# Guide 2022

## National Centres of Competence in Research

FNSNF
Swiss National Science Foundation

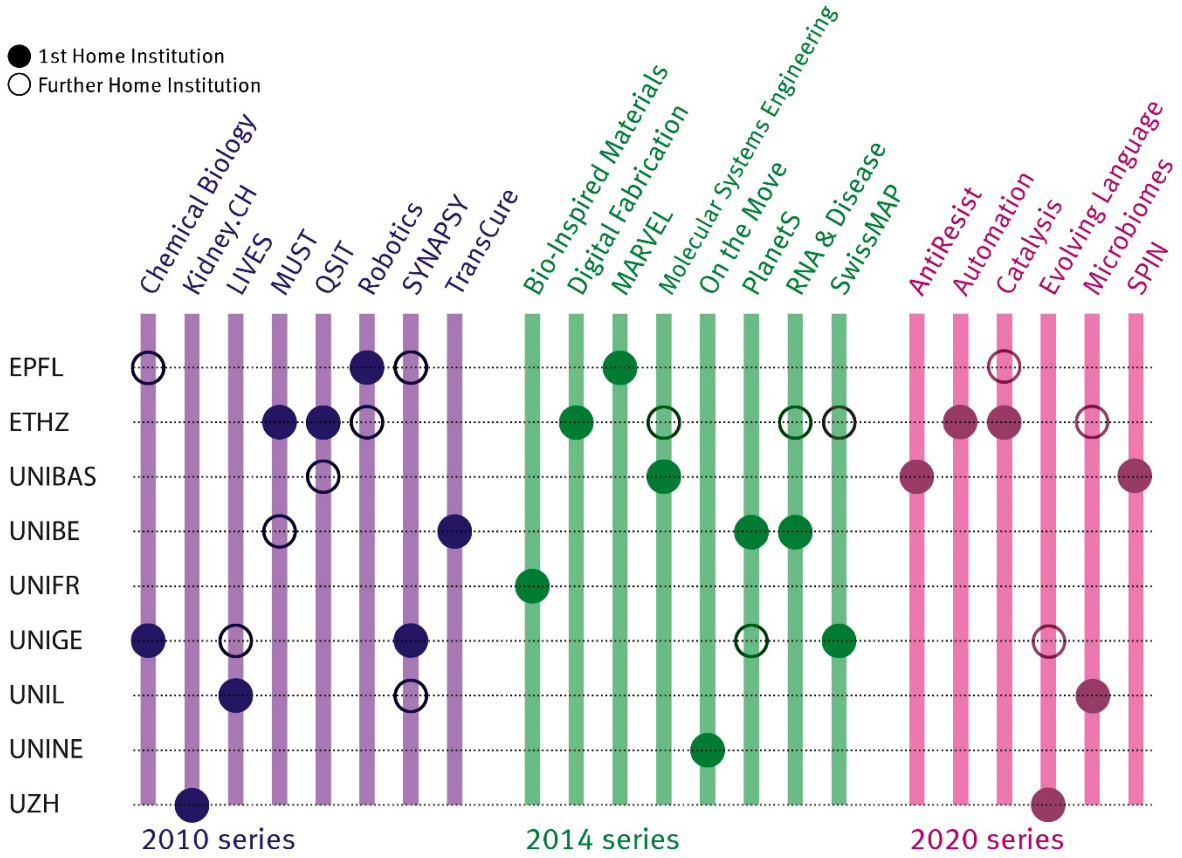
# Table of contents

# The NCCRs at a glance

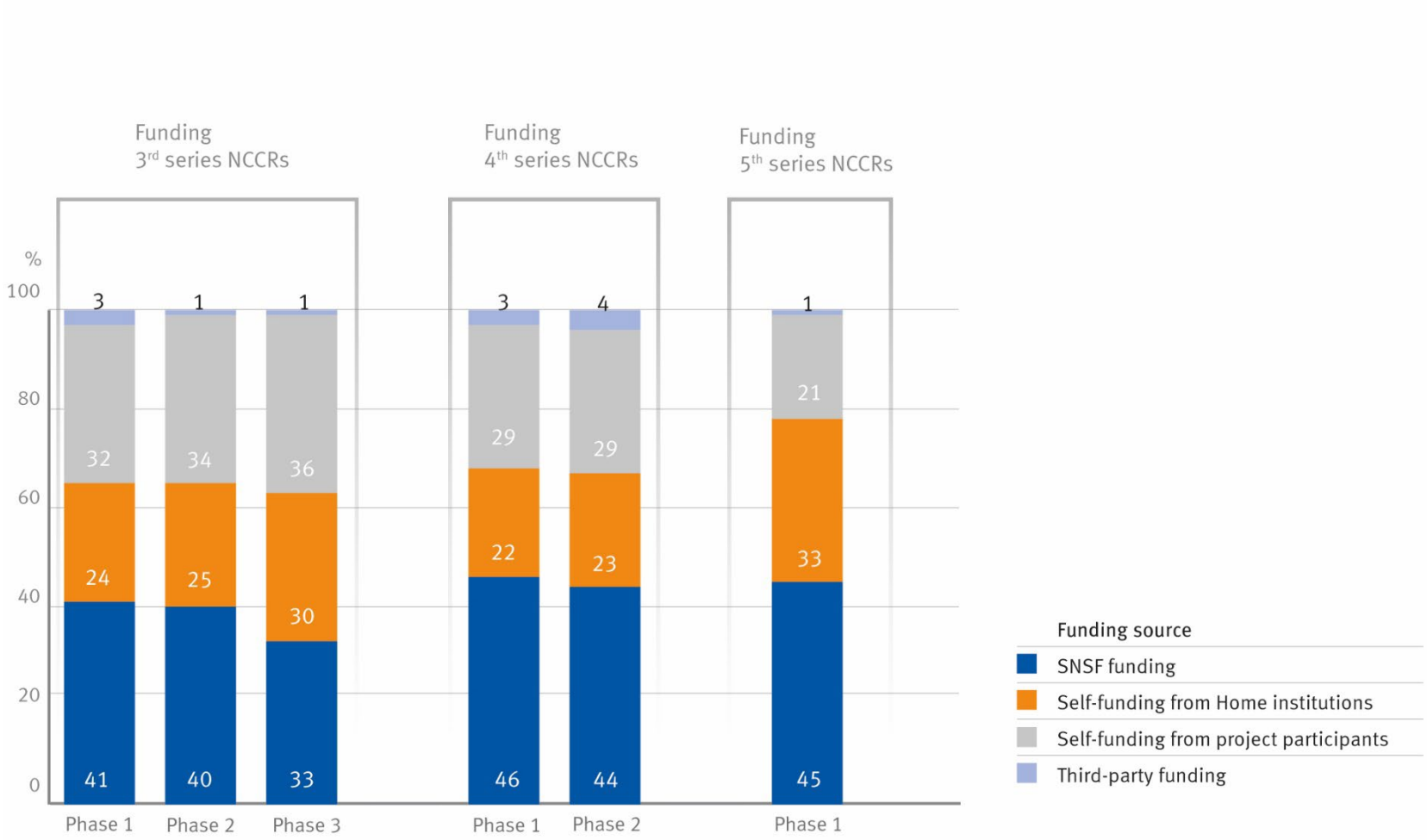
## Overview of NCCR Calls

| | Submitted pre-proposals | Submitted full proposals | Approved proposals | Years of operation |
|---|---|---|---|---|
| 1st Call (1999) | 82 | 34 | 14 | 2001-2013 |
| 2nd Call (2003) | 44 | 17 | 6 | 2005-2017 |
| 3rd Call (2008) | 54 | 28 | 8 | 2010-2022 |
| 4th Call (2011) | 63 | 23 | 8 | 2014-2026 |
| 5th Call (2017) | 54 | 23 | 6 | 2020-2032 |

## The running NCCRs



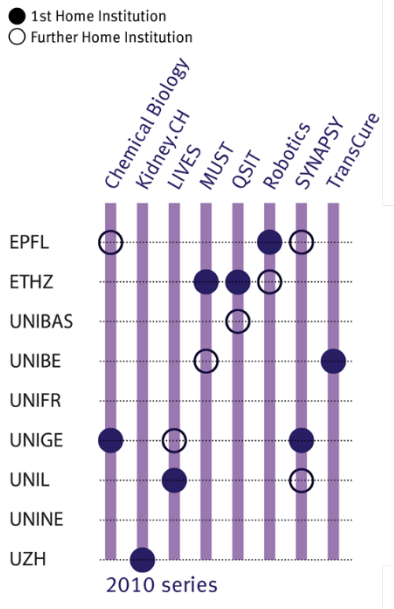
## Funding of the NCCRs



# NCCR 3rd series at a glance

## 3rd series of NCCRs (Operation 2010-2022)

| Short Name | NCCR-Director | Home Institutions | Starting date |
|---|---|---|---|
| Chemical Biology | Prof. Robbie Loewith | University of Geneva, EPFL | December 1, 2010 |
| Kidney.CH | Prof. Johannes Loffing | University of Zurich | August 1, 2010 |
| LIVES | Prof. Dario Spini | University of Lausanne, University of Geneva | January 1, 2011 |
| MUST | Prof. Ursula Keller | ETH Zurich, University of Bern | July 1, 2010 |
| QSIT | Prof. Klaus Ensslin | ETH Zurich, University of Basel | January 1, 2011 |
| Robotics | Prof. Dario Floreano | EPFL, ETH Zurich | December 1, 2010 |
| SYNAPSY | Prof. Camilla Bellone | Universities of Geneva and Lausanne, EPFL | October 1, 2010 |
| TransCure | Prof. Hugues Abriel | University of Bern | November 1, 2010 |




## 3rd series of NCCRs: Funding in phase 1, phase 2 and phase 3: 2018–2021

| Funding source (CHF) | Phase 1 | Phase 2 | 2018 | 2019 | 2020 | 2021 | Phase 3 total |
|---|---|---|---|---|---|---|---|
| SNSF funding[1] | **124'685'356** | **128'859'352** | 22'601'344 | 24'812'021 | 22'905'666 | 21'257'373 | **91'576'404** |
| Self-funding from Home Institutions[2] | **72'822'637** | **81'481'260** | 18'868'316 | 19'412'499 | 21'553'303 | 23'421'466 | **83'255'584** |
| Self-funding from project participants | **95'700'592** | **112'749'559** | 25'979'061 | 26'535'820 | 25'179'808 | 22'261'997 | **99'956'686** |
| Third-party funding[3] | **9'461'241** | **2'763'239** | 358'194 | 647'413 | 1'756'507 | 246'806 | **3'008'920** |
| Total | **302'669'826** | **325'853'410** | 67'806'915 | 71'407'753 | 71'395'284 | 67'187'642 | **277'797'594** |

[1] incl. Funding of transfer projects (strong Swiss franc package), compensation for PhD salaries increase, flexibility grant, mobility grant and open research data grant.
[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment
[3] Not included is CTI funding"

## Persons involved in the NCCRs in the last reporting period (12 months)

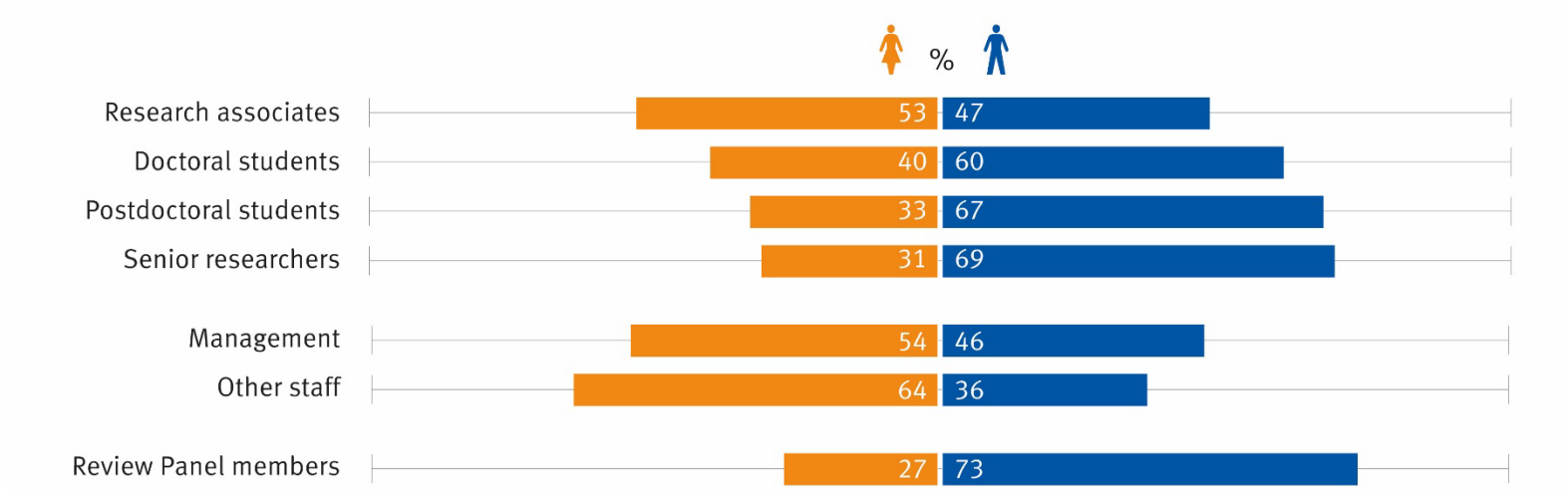
| Personnel | Total of Persons | Female | Male | Swiss | Other nationalities |
|---|---|---|---|---|---|
| Research associates[1] | 86 | 46 | 40 | 34 | 53 |
| Doctoral students | 262 | 106 | 156 | 70 | 200 |
| Postdoctoral students | 184 | 60 | 124 | 18 | 173 |
| Senior researchers[2] | 379 | 117 | 262 | 164 | 239 |
| Management[3] | 33.28 | 44 | 38 | 47 | 47 |
| Other staff | 140 | 89 | 51 | 74 | 70 |
| Total | 1133 | 462 | 671 | 407 | 782 |

[1] Includes graduate scientists (level master) but not registered as doctoral students or undergraduate students participating in research projects.

[2] Including leaders of the individual projects and other organisational units of the NCCRs

[3] Full-time equivalent, including NCCR-Director and persons in charge of knowledge and technology transfer, equal opportunities, communication, education and training

## Gender in the NCCRs



# NCCR Chemical Biology

## Visualisation and Control of Biological Processes Using Chemistry

NCCR Director: Prof. Robbie Loewith, NCCR Co-Director: Prof. Christian Heinis
Home Institutions: University of Geneva, EPFL
Start date: 1st of December 2010 (3rd NCCR series)

### Description

The National Centre of Competence in Research (NCCR) "Chemical Biology - Visualisation and Control of Biological Processes Using Chemistry" uses chemistry tools to obtain a better understanding of life at the molecular level. Until now, few technologies could characterise in detail the countless biochemical activities that constitute a living cell. In the NCCR Chemical Biology, chemists, biochemists, biophysicists and cell biologists develop innovative techniques based on small molecules and proteins to obtain new information about cellular processes and control them in-situ. The new tools are applicable to various biological phenomena like visualising the activity of selected proteins during cell division and investigating how membranes control the activity of proteins in them. The NCCR is also engaged in establishing a platform for chemical screening aimed at developing a new generation of molecules with biological effects. For further information visit: https://nccr-chembio.ch/

### Heads of Research Groups

Prof. **Andrea Ablasser**, Institut d'Infectiologie, EPFL
Prof. **Charlotte Aumeier**, Département de Biochimie, Université de Genève
Prof. **Yimon Aye,** Institut des sciences et ingénierie chimiques, ISIC, EPFL
Prof. **Bruno Correia**, Faculté des sciences et techniques de l'ingénieur, STI, EPFL
Prof. **Lyndon Emsley**, Institut des sciences et ingénierie chimiques, ISIC, EPFL
Prof. **Beat Fierz**, Institut des sciences et ingénierie chimiques, ISIC, EPFL
Prof. **Anne-Claude Gavin**, Faculté de Médecine, Université de Genève
Prof. **Pierre Gönczy**, Institut suisse de recherche expérimentale sur le cancer (ISREC), EPFL
Prof. **Marcos Gonzalez-Gaitan**, Institut des sciences et ingénierie chimiques, ISIC, EPFL
Prof. **Monica Gotta**, Faculté de Médecine, Université de Genève
Prof. **Christian Heinis**, Institut des sciences et ingénierie chimiques, ISIC, EPFL
Prof. **Sascha Hoogendoorn,** Département de Chimie Organique, Université de Genève
Prof. **Marko Kaksonen**, Département de Biochimie, Université de Genève
Prof. **Karten Kruse**, Département de Biochimie & Département de Physique Théorique appliquée à la Biologie, Université de Genève
Prof. **Robbie Loewith**, Département de Biologie Moléculaire, Université de Genève
Prof. **Suliana Manley**, Institut de physique des systèmes biologiques, EPFL
Prof. **Stefan Matile**, Département de Chimie Organique, Université de Genève
Dr. **Dimitri Moreau**, Département de Biochimie, Université de Genève
Prof. **Howard Riezman**, Département de Biochimie, Université de Genève
Prof. **Pablo Rivera-Fuentes**, SB ISIC LOCBP, EPFL
Prof. **Aurélien Roux**, Département de Biochimie, Université de Genève
Prof. **Gerardo Turcatti**, Plateformes technologiques SV, EPFL
Prof. **Gisou van der Goot**, Institut de recherche en infectiologie, EPFL
Prof. **Jérôme Waser**, Institut de recherche en infectiologie, EPFL
Prof. **Nicolas Winssinger**, Département de Chimie Organique, Université de Genève

**Overview of all Research Projects**

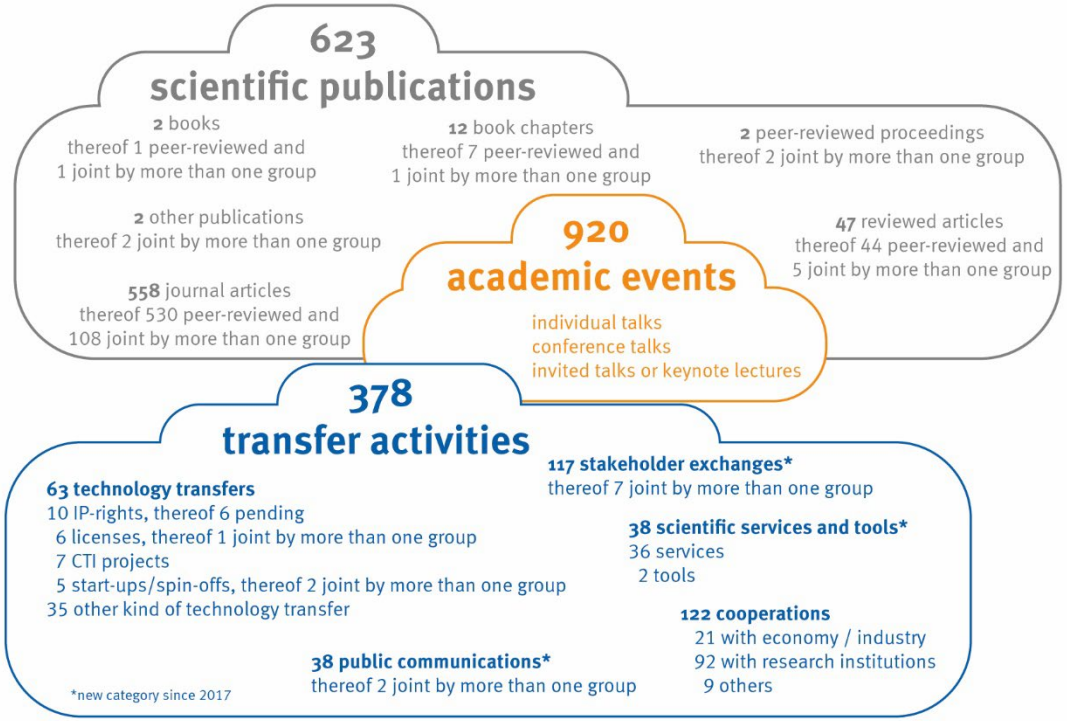
### Participating Institutions

Université de Genève (12 groups)/EPFL (13 groups)


Home Institutions
Partner Institutions

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Biozentrum, University of Basel, CH
CNRS, Grenoble, FR
Institut Curie, Paris, FR
ETHZ, Zurich, CH
INSERM, University of Lyon, Lyon, FR
Laboratory of Computational Systems Biotechnology LCSB, EPFL, CH
MPI for Colloids and Surfaces, Potsdam-Golm, DE
MPI Physics of Complex systems, Dresden, DE
UCLA, Los Angeles, US
Dartmouth University, US
University of California, San Francisco, US
University of Auckland, NZ
TU Munchen, DE
Strasbourg University, FR
Eindhoven University of Technology, NL
EMBL Heidelberg, DE

**Private and public sector**

Spirochrome, Geneva, CH
Neworks, New York, US
Novartis Forschungsstiftung, Basel, CH
TCI Europe N.V., Zwijndrecht, BE

## Funding

| Funding Source (CHF) | Total Phase 1<br>2010 - 2013 | Total Phase 2<br>2014 - 2017 | Total Phase 3<br>2018 - 2021 | 2018 | 2019 | 2020 | 2021 | Phase 3<br>% |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **13'510'000** | **14'712'738** | **10'814'267** | 2'596'281 | 3'488'236 | 2'723'250 | 2'006'500 | 34 |
| Self-funding from Home Institutions[2] | **13'145'250** | **9'122'351** | **9'999'714** | 1'812'859 | 3'049'901 | 2'657'041 | 2'479'913 | 31 |
| Self-funding from project participants | **3'631'371** | **7'839'172** | **11'142'366** | 2'515'537 | 2'848'485 | 2'728'782 | 3'049'562 | 35 |
| Third-party-funding[3] | **130'596** | **18'400** | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **30'417'217** | **31'692'661** | **31'956'347** | 6'924'677 | 9'386'622 | 8'109'073 | 7'535'975 | 100 |

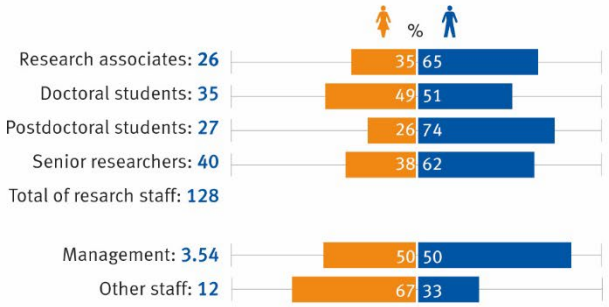
[1] incl. funding of transfer projects (strong Swiss franc package) in 2012, compensation for PhD salaries increase in 2014, flexibility grant in 2017, 2018, 2019 and 2020, mobility grant in 2017 and 2019 and open research data grant in 2019

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

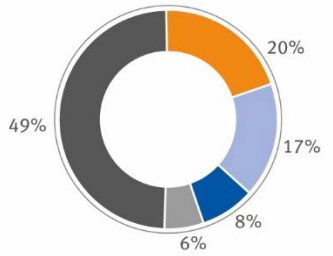
## Persons involved

**Data: current year**




## Nationalities of research staff

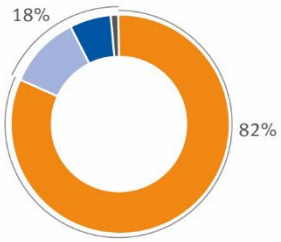
**Data: current year**




| | |
|---|---|
| Switzerland | 31 |
| France | 26 |
| Italy | 12 |
| China | 9 |
| other Nations | 75 |

## Next employer of doctoral students

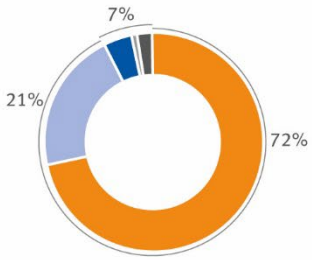
**Data: since start**




| | |
|---|---|
| Academic sector | 88 |
| Private sector | 12 |
| Public sector | 6 |
| Other | 0 |
| Not known | 1 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 90 |
| Private sector | 27 |
| Public sector | 5 |
| Other | 1 |
| Not known | 2 |

# NCCR Kidney.CH

## Kidney Control of Homeostasis

NCCR Director: Prof. Johannes Loffing
Home Institution: University of Zurich
Start date: 1st of August 2010 (3rd NCCR series)

### Description

The National Centre of Competence in Research (NCCR) "Kidney.CH – Kidney Control of Homeostasis" is the world's first research network to explore the physiological processes in healthy and diseased kidneys across a broad thematic spectrum.
The aim is to seek insights for new preventive, diagnostic and therapeutic approaches to treating kidney patients. The motivation being that kidney diseases have increased dramatically in recent years. Patients with chronic kidney diseases risk exposure to further secondary diseases such as high blood pressure or osteoporosis. Reduced kidney function has drastic consequences for the body as the kidneys are responsible for maintaining the balance between the most varied of substances in the body (homeostasis). Homeostasis is of central importance to body functions and thus a healthy life. For further information visit: https://www.nccr-kidney.ch/

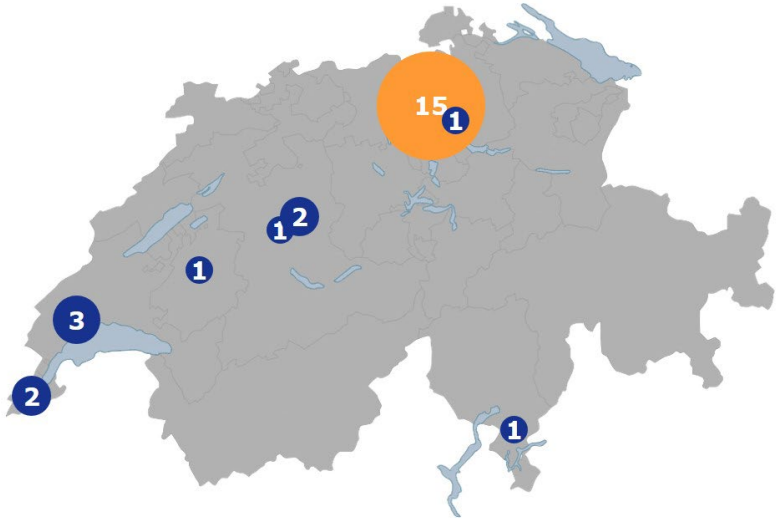
### Heads of Research Groups

Prof. **Ruxandra Bachmann-Gagescu**, Institut für Medizinische Genetik, Universität Zürich
Prof. **Felix Beuschlein**, Klinik für Endokrinologie, Diabetologie und Klinische Ernährung, Universitätsspital Zürich
Prof. **Murielle Bochud**, Inst. Uni. de Médecine Sociale et Préventive, Université de Lausanne
Prof. **Olivier Bonny**, Département de pharmacologie et de toxicologie, Université de Lausanne
Prof. **Sophie De Seigneux**, Dép. Physiologie cellulaire et métabolisme, Université de Genève
Dr. **Diane De Zélicourt**, Physiologisches Institut, Universität Zürich
Prof. **Olivier Devuyst**, Physiologisches Institut, Universität Zürich
Dr. **Daniela Egli-Spichtig**, Physiologisches Institut, Universität Zürich
Prof. **Eric Feraille**, Département Physiologie cellulaire et métabolisme, Université de Genève
Prof. **Daniel Fuster**, Departement Nephrologie / Hypertonie, Universitätsspital Bern
Prof. **Andrew Hall**, Anatomisches Institut, Universität Zürich
Prof. **Edith Hummler**, Département de Pharmacologie et Toxicologie, Université de Lausanne
Prof. **Uyen Huynh-Do**, Departement Nephrologie / Hypertonie, Universitätsspital Bern
Dr. **Pedro Imenez Silva**, Physiologisches Institut, Universität Zürich
Dr. **Anna Keppner**, Abteilung Medizin, Universität Freiburg
Prof. **Vartan Kurtcuoglu**, Physiologisches Institut, Universität Zürich
Prof. **Soeren Lienkamp**, Anatomisches Institut, Universität Zürich
Prof. **Johannes Loffing**, Anatomisches Institut, Universität Zürich
Dr. **Matthias Moor**, Department for BioMedical Research (DBMR), Universität Bern
Dr. **Stellor Nlandu Khodo**, Physiologisches Institut, Universität Zürich
Dr. **Ganesh Pathare**, Anatomisches Institut, Universität Zürich
Dr. **David Pentón Ribas**, Anatomisches Institut, Universität Zürich
Dr. **Anna Rinaldi**, Ospedale Regionale di Lugano
Dr. **Carsten Scholz**, Physiologisches Institut, Universität Zürich
Prof. **Carsten Wagner**, Physiologisches Institut, Universität Zürich
Prof. **Roland Wenger**, Physiologisches Institut, Universität Zürich

