

Researchers' Report 2013

Country Profile: Switzerland



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1. Key data

National R&D intensity target

“The Swiss research system is of very good quality and is based on a clear-cut separation between the public sector, which is centred on very research-intensive universities, and the private sector, which is centred on the large research units of multinational companies. The main priority of Swiss national research and innovation (R&I) policies is to provide excellent framework conditions by fostering basic as well as applied research and technology transfer.

Switzerland has one of the highest R&D intensities both in Europe and in the world with a value of 2.87% in 2008. Over the last decade, R&D intensity grew at an average annual rate of 1.9%, well above the EU rate of 0.8% and if the same trend is continued, will reach 3.60% in 2020. Almost 74% of R&D is performed by the private sector. This is due to the specific structure of the Swiss economy which is dominated by large multinational companies with their own global strategies. Swiss research policy focuses mainly on the quality of the public research sector and on the training of skilled researchers. An important trend in public R&D expenditures is the increasing R&D expenditure for universities. As a result, over the period 2000-2010, total higher education expenditure on R&D increased in real terms at an average annual rate of 5%. In 2008, higher education expenditure on R&D as a percentage of total expenditure on R&D in Switzerland was approximately on the same level as the EU average (CH: 24.2%; EU: 23.0%).

The share of new doctoral graduates per thousand population aged 25-34 has increased from 2.7% in 2002 to 3.6% in 2009, a value which is more than double the EU average. Switzerland's competitive R&I system is maintained by intensive and successful scientific activity as shown by a high share of scientific publications within the 10% most cited scientific publication worldwide (15.8% in 2008), a high number of international scientific co-publications per million population (2 505 in 2011), a high level of PCT patent applications per billion GDP (7.8 in 2009) and a high level of licensing and patent revenues from abroad as % of GDP (2.95% in 2011).

Switzerland has a good tradition of participating in international programs at European level. Switzerland's participant success rate in the EC Seventh Framework Programme was 25%. The successful participants received a total EC financial contribution of EUR 1.3 billion”.¹

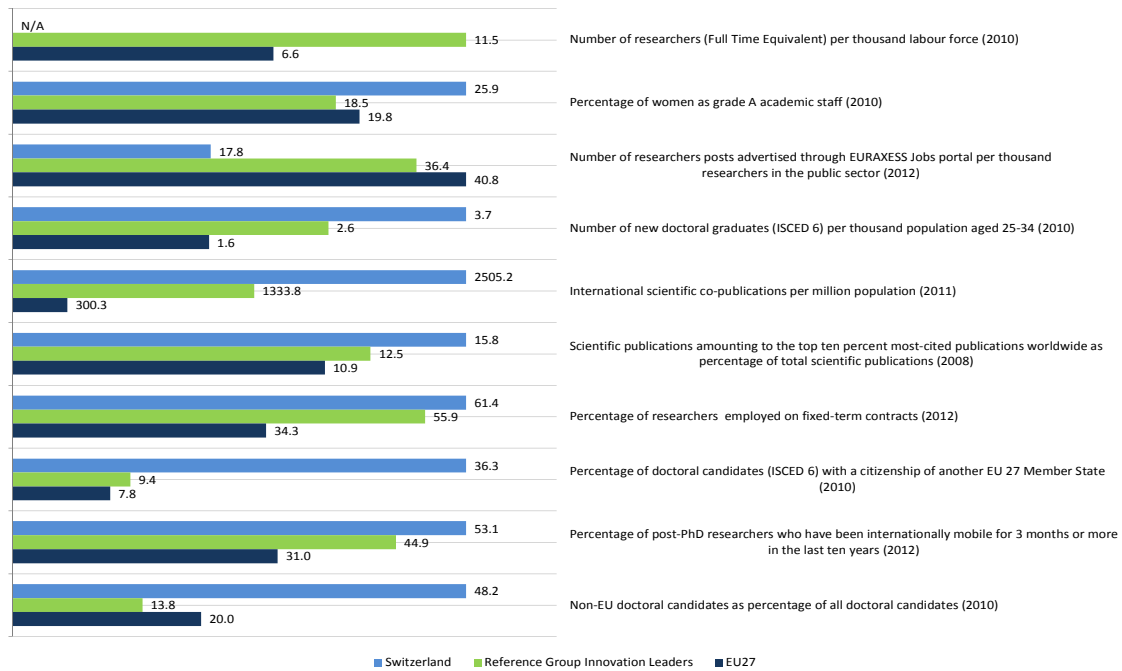
Key indicators measuring the country's research performance

The figure below presents key indicators measuring Switzerland's performance on aspects of an open labour market for researchers against a reference group and the EU-27 average².

