

3 R Swiss 3R
C C Competence
Centre

SWISS 3RCC ANNUAL REPORT

OF ACTIVITIES AND
ACHIEVEMENTS
2021





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1



1 FOREWORD

2021 was an important year for the 3RCC as it was the first of a new funding period stretching to the end of 2024. Thanks to the continued commitment and support by its funders, the 3RCC can now further develop the nationally coordinated efforts to advance the 3Rs in Switzerland.

The most important milestone of the year was the definition of the Centre's long-term strategic framework, where we envision the 3RCC as the driving force for 3Rs advancement for improved animal welfare and better science in Switzerland. The strategic framework now guides the development of the activities under the four mandates service areas: research, education, monitoring and communication.

The COVID-19 pandemic continued to impact the work of the 3RCC in 2021, where many planned on-site activities had to be postponed or transformed to an online format. This particularly impacted the activities in the education and communication mandates and much of the output planned for 2021 was delayed to 2022.

The 3RCC wishes to extend its gratitude to all its board members who with their individual expertise and knowledge have contributed to the further development of the Centre itself and its activities in advancing the 3Rs.





2 EXECUTIVE SUMMARY

The 3RCC promotes the 3Rs principle (replace, reduce, refine) concerning animal experimentation in Switzerland within the four mandated service areas under the performance agreements with its funders: **research, education, monitoring** and **communication**. The 3RCC is committed to active cooperation with academic institutions, industry, authorities and animal welfare organisations.

OVERVIEW MANDATED SERVICE AREAS

→ MORE
chapter 4.1.

RESEARCH FUNDING – Since its inception in 2018, the 3RCC Open Call funding scheme has provided CHF 3.9 Mio in research funding for 15 research projects of excellent scientific quality with a clear 3Rs impact. Two of the Open Call research projects were finalized in 2021, whereas 13 are still in active research phase. The 2021-2024 Funding Scheme has been diversified to accommodate funding opportunities not only for high quality 3Rs research through the yearly Targeted Calls, but also for a 3Rs focused Doctoral Programme, the advancement and dissemination of new refinement methods, for transfer of knowledge in 3Rs implementation and for the promotion of open sharing of 3Rs knowledge. An outline of the status and achievements of the 3RCC-funded research projects is given in → chapter 4.1. The 2021 Targeted Call has a total budget of CHF 0.9Mio and selected projects will be launched mid-2022.

→ MORE
chapter 4.2.1

RESEARCH AND MONITORING – Integral to the work of the 3RCC is its project portfolio, of which various surveys have monitored the progress of 3Rs implementation in the areas of education and research. During 2021, three reports – monitoring of animal use in Swiss science, animal use in Swiss education, and non-aversive mouse handling – were published and disseminated, these will also serve as a basis for future fact sheets and to inform future targeted projects under the different mandates. Performance in this area is laid out in → chapter 4.2.1.

→ MORE
chapter 4.2.2

EDUCATION AND TRAINING – The 3RCC collaborate with its members to map the existing educational activities covering 3Rs in Switzerland. A recommendation for requirements at the Bachelor level was previously published and additional recommendations for other educational levels are planned in the 2021-2024 period. The development of a targeted training in refinement remained a focus in 2021, where Covid-19 related restrictions has led to virtual education being developed as a complement to on-site trainings. More on-site activities are envisioned to resume in 2022.

Similarly, the 3Rs Day was offered in the format of webinar series co-organized with five other 3Rs Centres' across Europe. Achievements in education and training are summarised under → chapter 4.2.2.

→ MORE
chapter 4.3

COMMUNICATION, DISSEMINATION AND NETWORKING – The 3RCC is committed to active communication with its stakeholders and the broader public. In 2021, the Communications Work Group initiated its activities, in view of coordinating and streamlining communication measures from the 3RCC with its internal stakeholders. The mandate of the group in 2021 was to develop the communication strategy, focusing on public outreach efforts ahead of the popular vote on banning human and animal experimentation (13th February 2022).

Exchange with the NC3Rs, Charité 3Rs, Danish, Dutch and Swedish 3Rs Centres was maintained on a regular basis throughout 2021. A description of the **Communication, dissemination, and networking** in 2021 is described under → chapter 4.3.

STRATEGY DEVELOPMENT

→ MORE
section 3

In November 2020, the Strategic Board (SB) mandated an ad hoc Working Group, comprising of representatives of the SB, Executive Board (EB) and Directorate, to develop the 3RCC's strategic framework for the funding period 2021-2024 and beyond. The strategic framework was drafted in the first quarter of 2021 and ratified by the General Meeting in May 2021. Its content is described in short under → section 3.

COVID-19 IMPACT ON THE 3RCC'S ACTIVITIES

In 2021, some COVID-19-related work disruptions persisted. These primarily impacted projects requiring on-site activities, which could not be conducted as originally planned and were delayed. The 3Rs Day was cancelled and replaced by a four-day virtual symposium, organized together with other European 3Rs organisations.

The COVID-relief funding granted by the SB in November 2020 ensured the funded research projects severely impacted by the 2020 COVID lock-down could be fulfilled according to the originally projected outcome.



3



3 ORGANISATION AND STRATEGY

ORGANISATION

The Swiss 3R Competence Centre (3RCC) was founded on 27 March 2018 as a non-profit association to promote the replacement, reduction, and refinement of animal experimentation in Switzerland, namely the 3Rs principle, and facilitate its implementation in life sciences, with a focus on **research, education, monitoring** and **communication**. The 3RCC emerged as a joint initiative of academia, industry, regulators, government and an animal welfare organisation. The 3RCC is a scientific centre of national importance working on a non-commercial basis according to article 15 of the Federal Act on the Promotion of Research and Innovation (RIPA).

The 3RCC has a broad internal stakeholder representation. Its members include:

- Federal Institute of Technology Lausanne (EPFL), Federal Institute of Technology Zurich (ETH Zürich), Università della Svizzera Italiana (USI), University of Applied Sciences and Arts Northwestern Switzerland (FHNW), University of Basel, University of Bern, University of Fribourg, University of Geneva, University of Lausanne, University of Zurich, Zurich University of Applied Sciences (ZHAW).
- The Swiss association of research-based pharmaceutical companies (interpharma).
- The Swiss Federal Food Safety and Veterinary Office (FSVO).
- The Swiss Animal Protection (SAP) organisation.

