City to the left of the River Limmat, on Rennweg, Strehlgasse, Augustinergasse, St. Peterhofstatt and Münsterhof, there are many boutiques and antique dealers. Limmatquai on the right-hand side of the river features guildhalls, boutiques and romantic lanes and alleyways. The Löwenstrasse area and adjacent underground Bahnhofspassage have become a favorite shopping area as well. Langstrasse seems downright Mediterranean, and offers every heart's desire at a more moderate cost.

When it comes to fashion, Zurich is always up to date. All the big names have a presence in Zurich and there is a number of local fashion labels. Seekers of rarities, curios and nostalgic items can also wax enthusiastic about Zurich: the Saturday flea-market at the Bürkliplatz (May – October, 6 a.m. – 3.30 p.m.) is on a par with its counterparts in Paris and London, as is the curio market at the Rosenhof, which on Thursdays (10 a.m. – 8 p.m.) and Saturdays (10 a.m. – 4 p.m.) becomes a veritable cornucopia of manufactured, hand-crafted and chance artifacts.

Numerous antique shops in the old town on the right and left banks of the Limmat invite passersby to peruse old books and magazines. Cheeky boutiques offer outrageous and far-out fashions while accessories are on sale in countless little shops. Last but not least, Zurich is home to Europe's only shop specializing in the middle ages ("Médiéval", Spiegelgasse 29).

Shopping hours vary greatly as shops tend to adjust the hours to their particular clientele. By law, shops may not open on Sundays or on public holidays. Typical opening hours are from 8 or 9 a.m. to 6.30 or 8 p.m., except on Saturdays where they close at around 4 p.m. Special laws allow shops within the confines of a train station to remain open seven days a week. The same applies to shops attached to gas stations.

Department Stores Zurich's department stores have gone through considerable changes in recent years and have mostly departed from the original department store concept. Globus is a somewhat pricey and design-oriented store with a superb delicatessen in the basement and a very design-oriented houseware department. Jelmoli has been transformed from a traditional department store to a shop-in-shop concept where many labels have their own shop. Manor, Coop St. Annahof and EPA are lower to medium priced

department stores of the more traditional type. In recent years, Manor has become a very aggressive competitor in the field of consumer electronics, including computers and telephones.

Supermarkets Migros and Coop are the largest national chains of supermarkets with branches all over the greater Zurich area, and highly competitive prices. Coop tends to sell more national and international brands, while Migros carries more products displaying their own brand name. Migros is an unusual retailer in the sense that it is run in the form of a cooperative along non-profit lines. It allocates one percent of sales to cultural matters. Migros markets come in three different sizes, one “M” being the typical supermarket with a very limited non-food selection. “MM” denotes a supermarket with an extended non-food selection whereas “MMM” operates like a department store.

Specialty Food Markets and Health Food Stores Ethnic and other food specialties can be found throughout Zurich. Department stores such as Globus and Jelmoli carry an astounding variety of specialties. Oggenfuss (some German and some English) in Küssnacht (10 minutes from the Zurich city center) is favored by the local expat-community because they carry many international items and some of the staff speaks English.

Open Air Food Markets There are two food and flower markets operating on Tuesdays and Fridays from 6 a.m. to 11 a.m. at Bürkliplatz and at Helvetiaplatz. They are a must for discerning food shoppers. Every Wednesday there is the “specialty market” at the main station.

Books The English Bookshop stocks a large selection of British and American titles. The Librairie Payot is specialized in English and French books. Interlingua (some English and some German) is the leading bookshop for language course books and offers books, tapes and instructional material in any conceivable language. The Travel Book Shop carries a wide variety of maps, German and English travel guides and literature about different countries and ethnic groups. Scalo Books offers a huge variety of international art books and catalogues from shows all over the world.

Newspapers English newspapers such as The International Herald Tribune, The Wall Street Journal and the Financial Times and magazines such as the Economist, Time and Vogue are available at kiosks throughout the city. Some major kiosks such as the ones at Train Stations and at the Airport carry very extensive selections of foreign newspapers and magazines. Zurich’s most popular newspaper (in terms of circulation) is the “Tages Anzeiger” (TA). The

“Neue Zürcher Zeitung” (NZZ) (some English and some German) has a smaller circulation but is one of the leading German language newspapers in the world and is widely recognized for its extremely high editorial standards. In fact, it is considered compulsory reading for people in business, government and politics. NZZ offers a free English section on its website listing such items like “NZZ Editorials on World Affairs”, “NZZ Background on World Affairs” and “Swiss Week in Review”.

