



Campus and **Research Park** Switzerland





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Editor

State Secretariat for Education and Research with the support of Presence Switzerland

Embassy of Switzerland, Washington D.C.
Office of Science, Technology and Higher Education
2900 Cathedral Avenue, N.W.
Washington, D.C. 20008
+1 202 745 79 54
www.swissemb.org/scitech
was.science@eda.admin.ch

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Graphics and Layout

Laurel Prucha Moran

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Executive Summary

Switzerland is an excellent education and science hub. It has outstanding universities with numerous programs, a thriving private sector which encourages research & development and conducts its own cutting-edge research. Moreover, education in Switzerland is relatively inexpensive and increasingly provided in English. Postgraduate opportunities are plentiful because of the dynamic Swiss economy and its access to the European market and the larger world market. Finally, the quality of life is among the best in the world. Excellent infrastructure, safety, and political and economic stability are all good reasons why Switzerland is a great place to study and conduct research.

Switzerland has twelve doctoral degree-granting research universities offering a wide range of first-rate educational opportunities to international students. The two federal institutes of technology are world leaders in science and engineering education and research. The ten cantonal (state) universities not only provide comprehensive courses in diverse fields of study, but also host cutting-edge research. Excellent programs providing applied education are offered by the seven universities of applied sciences and the fifteen teacher training colleges. Moreover, Switzerland is home to several outstanding special institutes in the areas of international affairs, public administration, finance, and hotel management. There is a vast choice of educational opportunities for international students with many programs, especially at the master's degree and Ph.D. levels, taught in English.

Ensuring its global competitiveness, the "Swiss Research Park" benefits from considerable private and public funding for research and development. Switzerland not only hosts excellent public research centers including National Centers of Competence in Research in a number of academic fields, but also has very dynamic private research clusters. In addition, many start-ups and research facilities of multinational companies contribute to Swiss research. Switzerland has the highest number of Nobel laureates per capita in the world, ranks among the top countries for patents, and is widely recognized for the impact of its scientific publications.

The country's environment is highly international and competitive. Although Switzerland is small from a geographic standpoint, it is very influential in economic terms. Switzerland's most dynamic and important industries are financial services, the pharmaceutical and chemical sectors, and the machinery and engineering sectors. In addition, it is home to numerous well-known international companies and organizations which present some of the best job opportunities for graduates of the Swiss higher education system.

Switzerland is an excellent location for living, studying, and working. Its cultural variety, beautiful landscape, and innovative environment offer first-class surroundings both for your well-being and career advancement. Certainly, chocolate and fondue will be part of your experience, but you will quickly discover the country's international setting offers numerous high-quality opportunities for studying and researching.

1.1 A diverse and multicultural country in the heart of Europe



Switzerland is located in the heart of Europe. This geographic position and a decentralized governmental structure have enabled the country to become a meeting point of cultures and languages. The country has four official languages — German, French, Italian, and Romansh. In addition, English is broadly spoken and increasingly used as the primary language of business and research. Thanks to these factors, English-language speakers find it easy to settle in Switzerland. It is a highly diverse country with over

20% foreigners. Although it is not an EU-member state, more than 850'000 European Union (EU) nationals are working in Switzerland, making up over one fifth of its workforce. With regards to trade, it is the third largest supplier and second largest customer of the EU. Switzerland is completely integrated into the EU market of more than 447 million consumers, but still retains its political independence. Moreover, Switzerland also has a high population of foreigners from outside the EU, including the U.S.A., Asia, Africa, and the Middle East.

United Nations
in Geneva

Global Ranking of Cities with a High Quality of Life

| City | Ranking |
|---------------|----------|
| Zurich | 1 |
| Geneva | 2 |
| Vancouver | 3 |
| Vienna | 4 |
| Auckland | 5 |
| Dusseldorf | 6 |
| Frankfurt | 7 |
| Munich | 8 |
| Berne | 9 |
| Sydney | 9 |

Source: Mercer Human Resource Consulting, 2006.

1.2 An outstanding quality of life

Very few places in the world can offer the quality of life found in Switzerland. It is a clean and safe country with a gorgeous landscape. The country is efficiently organized and has a low crime rate. It is so safe that children go to school unaccompanied by an adult. At the same time, the efficiency of the public administration saves you time and allows you to focus on your studies and personal priorities. Furthermore, Switzerland has a stable and accommodating infrastructure. The education and health



care systems are top-notch, roads are well-maintained, and the public transportation network is excellent, enabling you to travel quickly and conveniently. In addition, the real estate market offers a variety of options for people wishing to rent or buy a home, apartment, or a room. Whether you choose to live downtown or in surround-

ing areas, you will find that residential areas offer comfort and convenience.

Besides working and studying, Switzerland's amazing physical and cultural landscape offers the ideal setting for leisure time. The picturesque mountains and lakes provide year-round activities for nature lovers and sports enthusiasts. The towns and villages have numerous sports clubs, including cycling, skiing, snowboarding, and sailing, among many others. For culture lovers, Switzerland hosts major events such as Montreux's Jazz festival, Locarno's film festival, and many other seasonal events.

1.3 A highly competitive and international environment

Switzerland offers a liberal and highly competitive business environment. The Geneva-based World Economic Forum ranked Switzerland as number one in its global competitiveness survey of 125 countries in 2006. Switzerland's top ranking reflects a combination of a world class capacity for innovation and the presence of a highly sophisticated business culture. The country has a well developed infrastructure for scientific research, with close collaboration between the leading research centers and industry. Companies spend generously on research and development.

Intellectual property protection is strong, and this has helped spur high levels of technological innovation. Business activity in the country benefits from a well-developed institutional framework, characterized by respect for the rule of law, an efficiently working judicial system, and high levels of transparency and accountability within public institutions. Flexible labor markets and excellent infrastructure facilities are two healthy features of the business environment.

Switzerland has an international profile: among several world-renowned companies are Nestlé in the food industry, UBS and Credit Suisse in banking, Swatch in the watch industry, Novartis and Roche in the pharmaceutical sector. In addition, foreign companies strongly contribute to the economic growth and wealth creation. About 10% of the Swiss gross national product (over USD 32 billion) is generated directly or indirectly by foreign companies, which at present employ about 210,000 workers in Switzerland. Numerous international organizations are based in Geneva — such as the European Headquarters of the United Nations and the International Committee of the Red Cross.

1.4 A dynamic and innovative high tech sector

Switzerland depends strongly on foreign trade. The most important exported goods are machinery, chemicals, and jewelry. Leading companies in engineering, machinery, pharmaceuticals, biotechnology, medical technology, and computer sciences have headquarters in Switzerland. Over 500 medical technology companies



Zurich airport



employ a workforce of 40,000 people. They also invest almost USD 500 million annually in R&D and export goods worth nearly USD 5 billion per year. Switzerland is a first-class location for life science companies and represents one of the world's leading biotechnology

clusters. The Swiss biotech industry ranks among the best. With an annual overall expenditure of USD 5.7 billion in 2002, the country has one of the world's highest levels of research expenditure relative to a gross domestic product (GDP) of 2.6%. The country has therefore an outstanding scientific reputation and ranks among the first in innovation and entrepreneurship. Growth and diversification characterize the Swiss high tech sector. World-renowned life science companies combined, with first rate universities and technical institutes offer a dynamic biotechnology industry. Switzerland has also become an excellent location for medical, micro- and nanotechnologies.

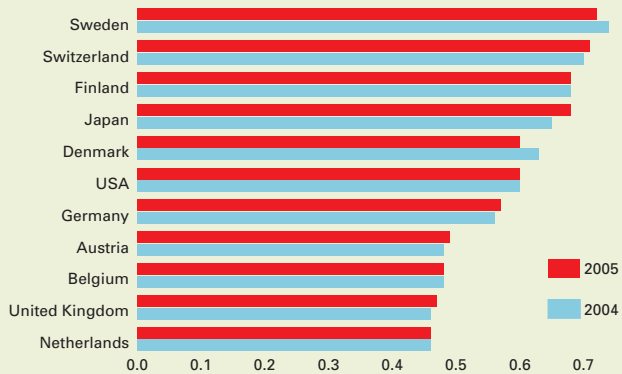
It provides highly supportive conditions for innovation. It offers a dynamic environment for knowledge creation, takes advantage of high investments in R&D activities, and ranks at the top in terms of innovation and entrepreneurship.