**Overview of all Research Projects**

### Participating Institutions

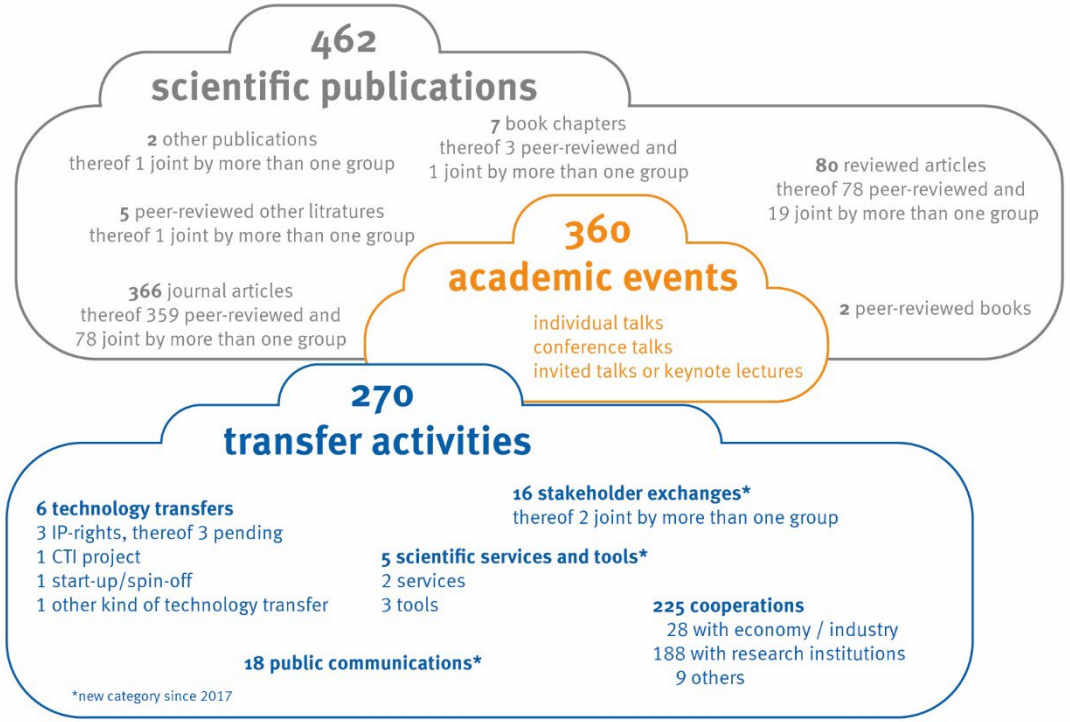
Université de Genève (2 groups)/Université de Lausanne (3 groups)
Universität Zürich (15 groups)/Universität Bern (1 group)/Universität Freiburg (1 group)/Universitätsspital Bern (2 groups)/Universitätsspital Zürich (1 group)/Ospedale Regionale di Lugano (1 group)




Home Institution
Partner Institutions

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Department of Physiology, University College London, GB
Human Genetics Unit, Medical Research Council, Edinburgh, GB
Institute of molecular bioscience, University of Tokyo, JP
Institute of Veterinary Physiology, University of Zurich, CH
Internal Medicine, National Center of Integrative Biomedical Informatics, Ann Arbor, US
Internal Medicine, CHUV - Centre Hospitalier Universitaire Vaudois, Lausanne, CH
Mineral metabolism clinic, Ut Southwestern Medical Centre, Dallas, TX, US
Department of Medicine, University of Aarhus, DK
Institute of Physiology, University of Kiel, DE
Centre de Recherche des Cordeliers, Paris, FR
Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, US

**Private and public sector**

Novartis, Basel, CH
Calciscon AG, Bern CH
VIFOR, Villars-sur-Glâne CH
Prosalix, Allschwil CH

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2010 – 2013 | **Total Phase 2** 2014 – 2017 | **Total Phase 3** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 3 %** |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **16'530'000** | **16'568'958** | **10'580'000** | 2'892'750 | 2'762'417 | 2'562'417 | 2'362'416 | 56 |
| Self-funding from Home Institution[2] | **2'168'316** | **4'709'507** | **4'776'662** | 1'068'181 | 350'193 | 1'666'434 | 1'691'854 | 25 |
| Self-funding from project participants | **5'271'515** | **3'333'162** | **2'406'392** | 850'183 | 446'209 | 0 | 1'110'000 | 13 |
| Third-party funding[3] | **146'955** | **0** | **1'154'740** | 0 | 0 | 1'154'733 | 0 | 6 |
| Total | **24'116'786** | **24'611'627** | **18'917'787** | 4'811'114 | 3'558'819 | 5'383'584 | 5'164'270 | 100 |

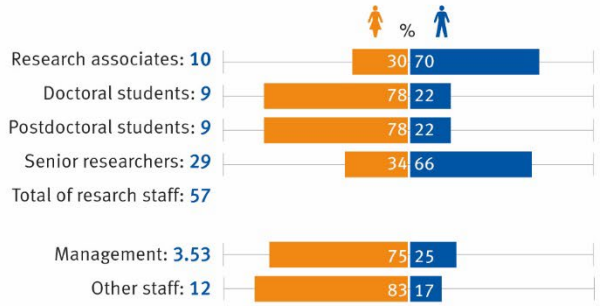
[1] incl. compensation for PhD salaries increase and flexibility grant in 2015.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

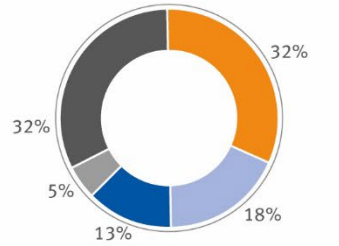
## Persons involved

**Data: current year**




## Nationalities of research staff

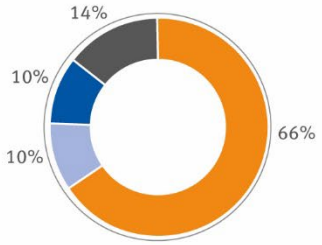
**Data: current year**




| | |
|---|---|
| Switzerland | 25 |
| Germany | 14 |
| France | 10 |
| Belgium | 4 |
| other Nations | 25 |

## Next employer of doctoral students

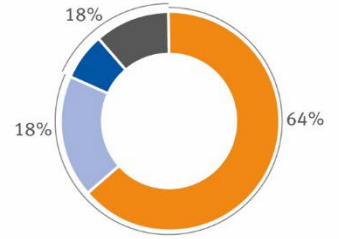
**Data: since start**




| | |
|---|---|
| Academic sector | 19 |
| Private sector | 3 |
| Public sector | 3 |
| Other | 0 |
| Not known | 4 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 35 |
| Private sector | 10 |
| Public sector | 4 |
| Other | 0 |
| Not known | 6 |

# NCCR LIVES

## Overcoming vulnerability: life course perspectives

NCCR Director: Prof. Dario Spini, NCCR Co-Director: Prof. Eric Widmer
Home Institutions: University of Lausanne, University of Geneva
Start date: 1st of January 2011 (3rd NCCR series)

### Description

The National Centre of Competence in Research (NCCR) "LIVES – Overcoming Vulnerability: Life Course Perspectives" analyzes the burdensome effects of post-industrial economies and societies on the development of vulnerability in terms of social exclusion or precariousness.
It conducts comparative, longitudinal analyses to examine the impact of socio-structural and personal resources on overcoming vulnerability. Hosted by the Universities of Lausanne and Geneva, the NCCR brings together national and international researchers to examine life courses as developmental processes, as outcomes of institutional regulation and policies, or as biographical meanings. Life trajectories of about 25'000 people will be studied across health, family, work, and institutional domains in order to develop innovative social policy measures. For further information visit: http://www.lives-nccr.ch/en/

### Heads of Research Groups

Prof. **André Berchtold**, Centre de recherche sur les parcours de vie et les inégalités, Université de Lausanne
Prof. **Laura Bernardi**, Centre de recherche sur les parcours de vie et les inégalités, Université de Lausanne
Prof. **Jean-Michel Bonvin**, Institut de socio-économie, Université de Genève
Prof. **Claudine Burton-Jeangros**, Département de Sociologie, Université de Genève
Prof. **Eric Davoine**, Chaire Ressources Humaines et Organisation, Université de Fribourg
Prof. **Paolo Ghisletta**, Groupe méthodologie et analyse de données, Faculté de psychologie et des sciences de l'éducation, Université de Genève
Prof. **Daniela Jopp**, Faculté des sciences sociales et politiques, Université de Lausanne
Prof. **Matthias Kliegel**, Laboratoire du Vieillissement Cognitif, Université de Genève
Prof. **Nicky Le Feuvre**, Laboratoire de sociologie, Université de Lausanne
Prof. **Jürgen Maurer**, Département d'économie, Université de Lausanne
Prof. **Daniel Oesch**, Institut des Sciences Sociales, Université de Lausanne
Prof. **Michele Pellizzari**, Département des Sciences Économiques, Université de Genève
Prof. **Clémentine Rossier**, Institut de démographie et socio économie, Université de Genève
Prof. **Koorosh Massoudi**, Laboratoire de psychologie du développement, conseil et Intervention, Université de Lausanne
Prof. **Alexandra Freund**, Departement für Psychology, Universität Zürich
Prof. **Dario Spini**, Centre de recherche sur les parcours de vie et les inégalités, Université de Lausanne
Prof. **Leen Vandecasteele**, Faculté des sciences sociales et politiques, Université de Lausanne
Prof. **Eric Widmer**, Département de Sociologie, Université de Genève

**Overview of all Research Projects**

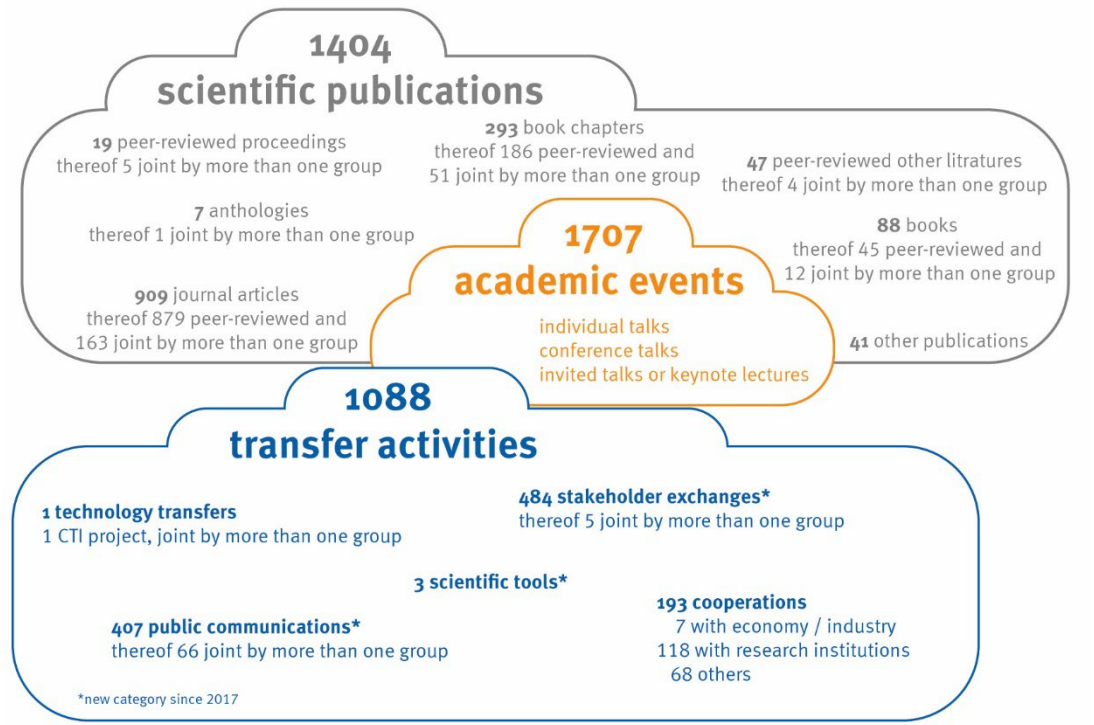
### Participating Institutions

Université de Fribourg (1 group)/Université de Genève (7 groups)
Université de Lausanne (9 groups)/Universität Zürich (1 group)


- Home Institutions
- Partner Institutions

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Institut National Etude Démographiques (INED), Paris, FR
NCCR On the move, University of Neuchatel, CH
Oregon State University, Center for Healthy Ageing Research and Hallie,US
Jacobs Centre for Productive Youth Development, University of Zurich, CH
Bremen International Graduate School of Social Sciences (BIGSSS), University of Bremen, DE
Centre on Aging and the Life Course, Purdue University, US
Millenium Nucleus for the Study of the Life Course and Vulnerability, Santiago de Chile, CHI
International Centre for Life Course Studies in Society and Health, University College London, UK
Institute for Life Course and Society, Galway, IRA
Population Europe – Network of Europe's leading demographic research centres, Berlin, DE
University College London, International Centre for Lifecourse Studies in Society and Health, UK
University of Bremen, Institut für Soziologie, Bremen, DE

**Private and public sector**

Centre de compétence suisse en sciences sociales (FORS), Lausanne, CH
Centre for Economic Policy Research, London, GB
Département de la santé et de l'action sociale du Canton de Vaud, Lausanne, CH
Départements des affaires régionales, de l'économie et de la santé du Canton de Genève, CH
Fondation Leenards, Lausanne, CH
Organisation for Economic Co-operation and Development, Paris, FR
Federal Social Insurance Office (OFAS), Bern, CH
Pro Senectute Switzerland, Basel, Bern, Valais, Vaud, CH
State Secretariat of Economic Affairs, Bern, CH

## Funding

| Funding Source (CHF) | Total Phase 1<br>2011 - 2014 | Total Phase 2<br>2015 - 2018 | Total Phase 3<br>2019 - 2022 | 2019 | 2020 | 2021 | 2022 | Phase 3<br>% |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **14'551'895** | **14'778'648** | **10'796'846** | 2'653'031 | 3'255'440 | 2'717'458 | 2'170'917 | 24 |
| Self-funding from Home Institution[2] | **5'636'219** | **13'983'831** | **19'718'470** | 4'627'127 | 4'594'005 | 4'728'732 | 5'768'606 | 45 |
| Self-funding from project participants | **13'721'239** | **12'886'243** | **13'199'590** | 3'140'194 | 3'336'638 | 3'832'049 | 2'890'709 | 30 |
| Third-party funding[3] | **5'440'407** | **955'918** | **512'311** | 133'054 | 164'399 | 151'720 | 63'138 | 1 |
| Total | **39'349'760** | **42'604'640** | **44'226'366** | 10'552'555 | 11'350'482 | 11'429'959 | 10'893'370 | 100 |

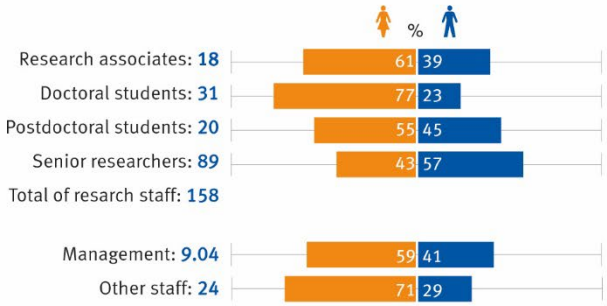
[1] incl. Mobility-grant in 2014, 2015 and 2020, compensation for PhD salaries increase in 2015, flexibility grant in 2015, 2016, 2017, 2018, 2019, 2020 and 2021 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

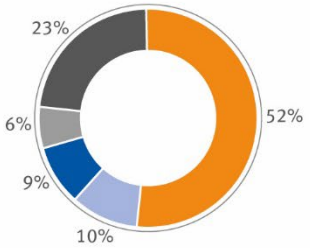
## Persons involved

**Data: current year**




## Nationalities of research staff

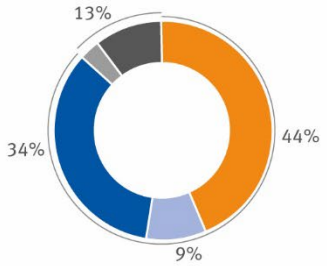
**Data: current year**




| | |
|---|---|
| Switzerland | 110 |
| Italy | 20 |
| France | 19 |
| Germany | 13 |
| other Nations | 48 |

## Next employer of doctoral students

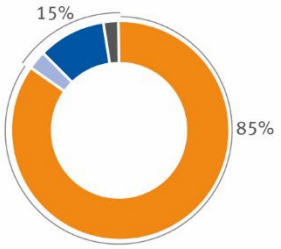
**Data: since start**




| | |
|---|---|
| Academic sector | 40 |
| Private sector | 8 |
| Public sector | 31 |
| Other | 3 |
| Not known | 9 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 50 |
| Private sector | 2 |
| Public sector | 6 |
| Other | 0 |
| Not known | 1 |

# NCCR MUST

## Molecular Ultrafast Science and Technology

NCCR Director: Prof. Ursula Keller, NCCR Co-Director: Prof. Thomas Feurer
Home Institutions: ETH Zurich, University of Bern
Start date: 1st July 2010 (3rd NCCR series)

### Description

The National Centre of Competence in Research MUST (Molecular Ultrafast Science and Technology) is an interdisciplinary research program, which brings together 26 Swiss research groups working in Ultrafast Science across the fields of physics, chemistry, material science and biology. MUST scientists create new experimental and theoretical tools and to apply them to unravel the fastest processes in the physics and chemistry of natural and manmade matter. Such science is fundamental in nature but relates strongly to a number of major challenges which our society faces. A detailed understanding of the structural dynamics of molecules will help developing alternative sources of energy, synthesizing complex drugs, or designing electronics in the post-Moore's law era..For further information visit: http://www.nccr-must.ch/home.html

### Heads of Research Groups

Dr. **Camila Bacellar Cases da Silveira**, SwissFEL (Alvra), PSI Villigen
Prof. **Natalie Banerji**, Departement für Chemie und Biochemie, Universität Bern
Dr. **Paul Beaud**, Laboratory for Synchrotron Radiation – Condensed Matter, PSI Villigen
Prof. **Christoph Bostedt**, PSI Villigen/Institut des Sciences et Ingénierie Chimiques, EPFL
Prof. **Andrea Cannizzo**, Institut für Angewandte Physik, Universität Bern
Prof. **Fabrizio Carbone**, Institute de Physique, EPFL
Prof. **Adrian Cavalieri**, PSI Villigen/Institut für Angewandte Physik, Universität Bern
Prof. **Majed Chergui**, Institut des Sciences et Ingénierie Chimiques, EPFL
Prof. **Thomas Feurer**, Institut für Angewandte Physik, Universität Bern
Prof. **Manfred Fiebig**, Departement Materialwissenschaft, ETH Zürich
Prof. **Peter Hamm**, Physikalisch-Chemisches Institut, Universität Zürich
Prof. **Robert Häner**, Departement für Chemie und Biochemie, Universität Bern
Prof. **Steve Johnson**, PSI Villigen/Institut für Quantenelektronik, ETH Zürich
Prof. **Ursula Keller**, Institut für Quantenelektronik, ETH Zürich
Prof. **Markus Meuwly**, Departement Chemie, Universität Basel
Prof. **Jacques-E. Moser**, Institut des Sciences et Ingénierie Chimiques, EPFL
Prof. **Jürg Osterwalder**, Physik-Institut, Universität Zürich
Prof. **Jeremy Richardson**, Laboratorium für Physikalische Chemie, ETH Zürich
Prof. **Ursula Röthlisberger**, Institut des Sciences et Ingénierie Chimiques, EPFL
Prof. **Daniela Rupp**, Laboratorium für Festkörperphysik, ETH Zürich
Prof. **Ruth Signorell**, Laboratorium für Physikalische Chemie, ETH Zürich
Dr. **Jörg Standfuss**, Department of Biology and Chemistry, PSI Villigen
Dr. **Urs Staub**, Laboratory for Synchrotron Radiation – Condensed Matter, PSI Villigen
Prof. **Jiri Vanicek**, Institut des Sciences et Ingénierie Chimiques, EPFL
Prof. **Jean-Pierre Wolf**, Groupe de Physique Appliquée, Université de Genève
Prof. **Hans Jakob Wörner**, Laboratorium für Physikalische Chemie, ETH Zürich

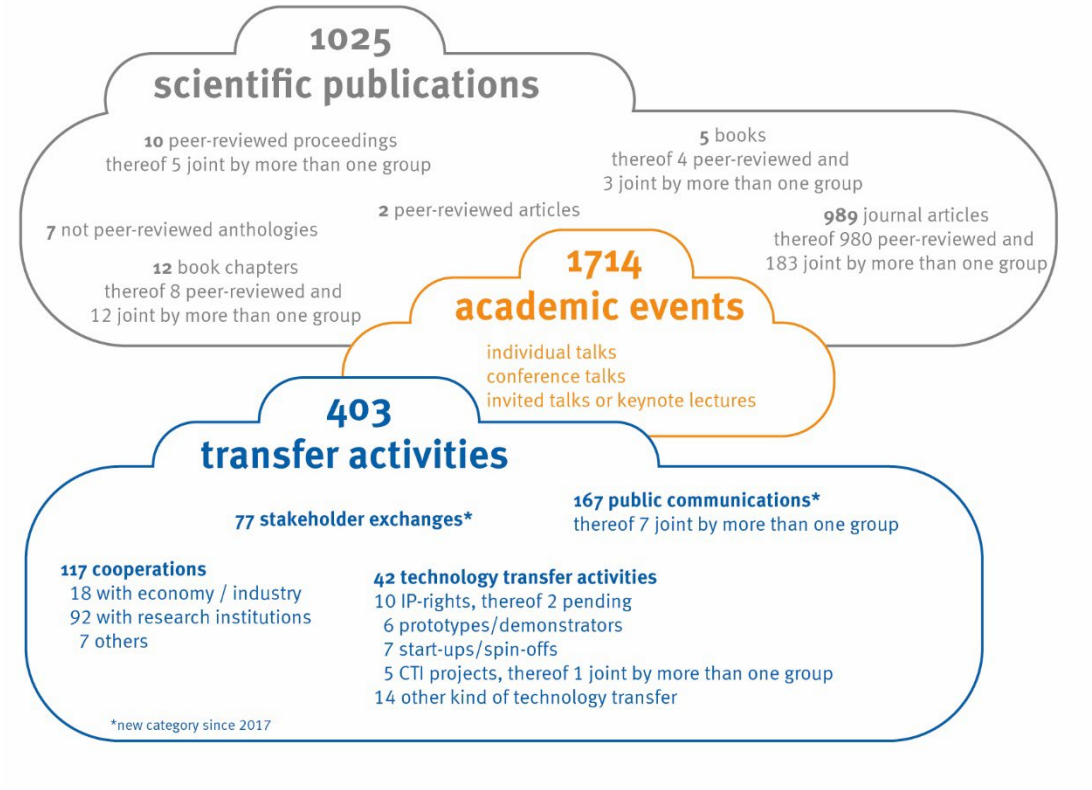
**Overview of all Research Projects**

### Participating Institutions

Universität Basel (1 group)/Universität Bern (5 groups)/Université de Genève (1 group)/Universität Zürich (2 groups)/EPFL (6 groups)/ETH Zürich (7 groups)/Paul Scherrer Institut PSI (4 groups)

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Cluster of Excellence – RESOLV, Bochum, DE
Elettra Sincrotrone and FERMI, Trieste, IT
EPFL, Laboratory of Photonics and Interfaces, CH
European X-Ray Free electron laser, Hamburg, DE
Fritz-Haber-Institut der MPG, Berlin, DE
ICFO, Barcelona, Spain
Imperial College London, Department of Physics, UK
KIT Karlsruhe, Institute of Applied Physics, DE
Leibnitz-Institut für Kristallzüchtung, Berlin, DE
Massachusetts Institute of Technology, Department of Chemistry, Cambridge, US
Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, DE
Max-Planck-Institut für Physik Komplexer Systeme, Dresden, DE
Max-Planck-Institut für Struktur und Dynamik der Materie/CFEL, Hamburg, DE
Newcastle University, Department of Chemistry, UK
Ruhr-Universität Bochum, DE
SACLA X-ray Free electron Laser (RIKEN), Hyogo, JP
Stanford Linear Accelerator Center, Menlo Park CA, US

**Private and public sector**

Google, Zürich, CH
8photonics, Bern CH
Aekip SA, Saint Sulpice, CH

## Funding

| Funding Source (CHF) | Total Phase 1<br>2010 - 2013 | Total Phase 2<br>2014 - 2017 | Total Phase 3<br>2018 - 2021 | 2018 | 2019 | 2020 | 2021 | Phase 3<br>% |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **17'766'000** | **17'401'769** | **12'703'278** | 3'040'028 | 3'256'417 | 3'203'417 | 3'203'416 | 34 |
| Self-funding from Home Institutions[2] | **9'616'456** | **6'517'233** | **5'218'669** | 1'449'605 | 1'420'981 | 1'285'083 | 1'063'000 | 14 |
| Self-funding from project participants | **14'445'287** | **17'855'201** | **18'651'303** | 4'873'692 | 5'512'748 | 4'583'581 | 3'681'282 | 50 |
| Third-party funding[3] | **867'189** | **173'346** | **762'514** | 24'835 | 287'625 | 450'054 | 0 | 2 |
| Total | **42'694'932** | **41'947'549** | **37'335'764** | 9'388'160 | 10'477'771 | 9'522'135 | 7'947'698 | 100 |

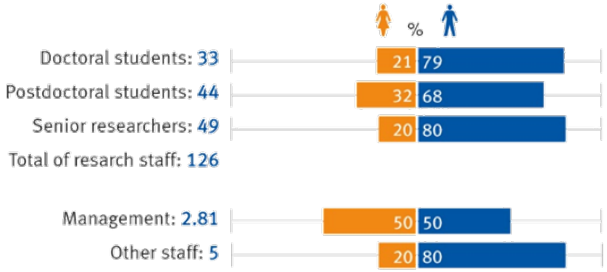
[1] incl. funding of transfer projects (strong Swiss franc package) in 2020, compensation for PhD salaries increase in 2014, flexibility grant in 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020 and 2021 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

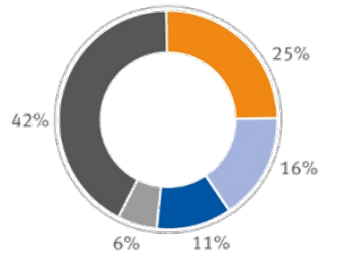
## Persons involved

**Data: current year**




## Nationalities of research staff

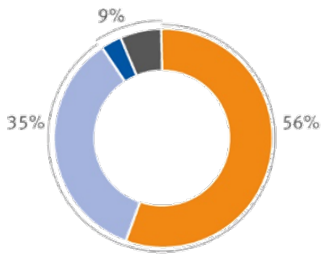
**Data: current year**




| | |
|---|---|
| Switzerland | 36 |
| Germany | 23 |
| Italy | 16 |
| France | 9 |
| other Nations | 61 |

## Next employer of doctoral students

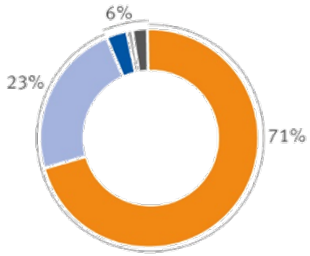
**Data: since start**




| | |
|---|---|
| Academic sector | 69 |
| Private sector | 44 |
| Public sector | 4 |
| Other | 0 |
| Not known | 7 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 123 |
| Private sector | 40 |
| Public sector | 6 |
| Other | 1 |
| Not known | 4 |

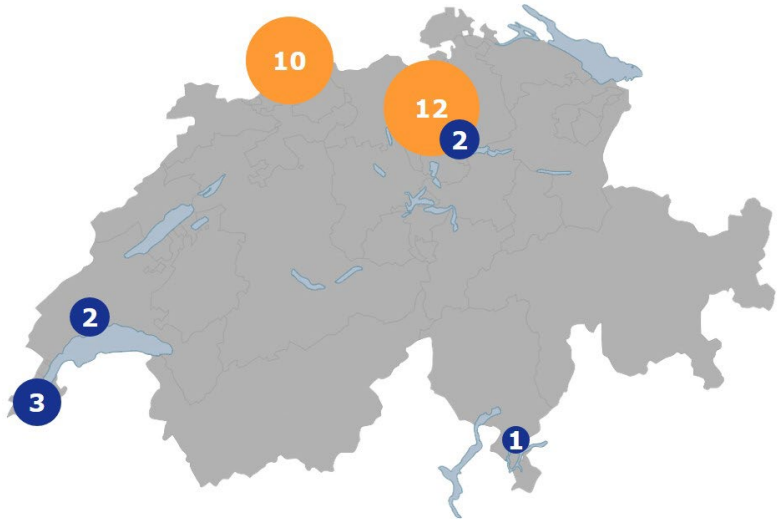
# NCCR QSIT
## Quantum Science and Technology

NCCR Director: Prof. Klaus Ensslin, NCCR Co-Director: Prof. Martino Poggio
Home Institutions: ETH Zurich, University of Basel
Start date: 1st of January 2011 (3rd NCCR series)

### Description
The National Centre of Competence in Research (NCCR) "QSIT – Quantum Science & Technology" is active in a field which unites the key discoveries of the 20th century: quantum physics and information theory. In future, research in this field will strongly influence science and technology. Potential applications are primarily focused in the area of computer science and sensors. The NCCR "QSIT" takes a multi-disciplinary approach, combining concepts from physics, chemistry, engineering and computer sciences. Researchers from many Swiss universities and from industry work together in the NCCR network. Their two common goals are to develop applications in the area of quantum computer science and to investigate new paradigms in physical basic research in view of novel states of matter.
For further information visit: https://nccr-qsit.ethz.ch/