In addition, the Swiss State Secretariat for Education, Research, and Innovation (SERI), and the Swiss Federal Office of Public Health (FOPH) act as observer members.

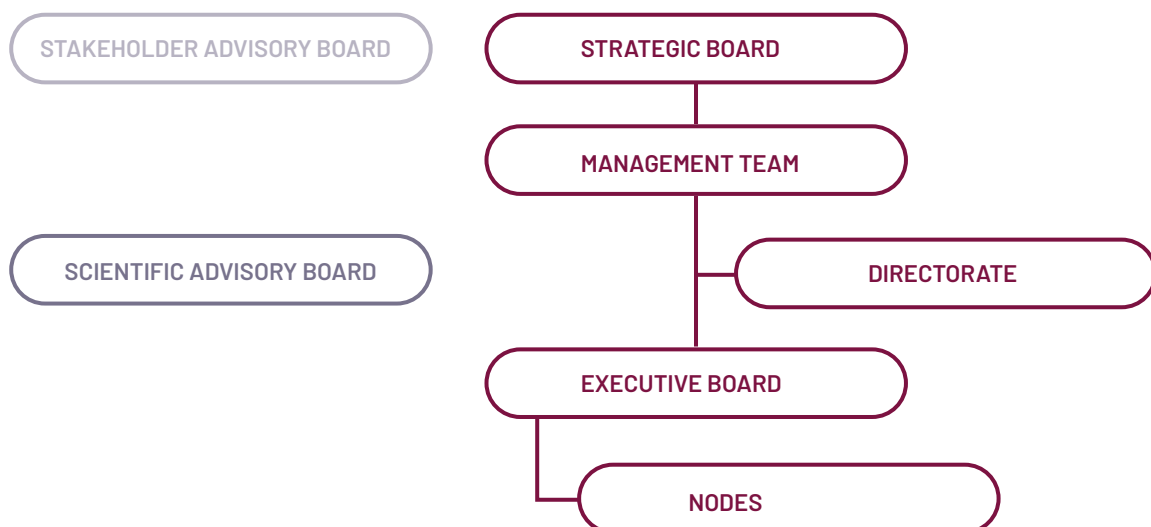


Figure 1 - Governance
during new funding period
2021-2024

The **STRATEGIC BOARD (SB)** consists of representatives of the member organization that hold strategic positions within their institutions. The SB defines the strategic orientation of the 3RCC, as well as the funding allocation. Furthermore, the SB nominates members of the Stakeholder- and Scientific Advisory Boards (StAB, and SAB), as well as the Executive Board (EB) and the Management Team (MT)

The **EXECUTIVE BOARD (EB)** consists of representatives of higher education institution members referred to as "Node Coordinators", representatives of the Swiss Animal Facilities Network (SAFN), the Animal Welfare Officers Network (AWON), the Institute of Laboratory Animal Sciences (Institut für Labortierkunde, LTK), the Réseau des animaleries lémaniques (RESAL), as well as the 3RCC Executive Director and other laboratory facilities involved in the 3Rs that are nominated by the SB. The EB is responsible for executing and implementing the strategy defined by the SB within the mandates, with consideration for suggestions from the SAB.

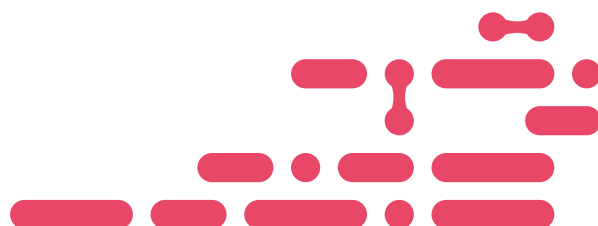
The 3RCC **SCIENTIFIC ADVISORY BOARD (SAB)** provides scientific expertise to the EB and to the SB, evaluates the progress and functioning of the 3RCC and supports the evaluation of the grant proposals for the funding programme.

The **MANAGEMENT TEAM (MT)** is nominated by the SB and is composed of one representative from each of the internal bodies (SB, EB and Directorate) with the purpose of i) enabling effective exchanges between the organizational bodies, ii) controlling and monitoring the operations, and iii) overseeing the ongoing activities within the Centre, in order to ensure a continued alignment with the strategy.

The **3RCC DIRECTORATE** is the central coordinating organ that implements all activities following the strategic lines defined by the SB.

A **STAKEHOLDER ADVISORY BOARD (STAB)** has hitherto not been established.

A full declaration of the 3RCC's board composition in 2021 can be found in the tables at the end of the document.



STRATEGY

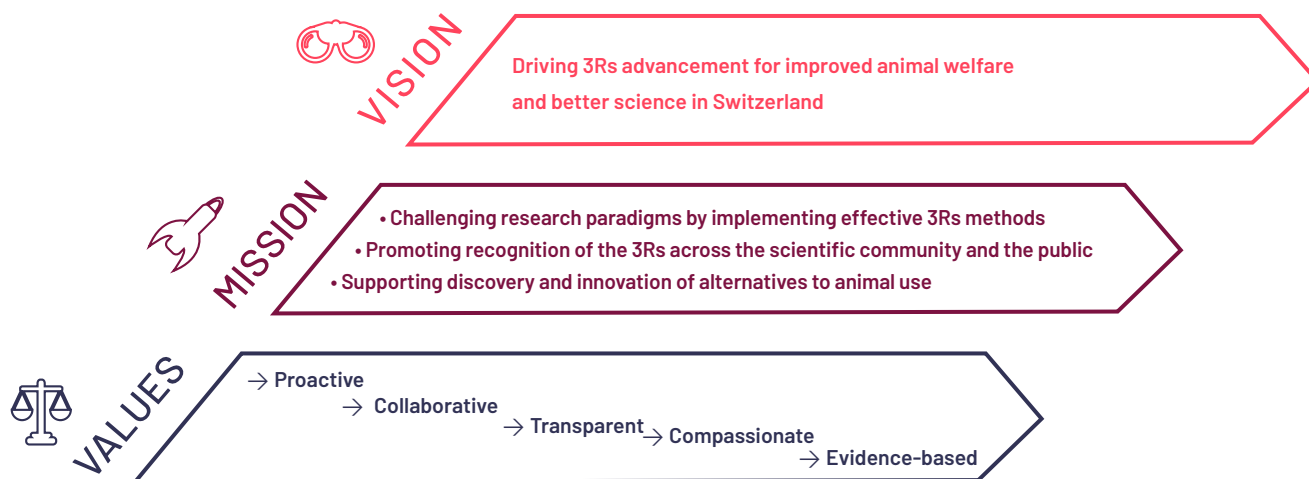


Figure 2 –
Vision, Mission
and Values



VISION – The 3RCC drives the advancement of the 3Rs Principle in Switzerland through activities that improve welfare for animals in research and that promote better science. The 3RCC envisions a new era in which replacement, reduction and refinement are consistently implemented to minimize the use of animals and the harm imposed on them, promoting scientifically valid and ethically responsible research. The Centre aspires to be the leading source for information on the 3Rs in all its implementation areas.