1.5 An excellent financial center and attractive location for foreign investors

With its value creation, employment, and tax revenues, the financial sector is an important pillar of the Swiss economy. The financial sector fulfills an essential function in the domestic economy as an efficient service provider, and it plays a key role for the global economy in financial intermediation.

Switzerland is a preferred international financial center. It provides long-term, stable conditions and an efficient infrastructure. The financial sector contributed 14% of the gross domestic product with over 340 banks offering services. Long-term decision-making, a liberal environment, and cooperative government

Innovationindex 2004-2005



Source: European Innovation Scoreboard, 2005.

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representatives are all crucial factors for foreign direct investment. Labor costs are significantly lower than in competing countries due to the high worker productivity. Financing is usually available at low interest rates. By European standards, taxation in Switzerland is investor-friendly. This constellation has resulted in the establishment of numerous prominent headquarters and R&D facilities.

Switzerland - 1st Preference for European/International Headquarters and key location for Research & Development



Source: Ernst&Young, 2006.



Prof. Michael Hengartner
Institute of Molecular Biology,
University of Zurich

"After having spent all my professional career in North America, I was slightly apprehensive about moving my research lab to Switzerland. But what a pleasant surprise it was! Thanks to its two outstanding universities, Zurich is rapidly developing into a Mecca in life science research: I found excellent infrastructure, generous and stable financial support, inquisitive and eager students, and above all stimulating colleagues who constantly challenge you to give your best — all what a scientist's heart desires. And thanks to Zurich's wonderful quality of life (routinely rated #1 in the world), I enjoy my time outside the lab as much as my time inside it!"



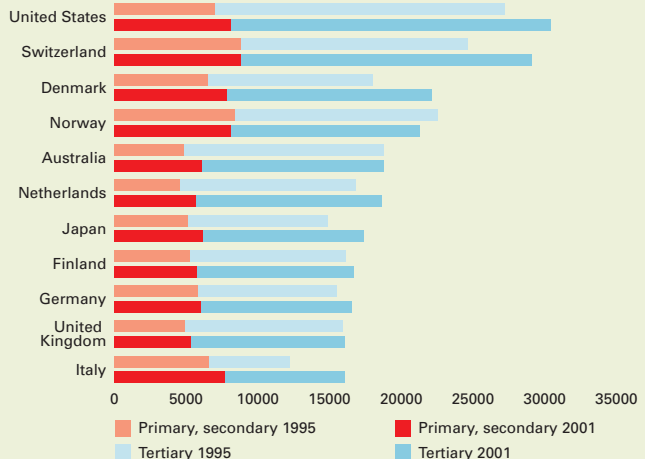
Chapter 2

Campus Switzerland

Swiss higher education is the key factor for boosting innovation, research, and extremely skilled workforce. Education creates knowledge, economic growth, and outstanding benefits for society. The country is convinced of education's high long-term importance and considers it as the essential pillar of its domestic policy.

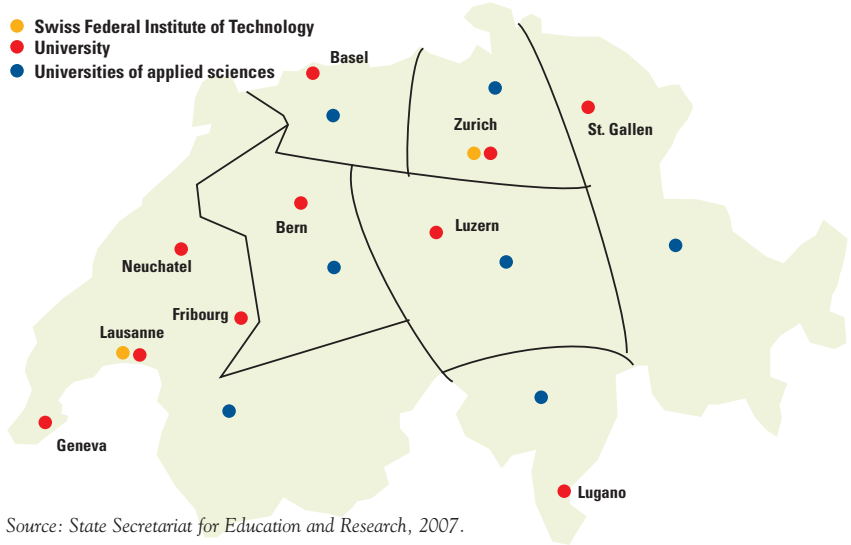
According to OECD statistics, Switzerland has the second-highest level of investment in education among all OECD countries. The country's economy depends strongly on the excellent education system and the highly qualified workforce. Almost 1 million students are enrolled in pre-school, primary school, and low secondary level, roughly 310,000 students in the upper secondary level, and approximately 200,000 students in public higher education, a total of 1.3 million out of an overall population of 7.5 million.

Expenditure on education per student by level of education (US Dollars, 2001 prices and PPPs)



Source: OECD, 2005.

2.1 Higher education in Switzerland at a glance



Source: State Secretariat for Education and Research, 2007.

Switzerland has twelve doctoral degree-granting research universities, seven universities of applied sciences and fifteen universities of teacher education plus three specialized tertiary institutions. The main aim of the doctoral degree-granting universities is teaching and basic research while the universities of applied sciences and teacher education place a stronger emphasis on knowledge that can be transferred to industry and economy as well as applied research and development. All these institutions are largely publicly funded (80% on average).

Doctoral degree-granting research universities

Switzerland has twelve public research universities with a total of more than 110,000 students. These institutions offer challenging and excellent bachelor's, master's, and Ph.D. degrees, as well as several executive and postgraduate education courses. These institutions of higher education have the following academic departments:

- Architecture and Design
- Economics
- Engineering
- Humanities, Languages and Social Sciences
- Law and Forensics
- Mathematics and Natural Sciences
- Medicine and Pharmacy
- Pedagogy and Educational Sciences
- Theology

Terminology — the following definitions of terms are used: Undergraduate stands for bachelor's programs, graduate for master's programs (Master of arts or science) and postgraduate for executive MBA and Master of advanced studies.

Although Switzerland offers first-rate education, the Swiss tuition fees are comparatively low. Since higher education is publicly funded, all students — Swiss and foreign — pay modest tuition fees. They are significantly lower than the tuition fees in the United States and in many other countries. Most Swiss universities charge between USD 800 and USD 1,200 per school year.

Universities of applied sciences (UAS)

Highly practice-oriented education is offered at seven universities of applied sciences. These universities are organized regionally and have campuses at multiple locations. The universities of applied sciences (UAS) cover the following areas of study and research:

- Applied Linguistics
- Applied Psychology
- Architecture, Building Engineering and Planning
- Agriculture and Forestry
- Business, Management and Services
- Chemistry and Life Sciences
- Design
- Engineering and Information Technology
- Fine Arts
- Social Work and Health
- Sports
- Theater Arts and Music

Universities of applied sciences provide a practice-oriented education. In contrast to the research universities, the UAS do not offer doctoral programs. They offer an excellent learning environment: small campuses, a communal atmosphere, a good learning infrastructure, well-equipped laboratories, a good student/faculty ratio, small study groups, student-oriented classes, and highly qualified teachers who are often involved in professional practice and/or research. Over 40,000 students attend universities of applied sciences each year. The UAS have over 40 individual schools with tuition fees between USD 800 and USD 1,600 per school year.

Universities of teacher education

Switzerland provides excellent programs in teacher education. In 2005-2006, 10,800 students attended courses at the fifteen universities of teacher education, which have both a scientific and a practical approach. These institutions offer diplomas at all levels. The main research is developed in the professional context and established in collaboration with other universities and universities of applied sciences.

Bologna reform

In the past few years, Switzerland has undergone its most fundamental reorganization of the education system. Within the framework of the 1999 Bologna Declaration, the country participated in the unification of European academic studies and introduced a three-cycle system based on bachelor's, master's, and doctoral degrees to ease the transfer from one institution to another for students, faculty, scientists, and administrators. In order to guarantee a maximum of

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student mobility, the Bologna process includes the European wide adoption of the European Credit Transfer and accumulation System (ECTS).

Special institutes

Switzerland has many outstanding specialized institutes. Special faculties are located in Geneva in the field of international studies, in Lausanne in public administration or in Sion in health and society.

Private institutions

Switzerland is also home to several excellent private institutions in specific domains. It attracts students from all over the world to attend business or hotel and tourism management schools.