¹ European Commission (2013), “Research and Innovation performance in EU Member States and Associated countries. Innovation Union progress at country level 2013”

² The values refer to 2012 or the latest year available

Figure 1: Key indicators – Switzerland



Source: Deloitte

Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, UNESCO OECD Eurostat education survey, Innovation Union Scoreboard 2013, MORE2

Notes: Based on the average innovation performance, Switzerland belongs to the group of Innovation leaders showing a performance well above that of the EU-27³.

Stock of researchers

The table below presents the stock of researchers by Head Count (HC) and Full Time Equivalent (FTE) and in relation to the active labour force.

Table 1: Human resources – Stock of researchers

Indicator ⁴	Switzerland	EU Average
Head Count per 1 000 active labour force (2008)	9.79	9.45
Head Count (2008)	45 874	-
FTE per 1 000 active labour force (2009)	5.28	6.63
Full time equivalent (FTE) (2009)	25 142	-

Source: Deloitte

Data: Eurostat

2. National strategies

The Swiss Confederation has put in place a range of measures aimed at training enough researchers to meet its R&D targets and at promoting attractive employment conditions in public research institutions. The table below presents key programmes and initiatives intended to implement the strategic objectives to train enough researchers to reach Switzerland's R&D targets, to promote attractive working conditions, and to address gender and dual career aspects.

Table 2: National strategies

Measure	Description
Federal Council Dispatch on the Promotion of Education,	This strategy promotes education, research and innovation. It has the following objectives:

³ European Commission (2013), "Innovation Union Scoreboard 2013"

⁴ More recent data are not available

Measure	Description
Research and Innovation for 2008-2011⁵ (2007)	– Offer an appealing, world-class educational system by: – Raising the quality of teaching; – Reforming the basic study programmes and development of Master's and doctoral programmes; – Provide attractive working conditions and encourage equal opportunities by: – Developing a tenure track system to foster the development of the next generation of teachers and researchers; – Improving the position of teaching and research assistants through the clarification of titles and roles; – Foster equal opportunities at all levels by: – Putting in place instruments and measures in support of equal opportunities; – Supporting childcare facilities.
Universities' planning for the period 2012-16, Strategic Planning (Rectors' Conference of the Swiss Universities - CRUS) (2010)	In 2010, the CRUS adopted a strategy to develop doctoral and post-doc training and improve the working conditions and career prospects of young researchers at the 12 universities (10 cantonal and two federal institutes of technology).

Source: Deloitte

3. Women in the research profession

Measures supporting women researchers in top-level positions

In 2010, the percentage of women grade A academic staff was 25.9% in Switzerland compared with 18.5% among the Innovation Union reference group and an EU average of 19.8%⁶.

The Swiss government has introduced a number of measures to raise the proportion of women in high level positions in research, technology and innovation. The table below provides an overview of key initiatives supporting women in the research profession.

Table 3: Women in the research profession - Key programmes and initiatives

Measure	Description
Gender Campus (ongoing)	The national platform Gender Campus ⁷ () for gender equality, gender studies and the promotion of gender-sensitive careers in higher education lists all national institutions, statistics, training offers and links in the respective research field. Between 2013-2016, the platform is financed by the Swiss University Conference (SUC) sub-programme 'Gender Studies' and the new State Secretariat for Education, Research and Innovation (SERI).
Diversity@CTI Initiative (The Innovation Promotion Agency – Commission for Technology and Innovation – CTI) (2009)	The CTI encourages greater diversity and aims to increase significantly the proportion of women involved in innovative projects and entrepreneurship. The Diversity@CTI initiative fostered diversity by increasing the number of female researchers, inventors, mentors, experts and coaches on its staff.
Equal Opportunity at Universities of Applied Sciences Programme (The Federal Office of Professional Education and Technology - OPET) (2008-12)	This programme promotes equal opportunities between men and women. Universities of Applied Sciences (UAS) are free to develop their own equal opportunity measures and projects. The general objective is sustainable integration of the equal opportunity principle in all performance and management agreements.
Gender and Research Promotion (GEFO-Studie) (SNSF 2008)	This report aimed at identifying and quantifying the issue of women dropping out of academic careers (leaky pipeline) in relation to the role played by the SNSF in the processes of research promotion and access to grants.
Gender equality measures at the Swiss Federal Institutes of Technology ETHZ/EPFL (by academic year)⁸	The ETHZ has earmarked 0.4% of its global budget for gender equality measures of various kinds (e.g. "fix the leaky pipeline", gender monitoring 09, 11 etc.). The EPFL has put a focus on STEM-related programmes.