MISSION – Effective implementation of the 3Rs depends on the **recognition** of its utility and **knowledge** in how to translate theory into action. Knowledge should inspire the scientific community to achieve more for improved animal welfare and better science. Providing 3Rs knowledge to the public increases transparency on how methods are implemented and how these impact animal welfare. Furthermore, to realize the full potential in application of the 3Rs Principle, there is a need to continuously challenge the status quo of the rapidly changing research landscape and to pursue the implementation of effective 3Rs methods wherever possible. Additionally, where science is pushing the boundaries for the possibilities in replacing the use of animals, the 3RCC will catalyse this innovation and its application to the benefit of 3Rs advancement.



VALUES – The 3RCC will tackle its mission in a **proactive** manner, committed to effectively addressing gaps in knowledge and to anticipating and responding to trends that influence animal use. The broad stakeholder representation requires an inclusive and respectful discourse that always seeks **collaborative** solutions across different fields and views. The Centre seeks to build trust through a **transparent** working manner, but also to promote transparency in research involving animals, through efficient monitoring and communication. **Compassion** is intrinsic to the 3Rs Principle and a reference frame for 3RCC's working manner, which is rooted in a scientific perspective and strictly follows **evidence-based** practice.

The Strategic Framework (developed in 2021) consists of three parts: the **strategy**, the **implementation plan** and the **progress and impact measurement** toolbox. Here, we primarily focus on describing the framework as such and how it guides the organization's activities.

To achieve the full potential of the 3Rs Principle, we have identified three challenges that need to be addressed: i) to change the mindset of people, ii) to ensure compliance with good practice

principles around 3Rs, and iii) to connect the necessary competences to further the 3Rs. From these, three long-term strategic goals were set; to **change mindsets**, to ensure **good 3R practice**, and to promote **networks for science**. These goals complement each other and describe how the Centre intends to move its activities forward in the future.