2.2 Rankings of the Swiss universities

Swiss institutions of higher education are ranked internationally among the best. Several rankings illustrate this excellent academic position. Whatever criteria the rankings use, there are always three to five Swiss universities to be found among the top 100 of the world.

| University | Shanghai Jiao Tong 2007 | Newsweek 2006 | The Times 2006 |
|------------------------|----------------------------|------------------|-------------------|
| ETH Zurich | 27 | 21 | 24 |
| University of Zurich | 58 | 46 | 109 |
| University of Basel | 81 | 44 | 75 |
| EPF Lausanne | 102-150 | 26 | 64 |
| University of Geneva | 102-150 | 32 | 39 |
| University of Bern | 151-200 | NA | 178 |
| University of Lausanne | 201-300 | NA | 89 |

The renowned Shanghai Jiao Tong Ranking scores institutions according to their academic and research performance and is based on a scientific methodology. Swiss institutions are in the top 100. A closer look at the fields shows that the EPF Lausanne ranks 28th in the field of engineering, the University of Geneva 51st and 75th in natural sciences and mathematics, respectively. In life sciences, the University of Zurich ranks 29th and the University of Basel 35th. Newsweek's ranking highlights the Swiss universities' high standard. Five Swiss institutions are among the top 50 global universities in 2006. Finally, the Times' World University ranking portrays Switzerland's education system in a positive light. In 2006, Switzerland had five universities in the top 90.

2.3 Presentation of diverse higher education

Due to its high quality and broad education environment, Switzerland offers various opportunities to study or conduct research. In the following section, you will discover the numerous possibilities and thus find the right institution of higher education for you.

Doctoral degree-granting research universities



ETH Zurich

master@rektorat.ethz.ch
www.ethz.ch

Consistently ranked the top university in continental Europe, ETH Zurich is a leading player in research and education in Switzerland and the world.

The 16 Departments of ETH Zurich offer bachelor's, master's, and doctoral programs in engineering and natural sciences. The language of instruction in the bachelor's programs is German, whereas English is the lingua franca at the graduate level. All degree programs provide a solid scientific base, equipping ETH graduates with the flexibility necessary to apply their knowledge and skills in industry, business, or the public sector, as entrepreneurs or scientists.

The international outlook: Close to 60% of the professors have been recruited from abroad. The excellent infrastructure and the attractive urban environment of Zurich make ETH Zurich the ideal place for creative personalities. The ties to businesses and industries are very close, the Greater Zurich area being the economic center of Switzerland and home to numerous international companies. And beyond world-class education, Zurich also offers many other highlights: a metropolitan flair, excellent sports facilities, an extensive range of cultural and recreational offerings, and a vibrant nightlife.

Key figures:

Nobel Laureates: 21
Number of students (2006): 13,000
Female students: 29%
International students: 22%
Semester tuition fee:
(Swiss and Non Swiss) USD 515

Teaching and research areas:

- Construction sciences: architecture; civil, environmental and geomatic engineering
- Engineering sciences: computer science, electrical engineering and information technology; materials science; mechanical and process engineering; micro and nanosystems; bioinformatics
- Natural sciences and mathematics: biology; chemistry; chemical engineering and biotechnology; computational science and engineering; human movement sciences; mathematics; physics; pharmaceutical sciences.
- System-oriented sciences: agricultural sciences; earth sciences; environmental sciences; food science
- Management and social sciences: management, technology and economics; comparative and international studies



Anna Ludeke B.S. in Computer Science at Northwestern University in Evanston, Illinois, U.S.A.

"Studying abroad at ETH Zurich was one of the best experiences I have had. The faculty, fellow students, and administration made my time there better than I could have hoped for. I took mainly Computer Science courses, and was also able to have language classes that genuinely made me feel more a part of the culture. The mix of nationalities and variety of extracurricular groups and activities allowed me to become immersed in a truly international atmosphere. I would highly recommend ETH to anyone thinking of studying an engineering or science-related field; it is an excellent Swiss university with so much to offer. I miss my time spent there already, and cannot wait to get the opportunity to go back."



EPF Lausanne

relint@epfl.ch
www.epfl.ch

From its foundation in 1853, the Ecole Polytechnique Fédérale de Lausanne (EPFL) has evolved into a top-ranked research and teaching university that attracts some of the best intellects in the world. In its unique spot in one of Europe's most beautiful places, 10,000 people share this campus and interact daily to learn and explore. More than a hundred nationalities are represented on campus, and 50% of the teaching staff originates from abroad. The EPFL offers 17 complete study courses in engineering, architecture, basic sciences, and life sciences. Students follow programs at the bachelor's, master's, and doctoral level, and enjoy many opportunities for international exchange. The campus is structured to encourage interdisciplinary learning, and students at all levels participate in research projects in the campus' 250 laboratories and research groups. In addition to excellence in education and research, EPFL is committed to technology transfer as a fundamental part of its mission. An average of 10 new start-up companies are formed each year from innovations discovered at the EPFL.

Key figures:

Number of students (2006): 6,239
Female students: 24%
International students: 40%
Semester tuition fee:
(Swiss and Non Swiss) USD 506

Teaching and research areas:

- Mathematics, physics, chemistry and chemical engineering
- Architecture, civil engineering, environmental sciences and engineering
- Electrical and electronics engineering, mechanical engineering, materials science and engineering, microengineering
- Computer science, communication systems
- Life sciences and technologies
- Management of technology and entrepreneurship



University of Zurich

international@int.uzh.ch
www.uzh.ch

University of Zurich is the largest university in Switzerland and plays a leading role in Swiss higher education. It offers its 24,000 students a great diversity of studies, with more than 100 different degree programs and over 3,000 combinations of disciplines in seven faculties.

The university's strong commitment to the highest standards in scientific knowledge and responsible research are the fundamentals of excellence in research and teaching. The University of Zurich belongs to the League of European Research Universities (LERU). On the national level, it is the center of five strategic focal areas of research in the fields of life sciences, economics, and the humanities.

Of great importance to the University of Zurich is the promotion of young academics who are encouraged and supported in their research activities and in preparing for international careers. Through a close cooperation with the ETH as well as with other Swiss and international institutions of higher education, the University of Zurich initiates and sustains stimulating academic exchange at the highest level.

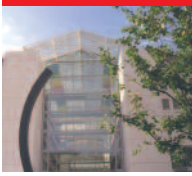
With its modern infrastructure and excellent local and international networks, the University of Zurich is well integrated into the cultural and economic metropolis and offers an attractive and stimulating working environment to more than 2,600 members of research and teaching staff from all over the world.

Key figures:

Nobel Laureates: 12
Number of students (2006): 23,817
Female students: 54%
International students: 13%
Semester tuition fee:
Swiss USD 551, Non Swiss USD 631

Teaching and research areas:

- Arts and Social Sciences
- Law
- Economics
- Medicine
- Mathematics and Sciences
- Veterinary Medicine
- Theology



University of Geneva

intl@intl.unige.ch
www.unige.ch

The University of Geneva was founded in 1559, upon the initiative of Jean Calvin. It is nestled in the heart of a city of great international renown and intellectual heritage, and defines itself as a place of reflection, teaching, and dialogue. With a student body from 137 different countries, the University of Geneva is the second largest university in Switzerland, and also hosts the largest number of female students. Just like the city of Geneva itself, the university enjoys a strong international reputation, both for the quality of its research (it ranks among the top institutions among the League of European Research Universities) and the excellence of its education. This acclaim has been won in part due to its strong ties to many national and international Geneva-based organizations, such as the World Health Organization, the International Telecommunications Union, the International Committee of the Red Cross, and the European Organization for Nuclear Research.

The University of Geneva is a comprehensive university offering a wide range of programs. Its domains of excellence in research include life sciences (molecular biology, bio-informatics), physics of elementary particles, and astrophysics. Furthermore, the University of Geneva boasts one of the oldest and finest translation and interpretation schools in the world, the ETI.

Key figures:

Number of students (2006): 14,418
Female students: 59%
International students: 36%
Semester tuition fee:
(Swiss and Non Swiss) USD 400

Teaching and research areas:

- Sciences
- Medicine
- Arts
- Economical and Social Sciences
- Protestant Theology
- Law
- Psychology and Educational Sciences
- Architecture
- Translation and Interpretation

Independent institutes with links to the University of Geneva

- Graduate Institute of International Studies (IUHEI)
- Graduate Institute of Development Studies (IUED)



University of Bern

infodesk@int.unibe.ch
www.unibe.ch

The University of Bern offers top quality across the board: it enjoys special recognition in leading-edge disciplines, is reputed for the excellent quality of its teaching, and offers a delightful campus environment intimately linked to the social, economic, and political life of the city. The University of Bern is a leader in a number of research fields. For example the Physics Institute, with its space research program, took part in Man's first lunar expedition and continues to supply research instruments and experimental results to NASA and ESA missions. Bern enjoys a leadership position in three national research centers: "Climate," "World Trade Regulation," and "North-South" (sustainable development).