⁵ The measures in the Federal Council Dispatch on the Promotion of Education, Research and Innovation have been prolonged and applied in 2013 as well

⁶ See Figure 1 "Key indicators – Switzerland"

⁷ Available at: www.gendercampus.ch/e

⁸ Available at: http://www.equal.ethz.ch/gender_monitoring/index_EN

Measure	Description
GRIPS Gender Report (Swiss National Science Foundation) (2001)	The Report, commissioned by the Swiss National Science Foundation in collaboration with the Equal Opportunities Commission, examines issues related to gender mainstreaming and offers recommendations on the basis of its findings.
Marie Heim-Vögtlin (MHV) Programme (SNSF)	This programme supports the professional integration at Swiss universities of well-qualified women scientists (docs and post-docs) who have interrupted their research career for family-related reasons or who have re-located in order to follow their (academic) partner.
Swiss Federal Equal Opportunity at Universities Programme (CRUS) (2000-11/12)	The Federal programme for the promotion of equal opportunity for women and men at Swiss universities aimed to promote equal opportunities in the researcher profession. The Programme consisted of three modules: 1. The incentive programme for the promotion of female professors encouraged universities to hire women professors. At the end of each academic year, the total budget was distributed according to the number of newly hired female professors who had received a permanent contract. The annual budget was CHF 0.8 million (some EUR 0.66 million) for the period 2008-11; 2. The mentoring programme for the promotion of female junior researchers supported mentoring projects for female junior researchers. The annual budget was CHF 0.8 million (some EUR 0.66 million) for the period 2008-11; 3. The work-life programme for greater balance between academic career and family encouraged Swiss universities to introduce childcare measures. In addition, it encouraged them to provide support for dual-career couples. The annual budget was CHF 0.3 million (some EUR 0.25 million) for the period 2008-11. The programme has been prolonged until June 2013.
Swiss University Conference programme "Equal Opportunity at Universities"/Gender Studies 2013-2016	From 2013 onwards, the ten Swiss universities have their own action plans for gender equality measures with the support of the university management and the gender equality delegates. The programme's funding was allocated on December 6, 2012. All the action plans have been evaluated and accepted ⁹ .
120% Model (SNSF) (planned)	In 2013, the Swiss National Science Foundation implemented a '120% employment model' allowing parenting post-doctoral researchers to work part-time at 60%. The position will be complemented with an additional 60% for an assistant supporting the post-doctoral researcher in their work. This model has already been tested in the course of the Federal Equal Opportunities Programme (e.g. at the Vetsuisse Faculty in Bern).

Source: Deloitte

Measures to ensure a representative gender balance

The Federal Equal Opportunities Programme 2008-11/12 aimed to increase the proportion of category I women Professors from 14% in 2006 to 25% by the end of 2012. For the period 2013-16, the Rectors' Conference of the Swiss Universities (CRUS) has set what are considered to be realistic targets per domain for newly nominated women Category I professors and assistant professors in the forthcoming Swiss University Conference sub-programme Equal Opportunity at Universities 2013-2016. The overall goal of the programme is for 25% of grade A professors and 40% of assistant professors (grade B) to be women by 2016. The proportion of the newly nominated women professors is monitored once per academic year in the course of the programme.

The Swiss National Science Foundation promotes a representative gender balance in the election of researchers in SNSF's evaluation committees. A decision by SNSF bodies not to include female researchers must be explicitly justified.

Maternity leave

Women researchers receive 80% of their salary during maternity leave (for 14 weeks). Institutions usually pay the difference should the amount exceed the 80% threshold.

⁹ Available at: <http://www.crus.ch/information-programme/chancengleichheit-gender-studies-suk-programm-p-4/aktionsplaene.html>

4. Open, transparent and merit-based recruitment

Recruitment system

The recruitment¹⁰ (reappointment and new appointment) of professors at Swiss universities is set down in University regulations. Generally, a committee is responsible for the organisation of reappointments, and new appointments of professors and newly created chairs. The department concerned defines the profile and description of job vacancies together with the structural committee. Recruitment vacancies must be open and transparent. The best suited candidates are selected on the basis of transparent selection criteria. Guidelines for gender fair recruitment procedures have been developed in the course of the Swiss Federal Equal Opportunities at the Universities Programme 2000-12 and will be intensified within the Swiss University Conference Sub-programme "Equal Opportunity at Universities" 2013-2016.

At the doctoral level, recruitment and selection are either effected by the (future) doctoral supervisor or, with the introduction of programmes, operated more and more often by a committee. In addition, there are the traditional recruitment and selection processes (doctoral candidates contact future supervisors or are recruited by them) and there are calls for candidates. The latter have become more common and have an acknowledged merit, but recruitment and selection by future supervisors who "discover" promising students have retained their value, especially in the humanities and social sciences.

Open recruitment in institutions

The table below presents information on open recruitment in higher education and public research institutions.