### Heads of Research Groups
Prof. **Christoph Bruder**, Departement Physik, Universität Basel
Prof. **Nicolas Brunner**, Département de Physique Théorique, Université de Genève
Prof. **Christian Degen**, Laboratorium für Festkörperphysik, ETH Zürich
Prof. **Klaus Ensslin**, Laboratorium für Festkörperphysik, ETH Zürich
Prof. **Tilman Esslinger**, Institut für Quantenelektronik, ETH Zürich
Prof. **Jérôme Faist**, Institut für Quantenelektronik, ETH Zürich
Prof. **Anna Fontcuberta i Morral**, Laboratoire des matériaux semiconducteurs, EPFL
Dr. **Andreas Fuhrer**, IBM Research – Zürich Rüschlikon
Prof. **Jonathan Home**, Institut für Quantenelektronik, ETH Zürich
Prof. **Thomas Ihn**, Laboratorium für Festkörperphysik, ETH Zürich
Prof. **Atac Imamoglu**, Institut für Quantenelektronik, ETH Zürich
Prof. **Tobias Kippenberg**, Laboratoire de photonique et mesures quantiques, EPFL
Prof. **Jelena Klinovaja**, Departement Physik, Universität Basel
Prof. **Daniel Loss**, Departement Physik, Universität Basel
Prof. **Patrick Maletinsky**, Departement Physik, Universität Basel
Prof. **Alberto Morpurgo**, Département de physique de la matière quantique, Université de Genève
Prof. **Lukas Novotny**, Department Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Martino Poggio**, Departement Physik, Universität Basel
Prof. **Renato Renner**, Institut für Theoretische Physik, ETH Zürich
Dr. **Gian Salis**, IBM Research - Zürich Rüschlikon
Prof. **Christian Schönenberger**, Departement Physik, Universität Basel
Prof. **Philipp Treutlein**, Departement Physik, Universität Basel
Prof. **Andreas Wallraff**, Laboratorium für Festkörperphysik, ETH Zürich
Prof. **Richard Warburton**, Departement Physik, Universität Basel
Prof. **Werner Wegscheider**, Laboratorium für Festkörperphysik, ETH Zürich
Prof. **Stefan Willitsch**, Departement Chemie, Universität Basel
Prof. **Stefan Wolf**, Facoltà di Lugano, Scienze informatiche, Università della Svizzera Italiana

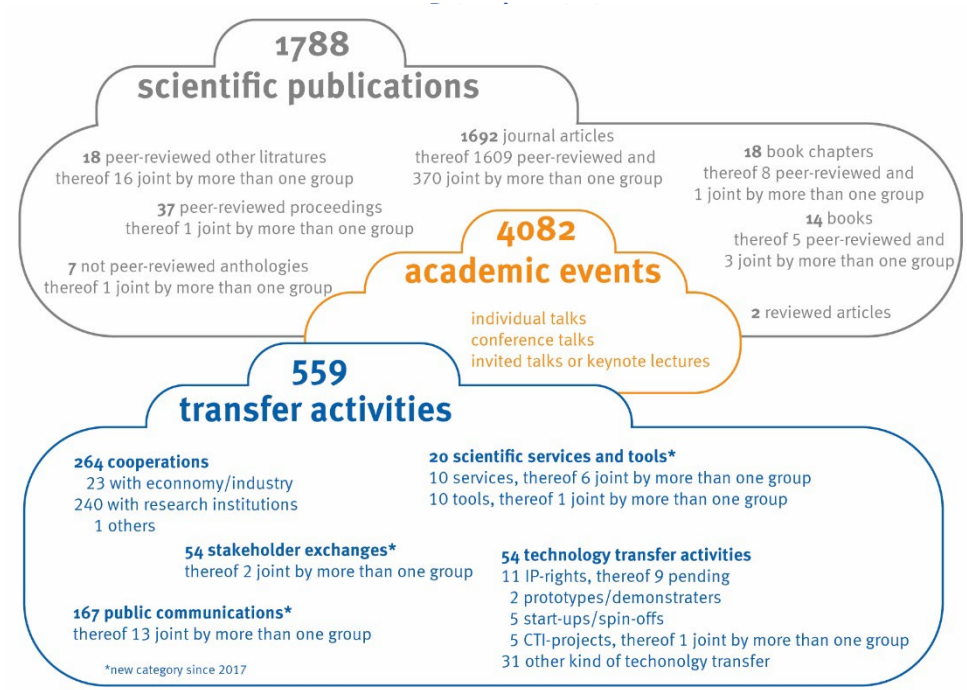
### Participating Institutions
Universität Basel (10 groups)/Université de Genève (3 groups)/Università della Svizzera Italiana Lugano (1 group)/EPFL (2 groups)/ETH Zürich (12 groups)/IBM Research Laboratory Rüschlikon (2 groups)



## Heads of Research Groups (continued)

Prof. **Vanessa Wood**, Department Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Hugo Zbinden**, GAP-Quantum Technologies, Université de Genève
Prof. **Dominik Zumbühl**, Departement Physik, Universität Basel

## Output Data




## Key collaborations with third parties

**Academia**
Keio University Yokohama, ITOH group, JP
Dept. of Physics, National University, SIN
University of Innsbruck, AT
Ecole normale supérieure, FR
Department of Physics, Harvard University, Cambridge, US
Niels Bohr Institute, Copenhagen, DK
Department of material science, Tohoku University, JP
Département de Physique, Université de Sherbrooke, CAN
Kavli Institute of NanoScience, Technische Universität Delft, NL
Stanford University, Stanford, US
University of Texas, Austin, US
National Institute for Material Science, Tsukuba, JP
NIST National Institute of Standards and Technology, Colorado, US
Princeton University, US
University of Sydney, AUS
University of Oxford, GB
Imperial College London, GB
Max Planck Institute of Quantum Optics, DE
Laboratory for Micro and Nanotechnology, Paul Scherrer Institute, CH
University of Bristol, GB
Université Libre de Bruxelles, BE
The University of Queensland, AUS
ICFO – The Institute of Photonic Sciences, ES
Faculty of Physics, University of Vienna, AT
Institute of Theoretical Physics, University of Paris-Saclay, FR
Department of Applied Physics, Aalto University School of Physics, FI
**Private and public sector**
ID Quantique, CH
IBM Research Zurich, CH
Qnami, CH
QZabre, CH
Magnebotix, CH
Rhode & Schwarz, DE

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2011 - 2014 | **Total Phase 2** 2015 - 2018 | **Total Phase 3** 2019 - 2022 | 2019 | 2020 | 2021 | 2022 | **Phase 3 %** |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **17'301'437** | **20'703'916** | **14'975'000** | 3'591'000 | 3'786'334 | 3'811'333 | 3'786'333 | 27 |
| Self-funding from Home Institutions[2] | **17'394'837** | **17'374'595** | **16'193'911** | 3'790'748 | 3'310'061 | 4'293'102 | 4'800'000 | 29 |
| Self-funding from project participants | **18'759'166** | **29'395'878** | **24'417'569** | 5'854'526 | 6'045'471 | 6'961'228 | 5'556'344 | 44 |
| Third-party funding[3] | **171'450** | **0** | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **53'626'890** | **67'474'389** | **55'586'480** | 13'236'274 | 13'141'866 | 15'065'663 | 14'142'677 | 100 |

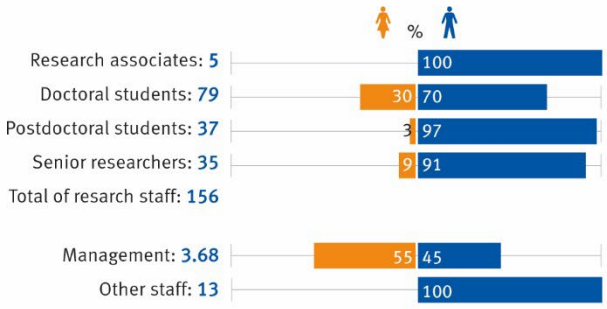
[1] incl. compensation for PhD salaries increase in 2015, flexibility grant in 2014, 2015, 2016, 2017, and 2018 and open research data grant in 2021.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

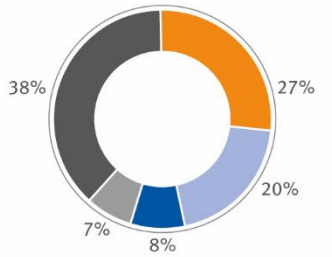
## Persons involved

**Data: current year**




## Nationalities of research staff

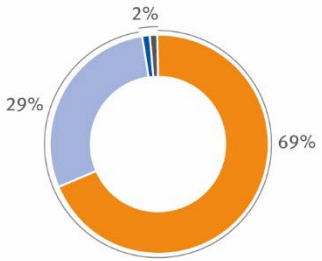
**Data: current year**




| | |
|---|---|
| Switzerland | 51 |
| Germany | 37 |
| China | 15 |
| Italy | 13 |
| other Nations | 70 |

## Next employer of doctoral students

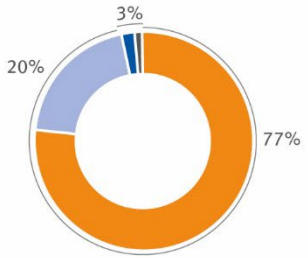
**Data: since start**




| | |
|---|---|
| Academic sector | 103 |
| Private sector | 43 |
| Public sector | 1 |
| Other | 0 |
| Not known | 1 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 142 |
| Private sector | 36 |
| Public sector | 5 |
| Other | 0 |
| Not known | 1 |

# NCCR Robotics

## Intelligent Robots for Improving the Quality of Life

NCCR Director: Prof. Dario Floreano, NCCR Co-Director: Prof. Robert Riener
Home Institutions: EPFL, ETH Zurich (since the 1st of December 2014)
Start date: 1st of December 2010 (3rd NCCR series)

### Description

The National Centre of Competence in Research (NCCR) "Robotics – Intelligent Robots for Improving the Quality of Life" encompasses a promising field of engineering which aims at developing new, human-oriented robotic technology. In the near future, intelligent robots will play an important role in improving quality of life. For example, "care robots" will help elderly people to stay in their familiar surroundings longer; "neuroprosthetic" and "exoprosthetic" robots will increase the mobility and autonomy of disabled person; "educational robots" will support the training of a new generation of scientists and engineers; "environmental robots" will keep our world cleaner and safer. In order to progress towards this vision, the NCCR "Robotics" is working towards developing fundamental insights in terms of technology, materials, and control mechanisms. For further information visit: http://www.nccr-robotics.ch/

### Heads of Research Groups

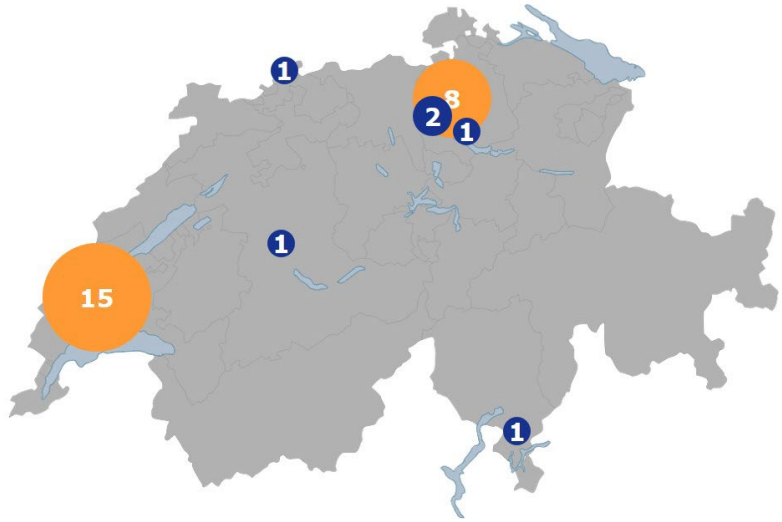
Prof. **Aude Billard**, Learning Algorithms and Systems Lab (LASA), EPFL
Prof. **Margarita Chli**, Vision for Robotics Lab (V4RL), ETH Zürich
Prof. **Grégoire Courtine**, G-Lab UPCourtine (G-Lab), EPFL
Prof. **Tobias Delbruck**, Sensors Group, Universität Zürich
Prof. **Pierre Dillenbourg**, Computer Human Interaction in Learning and Instruction (CHILI), EPFL
Prof. **Dario Floreano**, Laboratory of Intelligent Systems (LIS), EPFL
Prof. **Luca Gambardella**, Robotics Lab, Ist Dalle Molle di Studi sull'Intelligenza Artificiale, IDSIA
Prof. **Roger Gassert**, Rehabilitation Engineering Lab (RELab), ETH Zürich
Prof. **Marco Hutter**, Robotic Systems Lab (RSL), ETH Zürich
Prof. **Auke Ijspeert**, Biorobotics Laboratory (BIORob), EPFL
Prof. **Stéphanie Lacour**, Laboratory for Soft Bioelectronic Interfaces (LSBI), EPFL
Prof. **Laura Marchal-Crespo**, Motor Learning and Neurorehabilitation Lab, Universität Bern
Prof. **Silvestro Micera**, Translational Neural Engineering Lab (TNE), EPFL
Prof. **Francesco Mondada**, Miniature Mobile Robots Group (MOBOTS), EPFL
Prof. **Jamie Paik**, Reconfigurable Robotics Lab (RRL), EPFL
Prof. **Robert Riener**, Sensory-Motor Systems Lab (SMS), ETH Zürich
Prof. **Davide Scaramuzza**, Robotics and Perception Group (RPG), Universität Zürich
Prof. **Roland Siegwart**, Autonomous Systems Lab (ASL), ETH Zürich

### Heads of Associated Research Groups

Prof. **Alexandre Alahi**, Visual Intelligence for Transportation Lab (VITA), EPFL
Prof. **David Atienza**, Embedded Systems Lab (ESL), EPFL
Prof. **Ori Bar-Nur**, Laboratory of Regenerative and Movement Biology, ETH Zürich
Prof. **Olaf Blanke**, Laboratory of Cognitive Neuroscience (LNCO), EPFL
Prof. **Stelian Coros**, Computational Robotics Lab (CRL), ETH Zürich
Prof. **Josie Hughes**, Computational Robot Design & Fabrication Lab (CREATE), EPFL
Prof. **Mirko Kovac**, Materials and Technology Centre of Robotics, EMPA
Prof. **Stanisa Raspopovic**, Neuroengineering Lab (NeuroEng), ETH Zürich
Prof**. Georg Rauter**, Bio-Inspired Robots for Medicine Lab (BIROMED), Universität Basel
Prof. **Selman Sakar**, MicroBioRobotic Systems Lab (MICROROBS), EPFL

### Participating Institutions

Universität Bern (1 group)/Universität Basel (1 group)/Universität Zürich (2 groups)/EPFL (15 groups)/ETH Zürich (8 groups)/EMPA (1 group)/IDSIA (1 group)

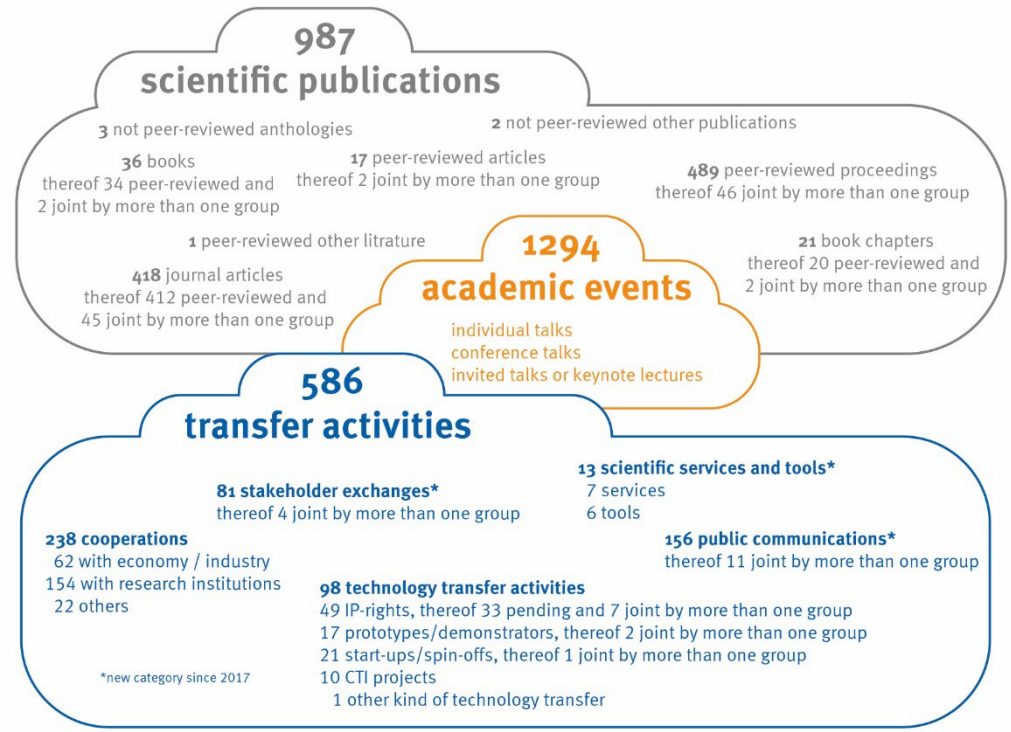


## Heads of Associated Research Groups (continued)

Prof. **Herbert Shea**, Soft Transducers Lab (LMTS), EPFL

**Overview of all Research Projects**

### Output Data




## Key collaborations with third parties

**Academia**

Bakırköy Mazhar Osman Mental Health and Neurological Diseases Education and Research Hospital, TUR
The University of Texas, UTA, Austin, TX., USA
Italian Institute of Technology, Genova, IT
The Hong Kong University of Science and Technology, HKG
Tohoku University, JP
Stanford University, California, USA
CHUV Department of Clinical Neurosciences, CH
Clinatec, Grenoble, FR
Charité – Universitätsmedizin Berlin, DE

**Private and public sector**

Huawei, Munich, DE
Intel, Santa Clara, USA
Prophesee, Paris, FR
Force Dimension, Nyon, CH
Intel, Munich, DE
Sony, Tokyo, JP
Armasuisse Wissenschaft und Technologie W+T, CH
Hocoma AG, CH
Leica Hexagon, CH

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2010 – 2013 | **Total Phase 2** 2014 - 2017 | **Total Phase 3** 2018 - 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 3 %** |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **13'391'024** | **15'336'237** | **11'263'920** | 2'690'545 | 2'924'459 | 2'824'458 | 2'824'458 | 54 |
| Self-funding from Home Institutions[2] | **6'126'703** | **12'091'453** | **6'361'966** | 1'057'585 | 1'457'893 | 1'808'988 | 2'037'500 | 30 |
| Self-funding from project participants | **10'387'838** | **5'055'707** | **3'366'971** | 1'346'400 | 1'016'654 | 1'003'917 | 0 | 16 |
| Third-party funding[3] | **115'360** | **0** | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **30'020'925** | **32'483'397** | **20'992'857** | 5'094'530 | 5'399'006 | 5'637'363 | 4'861'958 | 100 |

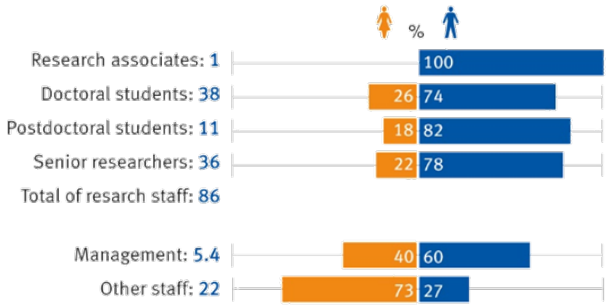
[1] incl. Mobility-grant in 2017, compensation for PhD salaries increase in 2014, flexibility grant in 2017 and 2018 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

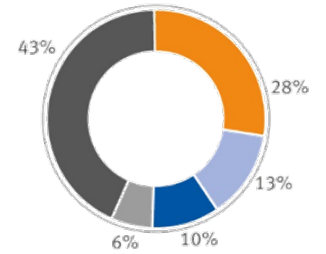
## Persons involved

**Data: current year**




## Nationalities of research staff

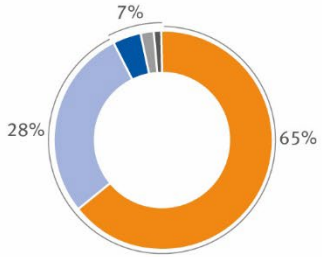
**Data: current year**




| | |
|---|---|
| Switzerland | 38 |
| Italy | 18 |
| Germany | 13 |
| France | 8 |
| other Nations | 59 |

## Next employer of doctoral students

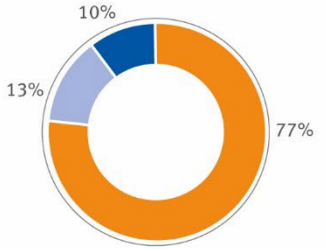
**Data: since start**




| | |
|---|---|
| Academic sector | 87 |
| Private sector | 38 |
| Public sector | 6 |
| Other | 3 |
| Not known | 1 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 52 |
| Private sector | 9 |
| Public sector | 7 |
| Other | 0 |
| Not known | 0 |

# NCCR SYNAPSY

## The synaptic bases of mental diseases

NCCR Director: Prof. Camilla Bellone, NCCR Co-Directors: Prof. Carmen Sandi and Prof. Philippe Conus
Home Institutions: University of Geneva, EPFL, University of Lausanne
Start date: 1st of October 2010 (3rd NCCR series)

### Description

The National Centre of Competence in Research (NCCR) "SYNAPSY – Synaptic Bases of Mental Diseases" aims to discover the neurobiological mechanisms of mental and cognitive disorders, since one of the major challenges in psychiatry is to achieve a better understanding of how these illnesses originate.
It is hoped that this research will lead to the development of improved diagnostic tools and therapeutic approaches. The NCCR "SYNAPSY" focuses on the interface between preclinical research and clinical development, combining neuroscience with psychiatry. This research focus will help train a new generation of psychiatrists with both high clinical expertise and a sound knowledge of the basic neurobiological aspects of mental functions and dysfunctions.
For further information visit: https://nccr-synapsy.ch/

### Heads of Research Groups

Prof. **Jean-Michel Aubry**, Service de Psychiatrie générale et Programme troubles de l'humeur, HUG-Hôpitaux Universitaires de Genève
Prof. **Claudia Bagni**, Département des neurosciences fondamentales (DNF) Université de Lausanne
Prof. **Camilla Bellone**, Département des neurosciences fondamentales (NEUFO) Université de Genève
Prof. **Olaf Blanke**, Brain Mind Institute, EPFL
Prof. **Alan Carleton**, Département des neurosciences fondamentales (NEUFO), Université de Genève
Prof. **Pico Caroni**, Friedrich Miescher Institute for Biomedical Research, Universität Basel
Prof. **Philippe Conus**, Service de Psychiatrie générale, Clinique psychiatrique universitaire, Cery-CHUV Lausanne
Prof. **Kim Do**, Centre de neurosciences psychiatriques, Unité de recherche sur la schizophrénie, Cery-CHUV Lausanne
Prof. **Stephan Eliez**, Département de Psychiatrie, Université de Genève
Prof. **Johannes Gräff**, Brain Mind Institute, EPFL
Prof. **Patric Hagmann**, Service de radiodiagnostic et radiologie interventionnelle, CHUV-Université de Lausanne
Prof. **Michael Herzog**, Brain Mind Institute, EPFL
Prof. **Kathryn Hess Bellwald**, Brain Mind Institute, EPFL
Prof. **Anthony Holtmaat**, Département des neurosciences fondamentales (NEUFO), Université de Genève
Prof. **Christian Lüscher**, Département des neurosciences fondamentales (NEUFO), Université de Genève
Prof. **Pierre Magistretti**, Centre de Neuroscience psychiatrique, Cery-CHUV Lausanne
Prof. **Pierre Marquet**, Unité mixte internationale en neurodéveloppement et psychiatrie infantile, Dept. Psychiatrie-CHUV, Université de Lausanne et Université Laval; Département de psychiatrie et neuroscience, Université Laval, Québec, Canada
Prof. **Jean Luc Martin**, Centre de Neuroscience psychiatrique, Cery-CHUV Lausanne

### Participating Institutions

Universität Basel/Friedrich-Miescher-Institut (1 group)/Université de Genève/HUG Genève (8 groups)/Université de Lausanne/CHUV Lausanne (9 groups)/EPFL (6 groups)

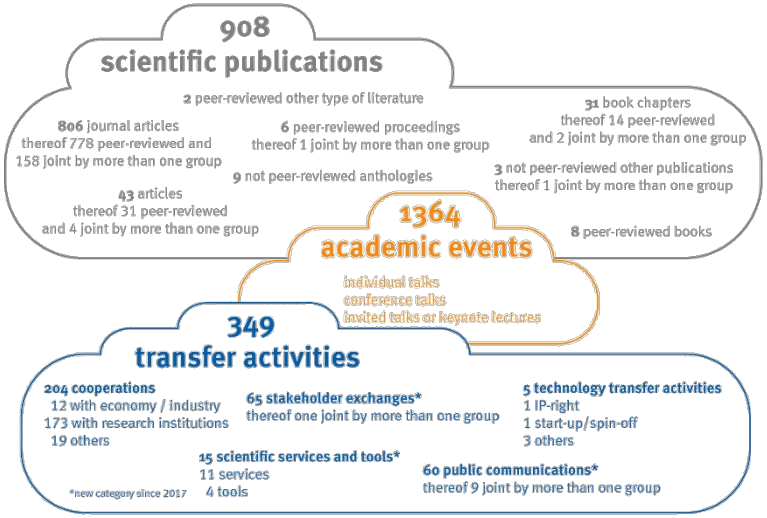
## Heads of Research Groups (continued)

Prof. **Christoph Michel**, Département des neurosciences fondamentales (NEUFO) Université de Genève
Prof. **Martin Preisig**, Unité mixte internationale en neurodéveloppement et psychiatrie infantile, Dept. Psychiatrie-CHUV, Université de Lausanne
Prof. **Carmen Sandi**, Brain Mind Institute, EPFL
Prof. **Marie Schaer**, Département de Psychiatrie, Université de Genève
Prof. **Daniel Schechter**, Service de Psychiatrie de l'Enfant et Adolescent (SUPEA), CHUV
Prof. **Ralf Schneggenburger**, Brain Mind Institute, EPFL

Overview of all Research Projects

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

University of Pennsylvania, US
King's College London, UK
Glasgow University, UK
Albert Einstein College of Medicine Bronx, US
Columbia University, US
King's College London, UK
North Carolina University, Chapel Hill, US
Mannheim, DE
NIMH, Bethesda, US
Laval University, CA
Munich University, DE
NeuroSpin, Paris, FR
McLean Hospital, Harvard, Boston, US
Sainte-Anne Hospital, Paris, FR
Simon Fraser University, Vancouver, CA
INSERM, Gif-sur-Yvette, FR
Mount Sinai, US
Radboud University, Nijmegen, NL
Langone School of Medicine NYU, US
University of Oslo, SE

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2010 - 2013 | **Total Phase 2** 2014 - 2017 | **Total Phase 3** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 3 %** |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **17'480'000** | **17'574'634** | **12'834'760** | 3'073'760 | 3'300'334 | 3'230'333 | 3'230'333 | 27 |
| Self-funding from Home Institutions[2] | **14'144'189** | **13'332'539** | **16'226'064** | 3'862'876 | 4'030'373 | 3'970'335 | 4'362'480 | 35 |
| Self-funding from project participants | **15'637'967** | **23'704'005** | **17'662'798** | 5'039'500 | 5'142'698 | 4'216'500 | 3'264'100 | 38 |
| Third-party funding[3] | **2'254'204** | **959'270** | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **49'516'360** | **55'570'448** | **46'723'622** | 11'976'136 | 12'473'405 | 11'417'168 | 10'856'913 | 100 |

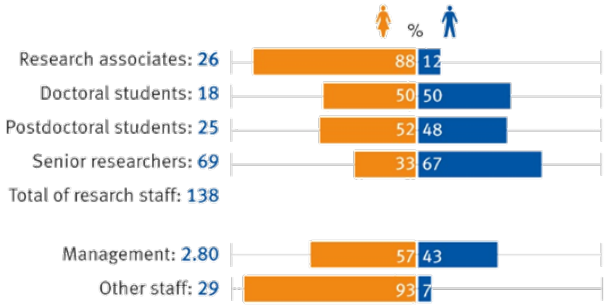
[1] incl. compensation for PhD salaries increase in 2014, flexibility grant in 2016, 2017, and 2018 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

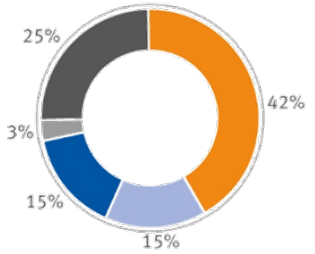
## Persons involved

**Data: current year**




## Nationalities of research staff

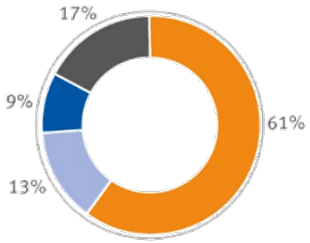
**Data: current year**




| | |
|---|---|
| Switzerland | 82 |
| France | 30 |
| Italy | 29 |
| Spain | 6 |
| other Nations | 49 |

## Next employer of doctoral students

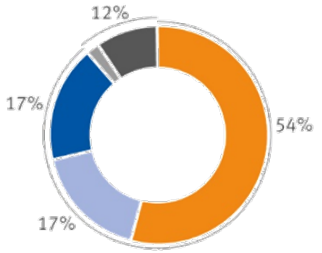
**Data: since start**




| | |
|---|---|
| Academic sector | 40 |
| Private sector | 9 |
| Public sector | 6 |
| Other | 0 |
| Not known | 11 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 55 |
| Private sector | 17 |
| Public sector | 17 |
| Other | 3 |
| Not known | 10 |

# NCCR TransCure

## From transport physiology to identification of therapeutic targets

NCCR Director: Prof. Hugues Abriel
Home Institution: University of Bern
Start date: 1st of November 2010 (3rd NCCR series)