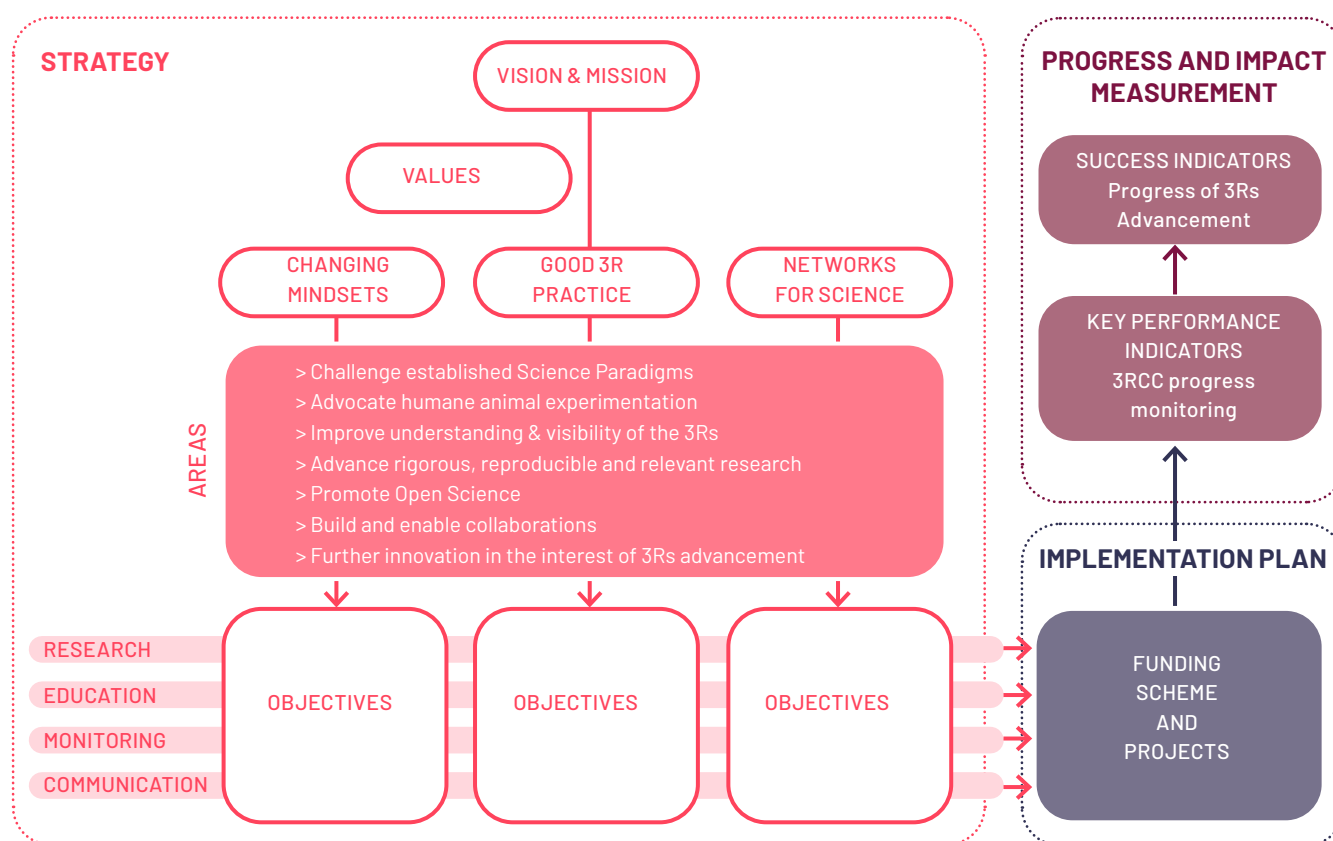


Figure 3 –
Strategic
framework

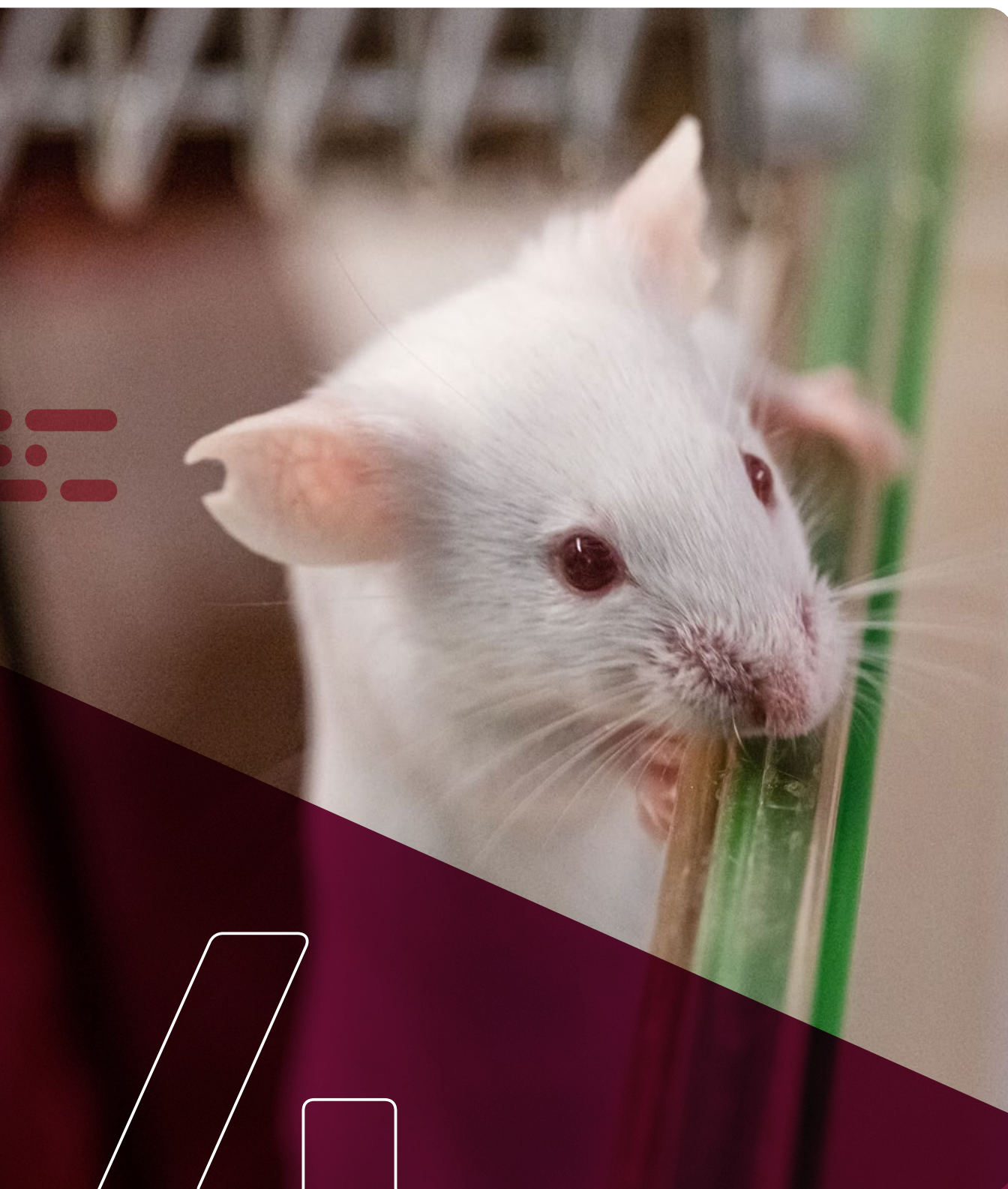
Across the long-term strategic goals, seven areas of activity have been identified as important. The strategic goals are broken down into objectives that may be shared, both between goals and between mandates (research, education, monitoring and communication). In total 37 individual objectives were identified. These objectives set a wide range on the Centre's scope that covers a timeframe of at least four to eight years. Objectives ranked in accordance to priority; high, medium or low, and the implementation plan for the period 2021-2024 was developed based on the 16 high-priority objectives identified.

→ MORE
sections 4.1,
4.2, 4.3

In the **implementation plan**, high priority objectives are addressed through different means, either through targeted funding efforts within the funding scheme, or in mandate-driven projects, described in → **sections 4.1, 4.2 and 4.3** respectively. The implementation plan describes the tactics in milestones and deliverables. To measure the 3RCC's **progress and impact** the measures developed within the implementation plan define a set of Key Performance Indicators (KPIs) that are short-term measurements of the direct output.

→ MORE
section 4.4

Success indicators (SIs) differ from the KPIs and are defined as broader measures of the longer-term outcome of the progress of 3Rs implementation within the Swiss research landscape. A preliminary set of SIs have been defined based on the goals and objectives setup within the strategy. These have served as a basis to scaffold the measurement of 3Rs-directed investments (in-kind support) undertaken by the HEIs to advance 3Rs implementation (described in → **section 4.4** of this report).



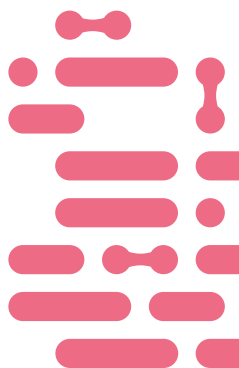
4 ACTIVITIES AND ACHIEVEMENTS 2021

4.1 RESEARCH FUNDING SCHEME AND FUNDED PROJECTS

From 2018 to 2020, the 3RCC has - through its Open Call (OC) funding schemes - supported projects that cover all aspects of the 3Rs principle (replacement, reduction, and refinement) aiming for a broad advancement of 3Rs research in Switzerland. This funding scheme provided a funding worth CHF 3.86 million for 15 research projects in fields such as oncology, neurology and infectious diseases where many animals are used (→ **Figure 4**).

→ MORE
Figure 4

In 2021, the 3RCC launched Targeted Calls (TC), in which a specific 3Rs focal area will be addressed yearly. Indeed, one of the long-term strategic goals is to create synergic efforts, where the right competences are connected to advance 3Rs innovation and comprehensively tackle one specific high-severity model. For this purpose, the first Targeted Call from 2021 aimed to provide an integrated 3Rs-alternative approach **for a specific high-severity animal model**. In contrast to the previous Open Call scheme, this Targeted Call aims to fund a single collaborative project with CHF 920'000. This call attracted 32 outline proposals and the SAB invited eight of these to submit a full proposal. The evaluation process of the full proposals start in February 2022 and the announcement of the grant recipient is scheduled for August 2022.



