



Researchers' Report 2014

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 2008¹. 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 programmes 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.”²

Key indicators measuring the country's research performance

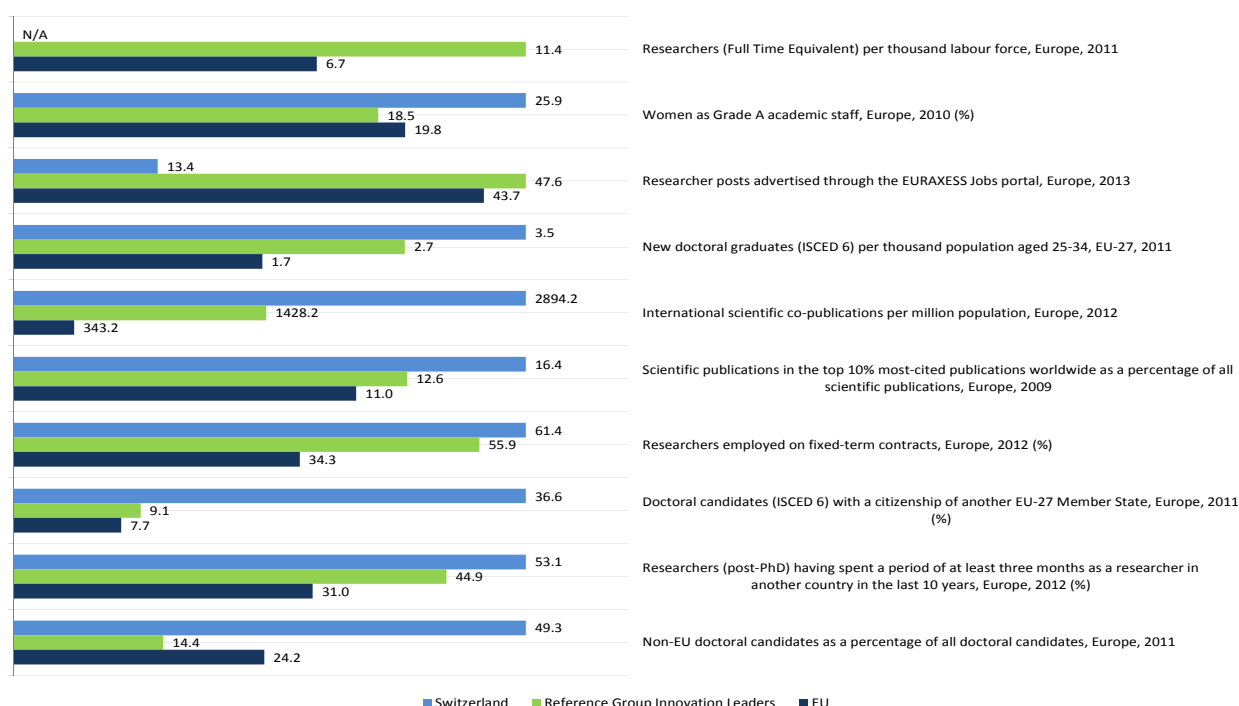
The figure below presents key indicators measuring Switzerland's performance on aspects of an open labour market for researchers against a reference group and the EU average³.

¹ More recent data are not publicly available on Eurostat.

² European Commission (2013), “Research and Innovation performance in EU Member States and Associated countries. Innovation Union progress at country level 2013”

³ The values refer to 2013 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 2014, MORE2.

Notes: Based on the average innovation performance, Switzerland belongs to the group of “Innovation leaders” showing a performance well above that of the EU⁴.