Table 4: Open recruitment in higher education and public research institutions

Do institutions in the country currently have policies to ...?	Yes/No	Description
– publish job vacancies on relevant national online platforms	No	Such rules may exist at faculty level.
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	No	Such rules may exist at faculty level.
– publish job vacancies in English	No	
– systematically establish selection panels	Yes	Institutions systematically establish selection panels for the recruitment of professors (see also "Recruitment system" above).
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Yes	Institutions establish clear rules for the composition of selection panels for the recruitment of professors while ensuring a representative composition and gender balance.
– publish the composition of a selection panel (obliging the recruiting institution)	No	Institutions inform university management of the composition of a selection panel for the recruitment of professors.
– publish the selection criteria together with job advert	No	Institutions publish selection criteria together with the job advert individually on request of the applicants.
– regulate a minimum time period between vacancy publication and the deadline for applying	No	-
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	No	-
– offer applicants the right to receive adequate feedback	Yes	Institutions offer applicants the right to receive adequate feedback upon the applicant's request.
– offer applicants the right to appeal	No	-

Source: Deloitte

¹⁰ A subdivision according to the four career stages (R1-R4) is not officially introduced in the universities and therefore there are not any specific rules. The provided description only refers to the recruitment for the doctoral and the professor levels

EURAXESS Services Network

In 2012, the number of researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 17.8 in Switzerland compared with 36.4 among the Innovation Union reference group and an EU average of 40.8¹¹.

Publicly funded research jobs are published on the respective job portals of the Universities, the Universities of Applied Sciences and research institutes. Not all applications are published on euraxess.ch, but euraxess.ch Jobs is linked to the job portals of all institutions.

Information on entry conditions and transfer of social security and pensions contributions is available on the following platforms (in English and other languages):

- Websites of the Federal Office for Migration;
- The Federal Social Insurance Office;
- The European Job Mobility Portal (EURES);
- The EURAXESS Jobs portal;
- The EURAXESS Service Centres;
- The Mobility Centres of the Universities of Applied Sciences.

5. Education and training

Measures to attract and train people to become researchers

The key drivers for the recruitment of young researchers are excellence in research, attractive working conditions and promising career prospects. Switzerland is well positioned internationally in attracting the most talented researchers. This is reflected in the high number of foreign students.

The table below summarises measures aiming to attract and train young people to become researchers.

Table 5: Human Resources – Key programmes and initiatives

Measure	Description
Ambizione Programme (SNSF) (ongoing)	The Programme targets qualified researchers from Switzerland who are spending time abroad or have returned from a stay abroad, e.g. as part of a mobility fellowship for advanced postdocs. It aims to support young researchers (up to 5 years after their doctorate) in all disciplines who would like to conduct, manage and lead an independently planned project at a Swiss university.
Initiative “More women in STEM” (recently launched)	Under the lead of the ETH-Domain and the Swiss Academy for Technical Sciences, a national initiative has been started to coordinate national activities in the field of women and STEM.
National Programmes (ongoing)	The Confederation supports a plethora of measures aimed at attracting (young) people into a researcher career: – Project days and sponsorships with schools organised in cooperation with industry; – Education and training of teachers, sensitising them to the needs of industry; and – A so-called ‘matching platform’, providing information on activities related to Science, Technology, Engineering and Mathematics (STEM) subjects.
Strategic Planning Programme for 2012-16 (CRUS) (ongoing)	The Programme aims to improve researchers’ working conditions and their career prospects. Young researchers will be relieved of a substantial part of their teaching duties and will be encouraged to devote more time to scientific activities and research projects. In addition, all doctoral candidates should receive a salary for their thesis work.
Swiss National Science Foundation (SNSF) Programmes (ongoing)	The SNSF strongly promotes researchers’ education at all stages of their careers. It invests approximately one fifth of its annual budget (the total volume of the budget is CHF 830.3 million (some EUR 685 million) in assisting doctoral theses, training researchers and supporting scientific publications. The Foundation also offers fellowships to PhD students and post-docs for research stays abroad. The SNSF supports basic research in all disciplines and does not take special measures to favour STEM disciplines. Approximately one third of the annual funding is allocated to mathematics, natural and engineering sciences, 40% to biology and medicine, 16% to interdisciplinary research and 12% to social sciences and humanities.
Swiss University	Within the Swiss University Conference Sub-programme Equal Opportunity at Universities

¹¹ See Figure 1 “Key indicators – Switzerland”

Measure	Description
Conference Sub-programme "Equal Opportunity at Universities" 2013-2016	2013-2016, several education and training activities take place, such as cooperation projects (Starting Doc ¹² , Mentoring German-speaking Swiss, <i>Réseau Romand</i>) and mentoring programmes ¹³ offered at medical and veterinary faculties, etc.).
Swiss Youth Science Foundation (ongoing)	The Swiss Youth Science Foundation, an independent non-profit organisation, aims to stimulate young people's interest in science. It supports adolescents in gaining first insights into their preferred field of science and enables them to get into contact with the private sector and the universities.

Source: Deloitte

Doctoral graduates by gender

Between 2000 and 2010, the number of doctoral degrees awarded increased by 27%¹⁴. The table below shows the ratio of doctoral graduates in Switzerland by gender to the total population cohort.

Table 6: Doctoral graduates by gender

Indicator	Switzerland	EU Average
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (2010)	3.7	1.5
Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2010)	3.1	1.4
Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2010)	4.3	1.6

Source: Deloitte

Data: Eurostat

Funding of doctoral candidates

The table below summarises different funding opportunities for doctoral candidates.