PROJECTS GRANTED UNDER THE 2018-2020 OPEN CALL FUNDING SCHEME

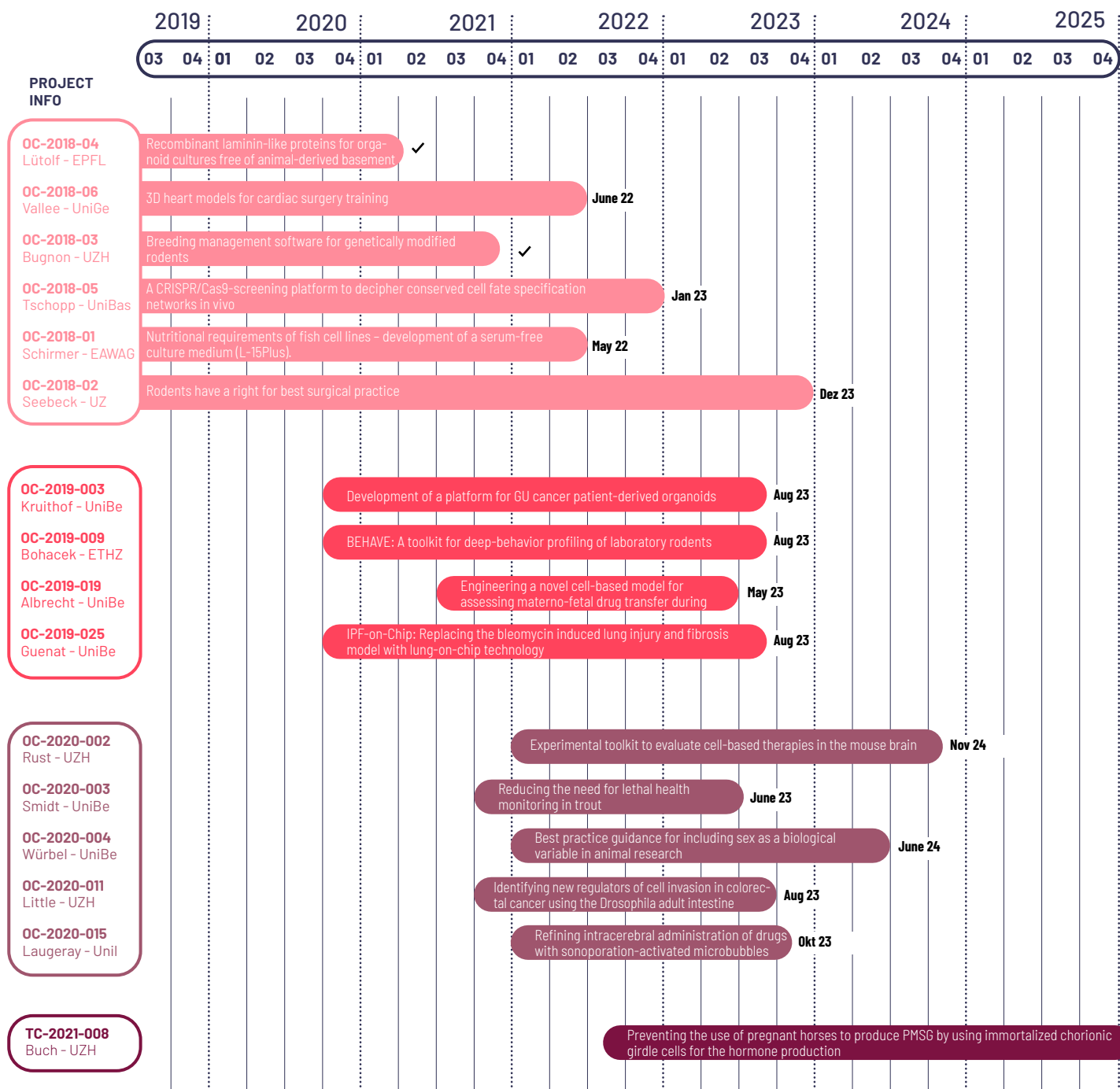


Figure 4 – The timelines of the projects funded under the 2018-2020 Open Call funding scheme.

PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS AND PRESENTATIONS 2021 CONNECTED WITH 3RCC-FUNDED PROJECTS ABOVE

SCIENTIFIC PUBLICATIONS (INCLUDING MANUSCRIPTS 'IN PRESS') IN 2021

Oliver Sturman, Lukas von Ziegler, Mattia Privitera, Rebecca Waag, Sian Duss, Yannick Vermeiren, Letizia Giovagnoli, Peter de Deyn & Johannes Bohacek. *Chronic adolescent stress increases exploratory behavior but does not appear to change the acute stress response in adult male C57BL/6 mice.* *Neurobiol Stress.* 15:100388.(2021) Sep 4 (2021)

Antonius Chrisnandy, Delphine Blondel, Saba Reza khani, Nicolas Broguiere & Matthias P. Lutolf. *Synthetic dynamic hydrogels promote degradation-independent in vitro organogenesis.* *Nature Materials* volume 21, pages 479–487 (2022), Nov 2021

Bauer L. LeSavage, Riley A. Suhar, Nicolas Broguiere, Matthias P. Lutolf & Sarah C. Heilshorn. *Next-generation cancer organoids.* *Nature Materials* volume 21, pages 143–159 (2022), Aug 2021.

Vladislava Milchevskaya, Philippe Bugnon, Emiel B.J. ten Buren, Frank Brand, Achim Tresch, Thorsten Buch. *Group size planning of breedings of gene-modified animals.* *BioRxiv.* Sept 2021.

Christian Feregrino, Patrick Tschopp. *Assessing evolutionary and developmental transcriptome dynamics in homologous cell types.* *Development Dynamics.* June 2021.

ORAL AND POSTER PRESENTATIONS AT SCIENTIFIC MEETINGS IN 2021

OC-2018-001

Barbara Jozef, Melanie Fischer and Kristin Schirmer. Nutritional requirements of fish cell lines – developments towards a serum-free culture medium. (Accepted as abstract for the 11th World Congress on Alternatives and Animal Use in Life Sciences (WC11), August 2021).