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 ⁵	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
Action Plan 2013–2016 Implementation of the Swiss National Science Foundation (SNSF) multi-year programme	This Action Plan sets out how the SNSF intends to implement the multi-year programme submitted to the federal authorities in 2010 in view of the funds available for the period 2013 to 2016, and how it aims to contribute to maintaining Switzerland's position as a leading research location in the long term. The catalogue of measures focuses on three priority areas:

⁴ European Commission (2014), “Innovation Union Scoreboard 2014”

⁵ More recent data are not available

Measure	Description
	– Ensure enough young scientists by offering funding schemes that are career-friendly; – Flexibly support researchers in their quest for excellence; and – Obtain maximum value from research and research findings.
Federal Council Dispatch on the Promotion of Education, Research and Innovation for 2013-2016	One of the objectives in the Federal Council's current Legislative Plan relates to the Education, Research and Innovation (ERI) sector: "Switzerland considers education, research and innovation (ERI) to be a top priority." The Federal Council has established three ERI policy guidelines for 2013-2016 along with corresponding objectives: – Education Guideline: "Satisfy the demand for workers with general education or VET/PET qualifications"; – Research and Innovation Guideline: "Consolidate the high level of grant funding awarded on a competitive basis and further strengthen Switzerland's internationally competitive position"; – Guideline on General Aspects of the ERI System: "Establish Switzerland as a location where research and economic activities are based on the principles of equal opportunity, sustainability and competitiveness."
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
Diversity@CTI Initiative (The Innovation Promotion Agency – Commission for Technology and Innovation – CTI) (ongoing)	The CTI encourages greater diversity and aims to increase significantly the proportion of women involved in innovative projects and entrepreneurship. The Diversity@CTI initiative fosters diversity by increasing the number of female researchers, inventors, mentors, experts and coaches on its staff.
Equal Opportunity at Universities of Applied Sciences Programme (State Secretariat for Education, Research and Innovation SERI) (2013-16)	This programme promotes equal opportunities between men and women. In cooperation with SERI, the Universities of Applied Sciences (UAS) develop their own equal opportunity measures and projects. The general objective is the sustainable integration of equal opportunity principles in all performance and management agreements ⁷ .
Gender Campus (ongoing)	The national Gender Campus ⁸ platform 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 State Secretariat for Education, Research and Innovation (SERI).
Gender equality grant to boost the careers of young women researchers (SNSF)	As of mid-April 2014, women working in projects or benefiting from career funding schemes at doctoral or postdoctoral level are entitled to a gender equality grant for activities such as mentoring, coaching or networking meetings. An eligible person receives a maximum of CHF 1 000 (some EUR 820) for career development measures per 12 months project duration.
Gender and Research Promotion	This report aimed at identifying and quantifying the issue of women dropping out of

⁶ See Figure 1 "Key indicators – Switzerland"

⁷ See Final evaluation report (in German: Schlussbericht Evaluation Chancengleichheit FH 2008-2011): <http://www.sbf.admin.ch/themen/01337/01339/01357/index.html?lang=de>

⁸ Available at: www.gendercampus.ch/e

Measure	Description
(GEFO-Studie) (SNSF 2008)	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)⁹ (ongoing)	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). It publishes gender monitoring reports at the end of each academic year. The Report on the Situation of Equal Opportunities for Women and Men in Studies and Science (2012/2013), by ETH Zurich, showed that the proportion of women has only increased at the professorship level and that the goals set for 2015 with regard to students, doctoral students and research associates will not be achieved. The EPFL has put a focus on STEM-related programmes.
Marie Heim-Vögtlin (MHV) Programme (SNSF) (ongoing)	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 University Conference programme "Equal Opportunity at Universities"/Gender Studies 2013-2016	For 2013-2016, the ten Swiss universities have adopted their own action plans for gender equality measures with the support of the university management and the gender equality delegates ¹⁰ . This is a successor programme to the Swiss Federal Equal Opportunity at Universities Programme, which ran from 2000-11/12 ¹¹ .
120% support grant (SNSF) (2013 – ongoing)	The SNSF introduced the 120% support grant in June 2013. It targets postdoctoral researchers who need to look after children during an important stage of their career and who therefore need more flexibility. The 120% support grants allow the postdocs to reduce their work-time percentage from 80-100% to a minimum of 60%, or they contribute towards covering the costs of external child care.

Source: Deloitte

Measures to ensure a representative gender balance

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 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 newly nominated women professors is being 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.