Table 7: Funding schemes available to doctoral candidates

Funding scheme	Description
Private sector fellowships	No data are available.
Stipends/grants	The SNSF offers the following types of stipend/grant: – Mobility fellowships for doctoral students (6-18 months) and post-docs (12-36 months); and – Finance of doctoral students (mobile or not);
Employment contracts	The majority of doctoral candidates are employed at a university institute and receive either university funding or other, notably project funding by the SNSF.
Other	Approximately 10% of all doctoral students (particularly in the fields of humanities and social sciences) receive no funding for their thesis. ¹⁵

Source: Deloitte

Measures to increase the quality of doctoral training

The Confederation aims to upgrade and improve doctoral programmes in order to maintain the high quality of the Swiss university research system. The table below presents two measures aimed at increasing the quality of doctoral training.

Table 8: Measures to increase the quality of doctoral training

Measure	Description
Doctoral Programme (CRUS) (ongoing)	The Doctoral Programme (2012/2013-2016), the successor to the ProDoc Programme (2008-2011), supports universities in the creation and development of interuniversity doctoral programmes with the aim of supporting research networking and improving the integration of doctoral students. The long-term objective of the Doctoral Programme is to offer appropriate training schemes to all doctoral students, including those in humanities and social sciences and, in this way, to strengthen doctoral education and the career prospects of doctorate holders.

Source: Deloitte

¹² Available at: <https://www2.unine.ch/releve/download-guides>

¹³ Report online: http://www.sbf.admin.ch/hm/dokumentation/publikationen/uni/SBF_Mentoring_Medizin_Schriftenreihe_2012_en.pdf

¹⁴ Swiss Federal Statistical Office

¹⁵ Huber, Odilo (2008), "Zur Lage der Doktorierenden in der Schweiz. Ergebnisse einer Befragungsstudie"

Skills agenda for researchers

Swiss universities and Swiss universities of applied sciences offer continuing education to researchers. Researchers acquire transferable skills by conducting independent research. At the same time, the skills and competencies of researchers are increasingly becoming an explicit part of doctoral training. This aspect is given special consideration in the development of new doctoral programmes (see chapter 5 “Education and training”).

The mentoring programmes of the Swiss University Conference Sub-programme Equal Opportunity at Universities 2013-2016 offer structural courses to improve the necessary skills of young (women) academics.

6. Working conditions

The SNSF fixes a minimum salary for doctoral students in all funded projects, within all disciplines and at all research institutions.¹⁶ It is the explicit intention of the Foundation gradually to increase salaries for doctoral students. Doctoral students in a full-time position on funded projects are entitled to work at least 50% of the time on their thesis.¹⁷ The SNSF plans to further increase this percentage in the near future. Doctoral students receive funding for four years to allow them time to finish their thesis. Post-docs are paid according to local norms (the SNSF pays as much as the universities would pay to their ‘own’ post-docs).

Measures to improve researchers’ funding opportunities

The SNSF supports approximately 7200 researchers each year. Almost 80% of these are below the age of 36. It supports basic research in all disciplines, from philosophy and biology to the nanosciences and medicine. The best applicants are funded by the SNSF in an annual total amount of CHF 700 million (some EUR 580 million).

The SNSF offers a range of research funding schemes, each with its individual budget. It supports fair competition by evaluating applications based on a competitive procedure. The SNSF distinguishes between different forms of funding for projects, career development, research programmes, infrastructures and public science communication.

Table 9: Measures to improve researchers’ funding opportunities

Measure	Description
Career development	The funding instruments for career funding include: – Mobility fellowships for doctoral students and postdoctoral researchers enable young scientists to benefit from a stay abroad in order to increase their knowledge and scientific reputation; – <i>Marie Heim-Vögtlin Programme</i> (see chapter 3 “Women in the research profession”); – <i>Ambizione Programme</i> (see chapter 5 “Education and training”); – SNSF Professorships enable junior researchers with several years of recognised research experience to take a significant step forward in their academic careers. A SNSF Professorship funds the establishment of an independent team to implement a research project. In addition, it enables researchers to resume their careers at a Swiss higher education institution upon return from a stay abroad.
Infrastructures	The funding of infrastructures and science communication involves highly specific, earmarked grants whose duration is often very short.
Programmes	The funding instruments for programmes include: – National Research Programmes (NRPs) to generate scientific knowledge aimed at solving Switzerland's most pressing problems. The topics are specified by the Federal Council; – With the National Centres of Competence in Research (NCCRs), the SNSF promotes long-term research networks in areas of strategic importance for Swiss science, the Swiss economy and Swiss society; – International cooperation programmes serve to promote cooperation between researchers in Switzerland and abroad, particularly in certain countries. There are also a number of programmes without geographical restrictions; – The special programmes for biology and medicine offer researchers the possibility of receiving financial support for large-scale research projects that are conducted by consortia or networks; and