Zhao Rui Zhang, Barbara Jozef and Kristin Schirmer. A 96-Well Plate Cell-Based Assay to Quantify Proliferation of RTgill-W1 Cell Line Under Serum-Free Conditions. (Accepted as platform presentation SETAC 10th Young Environmental Scientists Meeting, 22–26 February 2021).

Kristin Schirmer and Barbara Jozef. Fish cell lines and the 3Rs: fundamental developments and application in chemical risk assessment. (Presented as invited lecture at the 3Rs Across Europe, held on-line 22–24 September 2021).

OC-2018-003

Continuing Education course “Mouse Physiology & Pathophysiology 2021”

University of Zürich – 17th of June 2021

Title: “Breeding Management & Planning”

Recent advances in animal welfare science VIII. Virtual UFAW Animal Welfare

Conference 29th– 30th June 2021

Title: “Improved group size planning of breedings of gene-modified animals”

GVSOLAS (German Laboratory Animal Science Association)

Congress – 24th of September 2021

Title: “Chess meets Murphy: The intricacies of planning complex breedings”

4.2 3RCC PROJECTS

This section describes the internally driven projects conducted by the Swiss 3RCC in collaboration with its members (Executive Board and other partners). Each project's background, overview, and current status for 2021 is provided below.

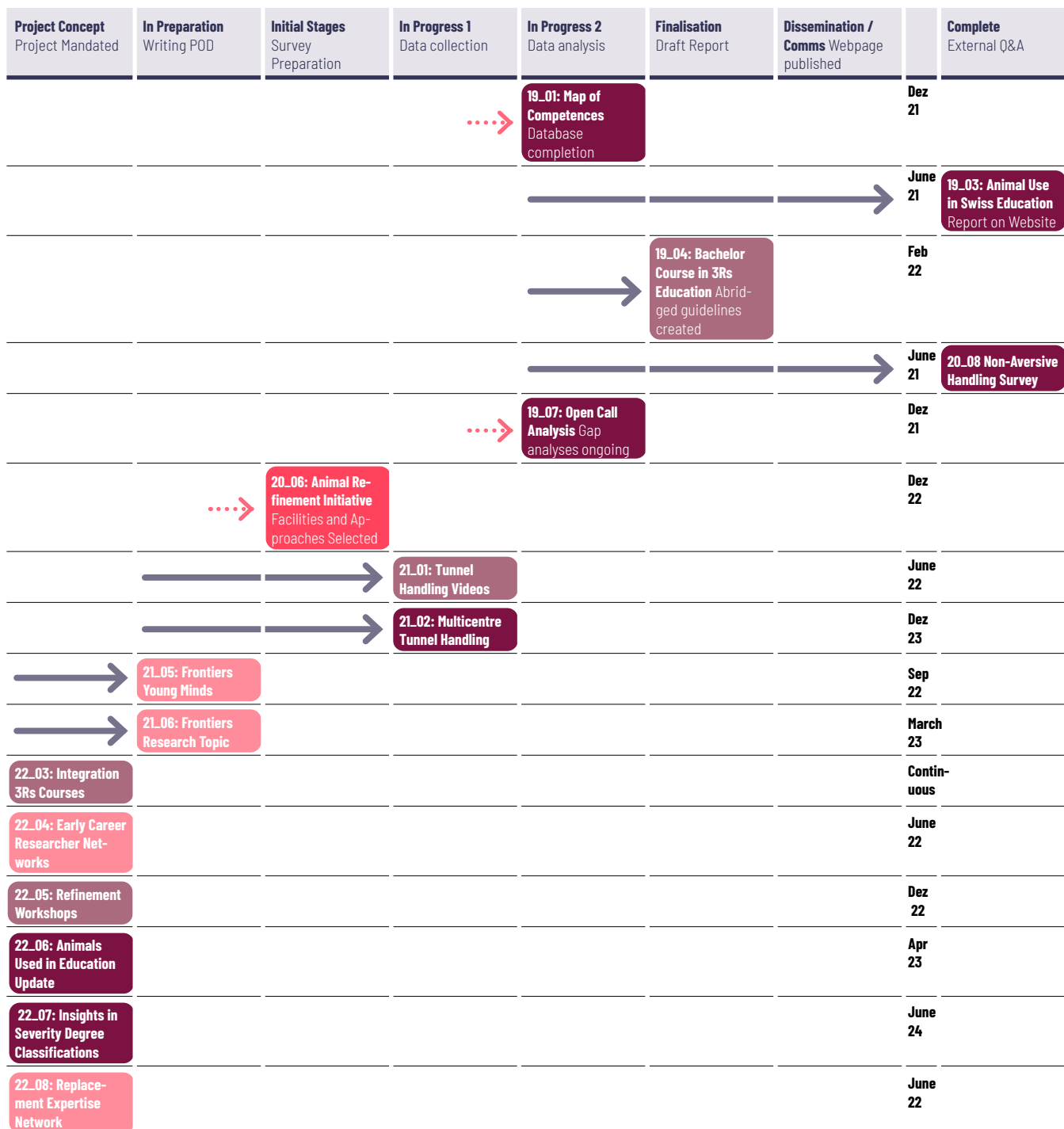


Figure 5 – Project life-cycle chart. Overview of the progress of 3RCC-driven projects in 2021. Green arrows indicate project progress according to plan, red arrows indicate delays. Project descriptions can be found in the sections below.

● Research ● Education ● Monitoring ● Communication

4.2.1 RESEARCH AND MONITORING

In addition to its funding scheme, the 3RCC also conducts internal projects that span the research and monitoring mandates. The monitoring of progress in 3Rs implementation across the research and educational landscape in Switzerland is central and below a description follows of the targeted projects that are currently ongoing, or were finalized in 2021, in these areas.

MAP OF COMPETENCES

STATUS: Ongoing | June 2019 – June 2022

GOAL: Networks for Science

MANDATE: Monitoring



Background: As of yet, there is no open, searchable, online platform where Swiss research groups and other stakeholders are able to share their own scientific and procedural competences and find other research groups and experts with the expertise needed for the accomplishment of an ongoing 3Rs project.



Aim: This project aims to gather research-relevant data regarding specific skills from individual research groups across Switzerland. Standardised forms will collect information on research methodologies employed (e.g. basic, clinical), for all relevant research areas (e.g. oncology, neuroscience), as well as details on procedures with animals (e.g. animal handling methods), in silico, or in vitro technologies and other specific 3Rs relevant expertise (e.g. education, biostatistics or ethics). This information will be stored in a searchable database, where researchers will be able to identify and contact other research groups with some key expertise in a given area.