Key figures:

Nobel Laureates: 2
Number of students (2006): 12,857
Female students: 51%
International students: 8%
Semester tuition fee:
(Swiss and Non Swiss) USD 524

Teaching and research areas:

- Theology
- Law
- Economics and Social Sciences
- Humanities
- Human Sciences
- Sciences
- Medicine
- Veterinary Medicine

The University of Bern offers more than 90 different degree programs; the focus is particularly on interdisciplinarity. The infrastructure is of very high quality, even in aesthetic terms. Some of the buildings have won architectural awards, such as the "Unitobler" — a former chocolate factory Tobler — that is now home to the faculty of humanities. Thanks to its relatively small size of 12,000 students, the ambience is friendly and personal. The 140 institutes are mostly located within walking distance of the main building, a beautiful turn-of-the-century edifice overlooking the medieval town of Bern — a UNESCO world heritage site. The city of Bern itself is embedded in a beautiful natural environment with hills, woods and lakes.



University of Lausanne

international@unil.ch
www.unil.ch

Dating from the foundation of the Academy in 1537, the University of Lausanne is composed of seven faculties where approximately 10,000 students and 2,200 researchers work and study. Emphasis is placed on an interdisciplinary approach, and there is a close cooperation between students, professors, and teaching staff.

The University of Lausanne is spread over three sites, the largest of which is in Dorigny on the shores of Lake Geneva. This peaceful green landscape with its views of the Alps and the lake provides the ideal setting for study and research.

The University of Lausanne enjoys an attractive location at the heart of the French-speaking region of Switzerland, and pursues an active collaboration at local and international levels. More than 30% of the teaching staff and more than 20% of the students come from abroad.

Up-to-date, well-equipped, and at the forefront of the latest technological developments, the University of Lausanne constitutes an ideal center for an exchange of ideas leading to intellectual, scientific, and economic progress.

Key figures:

Number of students (2006): 10,467

Female students: 55%

International students: 21%

Semester tuition fee:

(Swiss and Non Swiss) USD 464

Teaching and research areas:

- Arts
- Biology
- Business and Economics
- Criminal Justice
- French as a foreign Language
- Geosciences and Environment
- Law
- Medicine
- Political Sciences
- Protestant Theology
- Psychology
- Social Sciences
- Sport Science
- Study of Religions



University of Fribourg

international@unifr.ch
www.unifr.ch

The University of Fribourg is the bilingual university "par excellence" in Switzerland. Fribourg is a typical university town, with a high quality of life and excellent conditions for accomplishing one's studies. At the crossroads of Germanic and Roman languages, it constitutes a cultural bridge between the German and French traditions, as well as between northern and southern Europe. The university itself reflects this situation: 50% of the students speak German as their mother tongue, 30% French, and 7% Italian. Created in 1889, the university embodies a living dynamic interaction of around 215 professors and 10'000 students from over 100 countries.

Students often choose Fribourg because of its bilingual possibilities (French / German) which is not a mandatory requirement. Most programs can be followed in both languages. Students can obtain a diploma with a specific "bilingual" mention which would give them a competitive advantage on the job market. English is compulsory at the master's level in sciences. Lectures in English are available in the major disciplines.

The University of Fribourg has established a number of collaborative partnerships with leading universities around the world to promote exchanges, joint teaching programs, and research projects. Research at the University of Fribourg consists of teamwork, interdisciplinary strategies, ethical responsibilities, and an open dialogue with the economic world. 200 research groups work on some 650 projects, many of which are of immediate industrial application.

Key figures:

Number of students (2006): 10,000

Female students: 57%

International students: 18%

Semester tuition fee:

Swiss USD 484, Non Swiss USD 604

Teaching and research areas:

- Economics and Social Sciences
- Humanities
- Law
- Literature
- Theology
- Mathematics and Natural Sciences



University of Basel

austausch@unibas.ch
www.unibas.ch

Founded in 1460, the University of Basel is the oldest university in Switzerland. A rather small university with a long-standing tradition of excellence, it is a distinguished center of teaching and research.

Situated on the three-nation border of Switzerland, Germany, and France, Basel is at the very core of central Europe. The University, located attractively near the medieval center, benefits from the international and open-minded flair which characterizes the city. With its several world-famous museums, Basel has a rich cultural life.

The University of Basel has a warm and personal atmosphere. Even with over 9,200 students, it is still easy to make friends. The historic and modern buildings are inspiring sites for learning, equipped to meet the educational and professional challenges of the modern knowledge economy. The students can choose from a wide range of quality programs offered by seven faculties which excel at teaching and research. Known for its outstanding competence and innovation in emerging fields of science, the University of Basel considers life sciences and culture as its core research areas.

Key figures:

Nobel Laureates: 1
 Number of students (2006): 10,622
 Female students: 54%
 International students: 17%
 Semester tuition fee:
 (Swiss and Non Swiss) USD 560

Teaching and research areas:

- Humanities and Social Sciences
- Medicine
- Natural Sciences
- Law
- Economics
- Psychology
- Theology



University of St. Gallen

info@unisg.ch
www.unisg.ch

Founded in 1898, the University of St. Gallen (HSG) continues to pursue the goal of providing nearly 5,000 students with a practice-oriented education, guided by an integrative view of business, economics, law, and social sciences. The HSG is consistently ranked among the top business schools in Europe, with EQUIS and AACSB International accreditation underlining the commitment to a holistic curriculum that meets the highest academic standards.

While the five bachelor's programs provide general and diversified education, the ten master's programs allow students to gain greater depth on theoretical and practical levels. Each level of study includes a component of contextual studies intended to develop skills in critical thinking, cultural awareness, and leadership in order for graduates to meet the practical world's increasing claims on intellectual flexibility and intercultural qualifications.

Research is centered around 30 institutes and research groups, which bring theory and practice together while providing vital input for teaching. HSG students pursue extracurricular activities in more than 80 initiatives, including the annual St.Gallen Management Symposium.

A network of over 100 partner universities, including CEMS and PIM, offers students a multitude of possibilities to gain international experience. Double-degree programs are also available to qualified students.

The University overlooks the charming city of St.Gallen, with picturesque views of the nearby mountains and Lake Constance. A variety of nearby sporting and leisure activities as well as cultural entertainments enhance the quality of student life.

Key figures:

Number of students (2007): 5,000
 Female students: 29%
 International students: 25%
 Semester tuition fee:
 Swiss USD 816, Non Swiss USD 936

Teaching and research areas:

- Business Administration
- Economics
- Law
- International Affairs and Governance



University of Neuchatel

service.academique@unine.ch
www.unine.ch

Established in 1838 the “Académie de Neuchâtel” became the University in 1909. Today this university comprises five faculties, namely humanities, sciences, law, economics, and theology, which in turn cover around 30 different disciplines. The university offers a unique setting within French-speaking Switzerland, ensuring close contact between teachers and the 3,800 students, of which 550 are doctoral students.

The University of Neuchatel proposes three master’s degrees taught in English: the Master of Science in Micro- and Nanotechnology, the Master of Science in Finance, and the International Joint Master in Management, Law, and Humanities of Sport, also called FIFA Master. Other master’s programs are conducted partially in English (internet technologies, statistics). Also offered is a bilingual French-German Master’s degree in law jointly with the University of Lucerne.

Its French Language and Civilization Institute (ILCF) is specialized in teaching French for non-native French speakers. Its courses are designed for foreign students who wish to reinforce and extend their knowledge of French language, literature, and civilization. It also offers a summer program during four weeks in July.

Key figures:

Number of students (2007): 3,800
 Female students: 55%
 International students: 20%
 Semester tuition fee:
 Swiss USD 412, Non Swiss USD 632

Teaching and research areas:

- Ethnology, Prehistoric Archaeology, Logopedy, Journalism
- Plant Biology, Hydrogeology
- Financial Analysis, Work & Organizational Psychology, International Business Development, Statistics
- Health Law
- Protestant Theology
- Center for Understanding of Social Processes
- Micro- and Nanotechnology



University of Lugano

relint@lu.unisi.ch
www.unisi.ch

Founded in 1996, the University of Lugano (USI) is recognized as an interdisciplinary and multilingual university with four faculties. Its relatively small size and its high-quality infrastructure facilitate student-teacher relations and create, on both (Lugano and Mendrisio) campuses, the ideal conditions for study and research.