Furniture While there is a great variety of furniture stores it is important to note that finer furniture is normally not carried in stock and often requires a delivery time of between two to three months. Stores like IKEA and Interio operate on a cash and carry basis but even they require considerable delivery time on larger items. Cheap second hand furniture can be obtained at a “Brockenhaus”. There is a number of them in Zurich and they are pretty popular among Ph.D. students for getting basic furniture and other living and cooking equipment. Just ask your colleagues about good “Brockenhäuser” or do an internet search.

RESTAURANTS

Eating out is very popular in Zurich and offers a wide array of restaurants to suit everyone’s taste. The range includes bustling sidewalk cafes in summer, old world beer halls, comfortable family restaurants, trendy eating establishments and elegant haute cuisine locations. It is advisable to make a reservation in the trendy and more expensive restaurants in advance. In cafes, tea rooms and less expensive restaurants, table sharing is common. If your table has vacant seats, do not be shocked if other guests ask to use them. The price you see on the menu always includes the service fee which means you are not obliged to pay tips like you are in the US. If you are especially pleased with the service, you might round up the bill leaving something extra. In spite of the fact that take-away and food delivery services have not been common until recently, Asian take-away and pizza delivery services are now popping up even in the smaller towns around Zurich.

Often it is a disappointment for those expats coming to Zurich who have been used to having a choice of various ethnic restaurants in their neighborhood. Although limited and often more expensive than those found at “home”, there are restaurants that take us

beyond the traditional menus of Europe. It simply is not a city where one is able to walk into different districts full of ethnic delicacies. All of that said, Zurich does have hundreds of restaurants and cafes serving all types of local and international cuisine. The “Polyguide” features a list of restaurants, pubs and night clubs.

→ <http://www.polyguide.ethz.ch>

NIGHT LIFE

Nightlife in Zurich consists of a variety of bars and dance clubs that cater to all tastes. Just ask your colleagues for “hot” places or check the local newspapers. Checking the Polyguide is also a good idea.

→ <http://www.polyguide.ethz.ch>

VITAL INFORMATION IN THE CITY OF ZURICH

Garbage Disposal Waste disposal in Zurich is very well organized and the cost of the service is based upon user frequency. It is important to follow the proper instructions, not only to ensure the success of the operation, but also to avoid being fined for incorrect waste disposal.

Collection schedules and recycling rules vary according to the community. If you live in the city of Zurich the “Zurich collection calendar” is the essential document you need. It lists the days on which the different kinds of garbage are collected. The calendar, general information and advice is available from the Disposal & Recycling Department (German only) (01 645 77 77).

Refuse that must be placed in a garbage bag (“Züri-Sack”) includes combustible waste such as packaging, plastic, wood, kitchen waste, vegetable peelings, food leftovers, etc. In Zurich you must use official gray garbage bags with a colored print. They are available in 17 liters, 35 liters, 60 liters and 110 liters sizes in all supermarkets. Household refuse is generally collected once or twice a week.

In the suburbs it is customary to use tax stickers, sold at local supermarkets, which must be placed on garbage bags before disposal. Calendars are published by each community.

In the city of Zurich the following applies (the surrounding communities have comparable arrangements):

- Bundled paper (newspapers, magazines, envelopes, letters, etc.) is collected free of charge every two weeks.
- Bundled cardboard (corrugated cardboard, no laminated packaging such as drinks and freezer packaging) is collected approximately every two months.

It is important to put the refuse out on the sidewalk or at the edge of the street (if there is no container in front of the house) before 8 a.m., the bundled paper and the bundled cardboard before 7 a.m.

- Bulky combustible waste such as furniture, carpets, wood, etc., metal objects, earthenware and rubble are collected on request (01 645 77 55) and charges apply.
- Garden waste (leaves, grass cuttings, weeds, branches, etc.) is collected weekly after subscription and charges apply (01 645 58 30).
- Clothes and shoes (only clean items in good condition) are collected for charitable purposes about every three months in special Tex-Aid bags, which you receive automatically by mail.

In addition to the above mentioned collection services, there are an abundance of public collection points for recyclable materials all over the city. They include different containers for glass (bottles, jars, etc.) and metal such as aluminum or tin cans (rinse and remove paper), kitchen foil, nails, etc.

- PET drink bottles (specially designated plastic bottles, no oil or vinegar bottles), batteries, energy saving and neon lamps, can be returned to the sales point (e.g., supermarket) for free.
- Office electronics (monitors, computers, printers, mobile telephones, etc.), electrical household appliances (refrigerators, stoves, washing machines, televisions, hair dryers, etc.) and tires can be returned to the point of sale. Suppliers are required to take them back, but will usually charge you for the service.
- Used oil (motor oil, cooking oil, etc.) has to be returned to a specified public collection point.
- Hazardous waste such as chemicals, paints, varnishes, spray cans with propellant, medicines, thermometers, etc., must be returned to the sales point (chemists, drug stores, etc.) or directly to the hazardous waste collection point.