Parental leave

A maternity allowance is granted for 14 weeks when three conditions are simultaneously met:

1. The insured person is engaged in paid employment as an employee or on a self-employed basis;
2. She has been insured in the compulsory old age and survivors' pension scheme (AHV/AVS) during the nine months immediately prior to delivery;
3. She has worked during this period for at least five months.

⁹ Available at: http://www.equal.ethz.ch/gender_monitoring/index_EN

¹⁰ Available at: <http://www.crus.ch/information-programme/chancengleichheit-gender-studies-suk-programm-p-4/aktionsplaene.html>

¹¹ Evaluation of the period 2008-2011/12: <http://www.crus.ch/dms.php?id=28924>. This third phase of the Federal Programme (2008-2011/2012) dealt with the issue of “dual-career couples”. When the “dual-career couples” programme phase began, there was no conclusive data on how many such constellations actually exist in Switzerland. Today the picture is different. A comprehensive survey of academic staff at Swiss universities and the two Federal Institutes of Technology was conducted in 2011 when the Federal Programme was under-going evaluation. The results show that female academics are often under greater pressure than their male counterparts to accommodate career, partnership and family – influencing their chances of a successful career.

4. Open, transparent and merit-based recruitment

Recruitment system

The recruitment¹² (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 were 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. The strategic plans of some of the universities in the French-speaking cantons of Switzerland specify a percentage for newly hired female Category I & II professors. At the University of Geneva, for example, shortlists which do not show a percentage of 30% of female candidates are returned to the faculties by the rectorate and discussed with the deans.

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

¹² A subdivision according to the four career stages (R1-R4) has not been officially introduced in the universities and therefore there are not any specific rules. The description provided only refers to the recruitment for the doctoral and the professor levels

EURAXESS Services Network

In 2013, the number of researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 13.4 in Switzerland compared with 47.6 among the Innovation Union reference group and an EU average of 43.7¹³.

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.

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" (ongoing)	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 755 million (some EUR 610 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. Of the annual funding 34% is allocated to mathematics, natural and engineering sciences, 36% to biology and medicine, 30% to interdisciplinary research and 12% to social sciences and humanities.
Swiss University Conference Sub-programme "Equal Opportunity at Universities" 2013-2016	Within the Swiss University Conference Sub-programme Equal Opportunity at Universities 2013-2016, there are several education and training activities, such as cooperation projects (Starting Doc ¹⁴ , Mentoring German-speaking Swiss ¹⁵ , <i>Réseau Romand</i> ¹⁶) and mentoring programmes ¹⁷ offered at a range of faculties, including medical and veterinary, economics, history, law, mathematics, natural sciences, social sciences and theology.
Swiss Youth Science	The Swiss Youth Science Foundation, an independent non-profit organisation, aims to

¹³ See Figure 1 "Key indicators – Switzerland"

¹⁴ Available at: <http://www.unil.ch/mentoring>

¹⁵ Available at: <http://www.academic-mentoring.ch/en/programme/objectives/>

¹⁶ available at: <http://www.unifr.ch/f-mentoring/en/about/reseauromand>

¹⁷ Report online:

http://www.sbf.admin.ch/dokumentation/00335/01737/01738/index.html?lang=de&download=NHZLpZeg7t,lnp6i0NTU042l2Z6ln1acy4Zn4Z2qZpn02Yuq2Z6gpjCDfXt8e2ym162epYbg2c_JjKbNoKS6A--

Measure	Description
Foundation (ongoing)	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 2012, the number of doctoral degrees awarded increased by 29%. The table below shows the number of doctoral graduates in Switzerland by gender as a ratio of the total population. Today the percentage of women is 43.2%, whereas in 2005 it was 37.1% (and 34.6% in 2000).¹⁸

Table 6: Doctoral graduates by gender

Indicator	Switzerland	EU Average
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (2011)	3.5	1.7
Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2011)	3.0	1.6
Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2011)	4.1	1.8

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. ¹⁹

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.