### Description

The National Centre of Competence in Research (NCCR) "TransCure – From Transport Physiology to Identification of Therapeutic Targets" seeks to integrate the disciplines of physiology, structural biology and chemistry and to develop new therapeutic strategies for treating the most important diseases.
Transport proteins and ion channels play a key role in all physiological processes in the human body. Malfunctions in these proteins may contribute to the occurrence of diseases like diabetes, high blood pressure, osteoporosis and neuro-degeneration, and play a role in heart disease and cancers. The NCCR "TransCure" researchers aim to achieve a more profound understanding of the structures and mechanisms of these proteins. By broadening their knowledge of how transport proteins and channels work, they hope to develop new medicines. For further information visit: https://www.nccr-transcure.ch/

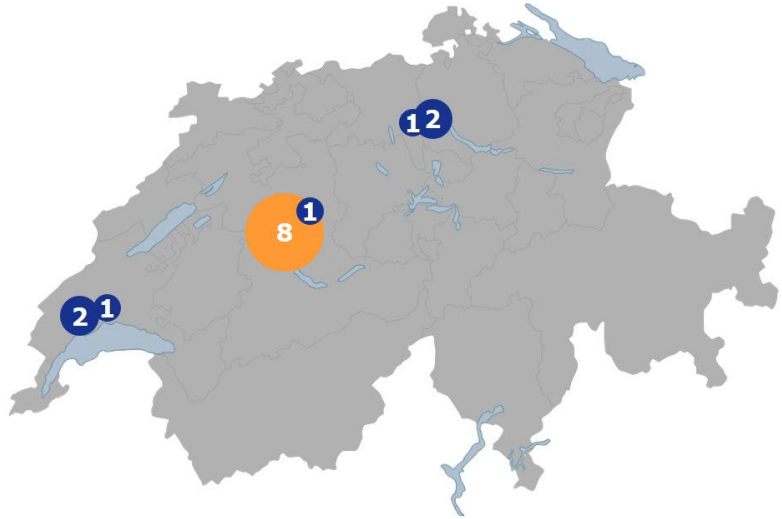
### Heads of Research Groups

Prof. **Hugues Abriel**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Christiane Albrecht**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Karl-Heinz Altmann**, Institut für Pharmazeutische Wissenschaften, ETH Zürich
Prof. **Murielle Bochud**, Institut Universitaire de Médecine Sociale et Préventive, Université de Lausanne
Prof. **Raimund Dutzler**, Biochemisches Institut, Universität Zürich
Prof. **Dimitrios J. Fotiadis**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Daniel G. Fuster**, Universitätsklinik für Nephrologie und Hypertonie, Inselspital Bern
Prof. **Jürg Gertsch**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Wanda Kukulski**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Kaspar Locher**, Institut für Molekulare Biologie und Biophysik, ETH Zürich
Prof. **Martin Lochner**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Christine Peinelt**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Jean-Louis Reymond**, Departement für Chemie und Biochemie, Universität Bern
Prof. **Henning Stahlberg**, Institut de physique, EPFL
Prof. **Andrea Volterra**, Département des neurosciences fondamentales, Université de Lausanne

**Overview of all Research Projects**

### Participating Institutions

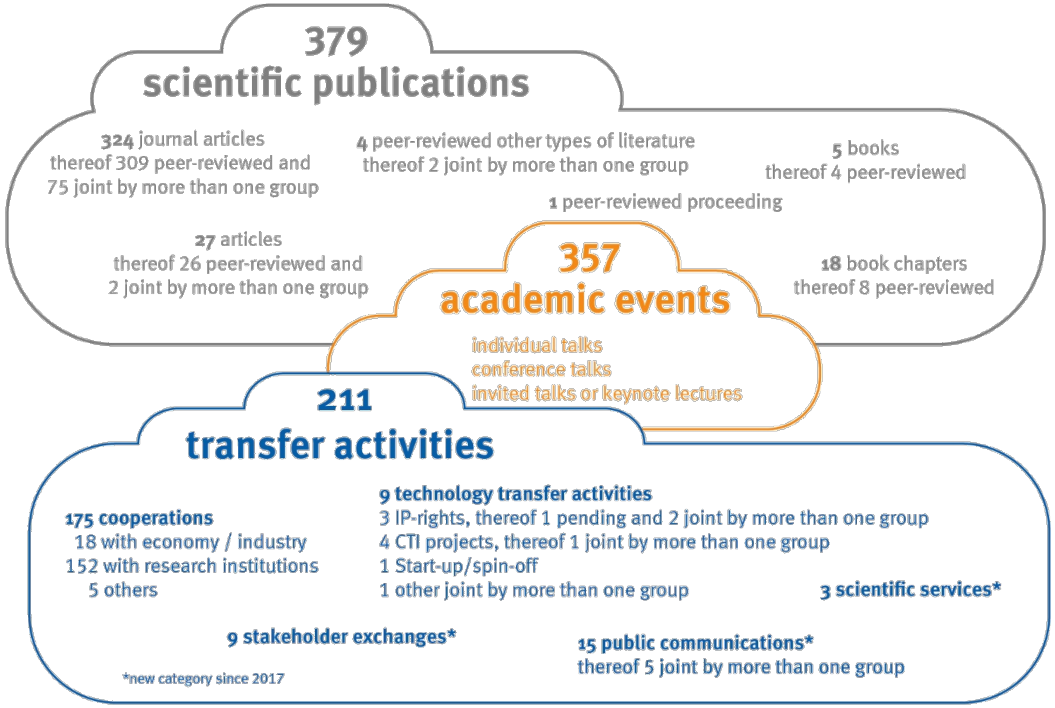
Universität Bern (8 groups)/Université de Lausanne (2 groups)/Universität Zürich (1 group)/EPFL (1 group)/ETH Zürich (2 groups)/Inselspital Bern (1 group)




Home Institution
Partner Institutions

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

CNCR, Neuroscience Campus Amsterdam, VU University, Amsterdam, NL
Departments of Pharmacology and Systems, Icahn School of Medicine at Mount Sinai, New York, US
Inselspital, Urology department, Bern, CH
Department of Biochemistry and Biophysics, Stockholm University, Stockholm, SWE
Department of neuroscience, University of Uppsala, Uppsala, SWE
University Hospital Lausanne, Department of Laboratory, Lausanne, CH
Food Science & Human Nutrition Dept., University of Florida, Gainesville, US
Department of Physiology, Johns Hopkins University, Baltimore, US
Dept. of Physiology, University of Cambridge, Cambridge, UK
Institut du Thorax, Université de Nantes, Nantes, FR
Institute of Pharmacy, University of Regensburg, Regensburg, DE
Westlake University, Key Laboratory of Structural Biology of Zhejiang Province, Hangzhou, CN
UT Southwestern Medical Center, Nephrology Division, Dallas, USA
Petrovskiy Russian Scientific Center of Surgery, Moscow, RU
Faculdada de Ciencias de la Salud, Universidad San Sebastien, Santiago, CHL
Department of Neuromuscular diseases, University College London, UK
Institut des Cordelier, INSERM, Paris, FR

**Private and public sector**

Vifor Pharma, Villars-sur-Glâne, CH
Novartis, Basel, CH

## Funding

| Funding Source (CHF) | Total Phase 1<br>2010 - 2013 | Total Phase 2<br>2014 - 2017 | Total Phase 3<br>2018 – 2021 | 2018 | 2019 | 2020 | 2021 | Phase 3<br>% |
|---|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **14'155'000** | **11'782'452** | **7'609'184** | 2'064'800 | 2'038'384 | 1'833'000 | 1'673'000 | 34 |
| Self-funding from Home Institution[2] | **4'590'667** | **4'349'751** | **4'760'128** | 1'199'335 | 1'199'092 | 1'143'588 | 1'218'113 | 22 |
| Self-funding from project participants | **13'846'209** | **12'680'191** | **9'109'697** | 2'359'029 | 2'186'917 | 1'853'751 | 2'710'000 | 41 |
| Third-party funding[3] | **335'080** | **656'305** | **579'355** | 200'305 | 195'382 | 0 | 183'668 | 3 |
| Total | **32'926'956** | **29'468'699** | **22'058'364** | 5'823'469 | 5'619'775 | 4'830'339 | 5'784'781 | 100 |

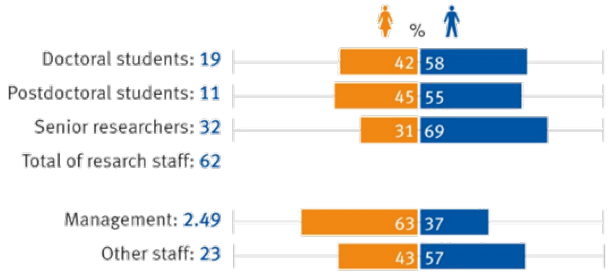
[1] incl. compensation for PhD salaries increase in 2015, flexibility grant in 2015, 2016, 2017, 2018 and 2019, mobility-grant in 2019 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

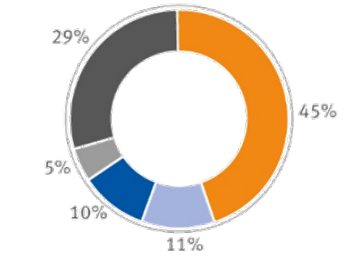
## Persons involved

**Data: current year**




## Nationalities of research staff

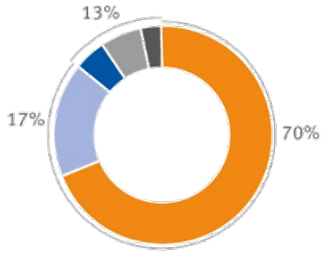
**Data: current year**




| | |
|---|---|
| Switzerland | 44 |
| Germany | 11 |
| Italy | 10 |
| Poland | 5 |
| other Nations | 29 |

## Next employer of doctoral students

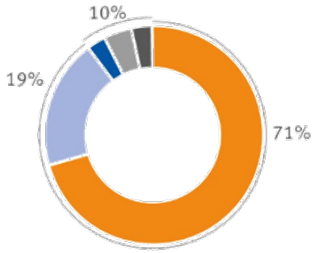
**Data: since start**




| | |
|---|---|
| Academic sector | 46 |
| Private sector | 11 |
| Public sector | 3 |
| Other | 4 |
| Not known | 2 |

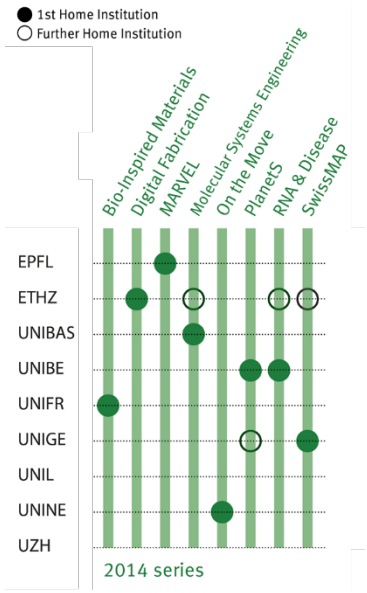
## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 113 |
| Private sector | 30 |
| Public sector | 6 |
| Other | 7 |
| Not known | 4 |

# NCCR 4th series at a glance




## 4th series of NCCRs (Operation 2014-2026)

| Short Name | NCCR-Director | Home Institutions | Starting date |
|---|---|---|---|
| Bio-Inspired Materials | Prof. Ullrich Steiner | University of Fribourg | June 1, 2014 |
| Digital Fabrication | Prof. Philippe Block | ETH Zurich | June 1, 2014 |
| MARVEL | Prof. Nicola Marzari | EPFL | May 1, 2014 |
| Molecular Systems Engineering | Prof. Thomas R. Ward | University of Basel, ETH Zurich | July 1, 2014 |
| On the Move | Prof. Gianni D'Amato | University of Neuchatel | June 1, 2014 |
| PlanetS | Prof. Willy Benz | University of Bern, University of Geneva | June 1, 2014 |
| RNA & Disease | Prof. Oliver Mühlemann | University of Bern, ETH Zurich | May 1, 2014 |
| SwissMAP | Prof. Stanislav Smirnov | University of Geneva, ETH Zurich | July 1, 2014 |

## 4th series of NCCRs: Funding in phase 1 and phase 2: 2018-2021

| Funding source (CHF) | Phase 1 | 2018 | 2019 | 2020 | 2021 | Phase 2 total |
|---|---|---|---|---|---|---|
| SNSF funding[1] | **123'402'938** | 31'906'082 | 34'353'221 | 33'208'054 | 33'169'029 | **132'636'386** |
| Self-funding from Home Institutions[2] | **58'759'368** | 17'602'146 | 16'654'679 | 15'739'263 | 18'865'101 | **68'861'189** |
| Self-funding from project participants | **77'471'914** | 23'207'225 | 23'078'429 | 25'007'621 | 15'935'227 | **87'228'502** |
| Third-party funding[3] | **9'787'557** | 2'848'391 | 3'410'633 | 6'308'534 | 1'332'584 | **13'900'142** |
| Total | **269'421'777** | 75'563'844 | 77'496'962 | 80'263'472 | 69'301'941 | **302'626'219** |

[1] incl. Funding of transfer projects (stron Swiss franc package), compensation for PhD salaries increase, flexibility grant, mobility grant and open research data grant.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

## Persons involved in the NCCRs in the last reporting period (12 months)

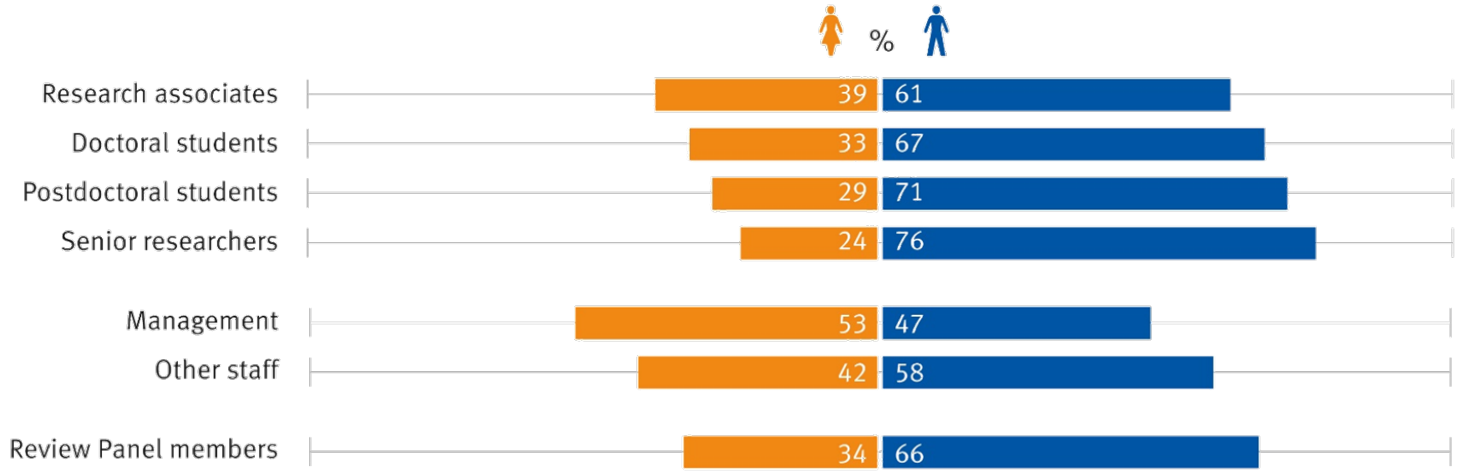
| Personnel | Total of Persons | Female | Male | Swiss | Other nationalities |
|---|---|---|---|---|---|
| Research associates[1] | 49 | 19 | 30 | 17 | 38 |
| Doctoral students | 404 | 134 | 270 | 97 | 319 |
| Postdoctoral students | 265 | 78 | 187 | 26 | 245 |
| Senior researchers[2] | 405 | 97 | 308 | 119 | 306 |
| Management[3] | 48.69 | 65 | 57 | 65 | 78 |
| Other staff | 107 | 45 | 62 | 47 | 65 |
| Total | 1352 | 438 | 914 | 371 | 1051 |

[1] Includes graduate scientists (level master) but not registered as doctoral students or undergraduate students participating in research projects.

[2] Including leaders of the individual projects and other organisational units of the NCCRs

[3] Full-time equivalent, including NCCR-Director and persons in charge of knowledge and technology transfer, equal opportunities, communication, education and training

## Gender in the NCCRs



# NCCR Bio-Inspired Materials

## Using Concepts from Nature to Create "Smart" Materials

NCCR Director: Prof. Ullrich Steiner
Home Institution: University of Fribourg
Start date: 1st of June 2014 (4th NCCR series)

### Description

The NCCR "Bio-Inspired Materials – Using Concepts from Nature to Create 'Smart' Materials" aims to pool the expertise of its members in the fields of chemistry, physics, materials science, biology and medicine in order to study and find applications for new smart materials inspired by living organisms. This involves devising new design strategies and rules to create and assemble macromolecules and nanoparticles into ordered structures to produce smart materials with the desired properties. The NCCR conducts the relevant research in four interdisciplinary modules that focus on mechanically responsive materials across different length scales, biologically inspired assembly of optical materials, responsive bio-interfaces and surfaces, and dynamics of interacting cell-material systems.
For further information visit: https://www.bioinspired-materials.ch/en/

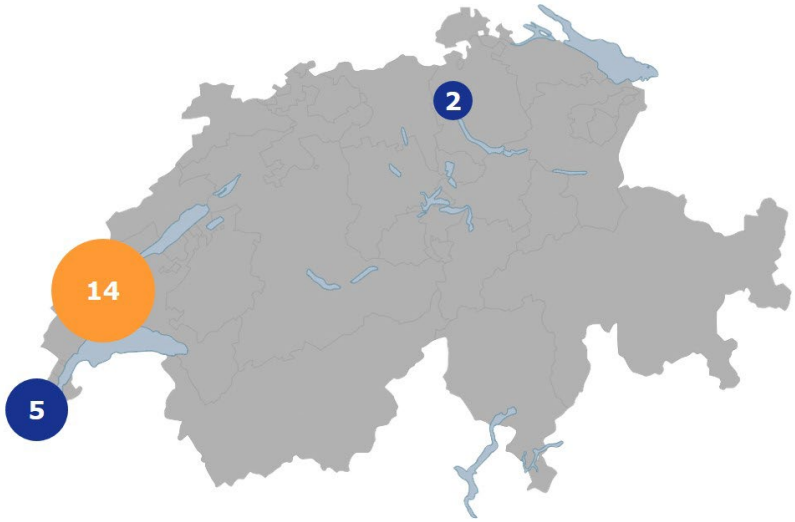
### Heads of Research Groups

Prof. **Guillermo Acuna**, Departement Physik, Universität Freiburg
Prof. **Esther Amstad**, Institut de Science et Génie des Matériaux, EPFL
Prof. **Nico Bruns**, Department of Pure and Applied Chemistry, University of Strathclyde
Prof. **Eric Robert Dufresne**, Departement Materialwissenschaft, ETH Zürich
Prof. **Alke Fink**, Adolphe Merkle Institute, Universität Freiburg
Prof. **Katharina Fromm**, Departement Chemie, Universität Freiburg
Prof. **Andreas Kilbinger**, Departement Chemie, Universität Freiburg
Prof. **Harm-Anton Klok**, Institut de Science et Génie des Matériaux, EPFL
Prof. **Marco Lattuada**, Departement Chemie , Universität Freiburg
Prof. **Matthias Lutolf**, Institut de Bioingénierie, EPFL
Prof. **Michael Mayer**, Adolphe Merkle Institute, Universität Freiburg
Prof. **Stefan Salenting**, Departement Chemie, Universität Freiburg
Prof. **Frank Scheffold**, Departement Physik, Universität Freiburg
Prof. **Ullrich Steiner**, Adolphe Merkle Institute, Universität Freiburg
Prof. **Francesco Stellacci**, Institut de Science et Génie des Matériaux, EPFL
Prof. **André Studart**, Departement Materialwissenschaft, ETH Zürich
Prof. **Aleksandra Radenovic**, Institut Interfacultaire de Bioingénierie, EPFL
Prof. **Barbara Rothen-Rutishauser**, Adolphe Merkle Institute, Universität Freiburg
Prof. **Curzio Rüegg**, Departement für Medizin, Universität Freiburg
Prof. **Stefano Vanni**, Departement Biologie, Universität Freiburg
Prof. **Christoph Weder**, Adolphe Merkle Institute, Universität Freiburg

**Overview of all Research Projects**

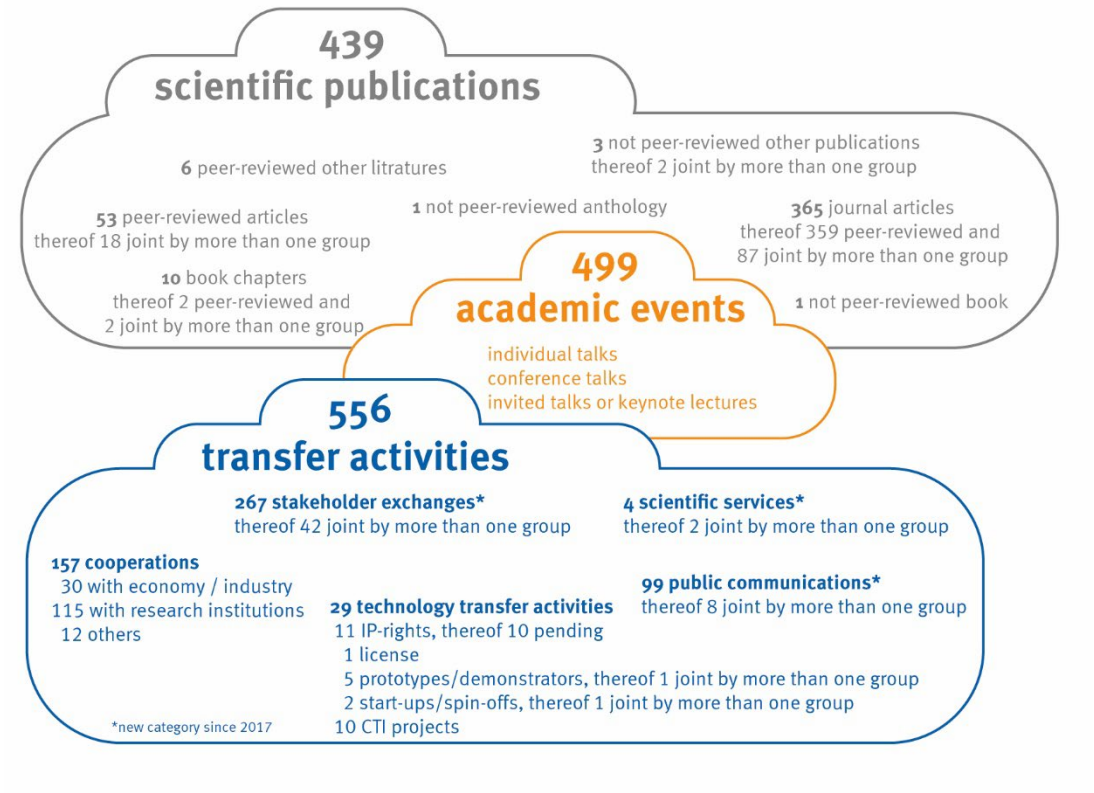
### Participating Institutions

Universität Freiburg (14 groups)/EPFL (5 groups)/ETH Zürich (2 groups)



## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

University of Chicago, US
University of California Los Angeles, US
University of Groningen, NL
Tsinghua University, CN
Paul Scherrer Institute, CH
University of Lausanne, CH
Empa, Swiss Federal Laboratories for Materials Science and Technology, CH
École Normale Supérieure, FR
Bulgarian Academy of Sciences, BG
Max Planck Institute for Polymer Research, DE
Karlsruhe Institute of Technology, DE
Cornell University, US
International Iberian Nanotechnology Laboratory, PT
Zurich University of Applied Sciences, CH

**Private and public sector**

BASF, CH
Novartis, CH
Service de la promotion économique du Canton de Fribourg, CH
Nanolockin, CH
CSEM SA, CH

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2014 – 2017 | **Total Phase 2** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 2 %** |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **12'015'719** | **17'225'000** | 4'000'000 | 4'425'000 | 4'400'000 | 4'400'000 | 46 |
| Self-funding from Home Institution[2] | **6'853'694** | **6'673'518** | 1'636'818 | 1'336'386 | 684'656 | 3'015'658 | 18 |
| Self-funding from project participants | **8'111'990** | **13'062'898** | 3'066'795 | 3'345'504 | 3'505'994 | 3'144'605 | 35 |
| Third-party funding[3] | **783'905** | **330'332** | -56'660 | 111'575 | 93'917 | 181'500 | 1 |
| Total | **27'765'308** | **37'291'748** | 8'646'953 | 9'218'465 | 8'684'567 | 10'741'763 | 100 |

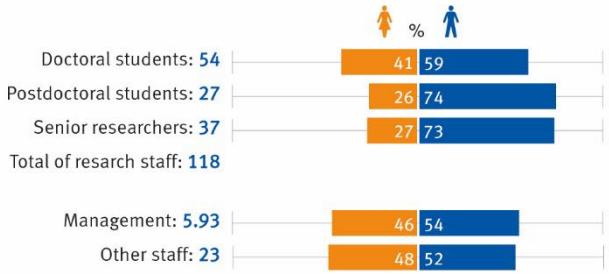
[1] incl. flexibility grant in 2017 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

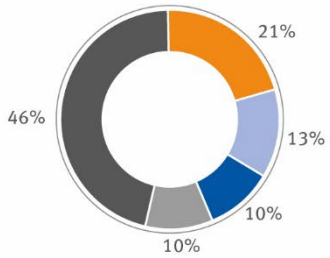
## Persons involved

**Data: current year**




## Nationalities of research staff

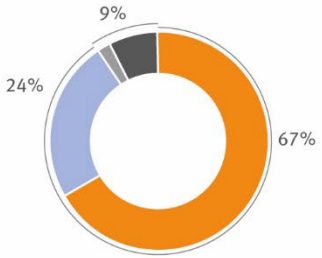
**Data: current year**




| | |
|---|---|
| Switzerland | 35 |
| Germany | 20 |
| Italy | 17 |
| France | 16 |
| other Nations | 76 |

## Next employer of doctoral students

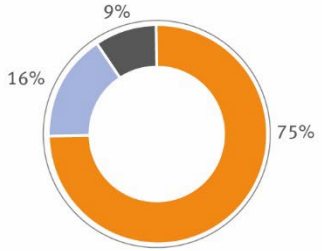
**Data: since start**




| | |
|---|---|
| Academic sector | 39 |
| Private sector | 14 |
| Public sector | 0 |
| Other | 1 |
| Not known | 4 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 41 |
| Private sector | 9 |
| Public sector | 0 |
| Other | 0 |
| Not known | 5 |

# NCCR Digital Fabrication

## Innovative Building Processes in Architecture

NCCR Director: Prof. Philippe Block
Home Institution: ETH Zurich
Start date: 1st of June 2014 (4th NCCR series)

### Description

The NCCR "Digital Fabrication – Innovative Building Processes in Architecture" aims to secure a leading position for Switzerland in this new and highly interesting sector, which is fast becoming a core discipline of architecture. Through a multidisciplinary approach the disciplines of architecture, engineering, robotics, and material and computer sciences are brought together in an ambitious partnership to establish digital technology as an essential part of future building processes. This new approach combines digitally mediated architectural design with robotic construction technologies to augment contemporary construction processes. The benefits of digital construction are evident: efficient use of production resources, material-specific concepts and durability, thanks to the seamless integration of design and fabrication.
For further information visit: http://www.dfab.ch/

### Heads of Research Groups

Prof. **Philippe Block**, Departement Architektur, ETH Zürich
Prof. **Margarita Chli**, Departement Maschinenbau und Verfahrenstechnik, ETH Zürich
Prof. **Stelian Coros**, Departement Informatik, ETH Zürich
Prof. **Benjamin Dillenburger**, Departement Architektur, ETH Zürich
Prof. **Corentin Fivet**, Faculté de l'environnement Naturel, Architectural et Construit, EPFL
Prof. **Robert Flatt**, Departement Bau, Umwelt und Geomatik, ETH Zürich
Prof. **Christophe Girot**, Departement Architektur, ETH Zürich
Prof. **Gudela Grote**, Departement Management, Technologie und Ökonomie, ETH Zürich
Prof. **Guillaume Habert**, Departement Bau, Umwelt und Geomatik, ETH Zürich
Prof. **Daniel Hall**, Departement Bau, Umwelt und Geomatik, ETH Zürich
Prof. **Marco Hutter**, Departement Maschinenbau und Verfahrenstechnik, ETH Zürich
Prof. **Walter Kaufmann**, Departement Bau, Umwelt und Geomatik, ETH Zürich
Prof. **Matthias Kohler**, Departement Architektur, ETH Zürich
Prof. **Agathe Koller-Hodac**, Mechatronik und Automation, HSR Hochschule für Technik Rapperswil
Prof. **Andreas Luible**, Technik und Architektur, HSLU Hochschule Luzern
Prof. **Mark Pauly**, Faculté Informatique et Communications, EPFL
Prof. **Arno Schlueter**, Departement Architektur, ETH Zürich
Prof. **Kristina Shea**, Departement Maschinenbau und Verfahrenstechnik, ETH Zürich
Prof. **Roland Siegwart**, Departement Maschinenbau und Verfahrenstechnik, ETH Zürich
Prof. **Olga Sorkine-Hornung**, Departement Informatik, ETH Zürich
Prof. **Yves Weinand**, Faculté de l'environnement naturel, architectural et construit ENAC, EPFL
Prof. **Andreas Wieser**, Departement Bau, Umwelt und Geomatik, ETH Zürich
Prof. **Melanie Zeilinger**, Departement Maschinenbau und Verfahrenstechnik, ETH Zürich