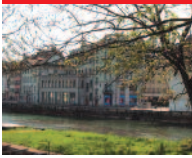
The official language is Italian, but English, the second working language, is used in many of the master’s programs, in the graduate schools, and in the professional master’s courses. German and French are also used as languages in a few specialist courses. USI was among the first Swiss universities to adopt the new European university system. By means of teaching and research agreements or partnerships with the Swiss universities and with major universities in Northern Italy, USI has established a genuine academic bridge between Northern and Southern Europe, paving the way for inter-university master’s courses, cross-border doctoral schools, and research projects, notably with the Polytechnic Universities of Milan and Zurich. The development of research in the sectors of urban project, finance, healthcare communication, health economics, distance teaching, and in some sectors of informatics, has considerably boosted the number of postgraduates (currently over 100) as well as funding for Swiss and European projects.

Key figures:

Number of students (2006): 2,157
 Female students: 50%
 International students: 48%
 Semester tuition fee:
 Swiss USD 1,600, Non Swiss USD 3,200

Teaching and research areas:

- Academy of Architecture
- Computer Science
- Communication Sciences
- Economics



University of Lucerne

rektorat@unilu.ch
www.unilu.ch

The University of Lucerne is a young one. Although its roots back to 1600, it has only formed part of Switzerland's twelve universities since 2000.

The study system at the University of Lucerne conforms to a pan-European standard in accordance with the Bologna model. The convenient size of the university provides students with a great degree of freedom and innovative combination possibilities. Study courses are offered in traditional subjects as well as in interdisciplinary subjects. Moreover, it is possible to combine elements from different faculties.

The excellent support of students is a special feature of the University of Lucerne. Law students are allocated a contact person (mentor) for the period of their studies in order to ensure optimal support and to maintain a dialogue between the students and lecturers. The academic staff cultivates numerous cooperations with foreign scientific institutions. These include, among others, renowned institutions such as various Max-Planck-Institutes and Harvard University.

Key figures:

Number of students (2006): 1,851
Female students: 54%
International students: 3%
Semester tuition fee:
(Swiss and Non Swiss) USD 572

Teaching and research areas:

- Law
- Humanities
- Theology

Prof. Thomas Stocker Institute of Climate and Environmental Physics, University of Bern

Professor Stocker is an internationally renowned climate scientist. His results on past CO₂-concentrations were used by former US vice-president Al Gore in "An Inconvenient Truth" on the threat of climate change. This film is one of the most seen documentaries of all times in the USA and it has won an Oscar. When interviewed on his sources of information Al Gore said: "One of the leading researchers that I rely on is Thomas Stocker. My film contains brand new data that were evaluated at the University of Bern."



Debasree Banerjee B.S. in Engineering, West Bengal University of Technology, Calcutta, India Master's student at EPF Lausanne

"I applied to the EPFL Masters Programme in Computer Science due to the attractive option of a specialized minor in Biocomputing. An excellent infrastructure, strong links between academics and industry, a distinguished faculty and a myriad of available choices all make me proud of my choice. The beautiful campus, the Swiss way of functioning and a truly international student body, all contribute to make it an unforgettable experience!"

Universities of applied sciences (UAS)

University of Applied Sciences of Western Switzerland

office@hes-so.ch
www.hes-so.ch

The major strength of the University of Applied Sciences of Western Switzerland is its faculty, its teachers and its support staff. Teaching is coordinated at every step of the study program: closely in the first year and in a more flexible way in the second year to meet the specific needs of each teaching area. The third year is focused on specific education.

Applied research, transfer of technology, and post-graduate studies are carried out in a network of excellence. This consists of 13 networks grouping together the particular skills of its schools with the aim of giving better service to the economy of the French-speaking region of Switzerland. These networks can be partially or completely integrated in the national centers of excellence.

Schools:

HES-SO Fribourg – Freiburg; HES-SO Geneva; HES-SO Valais – Wallis; HES-SO Arc; HES-SO Vaud; Changins School of Engineering; Ecole Hôtelière de Lausanne (School of Hospitality Management)

Key figures:

Number of students (2007): 12,049
 Female students: 50.8%
 International students: 13.09%

Teaching and research areas:

- Engineering
- Business, Management and Services
- Design
- Health
- Social work
- Arts

University of Applied Sciences of Zurich

info@zfh.ch
www.zfh.ch

With around 10,000 students, the University of Applied Sciences of Zurich is one of the largest institutions in its field in Switzerland. The UAS of Zurich currently includes nine schools.

Zurich has one of the world's highest standards of living and cultural offerings, with a wide selection of first-class theatres, museums, and cinemas. In this environment, the UAS of Zurich offers a broad range of study programs. Apart from teaching and continuing education, the institutes of the UAS of Zurich also conduct application-based research and development. Numerous projects are conducted in cooperation with other tertiary-level schools, private sector companies, public services, administrations, and non-profit organizations. Through the services they offer, the institutes also make their know-how available to others. These activities ensure the transfer of knowledge and technology into the business and industrial sectors. The University of Applied Sciences of Zurich promotes the international mobility of students and offers international contact facilities.

Schools:

School of Applied Psychology (HAP); School of Arts and Design Zurich (HGKZ); School of Music and Theater (HMT); School of Social Work Zurich (HSSAZ); School of Engineering (HSZ-T); School of Economics Zurich (HWZ); School of Engineering, Business Administration and Social Sciences Winterthur (ZHW); School of Life, environment and nutrition sciences Waedenswil (HSW)

Key figures:

Number of students (2006): 9,652
 Female students: 50%
 International students: 10%

Teaching and research areas:

- Architecture
- Building Engineering and Planning
- Business Management and Services
- Chemistry and Life Sciences
- Design and Art
- Engineering and IT
- Health
- Applied Linguistics
- Musical and Theatre
- Applied Psychology
- Social Work
- Teacher Education

University of Applied Sciences of Northwestern Switzerland

info@fhnw.ch
www.fhnw.ch

The University of Applied Sciences Northwestern Switzerland with its eight Schools covering a large variety of teaching areas is one of the leading institutions in the country within its field; it is located in one of the most highly industrialized and developed areas of Switzerland. The UAS of Northwestern Switzerland, with its approximately 6,000 students, offers highly individualized programs, allowing the students to choose from a broad variety of disciplinary curricula or to select specific classes from the faculties. The courses are practice-oriented and market-driven.

Application-oriented research and development occupies a particularly strategic position at the UAS of Northwestern Switzerland, which carries out research projects with partners. The Northwestern Switzerland fosters a network with partners like the University of Basel, the Paul Scherrer Institute, and the Friedrich Miescher Institute.

Schools:

School of Applied Psychology; School of Architecture, Civil Engineering and Geomatics; Academy of Arts and Design; School of Life Sciences; School of Social Work; School of Engineering; School of Business; School of Education

Key figures:

Number of students (2006): 5,752
Female students: 34%
International students: 11%

Teaching and research areas:

- Applied Psychology
- Engineering
- Architecture, Civil Engineering
- Geomatics
- Arts and Design
- Business
- Teacher education
- Life sciences
- Social work

Bern University of Applied Sciences

office@bfh.ch
www.bfh.ch

The canton of Berne including the capital of Switzerland is home to a million inhabitants. The Bern University of Applied Sciences consists of six departments, at various locations in the city of Berne, Biel, Burgdorf, Mäggingen, and Zollikofen. The individual schools offer assistance to help students settle in and coordinate study and social life, like cultural activities, sport, temporary accommodation, and career advice. Berne, Biel, and Burgdorf are medieval cities, which offer not only a beautiful surrounding but also a wide variety of cultural events and institutions. The Bern UAS welcomes students from all around the globe. Some of the schools maintain exchange programs with partner institutions and encourage their own students to spend study periods abroad.