Table 8: Measures to increase the quality of doctoral training

Measure	Description
Doctoral Programme (CRUS) (ongoing)	The Swiss University Conference Programme "Doctoral Programmes" (2012/2013-2016) run by the Rectors' Conference of the Swiss Universities (CRUS) is the successor to the former ProDoc Programme (2008-2011). The Programme supports universities in the creation and development of interuniversity doctoral programmes in order to strengthen research networking and improve the integration of doctoral students. The long-term objective of the 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

Skills agenda for researchers

Swiss universities and Swiss universities of applied sciences generally offer continuing education to researchers. Researchers acquire transferable skills by conducting independent research.

¹⁸ Swiss Federal Statistical Office 2012

¹⁹ Huber, Odilo (2008), "Zur Lage der Doktorierenden in der Schweiz. Ergebnisse einer Befragungsstudie"

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”). All Swiss universities share the same objectives in relation to doctorates. These are laid down in the joint position paper by the Swiss universities on the Doctorate: “Excellence through Research”²⁰. These are in line with the position of European countries within the Bologna framework.

It defines the purpose of the doctorate as being to:

- develop academic skills, especially the ability to carry out independent scholarly research;
- acquire subject-specific (disciplinary and interdisciplinary), methodological and transferable knowledge and skills;
- promote academic collaboration and networks with other doctoral candidates as well as with researchers and specialists in Switzerland and abroad.

The doctorate qualifies candidates for research-based professions at universities or other institutions (public sector, private enterprise, administration) and enables them to take on diverse high-level responsibilities and functions.

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 has decided to modify its salary policy as of 2014. The new features will include a simplified structure with only three employee categories (postdocs/doctoral students/other employees) and new arrangements for postdocs whose salaries are paid by the SNSF. Instead of the institution-related rates, a salary bracket of CHF 80,000 to CHF 105,000 will apply to these researchers, with a transitional period of no more than five years applying to the minimum rate. In addition, the SNSF has raised the salaries of doctoral students by approximately 7% as of 1 January 2014 and guarantees a “protected time” of at least 60% of a full-time equivalent for work on the doctoral thesis²¹. 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 8 750 researchers each year. Of these, 77% are below the age of 35 – 95% in the case of personnel at doctoral level and 55% for other scientists. It supports basic research in all disciplines, from philosophy and biology to the nanosciences and medicine.

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, which 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

²⁰ Available at: <http://www.crus.ch/dms.php?id=6872>, version of 17 January 2014.

²¹ For more information see <http://www.snf.ch/de/fokusForschung/newsroom/Seiten/news-130625-nachwuchs-entlastungsbeitrag-hoeheres-salaer.aspx>

Measure	Description
	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 – 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.

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 country profile on remuneration of researchers from the MORE2 study on the EURAXESS website.²²

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). Three have received the HRS4R logo: Bern University of Applied Sciences, *Haute école spécialisée de Suisse occidentale* (HES-SO) and the School of Teacher Education at the University of Applied Sciences Northwestern Switzerland.

The SNSF has adopted the 'Charter & Code', even if – as a funding agency – it does not directly employ researchers (see chapter 6 "Working conditions").

²² <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

Autonomy of institutions

The Swiss Universities and the Universities of Applied Sciences are autonomous. Both the CRUS and the KFH²³ 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 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.	– 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 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).	– 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 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 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. – 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 instruction 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.

Source: Deloitte

Career development

In support of researchers' career development, universities generally offer career services, such as websites and electronic platforms²⁴, 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.

²³ The Rectors' Conference of the Swiss Universities of Applied Sciences (KFH)

²⁴ For example at: www.releve-academie.ch

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

Generally, 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 Programme²⁵ 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.

Table 11: Collaboration between academia and industry

Measure	Description
BREF Programme (Gebert Rűf Foundation + KFH) (ongoing)	The BREF Programme promotes collaboration between Switzerland's business sector and/or society and the Universities of Applied Sciences.
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 125 million. The CTI funds the Universities of Applied Sciences in the development of research projects in close collaboration with industrial partners.
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.
Venturelab (IFJ Startup support)	Venturelab was launched in 2004 as a national training programme for innovative high-tech startups. Working in close partnership with the CTI, Venturelab organises venture ideas and venture challenge training modules at universities all over Switzerland. In addition, Venturelab provides high level training programmes for industry partners and corporate clients.