LOST AND FOUND, POLICE

Municipal police and Zurich Public Transport, Werdmühlestrasse 10,
Tel 01 216 51 11, Mo – Fr 7.30 a.m. – 5.30 p.m.
Sat, Sun, at the main police station, Bahnhofquai 3, Tel 01 216 71 11

Concerning your personal safety it is important to note that the crime rate in Switzerland and particularly in Zurich is low compared to other cities in Europe. Especially violent crime continues to be rare. Despite its relative safety, normal precautions should be taken. For your safety it is recommended that items of value be kept in a safe deposit box. Do not leave valuable items in a car, instead put everything in the trunk. Pick pocketing and purse snatching do occur. Do not display large amounts of cash or jewelry in public. Avoid certain areas of Zurich, in which drug dealers and drug users congregate. Any loss or theft of items should be reported immediately to the local police.

MEDICAL CARE

The Emergency Center in Zurich is a 24-hour referral service with English-speaking operators and provides medical advice and house calls 24 hours a day. The phone number is 01 269 69 69
SOS-Doctors (German only) and SOS-Dentists (German only) are two private organizations in Zurich, established by a group of doctors and dentists. They provide medical and dental assistance 24 hours a day in case of an emergency.

→ SOS-Doctors: phone 01 360 44 44

→ SOS-Dentists: phone 01 262 11 11.

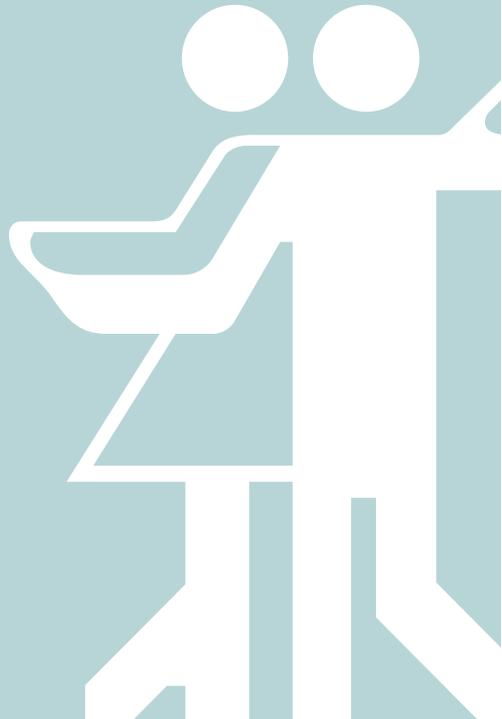
The Permanence Zurich Hauptbahnhof (main station) is the first private medical station in Zurich that provides urgent medical care on an outpatient basis without prior appointment. It is open daily from 7 a.m. to 11 p.m. The location is

→ Bahnhofplatz 15, 8001 Zürich
Tel 01 215 44 44

The Swiss Toxicological Information Center provides free medical advice in cases of poisoning and poisoning risks to anybody in Switzerland around the clock, 01 251 51 51.



ORGANIZATIONS AND CLUBS WITHIN ETH



A number of organisations exist within ETH to make life as a Ph.D. student easier, socially and culturally enlightening, or simply more enjoyable. Sport clubs and teams, orchestras, bands, choirs and bible-study groups are among the many choices that appeal to a diverse population of students. The addresses below should provide a good start, however this list is in no way complete. For more detailed listings and further information, check the semester programme, the ETH directory, the web page for ETH clubs and organisations (look on the intranet of the ETH-Homepage under the keyword “Vereine”) as well as other ETH publications. The best resource for current information are the bulletin boards located near each cafeteria, where information for activities sponsored by both official ETH organisations and external groups is regularly posted. There are some clubs common to both the University and ETH, and a lot of university activities are open to ETH students as well, so also have a look at University ads and homepages.

DIVERSE ORGANIZATIONS

AIIESEC AIIESEC is one of the largest student organisation in the world and has 50000 members across more than 83 countries and territories at more than 800 universities world-wide. AIIESEC is an international, non-political, non-profit, student-run, independent,



educational foundation. It is comprised of students and recent graduates of institutions of higher education who are interested in economics and management. AIESEC facilitates international exchange of thousands of students and recent graduates in paid traineeships or as volunteers for a non-profit organisation.