**Overview of all Research Projects**

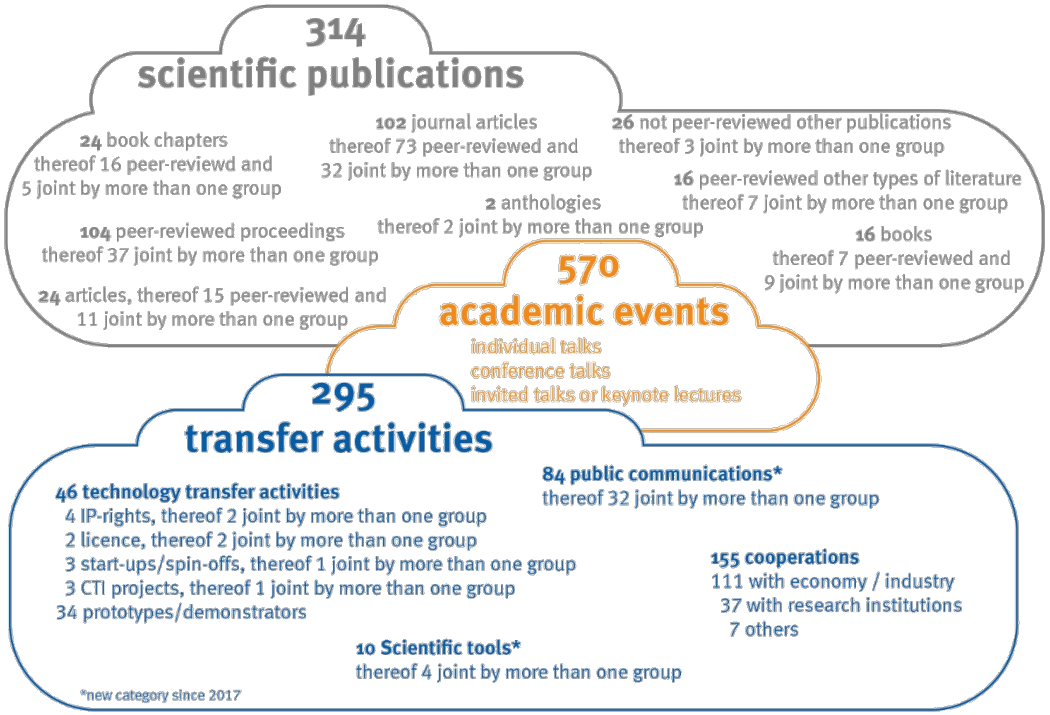
### Participating Institutions

ETH Zurich (18 groups)/EPFL (3 groups)/HSLU (1 group)/HSR (1 group)


Home Institution
Partner Institutions

## Output Data

**Data: since start**




## Key collaborations with third parties

**Private and public sector**

ABB Ltd, CH
Arup Group, UK
Autodesk Inc, US
BASF Schweiz AG, CH
Bürgin Creations, CH
CEAD B.V., NL
Doka AG, CH
Eberhard Bau AG, CH
ERNE Holzbau AG, CH
Fronius AG, CH
Hilti Corporation, AT
Holcim, CH
Implenia AG, CH
Knauf AG, CH
Losinger und Marazzi AG, CH
Marti AG, CH
Müller Steinag AG, CH
Peri GmbH, CH
SACAC AG, CH
Sika AG, CH
Stahlton AG, CH
Zindel Gruppe AG, CH

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2014 – 2017 | **Total Phase 2** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 2 %** |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **13'441'280** | **14'559'109** | 3'382'480 | 3'771'400 | 3'685'000 | 3'720'229 | 32 |
| Self-funding from Home Institution[2] | **8'825'936** | **9'572'217** | 3'230'960 | 2'386'117 | 1'908'000 | 2'047'140 | 21 |
| Self-funding from project participants | **4'795'110** | **9'465'590** | 2'491'350 | 2'838'192 | 4'016'048 | 120'000 | 21 |
| Third-party funding[3] | **5'756'043** | **11'943'482** | 2'419'937 | 2'750'165 | 5'758'296 | 1'015'084 | 26 |
| Total | **32'818'369** | **45'540'398** | 11'524'727 | 11'745'874 | 15'367'344 | 6'902'453 | 100 |

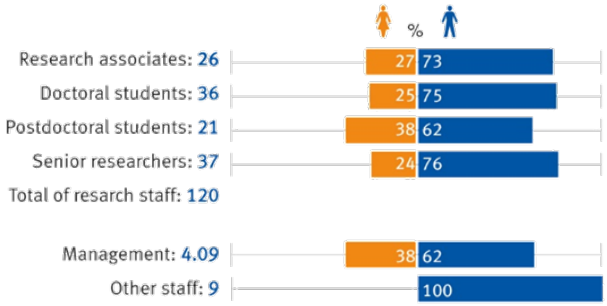
[1] incl. flexibility grant in 2016, 2017, 2018, 2019 and 2021, mobility grant in 2021 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

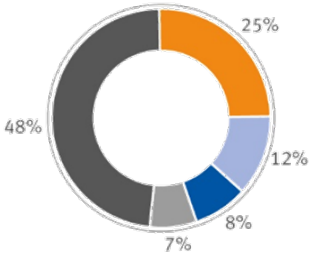
## Persons involved

**Data: current year**




## Nationalities of research staff

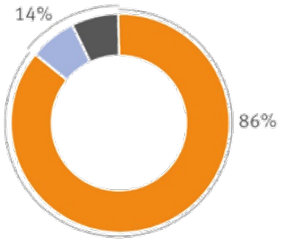
**Data: current year**




| | |
|---|---|
| Switzerland | 34 |
| Germany | 17 |
| Italy | 11 |
| USA | 10 |
| other Nations | 67 |

## Next employer of doctoral students

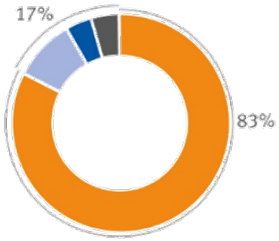
**Data: since start**




| | |
|---|---|
| Academic sector | 26 |
| Private sector | 2 |
| Public sector | 0 |
| Other | 0 |
| Not known | 2 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 19 |
| Private sector | 2 |
| Public sector | 1 |
| Other | 0 |
| Not known | 1 |

# NCCR MARVEL

## Materials' Revolution: Computational Design and Discovery of Novel Materials

NCCR Director: Prof. Nicola Marzari
Home Institution: EPFL
Start date: 1st May 2014 (4th NCCR series)

### Description

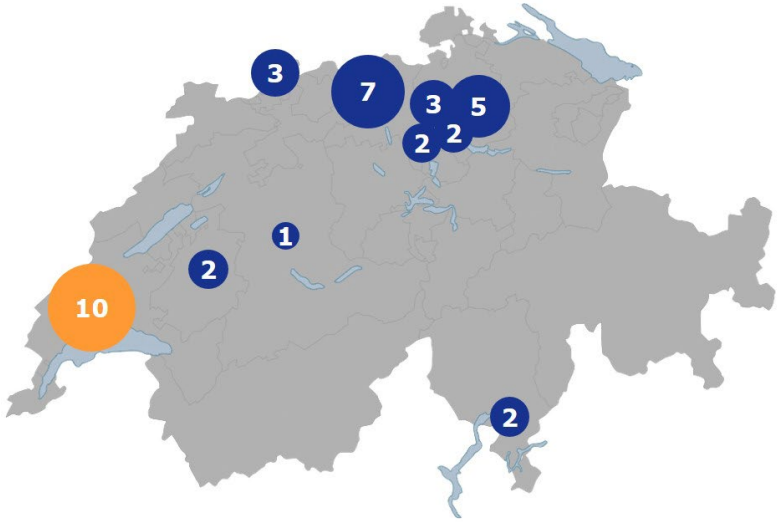
The MARVEL NCCR ("Materials' Revolution: Computational Design and Discovery of Novel Materials") aims to greatly accelerate the design and discovery of novel materials, via a materials' informatics platform of high-throughput quantum simulations. These are powered by advanced electronic-structure capabilities for predictive accuracy; innovative sampling methods to explore configuration/composition space; and the application of machine learning and big data to computational materials science. Searches are targeted to materials for energy harvesting, storage, and conversion; materials for ICT; high value/high tech industries; and organic crystals.
For further information visit https://nccr-marvel.ch

### Heads of Research Groups

Prof. **Ana Akrap**, Département de physique, Université de Fribourg
Prof. **Ulrich Aschauer**, Departement für Chemie und Biochemie, Universität Bern
Prof. **Michele Ceriotti**, Institut des matériaux, EPFL
Prof. **Anne-Clémence Corminboeuf**, Institut des sciences et ingénierie chimiques, EPFL
Prof. **William Curtin**, Institut de génie mécanique, EPFL
Prof. **Claude Ederer**, Departement Materialwissenschaft, ETH Zürich
Prof. **Lyndon Emsley**, Institut des sciences et ingénierie chimiques, EPFL
Dr. **Emiliana Fabbri**, Electrochemistry Laboratory, PSI Villigen
Prof. **Roman Fasel**, Nanotech@surfaces, Empa Dübendorf
Prof. **Marta Gibert**, Physik-Institut, Universität Zürich
Prof. **Stefan Goedecker**, Departement Physik, Universität Basel
Prof. **Jürg Hutter**, Institut für Chemie, Universität Zürich
Prof. **Martin Jaggi**, Institut d'informatique et de communications, EPFL
Prof. **Michel Kenzelmann**, Laboratory for Neutron Scattering and Imaging, PSI Villigen
Dr. **Teodoro Laino**, IBM Research GmbH, Rueschlikon
Prof. **Mathieu Luisier**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Nicola Marzari**, Institut des matériaux, EPFL
Prof. **Titus Neupert**, Physik-Institut, Universität Zürich
Prof. **Frithjof Nolting**, Laboratory for Condensed Matter Physics, PSI Villigen
Prof. **Alfredo Pasquarello**, Institut de physique, EPFL
Dr. **Daniele Passerone**, Nanotech@surfaces, Empa Dübendorf
Dr. **Daniele Pergolesi**, Laboratory for Multiscale Materials Experiments, PSI Villigen
Dr. **Giovanni Pizzi**, Institut des matériaux, EPFL
Dr. **Marco Ranocchiari**, Laboratory for Catalysis and Sustainable Chemistry, PSI Villigen
Prof. **Sereina Riniker**, Departement Chemie und Angewandte Biowissenschaften, ETH Zürich
Prof. **Volker Roth**, Departement Mathematik & Informatik, Universität Basel
Prof. **Thomas Schulthess**, Centro Svizzero di Calcolo Scientifico (CSCS), Lugano and Institut für Theoretische Physik, ETH Zürich
Prof. **Ming Shi**, Laboratory for Condensed Matter Physics, PSI Villigen
Prof. **Berend Smit**, Institut des sciences et ingénierie chimiques, EPFL
Prof. **Nicola Spaldin**, Departement Materialwissenschaft, ETH Zürich

### Participating Institutions

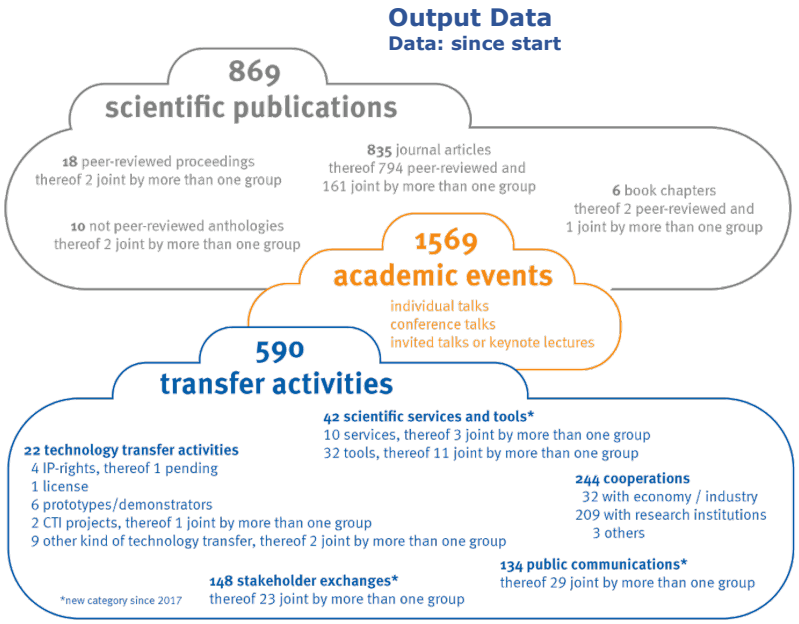
Universität Basel (3 groups)/Universität Bern (1 group)/Université de Fribourg (2 groups)/Universität Zürich (3 groups)/EPFL (10 groups)/ETH Zürich (5 groups)/Centro Svizzero di Calcolo Scientifico (2 groups)/Empa (2 groups)/IBM Research GmbH (2 groups)/Paul Scherrer Institut (7 groups)




Home Institution
Partner Institutions

Dr. **Urs Staub**, Laboratory for Condensed Matter Physics, PSI Villigen
Dr. **Ivano Tavernelli**, IBM Research GmbH, Rueschlikon
Dr. **Joost VandeVondele**, Centro Svizzero di Calcolo Scientifico (CSCS), Lugano
Prof. **Anatole von Lilienfeld**, Departement Chemie, Universität Basel
Prof. **Philipp Werner**, Département de physique, Université de Fribourg
Prof. **Oleg Yazyev**, Institut de physique, EPFL

**Overview of all Research Projects**




## Key collaborations with third parties

Centre Européen de Calcul Atomique et Moléculaire (CECAM), EPFL
Platform for Advanced Scientific Computing (PASC)
Swiss Data Science Center
H2020 Centre of Excellence on Materials Design at the Exascale (MaX)
H2020 European Materials Modelling Council (EMMC)
H2020 Nanoscience Foundries & Fine Analysis (NFFA)
H2020 MarketPlace, Intersect, OpenModel and DOME 4.0
H2020 BIG-MAP and Battery 2030+
H2020 Centre of Excellence on Targeting Real chemical accuracy at the EXascale (TREX)
Psi-k
Thomas Young Centre, London
Max-Planck-EPFL Center for Molecular Nanoscience and Technology
Quantum ESPRESSO Foundation, London
Crystallography Open Database, Vilnius
Simons Collaboration on the Many Electron Problem, Columbia University
African School series on Electronic Structure Methods and Applications (ASESMA), Urbana
Open Quantum Materials Database, Northwestern University
MAPEX Center for Materials and Processes, Bremen

**Private and public sector**

Material Phases Data System (MPDS), Vitznau
Solvay, Bruxelles
Robert Bosch Foundation, Cambridge MA
Samsung Advanced Institute of Technology, Korea
Materials Design Inc., San Diego, CA

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2014 – 2017 | **Total Phase 2** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 2 %** |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **18'000'000** | **18'203'327** | 4'529'162 | 4'642'165 | 4'512'000 | 4'520'000 | 41 |
| Self-funding from Home Institution[2] | **5'674'162** | **4'603'139** | 1'546'719 | 1'115'270 | 821'150 | 1'120'000 | 11 |
| Self-funding from project participants | **21'892'743** | **20'837'521** | 6'051'462 | 5'581'106 | 5'550'817 | 3'654'136 | 47 |
| 3rd party-funding[3] | **587'725** | **527'217** | 178'839 | 216'613 | 131'765 | 0 | 1 |
| Total | **46'154'630** | **44'171'204** | 12'306'182 | 11'555'154 | 11'015'732 | 9'294'136 | 100 |

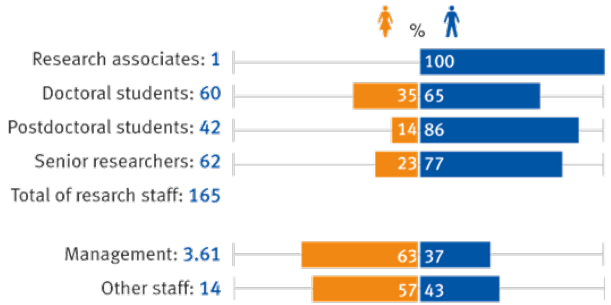
[1] incl. flexibility grant in 2018, 2019, 2020 and 2021 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

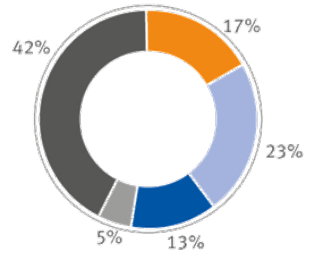
## Persons involved

**Data: current year**




## Nationalities of research staff

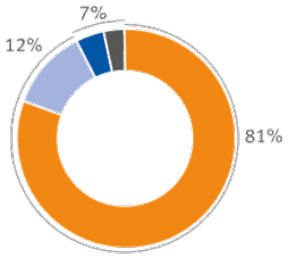
**Data: current year**




| | |
|---|---|
| Switzerland | 32 |
| Italy | 43 |
| Germany | 25 |
| China | 11 |
| other Nations | 80 |

## Next employer of doctoral students

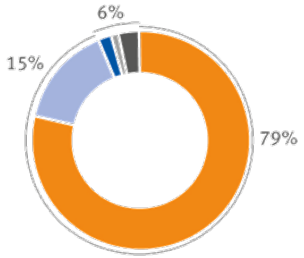
**Data: since start**




| | |
|---|---|
| Academic sector | 55 |
| Private sector | 8 |
| Public sector | 3 |
| Other | 0 |
| Not known | 2 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 120 |
| Private sector | 23 |
| Public sector | 3 |
| Other | 2 |
| Not known | 4 |

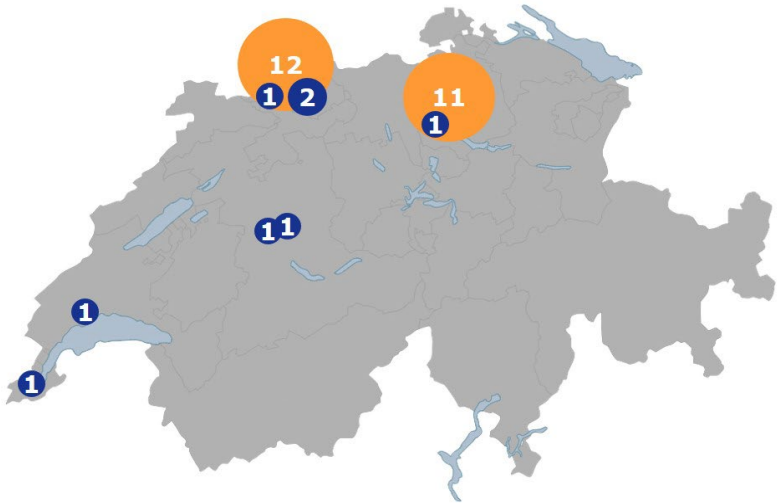
# NCCR MSE
## Molecular Systems Engineering

NCCR Director: Prof. Thomas R. Ward, NCCR Co-Director: Prof. Daniel Müller
Home Institutions: University of Basel, ETH Zurich
Start date: 1st of July 2014 (4th NCCR series)

### Description
The NCCR "MSE – Molecular Systems Engineering" attempts to capture the complexity and emergent properties prevalent in biology. The uniqueness of this initiative relies on the combination of both chemical and biological modules. In this approach, complex dynamic phenomena emerge as the result of the integration of molecular modules (molecular or biological prosthetics) designed to interact in a programmed way with their complex environment. Accordingly, the NCCR aims at creating molecular factories and cellular systems whose properties are more than the sum of the attributes of the individual modules. These new system-level properties emerge through the interactions of chemical- and biological networks assembled from the individual modules.
Through innovative and intensive collaborations, the NCCR is able to promote interdisciplinarity and bring together top scientists from chemistry, molecular and cell biology, biosystems engineering, and medicine with the objective to create molecular systems and factories that may find applications in the synthesis of high added-value products, as innovative diagnostic tools and for the restoration of a desired cellular or organ function. For further information visit: https://www.nccr-mse.ch/en/home/

### Heads of Research Groups
Prof. **Yaakov Benenson**, Departement Biosysteme, ETH Zürich
Prof. **Bruno Correia**, Institut of Bioingineering, EPFL
Prof. **Jonathan De Roo**, Departement Chemie, Universität Basel
Prof. **Murielle F. Delley**, Departement Chemie, Universität Basel
Prof. **Petra Dittrich**, Departement Biosysteme, ETH Zürich
Prof. **Dimitrios Fotiadis**, Institut für Biochemie und Molekulare Medizin, Universität Bern
Prof. **Martin Fussenegger**, Departement Biosysteme, ETH Zürich
Prof. **Catherine Housecroft**, Departement Chemie, Universität Basel
Dr. **Richard Kammerer**, Paul Scherrer Institut, PSI Villigen
Dr. **Emanuel Lörtscher**, IBM Research GmbH, Rüschlikon
Prof. **Ivan Martin**, Departement Biomedizin, Universitätsspital Basel
Prof. **Stefan Matile**, Section Chimie et Biochimie, Université de Genève
Prof. **Marcel Mayor**, Departement Chemie, Universität Basel
Prof. **Wolfgang Meier**, Departement Chemie, Universität Basel
Prof. **Daniel Müller**, Departement Biosysteme, ETH Zürich
Prof. **Michael Nash**, Departement Chemie, Universität Basel
Prof. **Cornelia Palivan**, Departement Chemie, Universität Basel
Prof. **Sven Panke**, Departement Biosysteme, ETH Zürich
Prof. **Randall Platt**, Departement Biosysteme, ETH Zürich
Prof. **Sai Reddy**, Departement Biosysteme, ETH Zürich
Prof. **Botond Roska**, Institute for Molecular and Clinical Ophthalmology Basel
Prof. **Hendrik Scholl**, Augenklinik, Universitätsspital Basel
Prof. **Florian Seebeck**, Departement Chemie, Universität Basel
Prof. **Christof Sparr**, Departement Chemie, Universität Basel
Prof. **Jörg Stelling**, Departement Biosysteme, ETH Zürich
Prof. **Konrad Tiefenbacher**, Departement Chemie, Universität Basel

### Participating Institutions
Universität Basel (12 groups)/Universität Bern (1 group)/Université de Genève (1 group)/EPFL (1 group)/ETH Zürich (11 groups)/IOB (1 group)/IBM Research GmbH (1 groups)/Paul Scherrer Institut (1 group)/Universitätsspital Basel (2 groups)




Home Institutions
Partner Institutions

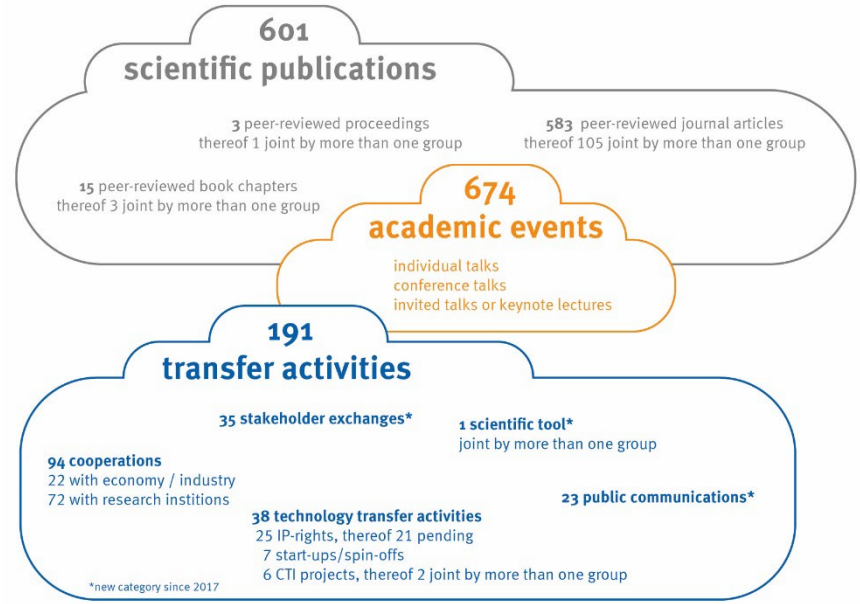
## Heads of Research Groups (continued)

Prof. **Barbara Treutlein**, Departement Biosysteme, ETH Zürich
Prof. **Effy Vayena**, Departement Gesundheitswissenschaften und Technologie, ETH Zürich
Prof. **Viola Vogel**, Departement Gesundheitswissenschaften und Technologie, ETH Zürich
Prof. **Thomas R. Ward**, Departement Chemie, Universität Basel
Prof. **Oliver Wenger**, Departement Chemie, Universität Basel

Overview of all Research Projects

### Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Delft University of Technology, Delft, NL
Ecole Normale Supérieure, Paris, FR
Harvard Medical School, Boston, US
Institut de la Vision, Paris, FR
University Freiburg, Freiburg, DE
Ludwig Maximilians-Universität, München, DE
Max Planck Institute of Biophysics, Frankfurt, DE
Mc Gill University, Montreal, CA
Salk Institute for Biologcal Studies, La Jolla, US
Scripps Research Institute, Jupiter, FL, US
Stanford University, Stanford, US
University of Pennsylvania, Pennsylvania, US
University of Uppsala, Uppsala, SE
Vienna University of Technology, Vienna, AT
Weizmann Institute of Science, Rehovot, IL

**Private and public sector**

Roche, Basel, CH
BASF, Basel, CH
Deltamem, Muttenz, CH
Nanosurf AG, Liestal, CH
Roche Diagnostics, Penzberg, DE

## Funding

| Funding Source (CHF) | Total Phase 1 2014 – 2017 | Total Phase 2 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | Phase 2 % |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **16'927'600** | **18'267'500** | 4'225'000 | 4'747'500 | 4'647'500 | 4'647'500 | 58 |
| Self-funding from Home Institutions[2] | **7'710'222** | **11'070'397** | 2'523'892 | 3'138'945 | 2'852'560 | 2'555'000 | 35 |
| Self-funding from project participants | **8'396'443** | **2'154'629** | 1'475'361 | 349'268 | 330'000 | 0 | 7 |
| Third-party funding[3] | **727'780** | **151'586** | 101'586 | 0 | 34'000 | 16'000 | 0 |
| Total | **33'762'045** | **31'644'112** | 8'325'839 | 8'235'713 | 7'864'060 | 7'218'500 | 100 |

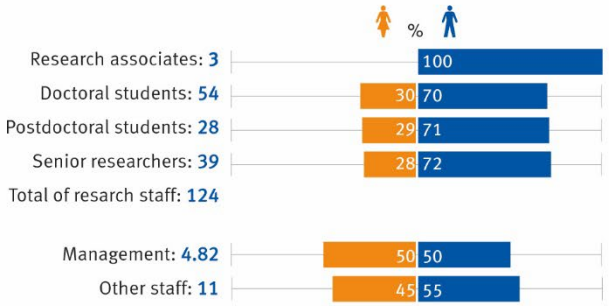
[1] incl. flexibility grant in 2016 and 2017 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

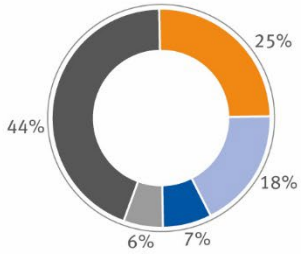
## Persons involved

**Data: current year**




## Nationalities of research staff

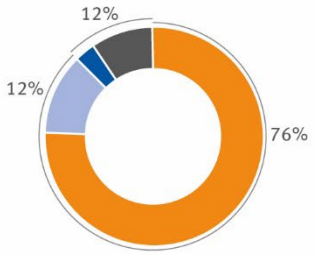
**Data: current year**




| | |
|---|---|
| Switzerland | 40 |
| Germany | 29 |
| Italy | 11 |
| China | 9 |
| other Nations | 70 |

## Next employer of doctoral students

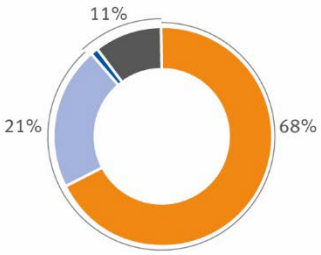
**Data: since start**




| | |
|---|---|
| Academic sector | 56 |
| Private sector | 9 |
| Public sector | 2 |
| Other | 0 |
| Not known | 7 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 50 |
| Private sector | 15 |
| Public sector | 1 |
| Other | 0 |
| Not known | 7 |

# NCCR On the Move
## The Migration-Mobility Nexus

NCCR Director: Prof. Gianni D'Amato
Home Institution: University of Neuchatel
Start date: 1st of June 2014 (4th NCCR series)

### Description
Migration to Switzerland has undergone a fundamental change in the past decade. Earlier patterns consisted mostly of long-term migration. However, the situation has altered due to changing national and European legislation and economic agreements between countries. Closely interlinked national and global markets have been further increasing temporary forms of mobility. Migratory reality today is thus more complex than ever and, so far, barely any systematic research has been conducted. The NCCR "On the Move – The Migration-Mobility Nexus" aims to better understand the changed migration and mobility patterns of today and its consequences for the State, the economy and society at large. This will provide a basis for an informed, forward-looking and sustainable migration policy.
For further information visit: https://nccr-onthemove.ch/