Schools:

Engineering and Information Technology ; Architecture, Wood and Civil Engineering; Business and Administration; Health; Social Work; Bern University of the Arts; Swiss College of Agriculture; Swiss Federal Institute of Sports Mäggingen

Key figures:

Number of students (2006): 5'100
Female students: 35%
International students: 12%

Teaching and research areas:

- Science and Engineering
- Business Administration
- Social work
- Health
- Architecture
- Construction
- Conservation and Restoration
- Sports
- Arts
- Agriculture
- Food Sciences

University of Applied Sciences of Eastern Switzerland

fho@sg.ch
www.fho.ch

The University of Applied Sciences of Eastern Switzerland (FHO) is one of the largest and most renowned educational institutions in the area. Modular study programs allow students to design their curriculum according to their personal preferences. Most of the faculty have extensive work experience and are thus able to present their topics dynamically and with a strong application orientation.

Through its applied research and development institutes, the UAS of Eastern Switzerland maintains close contact with organizations from various sectors of industry, business, and society in general. Due to their application-oriented education, based on a solid science foundation, students can graduate with an attractive professional profile and face promising perspectives in the job market.

Situated at the intersection of Switzerland, Austria, Germany, and the Principality of Liechtenstein, the UAS of Eastern Switzerland promotes cooperation between universities and companies of all four countries. As part of the International University of Lake Constance, the UAS of Eastern Switzerland encourages a shared approach to teaching as well as research and development. In addition, it has partnerships with universities in English-speaking countries, on both an educational and professional level.

Schools:

School of Engineering and Architecture Rapperswil (HSR); School of Business Administration; Engineering and Social Work St.Gallen (FHS); School of Business Administration and Engineering Chur (HTW); School of Engineering Buchs (NTB)

Key figures:

Number of students (2006): 3,302
 Female students: 23%
 International students: 13%

Teaching and research areas:

- Engineering and IT
- Building Engineering and Planning
- Business Administration
- Management and Tourism
- Social Work and Health

Lucerne University of Applied Sciences and Arts (FHZ)

direktion@fhz.ch
www.fhz.ch

The Lucerne University of Applied Sciences and Arts is the regional center for higher education in central Switzerland. Lucerne, the city of tourism and culture, is also a city of education. FHZ is comprised of five schools with nearly 3,000 undergraduates and over 2,000 postgraduates. The Lucerne University of Applied Science and Arts contributes significantly to the economic and cultural development of Lucerne and Central Switzerland.

Studying at the Lucerne UAS also means studying where hundreds of thousands spend their vacation: in the world-famous city and on the Lake of Lucerne. The beauty of the landscape beckons you to explore it and offers a wide range of outdoor activities. Jean Nouvel's Culture and Congress Center, museums, and places of historical interest offer culture and events at the highest level.

Schools:

School of Engineering and Architecture (HTA); School of Business (HSW); School of Social Work (HSA); School of Art and Design (HGK); School of Music (MHS)

Key figures:

Number of students (2006): 2,940
 Female students: 41%
 International students: 7%

Teaching and research areas:

- | | |
|---------------------------|---------------|
| • Engineering | • Design |
| • Architecture | • Design |
| • Economics | • Management |
| • Business Administration | • Social Work |
| | • Arts |

University of Applied Sciences of Southern Switzerland

info@supsi.ch
www.supsi.ch

The University of Applied Sciences of Southern Switzerland (SUPSI) has a university statute focused on profession-oriented university education and on applied research. Since its foundation in 1997, SUPSI has been a fundamental part of the Italian-language university pole in Switzerland, which currently numbers approximately 4,000 students in the marvelous Lugano region.

The distinguishing features of SUPSI are that it provides study opportunities to those who have already gained some professional experience and who continue to operate in a professional capacity. The teaching program incorporates full-time lecturers-researchers and part-time professionals. Moreover it offers a wide range of continuous courses to those operating professionally and conducts applied research projects in collaboration with companies and institutions in the region.

If on one hand SUPSI is strongly related to its region, on the other hand it is very open at national and international level. The integration with the Fernfachhochschule Schweiz has created an intercantonal dimension and since its foundation, SUPSI has participated in the Erasmus program. Students can undertake part of their bachelor's or master's courses at a SUPSI partner European university. SUPSI students can enjoy its strategic location as well: from Lugano they can easily reach some important Swiss cities as Zurich, Bern, Lucerne, Geneva, Lausanne, as well as Milan, Como, Varese (in North Italy).

Affiliate schools:

Fernfachhochschule Schweiz; Dimitri Theater School; Swiss Italian Conservatory

Universities of teacher education

Switzerland offers high-quality programs in teacher education. The institutions offer diplomas for pre-school, primary, secondary I, secondary II (or matura school) levels, and continuing education. They also provide degrees for special-needs education, speech therapy, and psychomotor training. Universities of teacher education are located in Bern, Brig, St-Maurice, Brugg, Basel, Solothurn, Chur, Freiburg (Fribourg), Geneva, Kreuzlingen, Lausanne, Locarno, Lucerne, Schwyz, Zug, Porrentruy, Bienne, La Chaux-de-Fonds, Rorschach, Schaffhausen, St. Gallen, and Zurich.

Special institutes

International studies and Development

The Graduate Institute of International Studies (IUHEI) in Geneva is one of the centers of excellence in the world specialized in international relations. The Institute offers master's, Ph.D., and postsecondary education degrees in four areas of study: international law, international economics, international history and politics, and political

Key figures:

Number of students (2006): 1,583

Female students: 35%

International students: 19%

Teaching and research areas:

- Architecture
- Business Management
- Civil Engineering
- Computer Science
- Conservation and Restoration
- Electronics
- Interior design
- Mechanical Engineering
- Music
- Nursing
- Occupational Therapy
- Physiotherapy
- Social work
- Theater
- Visual communication

24 Campus and Research Park Switzerland

science. The Graduate Institute of Development Studies (IUED), located in Geneva as well, is an outstanding institution in development studies. Both institutes are attached to the University of Geneva, but remain independent foundations. They are currently merging into a new institution at the beginning of 2008, the Graduate Institute of International Studies and Development (IHEID), which will combine in a unique manner the fields of Development and International Relations. www.hei.unige.ch, www.unige.ch/iued

Public Administration

The Swiss Graduate School of Public Administration (IDHEAP) in Chavannes is a distinguished institution of postgraduate education that prepares students for the senior functions in the public and para-public administrations and offers master's, Ph.D., and continuing education programs. www.idheap.ch

Health and society

The Institut Universitaire Kurt Boesch (IUKB) in Sion offers an interdisciplinary approach of teaching and research. It offers numerous master's programs in the field of aging, health, and society. In addition, it offers continuing education about mediation, business, and tourism management. www.iukb.ch

Business schools

Switzerland offers excellent MBA and executive education programs. The International Institute for Management Development (IMD) in Lausanne is one of the world's leading business schools. IMD is world-renowned for outstanding networks with the business world. The executive education at IMD was ranked 2nd in the world and 1st among European business schools in the 2006 Financial Times. www.crus.ch/engl/mba.html, www.imd.ch

Hotel and Tourism Management Schools

The Swiss hotel and tourism sector enjoys an excellent reputation worldwide. Not only were Swiss hotel management institutions the first to provide such specialized programs in the 19th century, but the Swiss have succeeded in creating a modern and thriving combination of professional excellence and international business in a multicultural environment. Students from all over the world study at Swiss hotel schools to ensure that they get a professional and future-oriented education. Hotels and tourist organizations are therefore keen on employing Swiss-trained 'hoteliers', owing to their ability to succeed in a highly competitive environment.

Swiss Federation of private schools

www.swiss-schools.ch

Research Park Switzerland

The knowledge-based Swiss economy invests considerably in research and innovation. Research & Development (R&D) are crucial to ensure long-term national prosperity. Social welfare and economic success strongly depend on a highly qualified workforce. Therefore, publicly- and privately-funded research institutions ensure Swiss competitiveness and research.

3.1 Overview

By international comparisons, Switzerland has superior qualities and enjoys an excellent reputation in all major areas. Thanks to the attractive environment and the highly skilled workforce, both start-ups and large companies in the pharmaceutical, bio- and medical technology, and machinery industries successfully conduct



research in Switzerland. In many cutting-edge fields, Swiss research groups are world-renowned. More than two-thirds of Swiss research and development funds are private, with the majority of resources contributed by the chemical, pharmaceutical, electronics, and metallurgical industries. The remaining resources are mainly provided by the state. The Swiss research landscape comprises excellent institu-

tions both in the public and the private sector. The Swiss National Science Foundation (SNSF) is the leading organization dedicated in the promotion of basic sciences research. The Commission for Technology and Innovation supports innovation and the transfer of know-how and technology.