¹⁶ For a detailed listing of salaries, please visit: http://www.snf.ch/SiteCollectionDocuments/allg_doktorierende_d.pdf

¹⁷ For more information, see the Swiss National Science Foundation: <http://www.snf.ch/E/services-for-researchers/Pages/documents-for-researchers.aspx>

Measure	Description
	– The Sinergia programme offers researchers from all disciplines the possibility of carrying out disciplinary and interdisciplinary research in small networks.
Project funding	Project funding can be requested by applicants who receive a salary from their home institution, but who still need additional funds to carry out their research project. The applicants' own salaries are not covered by the project funding scheme. Furthermore, each university has its own funding opportunities for projects.

Source: Deloitte

Remuneration

Annually, approximately 80% of the funds approved by the SNSF (some EUR 600 million) are used to cover researchers' salaries and social security contributions. Approximately, 77% of the salaried researchers are 35 or under (95% in the case of personnel at doctoral level and 55% for other scientists).

Doctorates are financed via employment in a research project, working as an assistant at a university, or research grants. The sources of funding are diverse, including funds provided by the institutions or governing authorities (the canton or the federal government), subsidies (contributions from the federal government), funds for research promotion by the SNSF and the CTI, EU-funded programmes as well as third-party funding.

Positions held by young researchers at the beginning of their career are financially less attractive than positions offered in the private sector. The CRUS therefore places emphasis on improving young researchers' working conditions.

For further information, see the new country profile on remuneration of researchers from the MORE2 study (forthcoming, on the EURAXESS website).

Researchers' Statute

Switzerland does not have a statute for researchers. Anyone engaged in research or higher education activities is usually employed under a contract which includes the following rights: salary, career prospects, social security coverage, freedom of research and participation in decision-making processes.

'European Charter for Researchers' & 'Code of Conduct for the Recruitment of Researchers'

In 2005, the CRUS adopted the 'European Charter for Researchers' and 'Code of Conduct for the Recruitment of Researchers'. All Swiss universities, research institutes, and some universities of applied sciences have now endorsed the 'Charter & Code'. Almost half are currently implementing the 'Charter & Code' via the 'HR Strategy for Researchers' (HRS4R). The SNSF has adopted the 'Charter & Code', even if – as a funding agency – it does not directly employ researchers (see chapter 6 "Working conditions").

Autonomy of institutions

The Swiss Universities and the Universities of Applied Sciences are autonomous. Both the CRUS and the KFH¹⁸ support the unity of research and teaching. The table below briefly describes the various aspects of autonomy enjoyed by Swiss universities.

Table 10: Autonomy of institutions

Organisational	Financial	Staffing	Academic
– The selection of the rector may have to be validated by an external authority – Rector's qualifications are not laid down by law – There are no statutory provisions on dismissal of	– Block grant: the funding period in some universities may be longer than one year, but this has to be confirmed annually by the cantonal or federal parliament – Universities are able to keep a surplus	– Universities are essentially free to recruit their academic staff – Universities are free to decide salaries for both senior academic and senior administrative staff – There are no specific	– Universities are basically free to decide on their student intake. However, a 'numerus clausus' may apply for some fields – The admissions criteria are set by an external authority

¹⁸ The Rectors' Conference of the Swiss Universities of Applied Sciences (KFH)

Organisational	Financial	Staffing	Academic
- rectors – The term of office (employment) is between 2 and 6 years, depending on the university. It is determined by universities within statutory guidelines – Universities may decide on their academic structures – Universities are only allowed to create not-for-profit entities – An external authority decides on the appointment of external members on governing bodies	- without restrictions – Universities are not able to borrow money on the financial markets – Universities can sell real estate with external approval – Universities and public authorities cooperate in setting fees for national/EU/non-EU students at all levels (BA, MA, PhD)	- regulations governing the dismissal of academic and administrative staff other than the pertinent national labour regulations – Universities can freely promote both academic and administrative staff on the basis of merit	– Universities can launch programmes (BA, MA, PhD) without prior accreditation – Universities can freely decide on the closure of academic programmes – Universities are able to choose the language of instructions at BA and MA level – Universities are able to select their quality assurance mechanisms freely and according to their needs. They can use a quality agency of their choosing – Universities decide freely on academic content

Career development

In support of researchers' career development, universities generally offer career services, such as websites and electronic platforms¹⁹, career advice, training and information meetings, and mentoring programmes (especially for women researchers).

The SNSF offers a range of funding schemes that support researchers at all stages of their career, starting with the doctorate (see chapter 6 "Working conditions").

Shift from core to project-based funding

The Universities of Applied Sciences are not affected by the shift from core to project-based funding as their research activities are based on project-based (short-term) research funding. The shift from core to project-based research funding does not directly change researchers' working conditions.