### Heads of Research Groups
Prof. **Christin Achermann**, Centre de droit des migrations, Université de Neuchâtel
Dr. **Jean-Thomas Arrighi**, Forum suisse pour l'étude des migrations et de la population (SFM), Université de Neuchâtel
Prof. **Joachim Blatter**, Politikwissenschaftliches Seminar, Universität Luzern
Prof. **Giuliano Bonoli**, Institut des hautes études en administration publique (IDHEAP), Université de Lausanne
Prof. **Eric Crettaz**, Haute école de travail social, HES-SO Genève
Prof. **Janine Dahinden**, Maison d'analyse des processus sociaux (MAPS), Université de Neuchâtel
Prof. **Gianni D'Amato**, Forum suisse pour l'étude des migrations et de la population (SFM), Université de Neuchâtel
Prof. **Eric Davoine**, Chaire Ressources Humaines et Organisation, Université de Fribourg
Prof. **Juan Manuel Falomir-Pichastor**, Unité de psychologie sociale, Université de Genève
Prof. **Flavia Fossati**, Inégalités et Intégration, Université de Lausanne
Prof. **Matteo Gianni**, Institut d'études de la citoyenneté, Université de Genève
Prof. **Fabrizio Gilardi**, Institut für Politikwissenschaft, Universität Zürich
Prof. **Eva Green**, Institut de psychologie, Université de Lausanne
Prof. **Dominik Hangartner**, Immigration Policy Lab, ETH Zürich
Prof. **Wassilis Kassis**, Pädagogische Hochschule, Fachhochschule Nordwestschweiz (FHNW)
Prof. **Stefanie Kurt**, Institut travail social, HES-SO Valais-Wallis
Prof. **Sandra Lavenex**, Département de science politique et relations internationales, Université de Genève
Prof. **Walter Leimgruber**, Seminar für Kulturwissenschaft und Europäische Ethnologie, Universität Basel
Prof. **Francesco Maiani**, Centre de droit comparé, européen et international, Université de Lausanne
Prof. **Anita Manatschal**, Forum suisse pour l'étude des migrations et de la population (SFM), Université de Neuchâtel
Prof. **Tobias Müller**, Institut d'économie et d'économétrie, Université de Genève

### Participating Institutions
Universität Basel (2 groups)/Université de Fribourg (1 group)/Université de Genève (5 groups)/Université de Lausanne (4 groups)/Universität Luzern (1 group)/Université de Neuchâtel (10 groups)/Universität Zürich (1 group)/ETH Zürich (1 group)/HES-SO Valais-Wallis (1 group)/HES-SO Genève (1 group)/Pädagogische Hochschule Fachhochschule Nordwestschweiz (1 group)/The Graduate Institute (1 group)


Home Institution
Partner Institutions

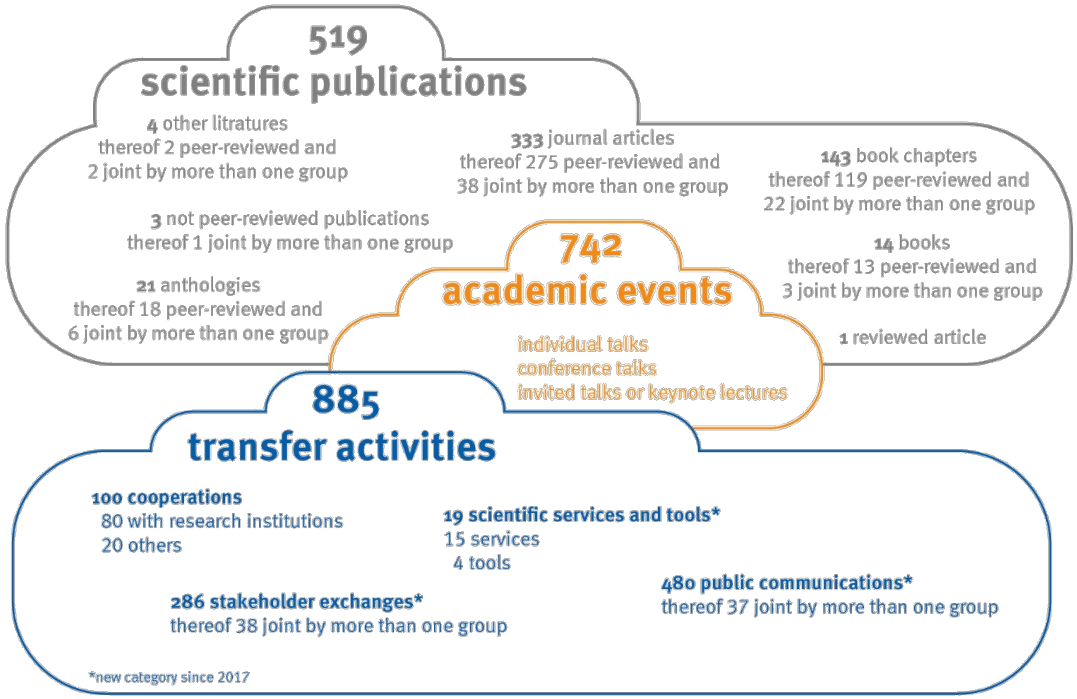
## Heads of Research Groups (continued)

Prof. **Mihaela Nedelcu**, Institut de sociologie, Université de Neuchâtel
Prof. **Etienne Piguet**, Institut de géographie, Université de Neuchâtel
Prof. **Yvonne Riaño**, Institut de géographie, Université de Neuchâtel
Prof. **Didier Ruedin**, Forum suisse pour l'étude des migrations et de la population (SFM), Université de Neuchâtel
Prof. **Alois Stutzer**, Wirtschaftswissenschaftliche Fakultät, Universität Basel
Prof. **Martina Viarengo**, Department of International Economics, Graduate Institute for International and Development Studies
Prof. **Philippe Wanner**, Institut de démographie et socioéconomie, Université de Genève
Prof. **Tania Zittoun**, Institut de psychologie et éducation, Université de Neuchâtel

Overview of all Research Projects

### Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Center for Migration Law, University of Nijmegen, NL
Department of Political Science, University of Vienna, AT
History Department, University of Amsterdam, NL
IMISCOE, Network of Scholars International Migration,
Integration and Social Cohesion, Erasmus University Rotterdam, NL
IMIS Osnabrück, DE
Malmö Institute for Studies of Migration, Diversity and Welfare, SE
Migration Policy Centre, European University Institute, IT
Pädagogische Hochschule Heidelberg, DE
Universidad Santo Tomas, Bogotà, CO
Università di Bologna, IT
Universitat Autònoma de Barcelona, ES
University of Sheffield, UK
University of Stockholm, SE
University of Thessaly, GR
University of Toronto, CA
University of Trondheim, NL

**Private and public sector**

Centre de compétence suisse en sciences sociales – FORS,
Université de Lausanne, CH
Commission fédérale pour les questions de migration (CFM), Wabern, CH
Stiftung Mercator Schweiz, Zürich, CH
Office fédéral de la statistique, Neuchâtel, CH
Secrétariat d'Etat aux migrations, Wabern, CH

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2014 – 2017 | **Total Phase 2** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 2 %** |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **17'403'134** | **16'611'580** | 4'364'754 | 4'136'700 | 4'016'300 | 4'093'826 | 69 |
| Self-funding from Home Institution[2] | **3'054'791** | **3'087'281** | 713'198 | 834'824 | 735'648 | 803'611 | 13 |
| Self-funding from project participants | **3'887'100** | **4'300'867** | 1'405'567 | 1'392'300 | 1'463'000 | 40'000 | 18 |
| Third-party funding[3] | **0** | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **24'345'025** | **23'999'728** | 6'483'519 | 6'363'824 | 6'214'948 | 4'937'437 | 100 |

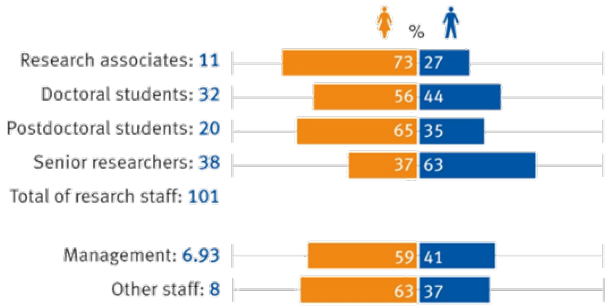
[1] incl. flexibility grant in 2015, 2016, 2017, 2018, 2019 and 2020, mobility-grant in 2014, 2016 and 2017 and 2021 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

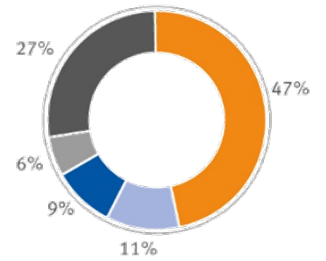
## Persons involved

**Data: current year**




## Nationalities of research staff

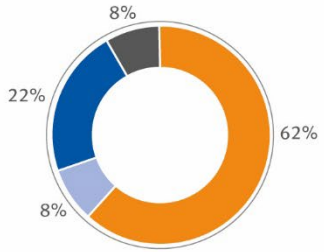
**Data: current year**




| | |
|---|---|
| Switzerland | 72 |
| Germany | 16 |
| Italy | 13 |
| Spain | 9 |
| other Nations | 41 |

## Next employer of doctoral students

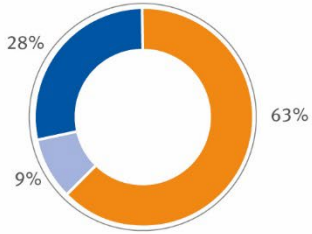
**Data: since start**




| | |
|---|---|
| Academic sector | 22 |
| Private sector | 3 |
| Public sector | 8 |
| Other | 0 |
| Not known | 3 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 20 |
| Private sector | 3 |
| Public sector | 9 |
| Other | 0 |
| Not known | 0 |

# NCCR PlanetS

## Origin, Evolution and Characterisation of Planets

NCCR Director: Prof. Willy Benz, NCCR Co-Director: Prof. Stéphane Udry
Home Institutions: University of Bern, University of Geneva
Start date: 1st of June 2014 (4th NCCR series)

### Description

The discovery of the first planet outside our solar system by Swiss astronomers in 1995 sparked a revolution in the field of astronomy. Not only did it help us to understand how planets are formed and evolve, but it also contributed to the development of instruments dedicated to the discovery of further exoplanets. By combining astronomical observations, measurements of solar system bodies using spacecraft, laboratory work and theoretical modelling, the NCCR "PlanetS – Origin, Evolution and Characterisation of Planets" aims to contribute to a better understanding of planets. In addition, the NCCR has coordinated the use of the CHEOPS instrument (CHaracterising ExOPlanets Satellite). For further information visit: http://nccr-planets.ch/

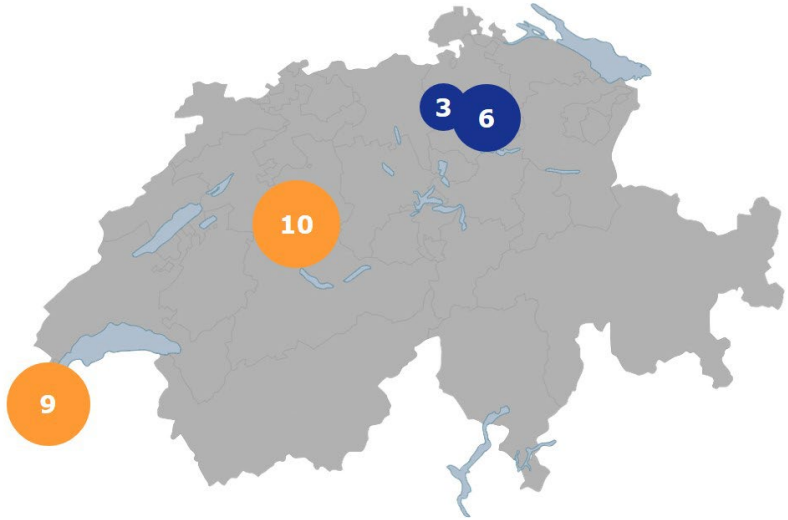
### Heads of Research Groups

Prof. **Yann Alibert**, Physikalisches Inst. u. Center f. Space and Habitability, Universität Bern
Prof. **Willy Benz**, Physikalisches Inst. u. Center f. Space and Habitability, Universität Bern
Dr. **Vincent Bourrier**, Observatoire, Université de Genève
Prof. **François Bouchy**, Observatoire, Université de Genève
Dr. **Henner Busemann**, Institut für Geochemie und Petrologie, ETH Zürich
Dr. **Brice-Olivier Demory**, Physikalisches Inst. u. Center f. Space and Habitability, Universität Bern
Dr. **Xavier Dumusque**, Observatoire, Université de Genève
Dr. **David Ehrenreich**, Observatoire, Université de Genève
Prof. **Ravit Helled**, Institut für Computergestützte Wissenschaften, Universität Zürich
Prof. **Kevin Heng**, Physikalisches Inst. u. Center f. Space and Habitability, Universität Bern
Dr. **Monika Lendl**, Observatoire, Université de Genève
Prof. **Ingo Leya**, Physikalisches Inst. u. Center f. Space and Habitability, Universität Bern
Prof. **Christophe Lovis**, Observatoire, Université de Genève
Prof. **Lucio Mayer**, Institut für Computergestützte Wissenschaften, Universität Zürich
Prof. **Klaus Mezger**, Institut für Geologie, Universität Bern
Dr. **Christoph Mordasini**, Physikalisches Inst. u. Center Space and Habitability, Universität Bern
Prof. **Francesco Pepe**, Observatoire, Université de Genève
Dr. **Antoine Pommerol**, Physikalisches Inst. u. Center f. Space and Habitability, Universität Bern
Prof. **Sascha P. Quanz**, Institut für Teilchen- und Astrophysik, ETH Zürich
Prof. **Hans Martin Schmid**, Institut für Teilchen- und Astrophysik, ETH Zürich
Prof. **Maria Schönbächler**, Institut für Geochemie und Petrologie, ETH Zürich
Prof. **Damien Ségransan**, Observatoire, Université de Genève
Dr. **Joachim Stadel**, Institut für Computergestützte Wissenschaften, Universität Zürich
Dr. **Veerle Sterken**, Institut für Teilchen- und Astrophysik, ETH Zürich
Dr. **Judit Szulágy**i, Institut für Teilchen- und Astrophysik, ETH Zürich
Prof. **Nicolas Thomas**, Physikalisches Inst. u. Center Space and Habitability, Universität Bern
Prof. **Stéphane Udry**, Observatoire, Université de Genève
Dr. **Susanne Wampfler**, Physikalisches Inst. U. Center Space and Habitability, Universität Bern

**Overview of all Research Projects**

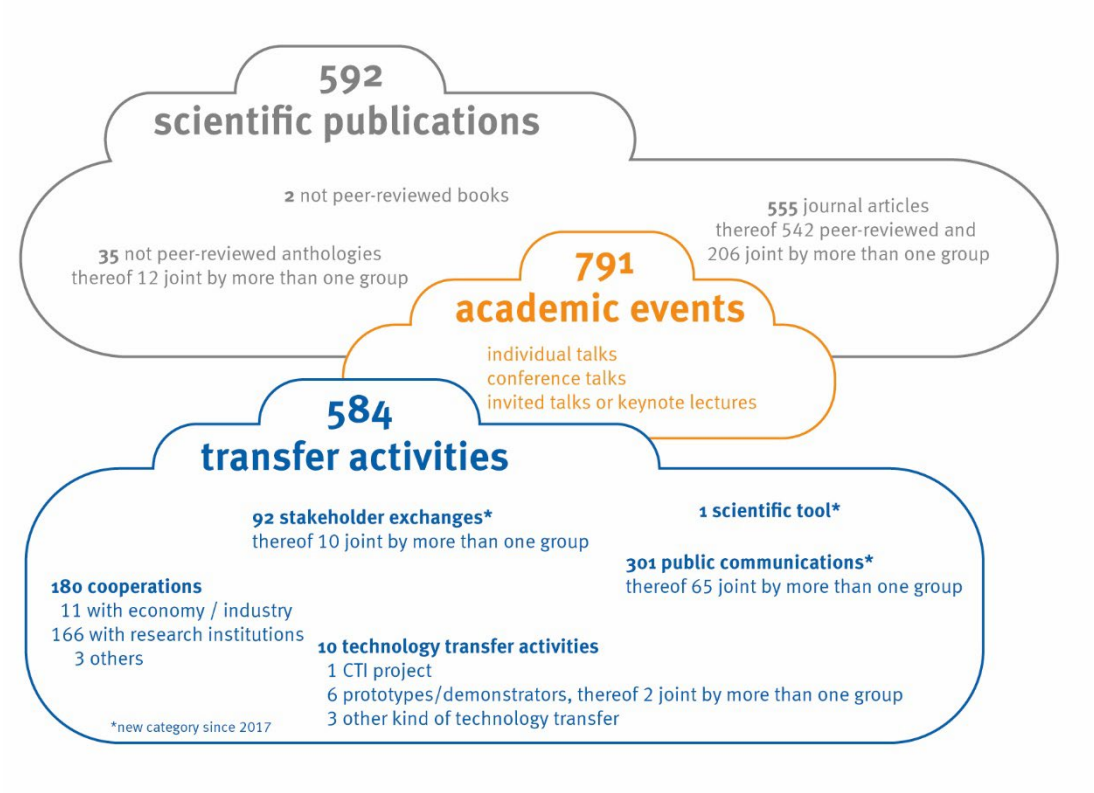
### Participating Institutions

Universität Bern (10 groups)/Université de Genève (9 groups)/Universität Zürich (3 groups)/ETH Zürich (6 groups)



## Output Data

**Data: since start**




## Key collaborations with third parties

**International Organisations / Agencies**

European Space Agency (ESA)
European Southern Observatory (ESO)
Japan Society for the Promotion of Science (JSPS)

**Private and public sector**

Burgergemeinde Zermatt
Swiss Museum of Transport
Swiss Space Museum

## Funding

| Funding Source (CHF) | Total Phase 1 2014 – 2017 | Total Phase 2 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | Phase 2 % |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **17'654'539** | **19'204'843** | 4'447'159 | 4'892'056 | 4'969'754 | 4'895'874 | 45 |
| Self-funding from Home Institutions[2] | **7'468'707** | **11'634'606** | 2'261'909 | 2'623'952 | 3'233'253 | 3'515'492 | 27 |
| Self-funding from project participants | **8'868'814** | **12'244'884** | 2'730'951 | 3'143'828 | 3'408'619 | 2'961'486 | 28 |
| Third-party funding[3] | **50'000** | **47'476** | 23'476 | 24'000 | 0 | 0 | 0 |
| Total | **34'042'060** | **43'131'809** | 9'463'495 | 10'683'836 | 11'611'626 | 11'372'852 | 100 |

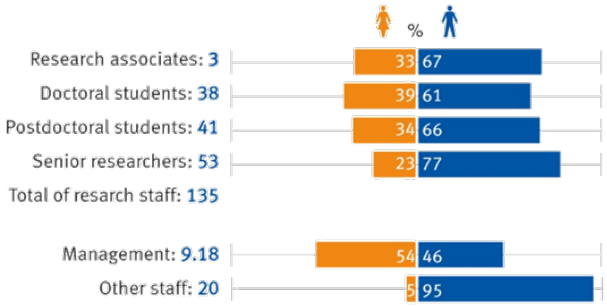
[1] incl. flexibility grant in 2017, 2018, 2019, 2020 and 2021 and open research data grant in 2020.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

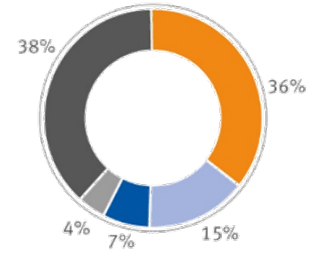
## Persons involved

**Data: current year**




## Nationalities of research staff

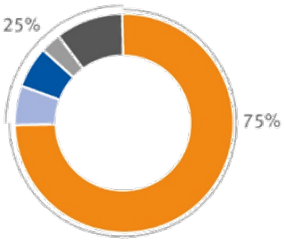
**Data: current year**




| | |
|---|---|
| Switzerland | 69 |
| France | 29 |
| Germany | 13 |
| USA | 8 |
| other Nations | 72 |

## Next employer of doctoral students

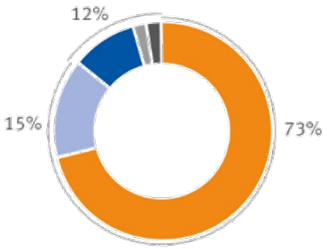
**Data: since start**




| | |
|---|---|
| Academic sector | 24 |
| Private sector | 2 |
| Public sector | 2 |
| Other | 1 |
| Not known | 3 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 50 |
| Private sector | 10 |
| Public sector | 7 |
| Other | 1 |
| Not known | 1 |

# NCCR RNA & Disease

## The Role of RNA in Disease Mechanisms

NCCR Director: Prof. Oliver Mühlemann, NCCR Co-Director: Prof. Frédéric Allain
Home Institutions: University of Bern, ETH Zurich
Start date: 1st of May 2014 (4th NCCR series)

### Description

The NCCR "RNA & Disease – The Role of RNA Biology in Disease Mechanisms" studies a class of molecules that has long been neglected: RNA (ribonucleic acid) is pivotal for many vital processes and much more complex than initially assumed. For instance, RNA defines the conditions, in a given cell, under which a given gene is or is not activated. If any part of this process of genetic regulation breaks down or does not run smoothly, this can cause heart disease, cancer, brain disease and metabolic disorders.
The NCCR brings together Swiss research groups studying different aspects of RNA biology in various organisms such as yeast, plants, roundworms, mice and human cells. By identifying the regulatory mechanisms that go off course during an illness, the NCCR will also be able to point out new therapeutic targets and help counter the biggest causes of death. For further information visit: https://nccr-rna-and-disease.ch/

### Heads of Research Groups

Prof. **Frédéric Allain**, Departement Biologie, ETH Zürich
Prof. **Nenad Ban**, Departement Biologie, ETH Zürich
Prof. **Marc Bühler**, Friedrich Miescher Institute for Biomedical Research, Basel
Dr. **Jeffrey A. Chao**, Friedrich Miescher Institute for Biomedical Research, Basel
Prof. **Jacob Corn**, Departement Biologie, ETH Zürich
Prof. **Constance Ciaudo**, Departement Biologie, ETH Zürich
Prof. **David Gatfield**, Faculté de biologie et de médecine, Université de Lausanne
Dr. **Helge Grosshans**, Friedrich Miescher Institute for Biomedical Research, Basel
Prof. **Jonathan Hall**, Departement Chemie und Angewandte Biowissenschaften, ETH Zürich
Prof. **Michael N. Hall**, Biozenturm, Universität Basel
Prof. **Martin Jinek**, Biochemisches Institut, Universität Zürich
Prof. **Stefanie Jonas**, Departement Biologie, ETH Zürich
Prof. **Ulrike Kutay**, Departement Biologie, ETH Zürich
Prof. **Sebastian Leidel**, Departement für Chemie, Biochemie und Pharmazie, Universität Bern
Prof. **Joachim Lingner**, Institut Suisse de Recherche Expérimentale sur le Cancer, EPFL
Prof. **Oliver Mühlemann** Departement für Chemie, Biochemie und Pharmazie, Universität Bern
Prof. **Mariusz Nowacki**, Institut für Zellbiologie, Universität Bern
Prof. **Ramesh Pillai**, Département de biologie moleculaire, Université de Genève
Prof. **Norbert Polacek**, Departement für Chemie, Biochemie und Pharmazie, Universität Bern
Prof. **Magdalini Polymenidou**, Department of Quantitative Biomedicine, Universität Zürich
Prof. **André Schneider**, Departement für Chemie, Biochemie und Pharmazie, Universität Bern
Prof. **Ataman Sendoel**, Institute for Regenerative Medicine, Universität Zürich
Prof. **Markus Stoffel**, Departement Biologie, ETH Zürich
Prof. **Volker Thiel**, Institut für Virologie und Immunologie, EDI & Universität Bern
Prof. **Mihaela Zavolan**, Biozentrum, Universität Basel

**Overview of all Research Projects**

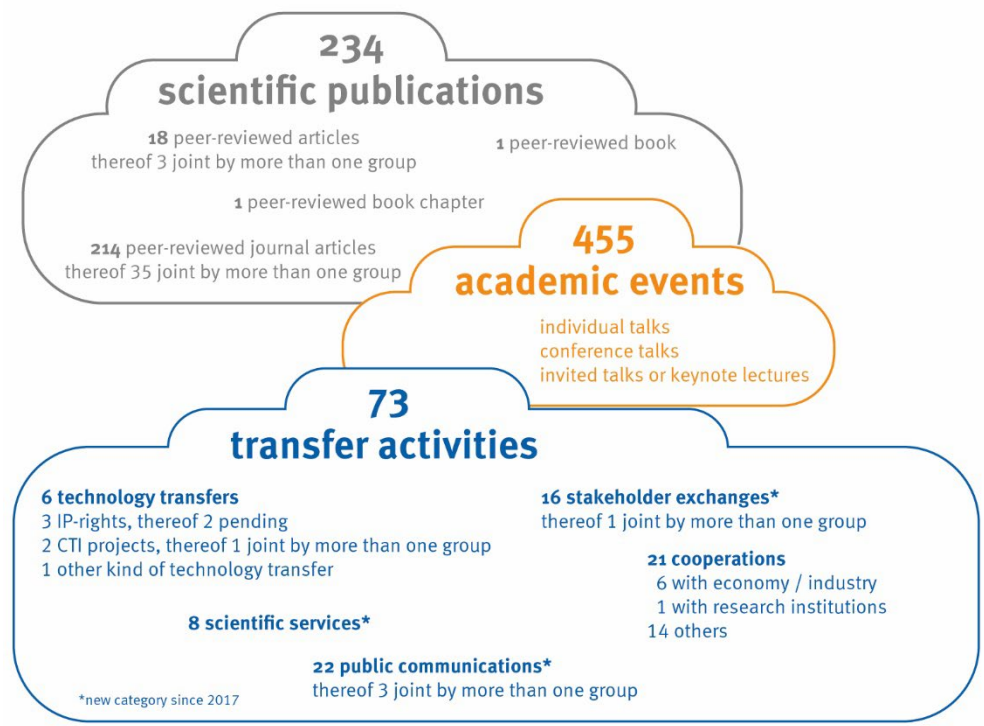
### Participating Institutions

Universität Basel (2 groups)/Universität Bern (6 groups)/Université de Genève (1 group)/Université de Lausanne (1 group)/Universität Zürich (3 groups)/EPFL (1 group)/ETH Zürich (8 groups)/FMI Basel (3 groups)


Home Institutions
Partner Institutions

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Swiss Reference Center for Porphyrias, Triemli Hospital, Zurich, CH
Institute for Research in Biomedicine, Università della Svizzera italiana, Bellinzona, CH
Institute for Oncology Research, Universita della Svizzera italiana, Bellinzona, CH
University Hospital, Bern, CH
University Hospital, Zurich, CH

**Private and public sector**

Fondation Dufloteau, Zürich, CH
Hofmann-La Roche, Basel, CH
Holcim Stiftung zur Förderung der wissenschaftlichen Forschung, Holderbank, CH
NOMIS Foundation, Samedan, CH
Novartis, Basel, CH
Promedica Stiftung, Chur, CH
Saverna, Allschwil, CH
Schweizerische Stiftung für die Erforschung der Muskelkrankheiten, SSEM, Cortaillod, CH
Skyhawk, Waltham, US
SMA Foundation, New York, US
T3 Pharmaceuticals AG, Basel, CH
Cure Spinal Muscular Atrophy, Illinois, US
Research and development fund University of Basel, Basel, CH
Ruth & Arthur Scherbarth Stiftung, Bern, CH
Seal of Excellence Funds, SELF-Fund, Bern, CH
Deutsche Forschungsgemeinschaft, Bonn, DE

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2014 – 2017 | **Total Phase 2** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 2 %** |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **16'751'666** | **17'917'500** | 4'150'000 | 4'625'000 | 4'577'500 | 4'565'000 | 40 |
| Self-funding from Home Institutions[2] | **12'570'545** | **14'196'785** | 3'752'072 | 3'270'830 | 3'405'883 | 3'768'000 | 31 |
| Self-funding from project participants | **10'904'797** | **12'309'121** | 2'937'787 | 3'023'126 | 3'368'208 | 2'980'000 | 27 |
| Third-party funding[3] | **1'882'104** | **900'049** | 181'213 | 308'280 | 290'556 | 120'000 | 2 |
| Total | **42'109'112** | **45'323'455** | 11'021'072 | 11'227'236 | 11'642'147 | 11'433'000 | 100 |

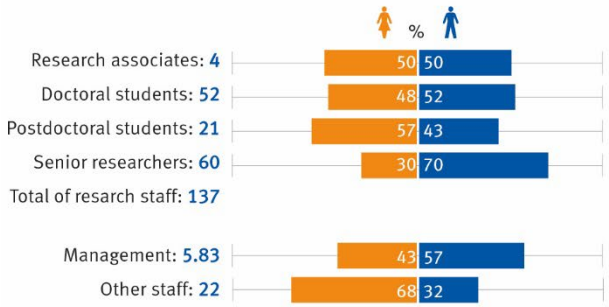
[1] incl. flexibility grant in 2014, 2015, 2016, 2017 and 2020, mobility-grant in 2015, 2016 and 2017 and open research data grant in 2019.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

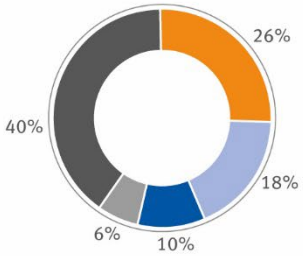
## Persons involved

**Data: current year**




## Nationalities of research staff

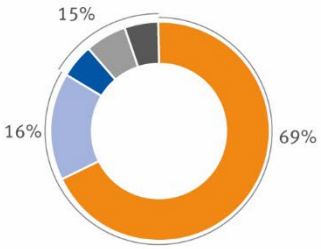
**Data: current year**




| | |
|---|---|
| Switzerland | 45 |
| Germany | 32 |
| Italy | 17 |
| India | 11 |
| other Nations | 69 |