→ AIESEC Zurich

Rämistrasse 66, 8001 Zürich

Tel 01 252 36 82, Fax 01 262 55 40

<http://www.zh.aiesec.ch>

AVETH Academic Association of the Scientific Staff at ETH Zurich ("Akademische Vereinigung des Mittelbaus an der ETH Zürich")

AVETH is the association of mid-level associates at ETH. The "Mittelbau", or mid-level associates, is comprised of all doctoral students, research assistants, post docs, and all other academic employees who are not faculty. Since its founding in 1968, the activities of the association have been intended to protect and nurture the intellectual and practical well-being of both individual members and the Mittelbau as a whole. The opportunity to voice opinions and influence decision-making at ETH is provided for through representation in various bodies, including the ETH administrative body, commissions, e.g., sport, cafeteria, and planning, and different action groups. The initiatives of the AVETH are designed to offer a greater number of services that address the specific needs of the Mittelbau. Additionally, the AVETH supports and encourages projects involving the private sector which enable its associates to further develop their careers and maximise their potential after leaving ETH. These interactions are primarily facilitated through Telejob, as well as through special seminars and services offered by AVETH to address career planning.

The most important assembly of the AVETH is the biannual meeting for members of AVETH ("Mitgliederversammlung", MV), normally scheduled in January and July. The members meeting provides the opportunity for all matters of discord and concern to be voiced and discussed. The governing board of the AVETH is also elected at the biannual meeting. The board is responsible for handling and recognising the daily responsibilities of the AVETH, in co-operation with its main office, and oversees all matters of both organisational and financial nature.

Active membership in AVETH is on a voluntary basis (monthly fee of CHF 4). The ability of the organisation to exercise influence on ETH

bodies, as well as to best serve the needs of the mid-level associates, benefits from as large a membership as possible, so please join.

→ Secretariat AVETH
SOL G 9, ETH Zentrum
Sonneggstrasse 33, 8092 Zürich
Tel 01 632 42 93 or 01 632 46 42, Fax 01 632 10 20
sekret@aveth.ethz.ch
<http://www.aveth.ethz.ch>

IAESTE - International Association for the Exchange of Students for Technical Experience

IAESTE was founded in the United Kingdom in 1948. It is a non-political, independent, non-governmental association, consisting of national committees in more than 60 countries. IAESTE operates an exchange programme for students of technical and natural sciences. In order to provide students at institutions of higher education with technical experience abroad and an international perspective world-wide traineeships are arranged. Information events at universities, trips to international events, activity weekends, weekly meetings as well as an attractive summer programme for foreign trainees are regularly organised.

→ IAESTE Local Committee Zurich
contacts.lc.iaeste@rektorat.ethz.ch
<http://www.iaeste.ethz.ch>

KOSTA - Commission for student events (“Kommission für studentische Anlässe”)

KOSTA, a subgroup of the VSETH (Students' Association of ETH), not only organises the SOLA-Party but also the famous Polyball. This is an established event in the annual agenda of Zurich's Society and in order to complete the decoration for the ball KOSTA is always looking for creative people to help in the Töga (“Töffligarage”) of ETH during November. New members, who enjoy improving their skills in the field of event management in a lively environment, are always welcome to join KOSTA.

→ Kosta / Polyballkommission
Leonhardstrasse 25a, 8001 Zürich
Tel 01 632 77 20, Fax 01 632 12 00
info@kosta.ch
<http://www.kosta.ch>
<http://www.polyball.ethz.ch>

The Psychological Counselling Service of ETH and University of Zurich (“Psychologische Beratungsstelle für Studierende beider Hochschulen”) This counselling service offers professional advice when one is faced with difficulties in the workplace or in private life.

The special requirements and stresses placed on a person doing a doctorate or in an assistantship can lead to working disorders or personal problems such as lack of concentration, incapacity to make important decisions, dealing with competitive situations or interpersonal conflicts.

Professional advice facilitates insights into patterns that cause disturbances and can activate resources to find constructive solutions.

The counselling service is free and all contacts are treated completely confidentially. The service is available both during the term and in the semester holidays. Appointments must be made in advance.

→ **The Psychological Counselling Service
of ETH and University of Zurich
Wilfriedstrasse 6, 8032 Zürich
Tel 01 634 22 80
pbs@zuv.unizh.ch**

SOSeth Students Helping Students (“Studentische Organisation für Selbsthilfe”) SOSeth is a service organisation open to all students, assistants and academic guests. In return for a nominal membership fee (CHF 5 for ETH student, CHF 8 for everybody else), SOSeth sponsors a number of activities and services free of charge or at very low cost, including darkroom facilities (b/w and colour), video-editing equipment, digital image processing and a fax service. They also hold movie nights at regular intervals during the term. Bring your own popcorn and enjoy some fine film repertoire free of charge! Announcements are made on their website, printed in Polykum/ETH-Life print, Zürcher Studentin, and are posted on various bulletin boards around ETH.

→ **SOSeth
UNG E 1, Universitätsstrasse 19
ETH Zentrum, 8092 Zürich
Tel 01 632 49 43
Fax 01 261 83 84
buro@sos.ethz.ch
<http://www.sos.ethz.ch>**

Telejob Telejob, the electronic job-search engine at ETH, is a spin-off organisation of the AVETH. Using an electronic database, it provides a means of helping undergraduate and graduate students find employment both inside and outside ETH Zurich. There are job postings in the database, ranging from Ph.D. positions in Zurich and Lausanne, to temporary or permanent positions in private firms within Switzerland and abroad.