Swiss Nobel prize winners

Switzerland ranks first among all countries in terms of Nobel prizes per capita. The 32 award winners achieved giant steps for mankind in various research fields. Swiss-educated Albert Einstein won a Nobel prize for Physics in 1921 for his General Theory of Relativity and other groundbreaking scientific contributions. Of these 32 Nobel prizes winners, ten were recognized in physics, six in chemistry, and eleven in medicine. Kurt Wüthrich was the most recent Swiss Nobel prize winner in the field of chemistry in 2002.

Swiss Nobel Prize Winners: 1901 Jean Henri Dunant (peace), 1902 Elie Ducommun and Charles Albert Gobat (peace), 1909 Emil Theodor Kocher (medicine), 1913 Alfred Werner (chemistry), 1919 Carl Friedrich Georg Spitteler (literature), 1920 Charles Edouard Guillaume (physics), 1921 Albert Einstein (physics), 1937 Paul Karrer (chemistry), 1939 Leopold Ruzika (chemistry), Hermann Hesse (literature), 1948 Paul Herrmann Müller (medicine), 1949 Walter Fudolf Hess (medicine), 1950 Tadeus Reichstein (medicine), 1951 Max Theiler (medicine), 1952 Felix Bloch (physics), 1957 Daniel Bovet (medicine), 1975 Vladimir Prelog (chemistry), 1976 Burton Richter (physics), 1978 Werner Arber (medicine), 1984 Niels K. Jerne and Georges J.F. Köhler (medicine), 1984 Carlo Rubbia and Simon van der Meer (physics), 1986 Heinrich Rohrer (physics), 1987 K. Alexander Müller (physics), 1988 Jack Steinberger (physics), 1991 Richard R. Ernst (chemistry), 1992 Edmond Henri Fischer (medicine), 1992 Georges Charpak (physics), 1996 Rolf Zinkernagel (medicine), 2002 Kurt Wüthrich (chemistry).

Patents — Excellent knowledge transfer

One measure of a country’s standing on innovation and R&D is the number of patents it can claim since patents reveal the number of marketable inventions derived from research. Switzerland, along with Finland and Japan, have the world’s highest patent intensity ratios. Switzerland appears among the most innovative countries. With over 120 patents per million habitants and around 200 patents per R&D expenditures in recent years, it has one of the world’s highest patent productivity rates.

Strong impact of Swiss scientific publications

Switzerland enjoys worldwide recognition for its research. The impact of Swiss scientific publications has strongly grown and played an integral role in several research areas in the last years. Over all research areas, only the U.S. and the Netherlands have a stronger impact. Swiss scientific publications are also highly significant in agriculture, biology, and environmental sciences. Switzerland has further strongly improved its ranking in clinical medicine to the 11th place.

Top countries in terms of scientific publications’ impact, by research area, 1998-2002

| Research Area | 1 | 2 | 3 | 4 | 5 | 6 |
|--|--------------------|--------------------|-------------|-------------|-------------|--------------------|
| <i>Engineering, Computing and Technology</i> | Switzerland | USA | DK | Israel | Netherlands | Australia |
| <i>Life Sciences</i> | USA | Switzerland | Netherlands | UK | Canada | Finland |
| <i>Physical, Chemical and Earth Sciences</i> | USA | Switzerland | Denmark | Netherlands | Germany | UK |
| <i>Agriculture, Biology and Environmental Sciences</i> | Netherlands | Denmark | UK | USA | Sweden | Switzerland |

Source: Center for Science and Technology Studies, 2004.

Talented Ph.D. graduates ensure knowledge pool

Switzerland benefits from a high number of talented Ph.D. graduates. New Ph.D. graduates in exact and natural sciences and engineering are not only highly specialized, but also invaluable to produce and transfer knowledge in an information-based economy and society. Currently Switzerland produces one new Ph.D. graduate per 1000 inhabitants aged 25-34. This means that Switzerland is not only the leader in new Ph.D. graduates among OECD countries, it produces twice as many as the EU and U.S. average and four times as many as the Japanese average.

3.2 Outstanding public research funding

Switzerland has created various institutions, e.g. the Swiss National Science Foundation (SNSF) and the Commission for Technology and Innovation (CTI), to foster research and development.



The Swiss National Science Foundation (SNSF)

The Swiss National Science Foundation supports basic research at Swiss universities and independent research institutes and assists with the career development of outstanding young scientists. The SNSF supports a considerable number of individual research projects and oversees the implementation of federal research projects: the National Research Programs (NRP), Priority Research Programs, and the National Centers of Competence in Research (NCCRs). In 2004, SNSF expenditures for research totaled USD 336 million. The National Research Programs contribute scientifically to urgent problems of national significance. The research areas are solution and practice-oriented to face major present-day problems. Current NRP-programs include e.g. musculoskeletal health and chronic pain, childhood, youth, and intergenerational relationships in a changing society, and landscapes and habitats of the Alps.

The Commission for Technology and Innovation (CTI)

The Commission for Technology and Innovation strengthens innovation and knowledge transfer between research and industry by co-funding public research and training institutes that are conducting joint research projects with industry. The CTI supports collaboration between dynamic companies and researchers at universities by supporting their cooperation in applied R&D.

Public Research Institutions

Regarding academia, all university-level institutions in Switzerland conduct research. Together with numerous private sector research facilities, they constitute the backbone of the Swiss research center. Basic research mainly takes place

at the doctoral degree-granting research institutions and the four federal research institutes of the ETH Domain. These ETH Domain research institutes are the leaders in their fields (Paul Scherrer Institute, Swiss Federal Institute for Environmental Science and Technology, Swiss Federal Institute for Forest, Snow and Landscape Research, and Swiss Federal Laboratories for Materials Testing and Research). They deliver world-class results in cutting-edge life sciences, nano-, and communications technologies. The Swiss Tropical Institute in Basel is famous for its research and work on infectious diseases, medical parasitology, and public health. While basic research is carried out in Switzerland mainly by the twelve doctoral degree-granting research institutions, the universities of applied sciences focus on applied research and maintain close contacts with the private sector.

First-rate National Centers of Competence in Research (NCCRs)

The National Centers of Competence in Research are networks of close collaboration between Swiss higher education institutions and international partner institutions. Launched in 2001, they offer a highly effective tool to further improve Swiss competitiveness. The main goal of the NCCRs is the promotion of scientific excellence in domains of crucial strategic significance. The NCCRs' achievements during 2001-2004 are remarkable with over 7,100 scientific papers, more than 120 patents/licenses, and over 330 collaborations with the private and public sector.

National Centers of Competence in Research in Switzerland

| Name | Focus | Name | Focus |
|---------------------------|---|---------------------------|--|
| Affective Sciences | Emotion elicitation and response patterning, emotion regulation and emotion in social processes | MICS | Decentralized models of IT-systems |
| Climate | Past climate variability, predictability, eco-system impacts and risks | Molecular Oncology | Basic tumor biology and the host response to cancer |
| CO-ME | Potential of information technology to optimize medical interventions | Nanoscale Science | Impact of nanometer scale on life sciences, medicine, biology, nanorobotics, computing or communication |
| Democracy | New political decision-making processes and strategies to improve the quality of democracy | Neuro | Restoration of function after damage or disease of the nervous system |
| FINRISK | Risk assessment and models of risk impacts on decision-making processes | North-South | Global change, the pressures of these syndromes and their causes on human, natural, economical resources |
| Genetics | Function and regulation of genes during cellular and organism development | Plant Survival | Interactions among plants, and between plants, insects and pathogens |
| Iconic Criticism | Dependence of iconic criticism in our image-oriented society | Quantum Photonics | Interaction of light with matter |
| IM2 | Prototypes in the field of man-machine interaction | SESAM | Mental health and mental disorders over a person's lifetime |
| MaNEP | New electronic materials and their application | Structural Biology | Quantitative understanding of the 3D-structure of proteins, their foldings and their interactions with other molecules |
| Mediality | Link between the forming of cultural meaning and media forms | Trade Regulation | Balance between economic and other regulatory objectives |

3.3 Dynamic private research clusters

Private sector research makes a key contribution in Switzerland. In 2004, more than two-thirds of all R&D was funded by private industry. More than USD 7.8 billion was spent on intramural R&D (corporate in-house activities), an increase of 18% from 2000. Extramural expenditures (external R&D) more than doubled from USD 1.44 billion in 2000 to USD 3.2 in 2004. Four major sectors contributed the major share of private research funding; the pharmaceutical and chemical industry (44 %), metal and machinery (17 %), research laboratories (14 %), and the information and communications technology (ICT) sector. Most of this research and development takes place in companies with more than 100 employ-

ees. With regards to funding, 11 % of private sector R&D expenditures are funded by third parties. This includes funds from abroad which amounted to 62% in 2004.