Status: The 3RCC Node Coordinators collected information from 115 research groups in Switzerland. There were 460 research area competences spanning across the 3Rs including 333 competences in animal procedures (e.g. handling, breeding, surgical procedures, etc) and 119 different pieces of equipment available for collaborations. A snapshot of the current status of the database is being analysed to create a brief report to be made publicly available.

ANIMAL USE IN SWISS EDUCATION

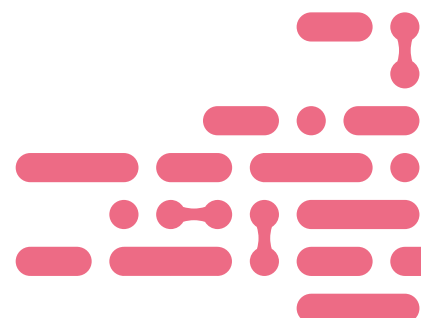
STATUS: Completed | January 2020 – June 2021

GOAL: Good 3Rs Practice

MANDATE: Monitoring



Background: In Switzerland, on average 7'500 animals are used for education and training every year. However, the Federal statistics (FVB) does not provide enough information on the specific training purposes the animals were used for. Thus, there is a need to provide the public and decision-makers with verified figures from institutions that use animals in training as well as information on the species and the type of training for which they were used.





Aims: In 2019, the 3RCC surveyed eleven Swiss Higher Education Institutions (HEIs) in order to better understand why and how animals are used for educational and training purposes. The survey captured i) the number of animals used in 2018 according to groups of species (mice; other laboratory rodents such as rats; rabbits, dogs, cats and primates; farm animals; others (e.g. fish, amphibians, birds and reptiles); ii) the course topic (general biology, human medicine, veterinary medicine, pharmacology, toxicology, specific high-level courses, other); and iii) severity degrees (from 0 to 3). Additional questions were provided to evaluate the use of alternative methods and barriers to implement animal-free alternatives.



Output: A total of 6'925 animals were used in 2018 in the surveyed HEIs (report published on September 2021). The degree of severity was mild for the majority of animals, whereas 6% experienced no harm. While HEIs are aware of the aspects of 3Rs in education and training, the lack of alternatives, teaching experience and financial reasons were found as main obstacles for a broader implementation. While the report was planned for a release in 2020, it required a number of updates in numbers to match the timing of data collection across all institutions. The project was concluded with a public release of aggregated data in September 2021 → <https://www.swiss3rcc.org/our-reports/animal-use-in-swiss-education>

ANIMAL REFINEMENT INITIATIVE

STATUS: Ongoing | June 2020 – June 2023

GOAL: Good 3Rs practice

MANDATE: Research



Background: Reduction and refinement approaches are key activities in animal facilities and this initiative will deploy the remaining funds of nearly CHF 50'000.- remaining funds upon dissolution of the 3Rs Foundation to address specific refinement approaches in a multi-centred investigative research project.



Aim: The project will encourage the implementation of established and easy-to-use refinement techniques at selected animal facilities in Switzerland as well as encouraging knowledge-transfer to other facilities.



Status: Based on a survey completed by animal facility managers, the project working group selected three refinement approaches with the best potential for wide-spread implementation: partial cage separators to reduce male aggression; increased bedding and nesting material; and additional refuges. Facilities at the EPFL, UZH and Novartis in Basel are participating in the direct implementation round supported by the Swiss 3RCC. The next step will gather information from all participating facilities and to identify the specific details of each refinement approach and how these could be uniformly implemented across the different facilities.

NON-AVERSIVE HANDLING SURVEY

STATUS: Complete | March 2021 – June 2021

GOAL: Good 3Rs Practice

MANDATE: Monitoring



Background: Mice remain the most commonly used animal in scientific research in the world and in Switzerland. Every single one of these mice are directly handled by a person in the breeding facility or a research lab, on a regular basis. Therefore, the way mice are handled is of large interest for animal welfare and could be important for the acquisition of reliable results,

as this handling could affect experimental outcomes. The Swiss 3RCC supports such refinement research and aims to promote methodologies which have been shown to be scientifically valid, robust and improve the welfare of the animal in question.



Aim: A survey on non-aversive handling methods was conducted across a range of Swiss institutions to learn more about the use of standard and refined mouse handling methods in Switzerland and potential implementation barriers of gentle mouse handling techniques such as tunnel or cup handling.



Status end of 2021 – More than 230 participants completed the survey, including scientists, animal caretakers and veterinarians across various Swiss animal facilities. Approximately a quarter of respondents indicated to use gentle handling methods like tunnel handling and cupping for mice. Near 58% of these had already used tunnel handling. Indeed, animal welfare was the major reason for using tunnel handling, and the method was also rated with a high level of satisfaction. Nearly a third of the respondents used tunnel handling regularly. The survey results are summarized on a slideshow report available on the 3RCC's website.

MULTICENTER TUNNEL HANDLING SURVEY

STATUS: Ongoing | March 2021 – December 2022

GOAL: Changing Mindsets

MANDATE: Monitoring



Background: In a recent study from the 3RCC on the use of non-aversive handling techniques in Swiss animal facilities, a number of hurdles appeared to limit the implementation of tunnel handling as a standard of mouse handling such as i) sterilization capacities, ii) the time required to perform such manipulations, iii) the costs. The impact of tunnel handling on research data acquisition is also debated.



Aim: The aim of the project is to provide a recommendation on the use of tunnel handling to Swiss animal facilities in order to facilitate its implementation. Data will be collected through on-line survey targeted to managers and facility staff to determine the current status of tunnel handling in various facilities. Also semi-structured interview with animal facility managers who have performed a pilot study on the use of tunnels within their facility, will complement the information in order to optimize the recommendations.



Status: The on-line survey was completed by eight animal facility managers in Switzerland, and 20 animal caretakers that have performed tunnel handling have answered an anonymous form to evaluate the satisfaction with regards to the use of tunnel handling versus traditional tail handling. The semi-structured interview was designed and will take place in May 2022. A report of the project is planned for release end of 2022.

4.2.2 EDUCATION AND TRAINING

The 3RCC conducts several projects to expand on and diversify 3Rs educational and training offer in Switzerland. In these projects, it collaborates both with national and international partners and the developed efforts focus on all educational levels.