→ Telejob

Sonneggstrasse 33, ETH Zentrum, 8092 Zürich

Tel 01 632 46 42, Fax 01 632 10 20

telejob@aveth.ethz.ch

<http://www.telejob.ch>

zart&heftig – The Association of Homosexual Students and Assistants

zart&heftig, the association of gay students and assistants was founded in 1989 and provides support for all scientific, political and personal matters concerning gays and lesbians at ETH and University. The association currently has about 180 members and has representatives in various committees at ETH and at the University of Zurich. zart&heftig also organises film evenings, book readings, dinner parties and many other social activities, in order to openly live gay culture at both ETH and the University and to promote its general acceptance. The association is open for students and assistants of ETH and the University of Zurich. The membership fee is CHF 25 per term.

→ zart&heftig

Rämistrasse 66, 8001 Zürich

Tel 078 879 87 76

zundh@websites.unizh.ch

<http://www.zundh.ethz.ch>

BOOKS, COMPUTERS AND OTHER ITEMS

ETH Bookstore (“Polybuchhandlung”) The ETH Bookstore stocks (or can order) nearly all the books required for studies and research at ETH and for spare-time reading. They operate two stores, one at ETH Zentrum and one at ETH Hönggerberg. Students and employees receive a five percent discount on all book orders, increasing to ten percent for orders from non-German language publishers. Books can also be ordered through the web site.

PH.D. REALITIES: WORKING TOGETHER WITH AN INDUSTRIAL PARTNER **◀◀** Working for my Ph.D. is the ideal combination of research in theoretical ideas and industrial experience.

With five years of work experience, the Robert Bosch company offered me the opportunity to do a Ph.D. After extended discussions with several universities, the choice to cooperate with the ZPE (Zentrum für Produkt-Entwicklung) at ETH was the best solution for all people involved in this project. In order to get an optimal performance we decided to choose the working environment within the company. Therefore I am employed by the Robert Bosch company, which offers a special three year program for postgraduates. Nevertheless, the close (!) relationship to the ZPE (www.zpeportal.ethz.ch) is very important. The enriching discussions with institute colleagues are beneficial for the development of the projects and help to overview different aspects and create new ideas. For these reasons, a 'ramp-up' time of 2 months working at the institute was performed. Further regular meetings are scheduled in order to keep in touch with each other.

I highly recommend this method to do a Ph.D., as ETH supports this interaction between research and industrial experience, which was always my intention for a Ph.D. **▶▶** Ralf Moryson, Center of Mechanics,

D-MAVT

◀▶▶ Polybuchhandlung
MM B 96, ETH Zentrum

Tel 01 632 42 89, Fax 01 261 01 56

◀▶▶ HPI E 16.1, ETH Hönggerberg

Tel 01 633 27 78, Fax 01 633 11 97

<http://www.books.ethz.ch/books>

Studentenladen Uni Zentrum

◀▶▶ Schönberggasse 2, 8001 Zürich

Tel 01 634 45 23, Fax 01 634 45 26

ladenz@zsuz.unizh.ch

Studentenladen Uni Irchel

◀▶▶ Winterthurerstrasse 190,
8057 Zürich

Tel 01 361 67 93, Fax 01 635 64 32

ladeni@zsuz.unizh.ch

The Foundation for Student Discounts ("Stiftung Studenten Discount", SSD)

The SSD offers students and other employees of ETH the opportunity to purchase quality office supplies, study aids, as well as a good selection of quality electronic goods, at fair prices.

◀▶▶ SSD Polyterrasse

MM C 87, ETH Zentrum, 8092 Zürich

Tel 01 632 42 41, Fax 01 632 10 66

info_laden@ssd.ethz.ch

PC-Shop (operated by SSD)

This shop deals exclusively with the sale of computers, printers, monitors and computer accessories.

◀▶▶ PC-Shop Polyterrasse

MM A 72, ETH Zentrum, 8092 Zürich

Tel 01 632 47 21, Fax 01 632 10 32

info_pcshop@ssd.ethz.ch

Self-Help Co-operative of ETH Students (“Selbsthilfe-Genossenschaft der Studierenden der ETH”, SAB) The SAB is a co-operative founded over thirty years ago by students at ETH. They maintain a well selected stock of office supplies and stationery, laboratory coats and personal lab supplies, greeting cards and posters, as well as other ETH paraphernalia, sold at reasonable prices. A film developing service is also available. Any profits made are returned to the students through special discounts.