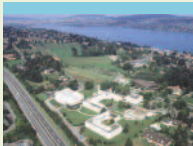
In 2003, the Swiss biotech sector comprised 227 companies, of which 88 suppliers and 139 core biotech companies. In fact, Switzerland has the highest biotech density

worldwide. Switzerland has a top research position worldwide in the fields of human and animal health as well as environment and industry. Switzerland is also home to more than 500 medical technology companies, which employ a full-time workforce of 40,000. These companies spend almost USD 500 million annually for research and development and export goods worth close to USD 5 billion per year. Moreover, Switzerland ranks 8th among the world's machinery-exporting countries. The Swiss machinery, mechanical, and electrical engineering industries are crucial for the Swiss economy and comprise more than 900 companies.



Switzerland has always been attractive for headquarters of leading global companies and their research laboratories like Merck-Serono, ABB, Roche, and Novartis amongst others. IBM is one example of the many companies which have been working in Switzerland for decades. Other companies such as Google continue to move their headquarters or their European base to Switzerland not only because of the excellent quality of life but especially for the highly educated workforce and strong research universities.

Case Study: IBM's European Research Laboratory in Rueschlikon



IBM Rueschlikon

<http://www.zurich.ibm.com>

The American high-tech company International Business Machines Corporation (IBM) has located one of its two European laboratories in Rueschlikon, near Zurich. The world's largest IT company has had this research laboratory in Switzerland since 1956. The Zurich laboratory employs approximately 300 individuals, including as many as 30 visiting scientists who typically stay for several months of intensive collaboration. In addition, a steady stream of postdoctoral fellows, Ph.D. candidates, and summer students pass through the Zurich laboratory. More than 20 nationalities are represented among the research staff members. The Zurich laboratory is involved in many joint projects with universities throughout Europe in research programs established by the European Union and the Swiss government.

Throughout the years, scientists of the Zurich lab have made significant contributions. Gerd Binnig and Heinrich Rohrer were awarded the Nobel Prize for Physics in 1986 for the invention of the scanning tunneling microscope. One year later, Georg Bednorz and Alex Müller received the same honor for the discovery of high-temperature superconductivity. Many other inventions were developed like new techniques to transmit data over telephone lines, to increase the storage density on magnetic hard disks or to make secure payments over the Internet.

In spring 2005, IBM decided to divide its European headquarters into two regions — southwest southern Europe in Madrid and northern northeast Europe in Zurich. This new headquarter has created around 200 additional jobs.

Research areas:

- **Systems:** servers, storage, networking
- **Services & Software:** privacy and data protection, information security, fluid and mobile computing, business integration technologies, intelligent business infrastructure
- **Science & Technology:** life science, materials for semiconductor technology, micro- and nanofabrication, nanoscale science, photonics and optoelectronics, post-CMOS technology, server technology, storage and memory technology
- **Industry Solutions;** executive briefing facility, forum of latest IBM mobile e business offering and partner technologies

Chapter 4

Studying in Switzerland

While Switzerland is known for many things e.g. its banks, chocolate, watches, fondues, one of the country's best offerings is its first-class higher education. This chapter provides sources for finding the program which best fits your interests.

4.1 High quality education at low costs

Valuing public education has a long tradition in Switzerland. As a result of the strong Swiss democratic history and background, the Swiss constitution explicitly stipulates that public education is mandatory and must be high quality, affordable, and secular. This concept is based on the idea that well-educated citizens bring added value to the country as a whole. The Swiss education system puts less emphasis on rigorous entrance tests and immense tuition fees and more on the democratic right for every high school (matura) graduate to attend university. Therefore, assessment tests take place throughout the entire school career and especially during high school.

4.2 A wealth of master's and Ph.D. programs

The Swiss higher education system offers a wide range of educational opportunities to the international student, from the Federal Institutes of Technology in Zurich (ETH) and in Lausanne (EPFL), to the ten cantonal universities. The Federal Institutes are world leaders in science and engineering education and research. The ten cantonal universities provide comprehensive courses in diverse fields of study and conduct cutting-edge research. In addition, the universities of applied sciences, and the universities of teacher education have a variety of programs oriented towards professional skills.



Dr. Matthias Kaiserswerth
Director, IBM Zurich Research Laboratory

“More than 50 years ago, the IBM Research organization selected Switzerland as location for its European branch, the IBM Zurich Research Lab. There were very good reasons for coming to Switzerland in 1956, and there are at least as many for staying here today. We have highly skilled people and internationally renowned universities and other research facilities within short distances. Moreover, the political climate traditionally has been and continues to be characterized by a strong commitment to innovation, making Switzerland a hotspot for innovation and providing just the right environment for cutting-edge research, which is at the core of IBM's business.”

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With regards to the working and studying language, while Switzerland offers possibilities to study or do research in several languages, English has become the main language in graduate and Ph.D. programs. In fact, many universities are increasing their English study programs every year. At most Swiss universities international students comprise 50% of the total Ph.D. candidates. They are attracted by the relatively low tuition, high quality of life, and world-class facilities that make Switzerland an outstanding choice. There is a broad offering of many interesting Ph.D. or postdoctoral programs, which often are organized in small working groups and mostly conducted in English. Ph.D. candidates are considered part of the workforce and paid. They benefit from Switzerland's position as a center of excellence in research, innovation, and international business.

The best way to view the most updated program selection is to use the following links: www.swissuniversity.ch, www.kfh.ch

Another way to find your English study program is to contact directly your preferred research lab or the university's international relations office.

These brochures give an additional insight into the possibilities of studying in Switzerland:

Higher Education in Switzerland: www.sbf.admin.ch/higher-education.html

Studying in Switzerland – Universities: www.crus.ch

Studying in Switzerland – Universities of Applied Sciences: www.kfh.ch

Studying in Switzerland – Universities of Teacher Education: www.skph.ch



Dr. Klaus W. Wellershoff
Chief Economist, UBS AG

"The University of St.Gallen not only provided me with the necessary backgrounds, means and resources for a career in business, but also gave me real insights into scientific economic research. Both aspects are of unpayable value in my current position."

Science and Technology Counselors

The Swiss science and technology counselors establish and maintain contacts with representatives of the administration, universities, research institutes, and the private sector in the host country. They stimulate and support cooperation projects in the area of university or industry research, knowledge transfer and researchers' mobility. You can find the contact information for the Science and Technology Counselors closest to you by using the following link:

www.sbf.admin.ch/htm/international/int/consulates/rat-e.html



Source: State Secretariat for Education and Research, 2007.

Further Information to the Campus and Research Park Switzerland

Federal Institutions

Swiss State Secretariat for Education and Research: www.sbf.admin.ch

Federal Office for Professional Education and Technology: www.bbt.admin.ch

Swiss Science and Technology Council: www.swtr.ch

Federal Commission for Scholarships for International Students:
www.sbf.admin.ch/htm/bildung/stipendien/eskas-e.html

Think Swiss: www.thinkswiss.org

Universities

Swiss research Universities: www.swissuniversity.ch

Rectors' Conference of the Swiss Universities: www.crus.ch

Conference of the Universities of Applied sciences Switzerland: www.kfh.ch

Swiss Conference of Rectors of Universities of Teacher Education: www.skph.ch

Swiss University Conference: www.cus.ch

Science and Research

Swiss National Science Foundation: www.snf.ch

Commission for Technology and Innovation: www.bbt.admin.ch/kti

National Centers of Competence in Research, www.snf.ch/E/targetedresearch/centres

National Research Programs, www.snf.ch/E/targetedresearch/researchprogrammes

Swiss Research Portal: www.researchportal.ch

Swiss Education & Research Network: www.switch.ch

Brochures

Higher Education in Switzerland: www.sbf.admin.ch/higher-education.html

Studying in Switzerland – Universities: www.crus.ch

Studying in Switzerland – Universities of Applied Sciences: www.kfh.ch

Studying in Switzerland – Universities of Teacher Education: www.skph.ch



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Confederaziun svizra

Swiss Confederation

Federal Department of Home Affairs FDHA
State Secretariat for Education and Research SER



Switzerland.