## Next employer of doctoral students

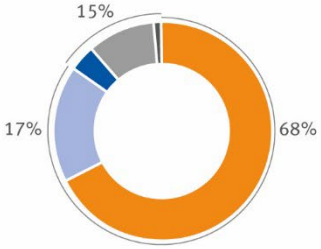
**Data: since start**




| | |
|---|---|
| Academic sector | 44 |
| Private sector | 10 |
| Public sector | 3 |
| Other | 4 |
| Not known | 3 |

## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 55 |
| Private sector | 14 |
| Public sector | 3 |
| Other | 8 |
| Not known | 1 |

# NCCR SwissMAP

## The Mathematics of Physics

NCCR Director: Prof. Stanislav Smirnov, NCCR Co-Director: Prof. Giovanni Felder
Home Institutions: University of Geneva, ETH Zurich
Start date: 1st of July 2014 (4th NCCR series)

### Description

Physicists use the language of mathematics to describe the processes that they observe. However, mathematics is more than a language. It is also a collection of complex, evolving ideas. At the threshold between theoretical physics and mathematics – where the mathematician's stringency and the physicist's intuition bear the greatest fruit – both sides benefit from closer cooperation. The NCCR "SwissMAP – The Mathematics of Physics" aims to take this melding of minds to the next level and establish an internationally renowned Swiss Institute for Advanced Research in Mathematics and Physics. The objective is to create a place where researchers can focus on fundamental questions, such as whether string theory really is suitable for describing all of the known force fields and interactions in a uniform Theory of Everything. For further information visit: http://www.nccr-swissmap.ch/

### Heads of Research Groups

Prof. **Anton Alekseev**, Section de Mathématiques, Université de Genève
Prof. **Alberto Cattaneo**, Institut für Mathematik, Universität Zürich
Prof. **Giovanni Felder**, Departement Mathematik, ETH Zürich
Prof. **Matthias Gaberdiel**, Institut für Theoretische Physik, ETH Zürich
Prof. **Gian Michele Graf**, Institut für Theoretische Physik, ETH Zürich
Prof. **Wolfgang Lerche**, Theory Division, CERN
Prof. **Marcos Mariño Beiras**, Section de Mathématiques et Département de Physique Théorique, Université de Genève
Prof. **Rahul Pandharipande**, Departement Mathematik, ETH Zürich
Prof. **Stanislav Smirnov**, Section de mathématiques, Université de Genève

**Overview of all Research Projects**

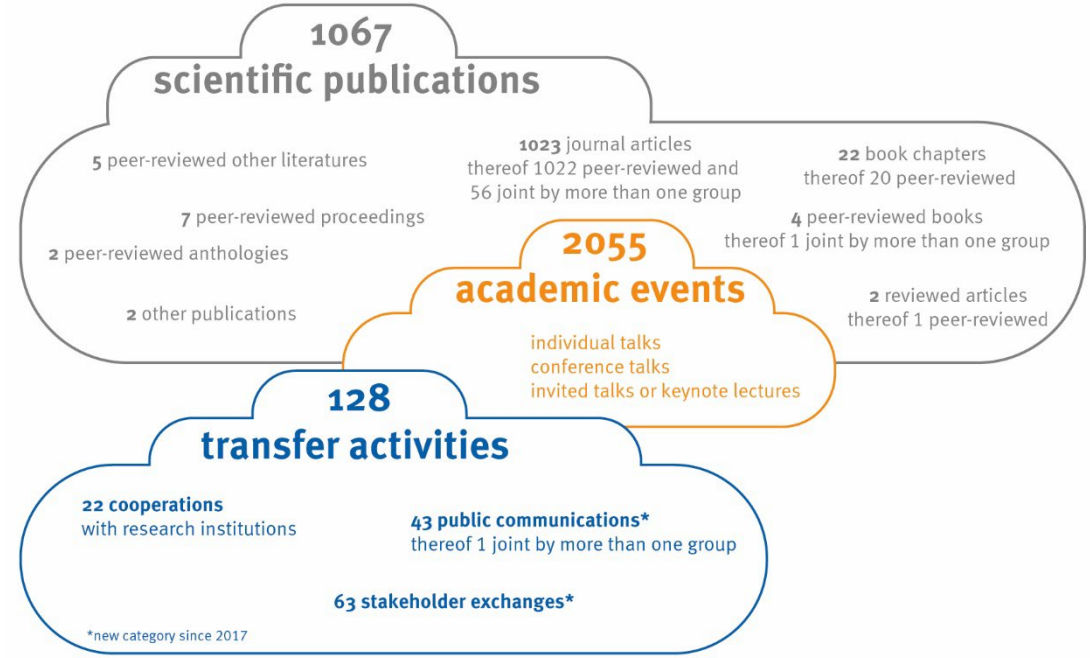
### Participating Institutions

Université de Genève (3 groups)/Universität Zürich (1 group)
ETH Zurich (4 groups)/CERN (1 group)


Home Institutions
Partner Institutions

## Output Data

**Data: since start**




## Key collaborations with third parties

**Academia**

Massachusetts Institute of Technology, US
Columbia University, US
Cornell University, US
University of Chicago, US
University of Michigan, US
University of British Columbia, CA
University of Toronto, CA
Institut de Physique Théorique, CEA-Saclay, FR
Université Paris-7, FR
Université Claude Bernard Lyon 1, FR
University of Cambridge, UK
University of Oxford, UK
University of Loughborough, UK
University of Helsinki, FI
Lund University, SE
Technion - Israel Institute of Technology, IL
Hebrew University of Jerusalem, IL
HRI Allahabad, IN
University of Stony Brook, NY, US

## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2014 – 2017 | **Total Phase 2** 2018 – 2021 | 2018 | 2019 | 2020 | 2021 | **Phase 2 %** |
|---|---|---|---|---|---|---|---|
| SNSF-funding[1] | **11'209'000** | **10'647'527** | 2'807'527 | 3'113'400 | 2'400'000 | 2'326'600 | 34 |
| Self-funding from Home Institutions[2] | **6'601'311** | **8'023'246** | 1'936'578 | 1'948'355 | 2'098'113 | 2'040'200 | 25 |
| Self-funding from project participants | **10'614'917** | **12'852'992** | 3'047'952 | 3'405'105 | 3'364'935 | 3'035'000 | 41 |
| Third-party funding[3] | **0** | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **28'425'228** | **31'523'765** | 7'792'057 | 8'466'860 | 7'863'048 | 7'401'800 | 100 |

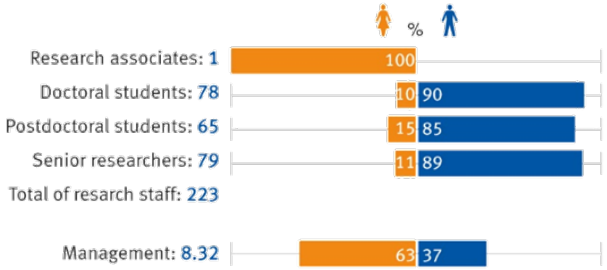
[1] incl. flexibility grant in 2018 and mobility grant in 2017.

[2] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[3] Not included is CTI funding

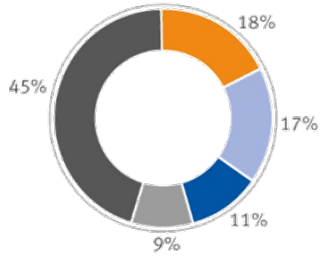
## Persons involved

**Data: current year**




## Nationalities of research staff

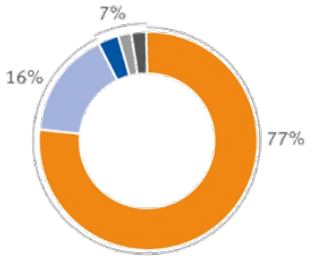
**Data: current year**




| | |
|---|---|
| Switzerland | 45 |
| Italy | 44 |
| Germany | 27 |
| Russia | 24 |
| other Nations | 117 |

## Next employer of doctoral students

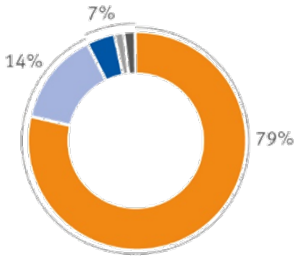
**Data: since start**




| | |
|---|---|
| Academic sector | 69 |
| Private sector | 14 |
| Public sector | 3 |
| Other | 2 |
| Not known | 2 |

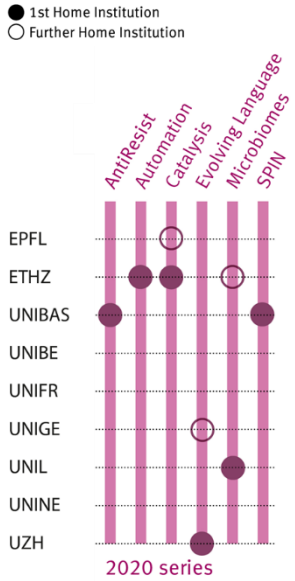
## Next employer of postdoctoral students

**Data: since start**




| | |
|---|---|
| Academic sector | 108 |
| Private sector | 19 |
| Public sector | 6 |
| Other | 2 |
| Not known | 2 |

# NCCR 5th series at a glance




## 5th series of NCCRs (Operation 2020-2032)

| Short Name | NCCR-Director | Home Institutions | Starting date |
|---|---|---|---|
| AntiResist | Prof. Christoph Dehio | University of Basel | August 1, 2020 |
| Automation | Prof. John Lygeros | ETH Zurich | August 1, 2020 |
| Catalysis | Prof. Javier Pérez-Ramirez | ETH Zurich, EPFL | August 1, 2020 |
| Evolving Language | Prof. Balthasar Bickel | University of Zurich, University of Geneva | June 1, 2020 |
| Microbiomes | Prof. Jan Roelof van der Meer | University of Lausanne, ETH Zurich | July 1, 2020 |
| SPIN | Prof. Dominik Zumbühl | University of Basel | August 1, 2020 |

## 5th series of NCCRs: Funding in phase 1: 2020-2023

| Funding source (CHF) | 2020 | 2021 | 2022 | 2023 | Phase 1 total |
|---|---|---|---|---|---|
| SNSF funding | 20'783'504 | 23'601'200 | 27'550'000 | 27'800'000 | 99'734'704 |
| Self-funding from Home Institutions[1] | 9'340'035 | 19'913'806 | 21'344'795 | 24'257'735 | 74'856'371 |
| Self-funding from project participants | 16'816'730 | 10'071'524 | 10'071'524 | 10'071'524 | 47'031'302 |
| Third-party funding[2] | 110'216 | 384'973 | 307'828 | 0 | 803'017 |
| Total | 47'050'486 | 53'971'503 | 59'274'147 | 62'129'259 | 222'425'394 |

[1] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[2] Not included is CTI funding

## Persons involved in the NCCRs in the last reporting period (12 months)

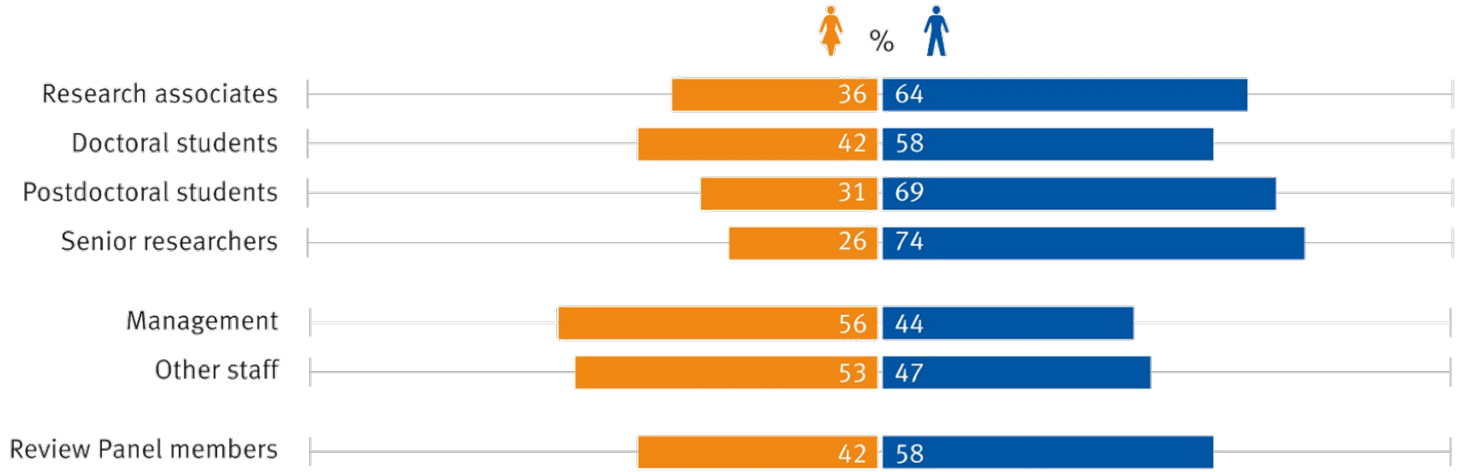
| Personnel | Total of Persons | Female | Male | Swiss | Other nationalities |
|---|---|---|---|---|---|
| Research associates[1] | 11 | 4 | 7 | 4 | 7 |
| Doctoral students | 233 | 98 | 135 | 43 | 196 |
| Postdoctoral students | 128 | 40 | 88 | 7 | 123 |
| Senior researchers[2] | 205 | 53 | 152 | 79 | 146 |
| Management[3] | 22.36 | 35 | 27 | 27 | 39 |
| Other staff | 58 | 31 | 27 | 25 | 36 |
| Total | 697 | 261 | 436 | 185 | 547 |

[1] Includes graduate scientists (level master) but not registered as doctoral students or undergraduate students participating in research projects.

[2] Including leaders of the individual projects and other organisational units of the NCCRs

[3] Full-time equivalent, including NCCR-Director and persons in charge of knowledge and technology transfer, equal opportunities, communication, education and training

## Gender in the NCCRs



# NCCR AntiResist

## New approaches to combat antibiotic-resistant bacteria

NCCR Director: Prof. Christoph Dehio
Home Institution: University of Basel
Start date: 1st of August 2020 (5th NCCR series)

### Description

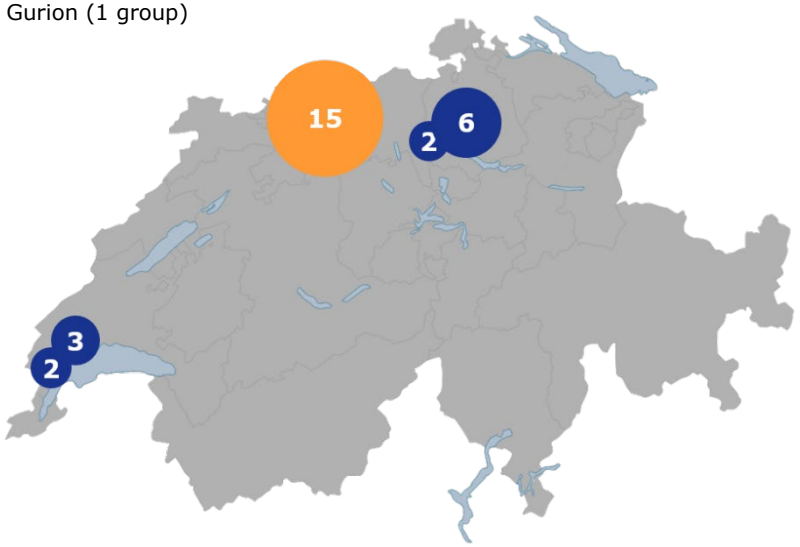
The NCCR "AntiResist" aims at developing new approaches to better understand the biochemical and biophysical processes caused by bacterial pathogens in infected patients, and to simulate them in tissue modelling. The findings will help researchers to develop new antibiotics more rapidly, and to identify new and innovative antimicrobial effect mechanisms on the basis of which new medicines can be developed.
Antibiotics play a vital role in many areas of modern medicine, especially protecting patients whose immune system has been weakened. But these achievements of modern medicine are now under threat. More and more strains of bacteria are becoming resistant to one or several types of antibiotics.
Therefore, the research will focus on four pathogens that cause major problems throughout the world. The NCCR's overriding objective is to initiate a paradigm change in infection research by adopting an interdisciplinary approach that brings together research groups from the fields of clinical research, biology, chemistry, engineering and pharmacology. For further information visit: https://www.nccr-antiresist.ch/en/

### Heads of Research Groups

Prof. **Marek Basler**, Departement Biozentrum, Universität Basel
Prof. **Karsten Borgwardt**, Department of Biosystems Science and Engineering, ETH Zürich
Prof. **Petr Broz**, Departement Biochemistry, Université de Lausanne
Prof. **Dirk Bumann**, Departement Biozentrum, Universität Basel
Prof. **Christoph Dehio**, Departement Biozentrum, Universität Basel
Prof. **Petra Dittrich**, Department of Biosystems Science and Engineering, ETH Zürich
Prof. **Knut Drescher**, Departement Biozentrum, Universität Basel
Prof. **Adrian Egli**, Infektiologie und Spitalhygiene, Universitätsspital Basel
Dr. **Alexander Harms**, Departement Biozentrum, Universität Basel
Prof. **Andreas Hierlemann**, Department of Biosystems Science and Engineering, ETH Zürich
Prof. **Sebastian Hiller**, Departement Biozentrum, Universität Basel
Prof. **Urs Jenal**, Departement Biozentrum, Universität Basel
Prof. **Nina Khanna**, Infektiologie und Spitalhygiene, Universitätsspital Basel
Prof. **John McKinney**, SV GHI UPKIN, EPFL
Prof. **Jacob Moran-Gilad**, Ben-Gurion University of the Negev
Prof. **Anne Müller**, Institute of Molecular Cancer Research, Universität Zürich
Prof. **Richard Neher**, Departement Biozentrum, Universität Basel
Prof. **Alexandre Persat**, SV GHI UPPERSAT, EPFL
Prof. **Paola Picotti**, Institut für Molekulare Systembiologie, ETH Zürich
Prof. **Jean Pieters**, Departement Biozentrum, Universität Basel
Prof. **Katharina Rentsch**, Labormedizin, Universitätsspital Basel
Prof. **Pablo Rivera-Fuentes**, SB ISIC LOCBP, EPFL
Prof. **Uwe Sauer**, Institut für Molekulare Systembiologie, ETH Zürich
Prof. **Daiana Stolz**, Lungenzentrum, Universitätsspital Basel
Prof. **Sarah Tschudin Sutter**, Infektiologie und Spitalhygiene, Universitätsspital Basel
Prof. **Erik Van Nimwegen**, Departement Biozentrum, Universität Basel
Prof. **Jan-Willem Veening**, Department of Fundamental Microbiology, Université de Lausanne

### Participating Institutions

Universität Basel (15 groups)/Université de Lausanne (2 group)/Universität Zürich (2 groups)/EPFL (3 groups)/ETH Zurich (6 groups)/University Ben-Gurion (1 group)




- Home Institution
- Partner Institutions

## Heads of Research Groups (continued)

Dr. **Mattia Zampieri**, Institut für Molekulare Systembiologie, ETH Zürich
Prof. **Annelies Zinkernagel**, Infektionskrankheiten u. Spitalhygiene, Universitätsspital Zürich

**Overview of all Research Projects**

## Key collaborations with third parties

**Academia**
InfectControl 2020, DE
Paul Scherrer Institute, CH

**Private and public sector**
Hoffmann la Roche, CH
Bioversys AG, CH
Polyphor, CH
German Center for Infection Research, DE
PhAST diagnostics, US

## Output Data

**Data: not yet available**

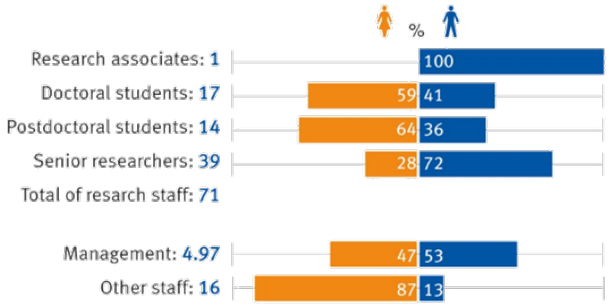
## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2020 – 2023 | 2020 | 2021 | 2022 | 2023 | **Phase 1 %** |
|---|---|---|---|---|---|---|
| SNSF-funding | **17'000'000** | 3'300'000 | 4'150'000 | 4'750'000 | 4'800'000 | 56 |
| Self-funding from Home Institution[1] | **9'311'056** | 1'510'798 | 1'848'523 | 3'049'300 | 2'902'435 | 31 |
| Self-funding from project participants | **2'984'764** | 1'513'264 | 490'500 | 490'500 | 490'500 | 10 |
| Third-party funding[2] | **803'017** | 110'216 | 384'973 | 307'828 | 0 | 3 |
| Total | **30'098'837** | 6'434'278 | 6'873'996 | 8'597'628 | 8'192'935 | 100 |

[1] Personnel costs, equipment and consumables, not included infrastructure and basic equipment
[2] Not included is CTI funding

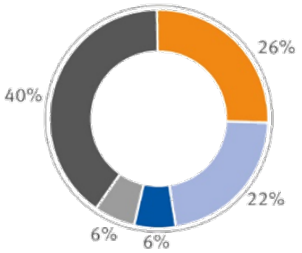
## Persons involved

**Data: current year**




## Nationalities of research staff

**Data: current year**




| | |
|---|---|
| Switzerland | 29 |
| Germany | 25 |
| France | 7 |
| Israel | 7 |
| other Nations | 44 |

# NCCR Automation
## Dependable Ubiquitous Automation

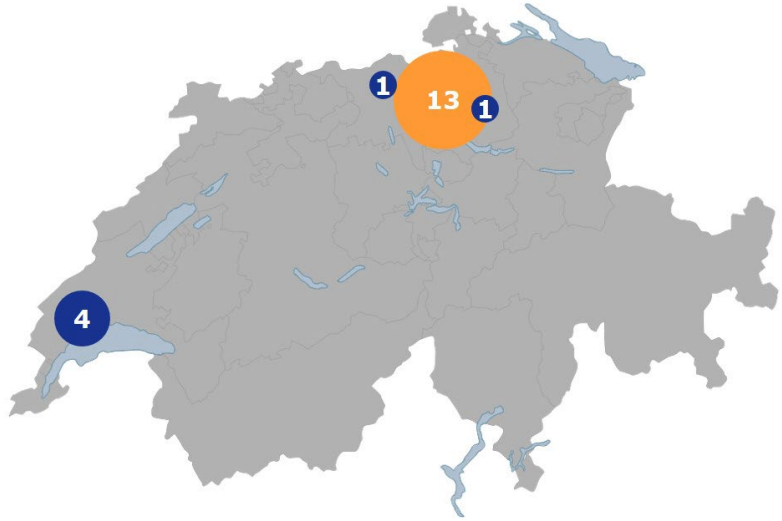
NCCR Director: Prof. John Lygeros, NCCR Co-Director: Prof. Gabriela Hug
Home Institution: ETH Zurich
Start date: 1st of August 2020 (5th NCCR series)

### Description
The latest advances in sensor technology, data generation and computing have the potential to profoundly change areas of our economic and daily lives. The complete automation and control of entire systems such as cities (smart cities), power grids (smart grids) or industrial processes (Industry 4.0) is increasingly becoming a reality in the course of digital transformation. The aim of the NCCR "Automation" is to advance the methodological and technological bases for the large-scale implementation of such complex systems. By improving decision-making and control procedures and developing new algorithms and computer methods, the reliability and flexibility of intelligent systems can be increased. One of the NCCR's key projects is to develop and implement a fully automated and decentralised energy management system at district or commune level. This will allow the economic potential and social impact of automated applications to be tested in real life.
For further information visit: https://nccr-automation.ch/

### Heads of Research Groups
Prof. **Srdjan Capkun**, Institut für Informationssicherheit, ETH Zürich
Prof. **Francesco Corman**, Departement Bau, Umwelt und Geomatik, ETH Zürich
Prof. **Raffaello D'Andrea**, Departement Maschinenbau und Verfahrenstechnik, ETH Zürich
Prof. **Florian Dörfler**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Giancarlo Ferrari Trecate**, STI IGM SCI-STI-GFT, EPFL
Prof. **Yu Fischer**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Emilio Frazzoli**, Departement Maschinenbau und Verfahrenstechnik, ETH Zürich
Prof. **Nikolas Geroliminis**, ENAC IIC LUTS, EPFL
Prof. **Gabriela Hug**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Colin Jones**, STI IGM LA3, EPFL
Prof. **Andreas Krause**, Departement Informatik, ETH Zürich
Prof. **Daniel Kuhn**, CDM MTEI RAO, EPFL
Prof. **John Lygeros**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Silvia Mastellone**, Hochschule für Technik, Fachhochschule Nordwestschweiz (FHNW)
Dr. **Kristina Orehounig**, Materials Science and Technology, Empa
Prof. **Kaveh Razavi**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Dr. **Alisa Rupenyan**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Roy Smith**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Prof. **Lothar Thiele**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich

**Overview of all Research Projects**

### Participating Institutions
EPFL (4 groups)/ETH Zurich (13 groups)/Empa (1 group)/FHNW (1 group)



## Output Data

**Data: not yet available**

## Key collaborations with third parties

**Academia**

None at the moment

**Private and public sector**

None at the moment

## Funding

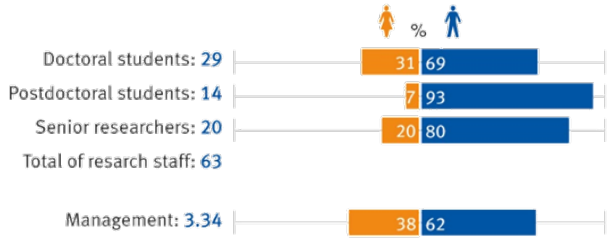
| **Funding Source (CHF)** | **Total Phase 1** 2020 – 2023 | 2020 | 2021 | 2022 | 2023 | **Phase 1 %** |
|---|---|---|---|---|---|---|
| SNSF-funding | **15'655'300** | 3'255'300 | 3'600'000 | 4'400'000 | 4'400'000 | 57 |
| Self-funding from Home Institution[1] | **9'787'572** | 1'463'172 | 2'892'400 | 2'716'000 | 2'716'000 | 36 |
| Self-funding from project participants | **1'954'756** | 1'096'684 | 286'024 | 286'024 | 286'024 | 7 |
| Third-party funding[2] | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **27'397'628** | 5'815'156 | 6'778'424 | 7'402'024 | 7'402'024 | 100 |

[1] Personnel costs, equipment and consumables, not included infrastructure and basic equipment

[2] Not included is CTI funding

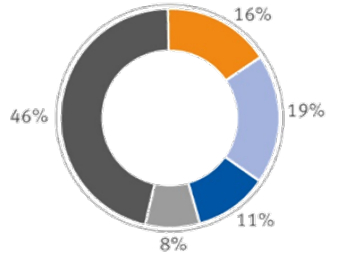
## Persons involved

**Data: current year**




## Nationalities of research staff

**Data: current year**




| | |
|---|---|
| Switzerland | 13 |
| Italy | 15 |
| Germany | 9 |
| Irland | 6 |
| other Nations | 37 |

# NCCR Catalysis

## Sustainable chemical processes through catalyst design

NCCR Director: Prof. Javier Pérez-Ramírez, NCCR Co-Director: Jérôme Waser
Home Institutions: ETH Zurich, EPFL
Start date: 1st of August 2020 (5th NCCR series)

### Description

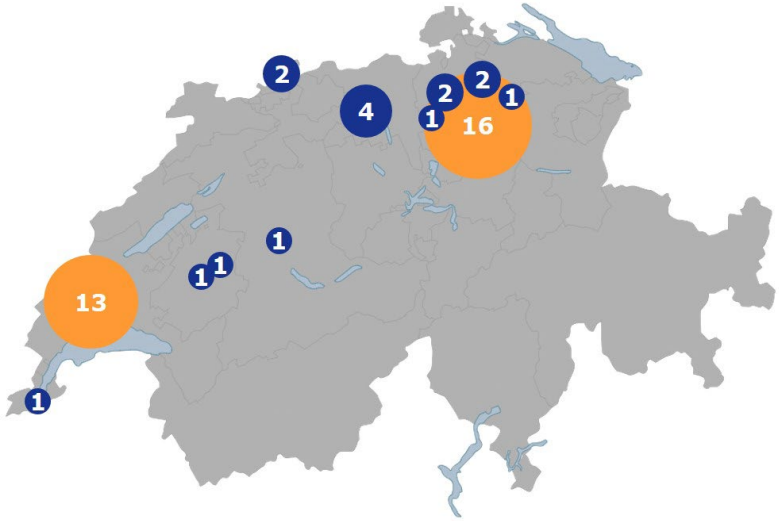
NCCR Catalysis aims to develop new catalytic processes that enable the production of societally-relevant compounds like fine chemicals, pharmaceuticals, and functional materials from abundant and renewable small-molecule feedstocks (e.g., carbon dioxide, methane, water, or nitrogen). To achieve the required fundamental understanding of relevant phenomena at length and time scales spanning ten orders of magnitude – from the atom to the full-scale process – NCCR Catalysis combines multidisciplinary and cross-dimensional modes, connecting research from chemistry, biotechnology, chemical and process engineering, and computer science. The adoption of digital methods sets the foundations for accelerating chemical discovery and the translation into competitive plant-ready technologies with tangible benefits to people and the environment. For further information visit: https://www.nccr-catalysis.ch/