→ SAB Polyterrasse

MM C 88.1, ETH Zentrum, 8092 Zürich

Tel 01 632 07 40, Fax 01 632 16 37

→ SAB Höggerberg

HPI E 14.2, ETH Höggerberg, 8093 Zürich

Tel 01 633 26 99, Fax 01 633 11 34

MUSIC

The instrumental and choral groups whose membership is comprised largely of students at both ETH and the University of Zurich are almost always on the lookout for new faces and voices. The level of musical talent varies – from purely amateur to aspiring professionals, as well as the frequency of rehearsals and performances. Look in the Semester Programme under “Freizeit” for further descriptions and up-to-date contact information.

The Academic Orchestra of Zurich (“Akademisches Orchester Zürich”, AOZ) is a joint organisation of the University and ETH in Zurich. Founded circa 1900, it has a membership of almost 90 players. The orchestra strives to promote talented musicians, and has given concerts in Switzerland and abroad. The orchestra is always eager to recruit new members.

Further music organisations are:

- Akademischer Chor ACZ (Choir)
- Akademisches Kammerorchester Zürich AKO (Chamber orchestra)
- colla voce (Choir)
- ETH Big-Band (Big band)
- Kammermusikvereinigung der Zürcher Hochschulen (Chamber orchestra)
- Polyband (Big band)

Academic Sports Club of Zurich (“Akademischer Sportverband Zürich”, ASVZ) The Academic Sports Club of Zurich offers students and staff of both ETH and the University the opportunity to engage in a broad variety of activities. Instruction led by professional instructors, as well as opportunities to participate in over sixty sports are offered at the university sport facilities located at ETH Zentrum-Polyterrasse, Fluntern, Uni-Irchel and ETH-Hönggerberg, as well as at various outdoor sites around Zurich. The sport centres are open for individual use as well. ASVZ aims to promote physical activities as a complement to study and work, emphasising the benefits of physical and mental well-being to good health, while providing recreation and relaxation.

Holders of a yellow legi are automatically considered members of ASVZ. Otherwise a pass can be obtained from the offices of the ASVZ for a fee of CHF 100 per term / CHF 150 per two terms. With either the pass or legi you are considered a member of ASVZ and are allowed free participation in almost all sport activities offered, as well as the use of the sport centre facilities. Some activities and special courses organised in co-operation with external groups may require an additional fee (golf, tennis, para-gliding, sailing, etc.)

In addition to individual training, it is possible to participate on a team in sports such as unihockey, badminton, football (soccer), beach-volleyball, amongst others. Other services available through ASVZ include massage, sauna, fitness evaluations, and sports/nutrition counselling. For some services, a minimal additional fee may be required.

Forest paths abound for meditative running, or simply letting off the steam of advisor/research anguish. An event worth getting involved in is the SOLA-Stafette, a run held in early May of each year. It is a relay race that takes place over long and short distances; through forest and over fields. To be in a team relay is a great way to meet people, see a bit of Zurich, ride the entire VBZ-network free for one twenty-four hour period and have a great time.

→ ASVZ Secretary

MMA 91, ETH Zentrum, 8092 Zürich

Tel 01 632 42 10, Fax 01 632 10 83

sekretariat@asvz.ethz.ch

<http://www.asvz.ch>

Academic Dance Club Zurich (“Akademischer Tanzclub Zürich”, ATZ)

Salsa, Boogie Woogie, Rock’n’roll, or Viennese waltzes are just a few of the types of dance you can learn and practice in courses and workshops offered at regular intervals throughout the year. Most courses last for seven weeks and classes are one and a half hours long. Some courses have special arrangements that will be noted in the printed program. The courses cost around CHF 130/150, with a discount of CHF 10 for students and ATZ members. Do not miss the chance – when your thesis is done you will want to dance the night away.

→ ATZ Tanzzentrum Zürich
Binzmühlestrasse 81, 8050 Zürich-Oerlikon
Tel 01 319 99 99
info@atz.ch
<http://www.atz.ch>

Additional sports organisations are:

- Akademischer Alpen Club Zürich AACZ (Hiking, Climbing).
- Schweizerischer Akademischer Skiclub SAS (Skiing).
- Volleyball Club Spada Academica SPADA (Volleyball).
- Studenten Wasserball Zürich SWZ (Water polo) .

For further information, see the ETH web pages (intranet of the ETH-Homepage under the keyword “Vereine”) for specifications and further information.