Social security benefits (sickness, unemployment, old-age)

Generally, the fellows (of e.g. *Ambizione* stipends, SNSF professorships) are employed by the Swiss Universities and therefore, enjoy standard employee benefits. However, this is not the case for fellows going abroad.

Fellows (doctoral and post-doc) funded by SNSF or the Scientific Exchange NMS^{ch} Sciex Programme²⁰ enjoy the same social security benefits (accident, unemployment, sickness, old-age) as researchers employed by universities under employment contracts. (Note: in Switzerland health insurance is private, but compulsory).

7. Collaboration between academia and industry

Researchers working in the Universities of Applied Sciences have gained experience in higher education teaching and in the private sector ('double profile'). Thus, almost all researchers have moved at least once from business to the public sector and vice versa during their career. Moreover, researchers maintain close contacts with the business sector and the labour market in general, as most research projects are carried out in collaboration with external partners (both industrial and in areas such as health or social work).

The table below summarises key programmes designed to boost collaboration between academia and industry, and to foster doctoral training in cooperation with industry.

¹⁹ Available at: <http://www.fokuslaufbahn.uzh.ch/index.html> and www.releve-academique.ch

²⁰ For information on the Scientific Exchange Programme, see <http://www.sciex.ch>

Table 11: Collaboration between academia and industry

Measure	Description
Commission for Technology and Innovation (CTI) (ongoing)	The CTI supports R&D projects, entrepreneurship and the development of start-up companies. Moreover, it helps optimise knowledge and technology transfer through the use of thematic and regional networks and platforms with a budget of some EUR 100 million. The CTI funds the Universities of Applied Sciences in the development of research projects in close collaboration with industrial partners.
BREF Programme (Gebert Rüf Foundation + KFH) (ongoing)	The BREF Programme promotes collaboration between Switzerland's business sector and/or society and the Universities of Applied Sciences.
KTT Initiative (CTI) (ongoing)	This fosters the transfer of Knowledge and Technology Transfer (KTT) between the Universities and regional businesses. KTT consortia support SMEs and the Universities in establishing contacts and developing projects.
National Research Programmes (SNSF) (ongoing)	The National Research Programmes promote innovative solutions aimed at solving Switzerland's most pressing problems in collaboration with industrial partners.

Source: Deloitte

8. Mobility and international attractiveness

In 2010, the percentage of doctoral candidates (ISCED 6) who were citizens of another EU-27 Member State was 36.3% in Switzerland compared with 9.4% among the Innovation Union reference group and an EU average of 7.8%²¹. In the same year, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 48.2% in Switzerland compared with 13.8% among the Innovation Union reference group and an EU average of 20.0%²².

Measures aimed at attracting and retaining 'leading' national, EU and third country researchers

The State Secretariat for Education, Research and Innovation has set up Swiss Houses for Scientific and Technological Exchange (so-called swissnex offices) in key overseas locations and has appointed science counsellors all over the world in order to develop bilateral cooperation partnerships with partner countries in the areas of education, research and innovation. The swissnex offices and science counsellors build and maintain personal and institutional networks which can be used by Swiss scientists, the Universities, the Universities of Applied Sciences and business.

Inward mobility (funding)

The table below summarises key measures in support of researchers' inward mobility.

Table 12: Measures supporting researchers' inward mobility

Measure	Description
Ambizione Programme (SNSF) (ongoing)	The <i>Ambizione</i> Programme is aimed at qualified researchers from Switzerland who are spending time abroad or have returned from a stay abroad, e.g. as part of a mobility fellowship for advanced postdocs. The Programme also aims to attract the best, next-generation foreign talents to carry out research work in Switzerland. In the period 2008-10, more than 50% of the beneficiaries were "returning", i.e. they had received their doctorate in Switzerland or had an SNSF grant earlier in their career. More than 40% were incoming, i.e. without earlier research activities in Switzerland (though they might still be Swiss citizens or residents).
SNSF Professorship (SNSF) (ongoing)	SNSF Professorships enable returning researchers to resume their careers at a Swiss higher education institution upon return from a stay abroad. Applicants need to have a Swiss university degree or at least two years' activity at a Swiss university. The proportion of researchers returning with an SNSF professorship in 2011 was 33%.

Source: Deloitte

Outbound mobility

The Swiss research system contains a variety of incentive measures encouraging researchers to spend some time abroad. For example, professors have the possibility of taking sabbatical leave to spend time in another

²¹ See Figure 1 "Key indicators – Switzerland"

²² Ibid

country. Research experience abroad is a pre-condition for ‘habilitation’ (certification as a Professor). The table below summarises key measures encouraging researchers to spend some time in another country.