### Heads of Research Groups

Prof. **Peter Broekmann**, Department of Chemistry and Biochemistry, University of Bern
Prof. **Rebecca M. Buller**, Centre for Biocatalysis and Process Technology, ZHAW
Prof. **Raffaella Buonsanti**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Erick M. Carreira**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Peter Chen**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Christophe Cóperet**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Clemence Corminboeuf**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Nicolai Cramer**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Andrew J. deMello**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Paul J. Dyson**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Gonzalo Guillén-Gosálbez**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Andres Hagfeldt**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Sophia Haussener**, Institute of Mechanical Engineering, EPFL
Prof. **Stefanie Hellweg**, Department of Civil, Environmental and Geomatic Engineering, ETH Zürich
Prof. **Xile Hu**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Gunnar Jeschke**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Maksym V. Kovalenko**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Andreas Krause**, Department of Computer Science, ETH Zürich
Dr. **Teodoro Laino**, IBM Research GmbH
Prof. **Jeremy S. Luterbacher**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Roger Marti**, School of Engineering and Architecture of Fribourg, HEFR
Prof. **Christoph R. Müller**, Department of Mechanical and Process Engineering, ETH Zürich
Prof. **Cristina Nevado**, Department of Chemistry, University of Zurich
Prof. **Javier Pérez-Ramírez**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Markus Reiher**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Philippe Schwaller**, Institute of Chemical Sciences and Engineering, EPFL
Prof. **Wendelin J. Stark**, Department of Chemistry and Applied Biosciences, ETH Zürich
Prof. **Thomas R. Ward**, Department of Chemistry, University of Basel
Prof. **Jérôme Waser**, Institute of Chemical Sciences and Engineering, EPFL

### Participating Institutions

University of Basel (2 groups)/University of Bern (1 group)/University of Fribourg (1 group)/University of Geneva (1 group)/University of Zurich (2 groups)/EPFL (13 groups)/ETH Zürich (16 groups)/EMPA (2 groups)/ HEFR (1 group)/IBM Research (1 group)/ICIQ (1 group)/PSI (4 groups)/ ZHAW (1 group)




Home Institutions
Partner Institutions

## Heads of Research Groups (continued)

Prof. **Jieping Zhu**, Institute of Chemical Sciences and Engineering, EPFL

## Heads of Research Groups (Associate Principal Investigators)

Prof. **André Bardow**, Department of Mechanical and Process Engineering, ETH Zürich
Dr. **Corsin Battaglia**, Swiss Federal Laboratories for Materials Science and Technology (Empa)
Prof. **Jeffrey Bode**, Department of Chemistry and Applied Biosciences, ETH Zürich
Dr. **András Bödi**, Photon Science Division, Paul Scherrer Institute
Prof. **Ali Coskun**, Department of Chemistry, University of Fribourg
Dr. **Patrick Hemberger**, Photon Science Division, Paul Scherrer Institute
Prof. **Núria López**, Institute of Chemical Research of Catalonia (ICIQ)
Prof. **Sandra Luber**, Department of Chemistry, University of Zurich
Prof. **Nicola Marzari**, Institute of Materials, EPFL
Prof. **Ross Milton**, Department of Chemistry, University of Geneva
Prof. **Bill Morandi**, Department of Chemistry and Applied Biosciences, ETH Zürich
Dr. **Maarten Nachtegaal**, Photon Science Division, Paul Scherrer Institute
Dr. **Olga Safonova**, Photon Science Division, Paul Scherrer Institute
Dr. **Alessandro Senocrate**, Swiss Federal Laboratories for Materials Science and Technology (Empa)
Prof. **Konrad Tiefenbacher**, Department of Chemistry, University of Basel
Prof. **Vasiiki Tileli**, Institute of Materials, EPFL

**Overview of all Research Projects**

## Key collaborations with third parties

CAT+, CH
NCCR MARVEL, CH
Scienceindustries Switzerland, CH
SusChem Switzerland, CH
Swiss Chemical Society (SCG), CH
Swiss Data Science Centre (SDSC), CH
Swiss Industrial Biocatalysis Consortium (SIBC), CH
Swiss National Supercomputing Centre (CSCS), CH
Swiss Process and Chemical Engineers (SGVC), CH
Clariant, CH
NFDI4Cat, DE
Advanced Research Center Chemical Building Blocks Consortium (ARCCBBC), NL
Catalysis Theory Center (CatTheory), DK
Max Planck Institute for Chemical Energy Conversion (MPI CEC), DE
Multiscale Catalytic Energy Conversion Research Center (MCEC), NL
European Chemical Society (EuChemS), Europe
European Federation of Catalysis Societies (EFCATS), Europe
SUNERGY, Europe
NUS Flagship Green Energy Programme, SG
SUNCAT Center for Interface Science and Catalysis, USA

## Output Data

**Data: not yet available**

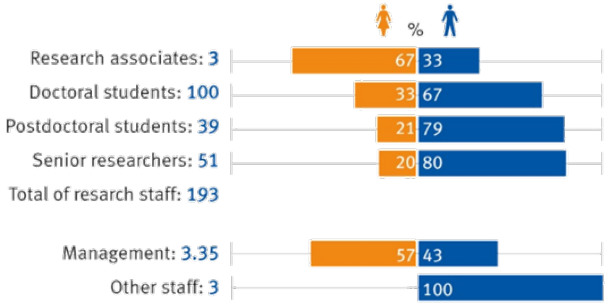
## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2020 – 2023 | 2020 | 2021 | 2022 | 2023 | **Phase 1 %** |
|---|---|---|---|---|---|---|
| SNSF-funding | **17'000'000** | 3'600'000 | 3'900'000 | 4'700'000 | 4'800'000 | 29 |
| Self-funding from Home Institution[1] | **14'622'042** | 1'019'032 | 4'100'000 | 4'751'505 | 4'751'505 | 25 |
| Self-funding from project participants | **26'438'226** | 6'938'226 | 6'500'000 | 6'500'000 | 6'500'000 | 46 |
| 3rd party-funding[2] | **0** | 0 | 0 | 0 | 0 | |
| Total | **58'060'268** | 11'557'258 | 14'500'000 | 15'951'505 | 16'051'505 | 100 |

[1] Personnel costs, equipment and consumables, not included infrastructure and basic equipment
[2] Not included is CTI funding

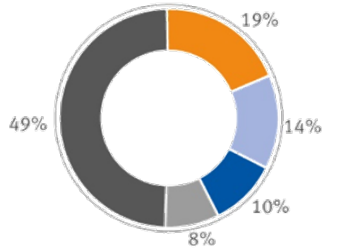
## Persons involved

**Data: current year**




## Nationalities of research staff

**Data: current year**




| | |
|---|---|
| Switzerland | 40 |
| Germany | 30 |
| China | 21 |
| Italy | 17 |
| other Nations | 104 |

# NCCR Evolving Language

## The Origins and Future of Language

NCCR Director: Prof. Balthasar Bickel, NCCR Co-Director: Anne-Lise Giraud
Home Institutions: University of Zurich, University of Geneva
Start date: 1st of June 2020 (5th NCCR series)

### Description

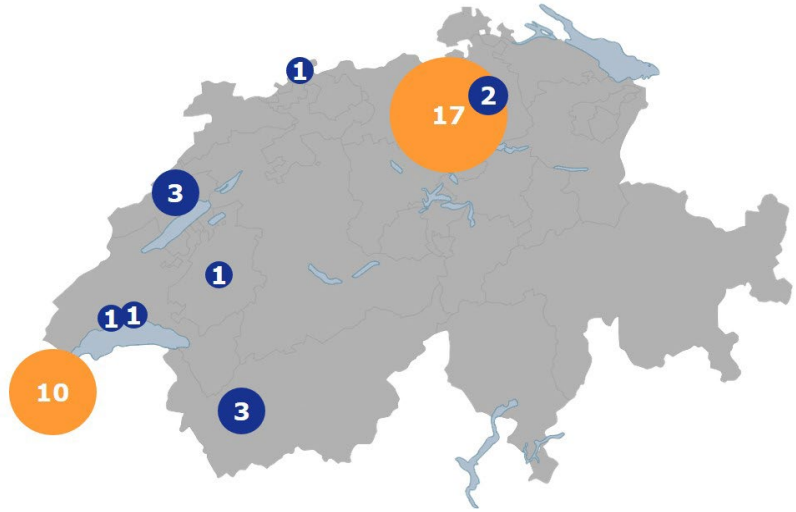
The NCCR "Evolving Language" is researching the evolution of language more broadly than any other research centre to date. The NCCR is using an interdisciplinary approach bringing together research groups from the humanities (linguistics, philosophy), biology, neurosciences, psychology and computer sciences.
Researchers are focusing on three issues: firstly, the dynamics of language structures and their evolution; then the biological prerequisites for language, including the related question of whether and how neurotechnologies could or should be used to influence language capabilities; and lastly, the social meaning of language and how it is likely to change with new means of communication.
The NCCR promises innovations and transfer services in medical fields (e.g. diagnosis and treatment of speech disorders) and in the application of digital instruments (human-machine communication, artificial intelligence, complex voice recognition).
For further information visit: https://www.evolvinglanguage.ch/

### Heads of Research Groups

Prof. **Adrian Bangerter**, Institut de Psychologie du Travail et des Organisations, Université de Neuchâtel
Prof. **Daphné Bavelier**, Faculté des Sciences et de l'Education, Université de Genève
Prof. **Raphael Berthele**, Institute of Multilingualism, Université de Fribourg
Prof. **Balthasar Bickel**, Institut für Vergleichende Sprachwissenschaft, Universität Zürich
Prof. **Hervé Bourlard**, Institut de Recherche, IDIAP
Prof. **Silvia Brem**, Klinik für Kinder- und Jugendpsychiatrie und Psychotherapie, Universität Zürich
Prof. **Judith Burkart**, Anthropologisches Institut und Museum, Universität Zürich
Prof. **Fabrice Clément**, Centre de Sciences Cognitives, Université de Neuchâtel
Prof. **Moritz Daum**, Psychologisches Institut, Universität Zürich
Prof. **Volker Dellwo**, Institut für Computerlinguistik, Universität Zürich
Dr. **Mathew Magimai Doss**, Institut de Recherche, IDIAP
Prof. **Reinhard Furrer**, Institut für Mathematik, Universität Zürich
Prof. **Anne-Lise Giraud**, Département des neurosciences fondamentales, Université de Genève
Prof. **Hans-Johann Glock**, Philosophisches Seminar, Universität Zürich
Prof. **Narly Golestani**, Département des neurosciences fondamentales, Université de Genève
Prof. **Didier Grandjean**, Département de Psychologie, Université de Genève
Prof. **Adrian Guggisberg**, Département des Neurosciences Cliniques, Université de Genève
Prof. **Richard Hahnloser**, Departement Informationstechnologie und Elektrotechnik, ETH Zürich
Dr. **James Henderson** Institut de Recherche, IDIAP
Prof. **Samia Hurst**, Institut Ethique Histoire Humanités, Université de Genève
Prof. **Marina Laganaro**, Departement de Psycholinguistique, Université de Genève
Prof. **Christian Lovis**, Sciences de l'information, Université de Genève
Prof. **Marta Manser**, Institut für Evolutionsbiologie und Umweltwissenschaften, Universität Zürich
Prof. **Paola Merlo**, Département de Linguistique, Université de Genève
Prof. **Martin Meyer**, Psychologisches Institut, Universität Zürich

### Participating Institutions

Universität Basel (1 group)/Université de Fribourg (1 group)/Université de Genève (10 groups)/Université de Lausanne (1 group)/Université de Neuchâtel (3 groups)/Universität Zürich (17 groups)/EPFL (1 group)/ETHZ (2 groups)/IDIAP (3 groups)




Home Institutions
Partner Institutions

## Heads of Research Groups (continued)

Prof. **Marcelo Sánchez-Villagra**, Paläontologisches Institut und Museum, Universität Zürich
Prof. **Kentaro Shimizu**, Institut für Evolutionsbiologie und Umweltwissenschaften, Universität Zürich
Prof. **Sabine Stoll**, Institut für Vergleichende Sprachwissenschaft, Universität Zürich
Prof. **Simon Townsend**, Institut für Vergleichende Sprachwissenschaft, Universität Zürich
Prof. **Dimitri Van De Ville**, Laboratoire de traitement d'images médicales, EPLF
Prof. **Carel van Schaik**, Institut für Vergleichende Sprachwissenschaft, Universität Zürich
Prof. **Martin Volk**, Institut für Computerlinguistik, Universität Zürich
Prof. **Robert Weibel**, Geographisches Institut, Universität Zürich
Prof. **Paul Widmer**, Institut für Vergleichende Sprachwissenschaft, Universität Zürich
Prof. **Markus Wild**, Philosophisches Seminar, Universität Basel
Dr. **Aris Xanthos**, Section des sciences du langage et de l'information, Université de Lausanne
Prof. **Pascal Zesiger**, Faculté des Sciences et de l'Education, Université de Genève
Prof. **Ce Zhang**, Department of Computer Science, ETH Zürich
Prof. **Klaus Zuberbühler**, Institut de Biologie, Cognition Comparée, Université de Neuchâtel

**Overview of all Research Projects**

## Key collaborations with third parties

**Academia**
Campus Biotech
Citizen Science Center Zürich
LiRI (Linguistic Research Infrastructure)
Swiss Data Science Center
ZNZ (Zentrum für Neurowissenschaften Zürich)

**Private and public sector**
Google Research
Sonova
Wyss Center
Zoo Basel

## Output Data

**Data: not yet available**

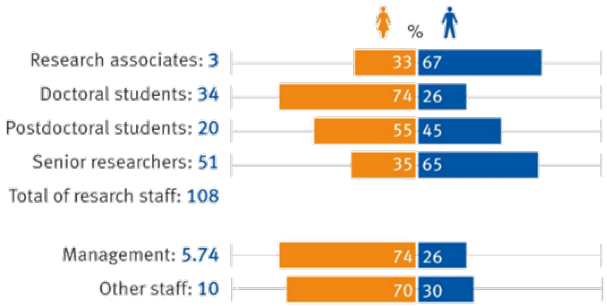
## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2020 – 2023 | 2020 | 2021 | 2022 | 2023 | **Phase 1 %** |
|---|---|---|---|---|---|---|
| SNSF-funding | **16'993'200** | 3'342'000 | 4'251'200 | 4'700'000 | 4'700'000 | 49 |
| Self-funding from Home Institutions[1] | **16'035'453** | 1'897'073 | 4'007'714 | 4'297'914 | 5'832'752 | 47 |
| Self-funding from project participants | **1'390'417** | 1'390'417 | 0 | 0 | 0 | 4 |
| Third-party funding[2] | **0** | 0 | 0 | 0 | 0 | |
| Total | **34'419'070** | 6'629'490 | 8'258'914 | 8'997'914 | 10'532'752 | 100 |

[1] Personnel costs, equipment and consumables, not included infrastructure and basic equipment
[2] Not included is CTI funding

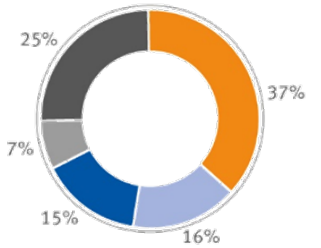
## Persons involved

**Data: current year**




## Nationalities of research staff

**Data: current year**




| | |
|---|---|
| Switzerland | 53 |
| France | 23 |
| Germany | 21 |
| Italy | 10 |
| other Nations | 36 |

# NCCR Microbiomes

## Microbial communities in health and environment

NCCR Director: Prof. Jan Roelof van der Meer, NCCR Co-Director: Prof. Julia Vorholt
Home Institutions: University of Lausanne, ETH Zurich
Start date: 1st of July 2020 (5th NCCR series)

### Description

The NCCR Microbiomes brings together an interdisciplinary research program with experimental and clinical microbiome studies. Combining computational, modeling, engineering and synthetic approaches, the Centre aims to understand the unifying principles of microbiome functioning, to develop tools to diagnose microbiome status, and to devise strategies to intervene and restore imbalanced microbiomes. Its scope encompasses microbial communities in human, animals, plants, as well as in natural and industrial environments. Microorganisms are generally considered as dangerous pathogens. This rather simplistic view does not tell the whole story. Human, animal and plant life is closely linked to the unseen world of microorganisms. Complex and diverse communities of microorganisms populate each human being, animal and plant. These communities, known as microbiomes, play a major role in our lives and our environment, influencing important processes such as protection against disease, nutrient absorption and maintaining a healthy environment.
In the medium term, this research has the potential to create new bases for ground-breaking innovation in major sections of the economy and society, such as nutrition, personalised medicine, medical diagnostics, agriculture and the environment. For further information visit: www.nccr-microbiomes.ch

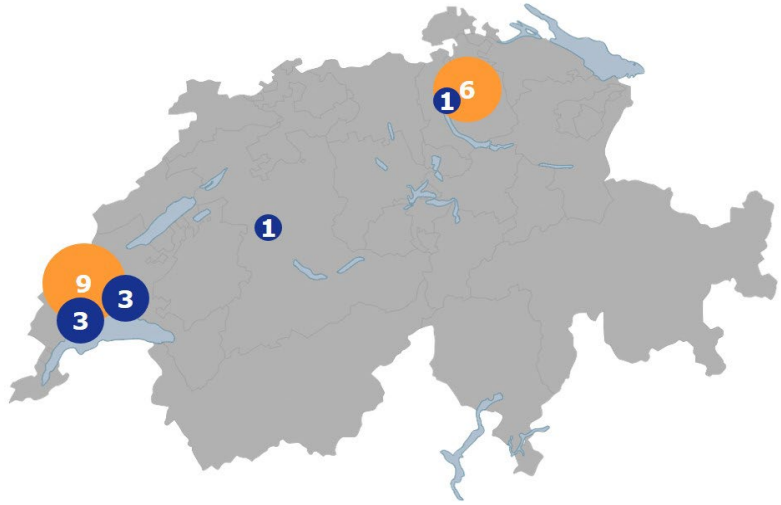
### Heads of Research Groups

Prof. **Martin Ackermann** Department of Environmental Systems Science, ETH Zürich
Prof. **Rizlan Bernier-Latmani**, Laboratoire de microbiologie environnementale, EPFL
Prof. **Alma Dal Co**, Department of Computational Biology, Université de Lausanne
Prof. **Philipp Engel**, Department of Fundamental Microbiology, Université de Lausanne
Prof. **Benoit Guery,** Service des maladies infectieuses, CHUV
Prof. **Gilbert Greub**, Institut de Microbiologie, CHUV
Prof. **Siegfried Hapfelmeier**, Institut für Infektionskrankheiten, Universität Bern
Prof. **Wolf-Dietrich Hardt,** Institut für Mikrobiologie, ETH Zürich
Prof. **Vassily Hatzimanikatis**, Institut des sciences et ingénierie chimiques, EPFL
Prof. **Christof Holliger**, Laboratoire de biotechnologie environnementale, EPFL
Prof. **Tadeusz Kawecki**, Department of Ecology and Evolution, Université de Lausanne
Dr. **Christoph Keel**, Department of Fundamental Microbiology, Université de Lausanne
Prof. **Sara Mitri**, Department of Fundamental Microbiology, Université de Lausanne
Dr. **Grégory Resch**, Center for Research and Innovation in Clinical Pharmaceutical Sciences, CHUV
Prof. **Ian Sanders**, Department of Ecology and Evolution, Université de Lausanne
Prof. **Yolanda Schaerli**, Department of Fundamental Microbiology, Université de Lausanne
Prof. **Emma Slack,** Dept. Gesundheitswissenschaften und Technologie, ETH Zürich
Prof. **Roman Stocker,** Institut für Umweltingenieurwissenschaften, ETH Zürich
Prof. **Shinichi Sunagawa**, Institut für Mikrobiologie, ETH Zürich
Prof. **Jan R. van der Meer**, Department of Fundamental Microbiology, Université de Lausanne
Prof. **Pascale Vonaesch**, Department of Fundamental Microbiology, Université de Lausanne
Prof. **Christian von Mering,** Institute of Molecular Life Sciences, Universität Zürich
Prof. **Julia Vorholt**, Institut für Mikrobiologie, ETH Zürich

**Overview of all Research Projects**

### Participating Institutions

Universität Bern (1 group)/Universität Zürich (1 group)/Université de Lausanne (9 groups)/EPFL (3 groups)/ETH Zurich (6 groups)/CHUV (3 groups)



## Output Data

**Data: not yet available**

## Key collaborations with third parties

**Academia**

Max Planck Society, DE
EMBL Heidelberg, DE
National University of Colombia, CO
Wageningen University and Research, NL
University of Fribourg, CH
University Hospital Zurich, CH
Inselspital University Hospital Bern, CH
University of Basel, CH
Agroscope, CH
Eawag, CH

**Private and public sector**

NFDI4Microbiota Initiative, DE
MiCRop Research Programme, NL
The TARA Ocean Foundation, FR
Simons Foundation, US
European Academy of Microbiology
Swiss Society for Microbiology, CH
European Society for Clinical Microbiology and Infectious Diseases
Musée de la Main, Lausanne, CH
Zoologisches Museum der Universität Zürich, CH
Promega, CH

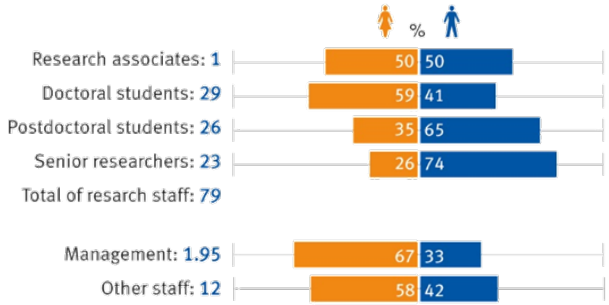
## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2020 – 2023 | 2020 | 2021 | 2022 | 2023 | **Phase 1 %** |
|---|---|---|---|---|---|---|
| SNSF-funding | **16'086'204** | 3'386'204 | 3'700'000 | 4'500'000 | 4'500'000 | 53 |
| Self-funding from Home Institutions[1] | **12'758'943** | 1'453'656 | 4'100'169 | 3'565'076 | 3'640'042 | 41 |
| Self-funding from project participants | **1'965'926** | 1'965'926 | 0 | 0 | 0 | 6 |
| Third-party funding[2] | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **30'811'073** | 6'805'786 | 7'800'169 | 8'065'076 | 8'140'042 | 100 |

[1] Personnel costs, equipment and consumables, not included infrastructure and basic equipment
[2] Not included is CTI funding

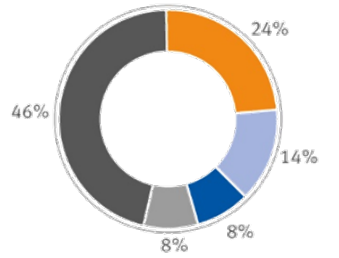
## Persons involved

**Data: current year**




## Nationalities of research staff

**Data: current year**




| | |
|---|---|
| Switzerland | 23 |
| Germany | 14 |
| France | 8 |
| Italy | 8 |
| other Nations | 44 |

# NCCR SPIN
## Spin Qubits in Silicon

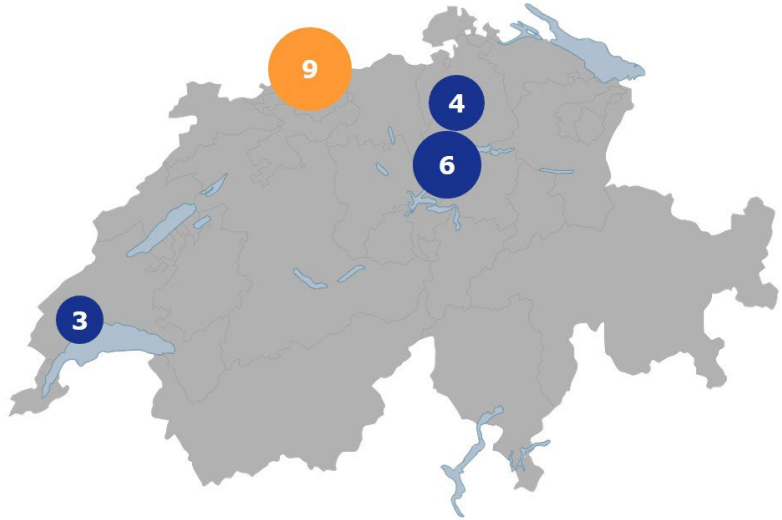
NCCR Director: Prof. Dominik Zumbühl, NCCR Co-Director: Daniel Loss
Home Institution: University of Basel
Start date: 1st of August 2020 (5th NCCR series)

### Description
The NCCR SPIN aims to make a major contribution to research into and the development of quantum computers and create the basis for a new information-processing technology. The NCCR's objective is to develop small, fast, scalable silicon-based qubits. It will also generate important findings on software and algorithm development, error correction and the architecture of future quantum computers.
The NCCR comprises an interdisciplinary team with research groups working in experimental and theoretical physics, material science, engineering and computer science. There will also be close cooperation with the industry-based research partner IBM Research, creating exceptional opportunities to develop prototypes and practically applicable technology. This could lay the foundations for accelerating the pace of digitalisation.
For further information visit: http://www.nccr-spin.ch

### Heads of Research Groups
Prof. **Klaus Ensslin**, Department of Physics, ETH Zürich
Prof. **Anna Fontcuberta i Morral**, STI IMX LMSC, EPFL
Dr. **Andreas Fuhrer**, IBM Research Rüschlikon
Prof. **Thomas Ihn**, Department of Physics, ETH Zürich
Prof. **Adrian Ionescu**, STI IEL NANOLAB ELB, EPFL
Prof. **Jelena Klinovaja**, Department of Physics, Universität Basel
Dr. **Andreas Kulmann** Department of Physics, Universität Basel
Dr. **Patrick Harvey-Collard** IBM Research Rüschlikon
Prof. **Daniel Loss,** Department of Physics, Universität Basel
Prof. **Mathieu Luisier**, Dept. of Information Technology and Electrical Engineering, ETH Zürich
Prof. **Ernst Mayer,** Department of Physics, Universität Basel
Dr. **Kirsten Moselund**, IBM Research Rüschlikon
Prof. **Martino Poggio**, Department of Physics, Universität Basel
Dr. **Heike Riel**, IBM Research Rüschlikon
Dr. **Gian Salis,** IBM Research Rüschlikon
Prof. **Pasquale Scarlino**, SB IPHYS HQC, EPFL
Prof. **Christian Schönenberger**, Department of Physics, Universität Basel
Prof. **Andreas Wallraff**, Department of Physics, ETH Zürich
Prof. **Richard Warburton,** Department of Physics, Universität Basel
Dr. **James Wootton**, IBM Research Rüschlikon
Prof. **Ilaria Zardo**, Department of Physics, Universität Basel
Prof. **Dominik Zumbühl**, Department of Physics, Universität Basel

**Overview of all Research Projects**

### Participating Institutions
Universität Basel (9 groups)/EPFL (3 groups)/ETH Zurich (4 groups)/ IBM (6 groups)




Home Institution
Partner Institutions

## Output Data

**Data: not yet available**

## Key collaborations with third parties

**Academia**

Forschungszentrum Jülich, DE
Harvard University, US
IST Austria, AT
Lancaster University, UK
Lund University, SE
Oxford University, UK
Princeton University, US
RIKEN, JP
RWTH Aachen, DE
TU Delft, NL
Université Grenoble Alpes and CEA Grenoble, FR
University College London, UK
University of Copenhagen, DK
University of Konstanz, DE
University of New South Wales, AU
University of Twente, NL

**Private and public sector**

CEA, FR
CNRS, FR
IBM, Yorktown Heights, US
IHP, DE
IKZ, DE
IMEC, BE
Infineon, Dresden, DE
Soitec, FR

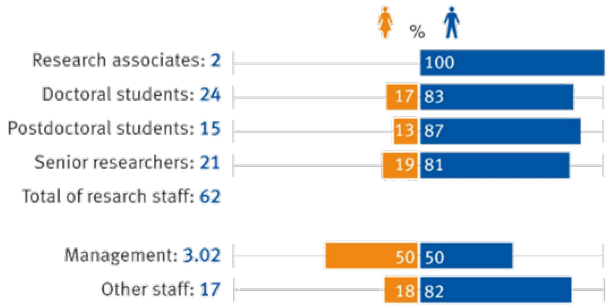
## Funding

| **Funding Source (CHF)** | **Total Phase 1** 2020 – 2023 | 2020 | 2021 | 2022 | 2023 | **Phase 1 %** |
|---|---|---|---|---|---|---|
| SNSF-funding | **17'000'000** | 3'900'000 | 4'000'000 | 4'500'000 | 4'600'000 | 41 |
| Self-funding from Home Institution[1] | **12'341'304** | 1'996'304 | 2'965'000 | 2'965'000 | 4'415'000 | 30 |
| Self-funding from project participants | **12'297'214** | 3'912'214 | 2'795'000 | 2'795'000 | 2'795'000 | 29 |
| Third-party funding[2] | **0** | 0 | 0 | 0 | 0 | 0 |
| Total | **41'638'518** | 9'808'518 | 9'760'000 | 10'260'000 | 11'810'000 | 100 |

[1] Personnel costs, equipment and consumables, not included infrastructure and basic equipment
[2] Not included is CTI funding

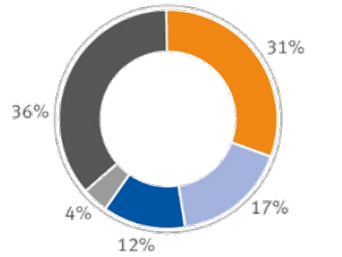
## Persons involved

**Data: current year**




## Nationalities of research staff

**Data: current year**




| | |
|---|---|
| Switzerland | 29 |
| Germany | 16 |
| Italy | 11 |
| Spain | 4 |
| other Nations | 34 |

# Impressum

The brochure “Guide” presents an overview on the currently running NCCRs. The statistical data is based on the latest progress reports of the NCCRs submitted during 2021. It is updated every year and can be downloaded as a pdf on our website: www.snsf.ch/Publications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