APPENDIX
GLOSSARY

Abmeldung: cancelling, de-registration
AHV: retirement and dependent's insurance – the state pension (Alters- u. Hinterlassenen-Versicherung)
Amtlich beglaubigt: officially attested, this can refer to translations or photocopies
Anmeldung: registration, application
AOZ: Academic Orchestra Zurich
Assistenz: the time you spend working to assist your supervisor (e.g. teaching or computer support)
ASVZ: Academic Sports Club Zurich
Aufenthaltsbewilligung: residence and work permit (typically B- or C-permit for foreigners)
AVETH: Academic Association of Scientific Staff at ETH
Bahnhof: train station. Note that Zurich has several, but the main one is most often referred to, unless otherwise specified
Betriebswirtschaftliches Institut: Institute of industrial engineering and management, ETH
Bewerbungskurs: seminar organised by Telejob which prepares you for job applications
Bibliothek: the library
CERN: European Laboratory for Particle Physics, Geneva
CH: Confoederatio Helvetica, indicating Switzerland
Chancengleichheit: equal opportunity

Collegium Helveticum: forum at ETH for interdisciplinary studies and discussions on natural and social sciences

Coop: cheap supermarket

Departement: department

Didaktikzentrum: Center for Teaching and Learning (DiZ)

Diplom: academic degree, in Switzerland and Germany equivalent to a Master

Doktorat: the time you spend on your Ph.D.

Doktorand: Ph.D. student

Doktoratsadministration: Office for Doctoral Studies

Doktorandenbüro: see Doktoratsadministration

Doktoratsstudium: the courses you have to take until completing your Ph.D.

Doktoratsverordnung: official rules for the doctorate

Doktorprüfung: Ph.D. examination

Doktorvater or Doktormutter: your Ph.D. supervisor who normally is the professor holding the chair where you are working

EC-Card: cash card provided by the bank if you have a certain regular income and which can be used in almost every European country

Eidgenössisch: federal, or for general purposes, “Swiss”, operated at a national level.

Einwohnerkontrolle: federal bureau of residence registration

En guete!: bon appetit, enjoy your meal

ETH: Eidgenössische Technische Hochschule, Swiss Federal Institute of Technology (there is one at Zurich, ETHZ, and one at Lausanne, EPFL)

ETH Alumni: Association of ETH graduates

ETH-Life: the web based ETH newspaper

ETH-Life print: the printed ETH newsletter

ETH-Pendelbus: the “Extra bus” – runs hourly between the Zentrum and Höggerberg campuses during the semester. No ticket is required, but you must have a legi or Personalausweis

Forschungsplan: research plan which is to be written and submitted to the Office for Doctoral Studies within 6 months after registration as Ph.D. student

Freizeit: supposed to be the period of time you do not spend in your lab working on your thesis

Fremdenpolizei: immigration police, now called Migrationsamt

Gemeindehaus: town hall, city hall

Gipfeli: croissant

Grüezi!: always appropriate when wanting to say “hello” – used to greet people passing on the street or trail, whether you know them or not

Gymnasium: Swiss high school

Halbtax-Abo: with this card you pay only half price for trains, buses, boats and trams in Switzerland a whole year. If you are an assistant (federal employee) you get it for free from ETH. If not, you have to buy it at the train station for about CHF 150, CHF 222 for two and CHF 350 for three years.

Hauptgebäude (HG): Main building (at ETH)

Hilfsassistent: Student assistant

IV: disability insurance (Invaliden-Versicherung)

Krankenkasse: health insurance company (there are a lot of them)

Kreis: city district in Zurich

Kreisbüro: city district office and immigration police office

Krippe: day nursery

Legi: official ETH Student (including Ph.D. students and assistants) identification card allowing them discounts (Rabatt) at lunch in the cafeteria, in the theatre at night, etc.

Lizentiat: academic degree, equivalent to a “Diplom” or a Master.

Matura: degree you get at high-school. Required for university-level studies in Switzerland

Mensa: cafeteria

Merci vielmals!: representing Swiss hybridism: “Thanks a lot”

Migros: cheapest supermarket, non-profit oriented

Mittelbau: Academic staff

NZZ: Neue Zürcher Zeitung

Oberassistent: A Postdoc employed for several years who works with an ETH professor

Pensionskasse des Bundes, PKB, “Publica”: pension fund for federal employees

Personalabteilung: Personnel department

Personalienbogen: Personal registration form used for employment application

Personalreglement: personnel rules

Pflichtenheft: list of responsibilities to be written at the start of Ph.D.

Pflichtexemplar: the required number of copies of your thesis that you have to hand in after the exam and before you can carry the Ph.D. title

PK: pension fund (Pensionskasse)

Polybahn: the quaint trolley that takes you between Polyterrasse and Central in a fraction of the time of walking. Enjoy the view from the front platform.

Polyguide: practical guide for the new ETH students, edited annually

Polykum: printed VSETH newsletter

Polyterrasse: the terrace at the back of the ETH main building that offers a great view over the city, and where you can find the shops, cafes, the gymnastic hall, music rehearsal rooms, etc.