Table 13: Measures supporting researchers' outbound mobility

Measure	Description
Cotutelles de thèse Initiative (State Secretariat for Education and Research – SER) (ongoing)	The SER provides financial support for ‘cotutelles de thèse’ (joint doctorate) projects which are based on a cooperation agreement between a Swiss university and a partner university abroad (Europe). The maximum amount of assistance is CHF 10 000 (some EUR 8 300). The funds are mainly intended to cover travel and living expenses incurred by the doctoral candidate and his/her supervisor(s).
SNSF Fellowships (SNSF) (ongoing)	SNSF Fellowships support doctoral students and postdoctoral researchers in spending some time abroad. The funding includes personal subsistence, a fixed sum for travel expenses and support for research and conference expenses. The funding scheme is open to doctoral candidates and to postdoctoral researchers (for up to five years after they have received their doctorate). The SNSF Fellowship funding scheme was evaluated in 2010 ²³ .
SNSF Short Visits Initiative (SNSF) (ongoing)	This allows researchers working in Switzerland to go abroad or third-country researchers to come to Switzerland. The visits can last between one week and three months. The main aim of this funding instrument, which is open to all fields of research, is to initiate or to consolidate international collaboration. There are no geographic limitations.
Mobility grants in project funding (SNSF) (ongoing)	Doctoral students from all disciplines working on an SNSF research project may have a stay abroad of six to twelve months. There are no geographic restrictions. The stay must be approved by the project's principal investigator and by the host institution. The maximum amount per application is CHF 20 000 (some EUR 16 200) covering travel and subsistence costs abroad. Due to its limited extent, the budget is distributed according to a priority list.

Source: Deloitte

Promotion of ‘dual careers’

The Swiss Federal Institute of Technology Zurich (ETHZ) and the CRUS offer Dual Career Projects for incoming academic couples.

The Swiss Federal Equal Opportunity at Universities Programme (CRUS) initiated a Module 3 project in 2009 in order to build up dual career structures and measures at every Swiss university. It also established a fund for the support of incoming couples at professorial and postdoc level taking into consideration a gender equality aspect in the respective funding. The project was evaluated in 2011²⁴.

The gender equality measures (see chapter 3 “Women in the research profession”) ensure the continuation of DCC measures at Swiss universities.

Portability of national grants

All SNSF grants are portable to other countries (worldwide) under the EUROHORCS ‘Money follows researcher’ scheme if the project leader moves to another country during the grant period. The project leader can either manage the project from abroad or take the funds – including employees – to their new institution. In 2011, 15 SNSF grants were transferred in this way (compared to 47 SNSF grants in 2010), with a total transferred amount of CHF 2.2 million (some EUR 1.8 million) (compared to CHF 5 million in 2010).

Access to cross-border grants

The table below presents funding schemes which are open to non-residents.

Table 14: Funding schemes open to non-residents

Measure	Description
Ambizione and SNSF Professorships (SNSF) (ongoing)	The programmes are open to applicants from outside Switzerland as long as they conduct research at a Swiss research institution (see also above “Measures supporting researchers' inward mobility”).

²³ Swiss National Science Foundation (2010), “Evaluation of the Programme of fellowships of the Swiss National Science Foundation (SNSF)”

²⁴ Available at: <http://www.crus.ch/information-programme/chancengleichheit/rechte-navigation/publikationen.html>

Measure	Description
DACH Agreement (DFG, FWF, SNSF,) (ongoing)	Within the scope of collaboration across the D-A-CH countries (Germany, Austria, Switzerland), the Deutsche <i>Forschungsgemeinschaft</i> (DFG, German Research Foundation), the FWF (Austrian Science Fund, Austria) and the SNSF have signed an agreement simplifying researcher mobility and the execution of cross-border research projects by opening up each other's national funding schemes to researchers in the other countries.
International Short Visits Initiative (SNSF) (ongoing)	See also above "Measures supporting researchers' outbound mobility".
Romanian-Swiss Research Programme and Bulgarian-Swiss Research Programme (ongoing)	Switzerland is participating in EU enlargement by supporting the efforts to reduce economic and social disparities. The countries supported include Romania and Bulgaria. One of the fields of cooperation selected in both countries is scientific research. The SNSF and its counterparts in Romania and Bulgaria were chosen by the Swiss Agency for Development Cooperation (SDC) to manage and administer two special programmes set up with the money available. Both programmes (2011-2016) will support the implementation of three-year Joint Research Projects (JRPs) carried out by groups of researchers from Romania/Bulgaria, jointly with groups of researchers from Switzerland.
Scientific Cooperation Between Eastern Europe and Switzerland (SCOPES) Programme (SNSF + Swiss Agency for Development and Cooperation – SDC)	This promotes scientific cooperation between research groups and institutions in Switzerland and Eastern Europe, including the Western Balkans, the South Caucasus, Central Asia, Ukraine, Moldova, Russia, Croatia and the Eastern European members of the EU.
Sinergia Programme (SNSF) (ongoing)	This supports established researchers in carrying out collaborative research projects in small networks. One of the research groups may come from outside Switzerland.

Source: Deloitte