Source: Deloitte

8. Mobility and international attractiveness

In 2011, the percentage of doctoral candidates (ISCED 6) who were citizens of another EU-27 Member State was 36.6% in Switzerland compared with 9.1% among the Innovation Union reference group and an EU average of 7.7%²⁶. In the same year, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 49.3% in Switzerland compared with 14.4% among the Innovation Union reference group and an EU average of 24.2%²⁷.

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

²⁵ For information on the Scientific Exchange Programme, see www.sciex.ch

²⁶ See Figure 1 "Key indicators – Switzerland"

²⁷ Ibid

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 2008-13, 51% of the beneficiaries were "returning", i.e. they had received their doctorate in Switzerland or had an SNSF fellowship grant earlier in their career. Around 45% were incoming, i.e. not of Swiss nationality and without a PhD degree from Switzerland.
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 2013 was 32%.

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 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 Research and Innovation – SERI) (ongoing)	The SERI provides financial support for ' <i>cotutelles de thèse</i> ' (joint doctoral projects) which are based on a cooperation agreement between a Swiss university and a partner university abroad (Europe and Israel). The maximum amount of assistance is CHF 10 000 (some EUR 8 100). The funds are mainly intended to cover travel and living expenses incurred by the doctoral candidate and his/her supervisor(s).
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 on the basis of a priority list.
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 ²⁸ .
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.

Source: Deloitte

Promotion of 'dual careers'

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

²⁸ Swiss National Science Foundation (2010), "Evaluation of the Programme of fellowships of the Swiss National Science Foundation (SNSF)"

The Swiss Federal Equal Opportunity at Universities Programme (CRUS) initiated a DCC project 2009-2012 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 2011²⁹.

The gender equality measures (see chapter 3 “Women in the research profession”) ensure the continuation of DCC measures at Swiss universities. However, specific national support (DCC-Fonds) for second hire partners of dual career couples, which was coordinated and managed at the CRUS, ended in 2012.

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 2013, 16 SNSF grants were transferred in this way (compared to 15 SNSF grants in 2011), with a total transferred amount of CHF 1.9 million (some EUR 1.54 million) (compared to CHF 2.2 million in 2011).

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”).
Bilateral programmes – Joint Research Projects (2013-2016)	The bilateral programmes of the Swiss Confederation are aimed at promoting and strengthening scientific cooperation with non-European countries that show high or promising research potential. The SNSF is responsible for funding the joint research projects. In the 2013-2016 Swiss Education, Research and Innovation (ERI) policy “Dispatch”, the State Secretariat for Education, Research and Innovation (SERI) mandated the Swiss National Science Foundation (SNSF) to implement one of the funding schemes available within this programme - the Joint Research Projects (JRPs) - for the five priority countries Brazil, China, India, Russia and South Africa (abbreviated BRICS) as well as for Japan and South Korea. During the 2013-2016 period, the SNSF will therefore launch calls for JRPs with the partner countries. The SNSF is organising the calls with one or two partner organisations in the countries concerned. Most of the calls are thematically limited to research fields that are important for both countries.
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 +	The SCOPES programme of the SNSF and the Swiss Agency for Development and Cooperation (SDC) is aimed at research groups and institutions in Switzerland and Eastern Europe who would like to launch a research co-operation. The current

²⁹ Available at: <http://www.crus.ch/dms.php?id=28110>

Measure	Description
Swiss Agency for Development and Cooperation – SDC) (2013-2016)	programme phase 2013-2016 is endowed with a budget of CHF 16 million and comprises five different funding schemes. The funding per project depends on the number of Eastern European partners.
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.
Swiss Programme for Research on Global Issues for Development (r4d programme) (2012-2022)	The r4d programme of the SNSF and the SDC is aimed at researchers in Switzerland and in developing and emerging countries who wish to execute a joint research project on global issues. The programme focuses on reducing poverty and protecting public goods in developing countries. For its duration from 2012 to 2022, the r4d programme has an overall budget of CHF 97.6 million.

Source: Deloitte