Postcard: cash card provided to holders of a postal account by the post office

Prüfung: examination

Psychologische Beratungsstelle: Psychological Counselling Service

Rektor: Vice-President for Academic Affairs, Rector

Sekretariat: administrative office

SNSF: Swiss National Science Foundation (Schweizerischer Nationalfonds, SNF)

SOLA-Staffette: relay race organized by the ASVZ, taking place around Zurich in May

Stelle: position (e.g., job position)

Stipendium: grant

Strassenverkehrsamt: Driving Vehicle Licensing Center (DVLC)

Studienberatung der ETH: Career Advisory Service for students (CAS)

SUVA: Swiss national accident insurance fund

Tages-Anzeiger: the daily Zurich newspaper with most readers, often called “Tagi”.

Übersiedlungsgut: personal property you import when you move to Switzerland

Umweltfreundlich: environmentally friendly

VBZ: Verkehrsbetriebe Zürich – the public transport system in Zurich (buses, trams and boats)

Velo: bicycle in swiss-german

Velovignette: obligatory liability insurance marker to put on the bike and which covers damages and personal injuries to others incurred in an accident with another vehicle or bicycle (costs about CHF 4 per year depending on where you buy it.)

Vereinigung, Verein: association

Vorlesung: lecture

VSETH: Students' Association of ETH

Wohngemeinschaft (short: WG): shared living characterized by two or more people sharing a flat. Very common among students.

Zentrum: center

Zentrum für Weiterbildung: Center for Continuing Education

Zimmervermittlung: apartment and room search service

Zulassungsprüfung: entrance examination that some students have to pass in order to become a Ph.D. student

ZVV: Zürcher Verkehrsverbund

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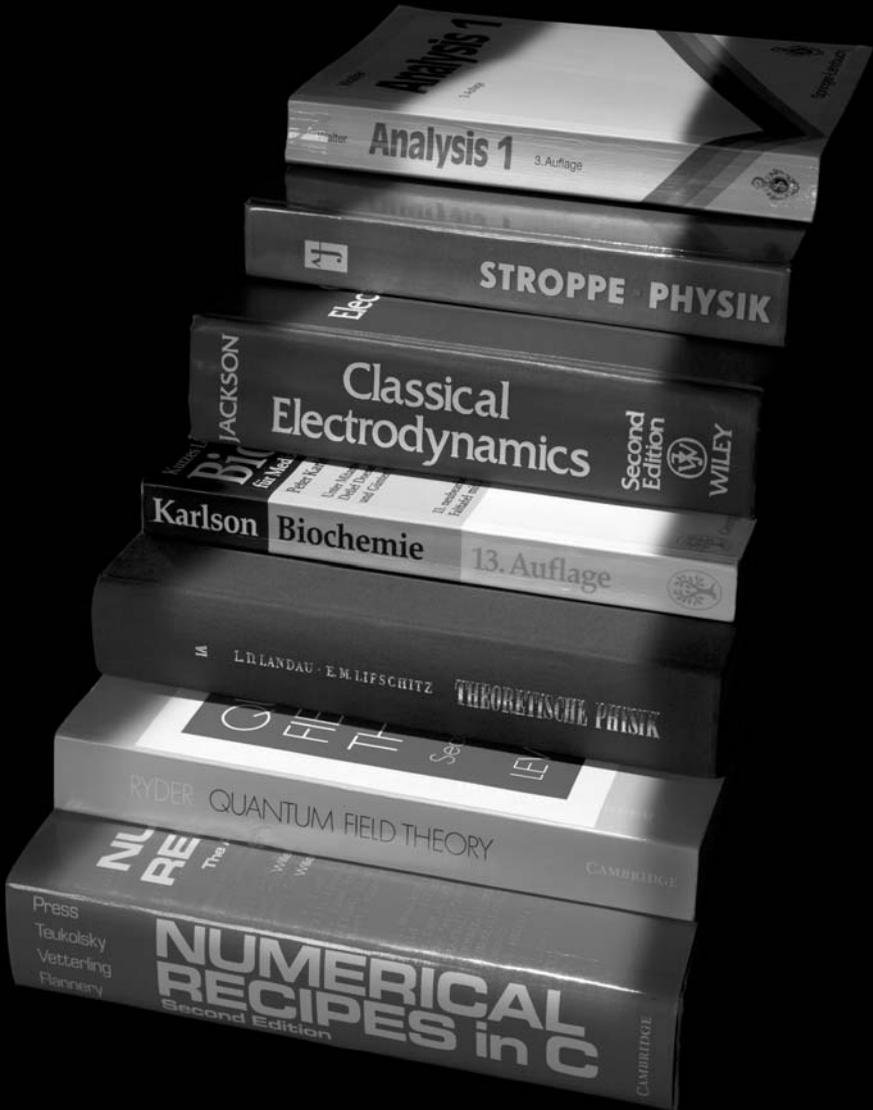
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