International webinar on replacement advancement

In 2021, the 3RCC focused on the organisation of one continuing education event teaming up with the NC3Rs of the U.K., Charité 3R, 3Rs-Centre Utrecht Life Sciences, the Swedish 3Rs Centre, the Danish 3R-Center, to organise a joint webinar series. The international webinar titled **“Replacing basement membrane extracts (BMEs)”** focused on covering the challenges and opportunities with replacing the commonly used animal-derived cell culture substrate basement membrane extract (BME). The symposium attracted an audience of 130 participants spread over four lunch sessions and full attendance of the series was accredited 0.5 CPE in fulfilment of the 3RCC's goals in the educational mandate. The event is available online on our website → <https://swiss3rcc.org/bme-symposium>.

BACHELOR COURSE IN 3RS EDUCATION

STATUS: Ongoing | October 2019 - February 2022

GOAL: Good 3Rs Practice

MANDATE: Education



Background: Students at the Bachelor level in life sciences, medicine, veterinary, environment, agricultural sciences, pharmacy, and others should learn the concept of the 3Rs Principle concerning animal experimentation. However, only a subset of these bachelor students is currently being taught the 3Rs Principle across all Higher Education Institutions (HEIs) as part of their mandatory curriculum.



Aim: This project aims to provide a nationwide educational guidance on the 3Rs Principle at the Bachelor Level as part of the core courses in life sciences, medicine, veterinary, environment, agricultural sciences, pharmacology, and any other potential degree of relevance. The 3RCC, through its Node Coordinators, will recommend the implementation of such a course at each HEI. Teaching material for a model course will be developed.



Output: A recommendation on a minimal set of topics essential to a Bachelor program was released on the 17th of May 2021, including a map of existing 3Rs courses in Swiss HEIs. Teaching slides on the topics of animal welfare, legislation, animal experimentation, the 3Rs, ethics in science and integrity and reproducibility are now available upon request. The general guidance and recommendation will be published in quarter one of 2022.

TUNNEL HANDLING VIDEOS

STATUS: Ongoing | Mars 2021 – February 2022

GOAL: GOOD 3RS PRACTICE

MANDATE: Education & Communication



Background: The use of tunnel handling becomes increasingly popular due to its obvious benefits to animal welfare by reducing stress and anxiety and improving the interactions with the experimenter. However, its implementation in animal facilities is lagging due to a number of barriers such as the costs of the tunnels, the increased staff resources and time required for cage change, the potential cross-cage contaminations.



Aim: In order to facilitate the implementation of tunnel handling, the 3RCC will generate three short videos targeting i) the general public, ii) animal caretakers, iii) scientists, in order to inform them about the methodology and demonstrate the manipulations. The format will consist in interviews of leaders in the field in Switzerland and videos for educational sessions.



Status: The first introductory video has been generated in German, with subtitles in French and English and has been released on the website and the linked 3RCC YouTube channel. The production of the second set of films is ongoing.

4.3 COMMUNICATION, DISSEMINATION AND NETWORKING

The 3RCC aims to promote the 3Rs principle and the activities of the centre to both internal and external stakeholders. The 3RCC primarily focus on communication to the scientific community, but also aims to reach the broader public and inform of the 3Rs and its advancement.

Through its communication channels, a dedicated website, a newsletter, regular press releases and social media posts via Twitter, the 3RCC provides up-to-date information related to the centre's activities, publications or events that may be of interest to researchers working with animals or looking for an alternative non-animal model, and opportunities for research grants and awards. The 3RCC has over 200 subscribers to its newsletter and published five newsletters in 2021.

In addition to its own communications, the 3RCC has contributed to and coordinated its communication efforts with its partners. It has contributed to several factsheets that are available on the swissuniversities website

3RCC Awards for outstanding 3Rs work

The Swiss 3RCC awarded **Bernhard Voelkl** from the Vetsuisse Faculty of the University of Bern the **2021 3Rs Award** in recognition of his work supporting researchers to better design animal studies to improve research quality and reduce animal use. The 2021 3Rs **Young Investigator Award** went to **Pauline Zamprogno** from the ARTORG Center for Biomedical Engineering Research, also at the University of Bern, for her contribution to a lung-on-chip model, which aims at replacing animals testing. With their research the awardees not only help promote the 3Rs principle, but also communicated their projects in an exemplary manner to encourage other researchers to adopt these novel approaches in their work.

The jury consisted of independent external reviewers from the Charité 3Rs (Berlin, DE) and the North American 3Rs Collaborative/University of Washington (USA) as well as a representative of the Swiss Federal Food Safety and Veterinary Office (FSVO). The jurors emphasised the importance of comprehensive communication as demonstrated by the award winners. The 3Rs Award 2021 and Young 3Rs Investigator Award recipients will receive CHF 4,000 and CHF 1,000 respectively to support their studies. Furthermore, they will get the opportunity to present their awarded research at the Swiss 3Rs Day 2022 and in a featured video.

3RS PANEL DISCUSSION

STATUS: Ongoing | August 2021 – February 2022

GOAL: Changing Mindsets

MANDATE: Communication



Background: As a response to the popular initiative “Yes to the ban on animal and human experimentation – Yes to research paths with impulses for safety and progress”, which aims to ban animal and clinical research, as well as import of medicines tested on animals, the 3RCC organizes a Panel Discussion geared to a broader public in order to offer a comprehensive view of the current possibilities and hurdles in replacing animals in research.



Aim: To strengthen the awareness of the 3Rs principle and increase visibility of progress in 3Rs implementation, and explain opportunities and limitations of alternative methods. This will be done by presenting to the lay audience the role and strategy of the 3RCC and the history of the 3Rs efforts in Switzerland in the format of a live-broadcast (on-line) panel discussion with Swiss experts.



Output: A live panel discussion entitled “Alternative methods in research” occurred on Feb 1st 2022 and consisted of two sessions: i) Opportunities and challenges of alternative methods (Prof. Adrian Roth, Prof. Barbara Rothen-Rutishauser, Prof. Thomas Geiser); and ii) How in vitro methods complement animal testing (Prof. Didier Trono, Dr. Anita Lüthi, Prof. Valerio Mante). The panel debated the current stand and outlook in replacing animal use in their respective fields and the audience was subsequently offered a question-and-answer session with all experts.

FRONTIERS YOUNG MIND

STATUS: Ongoing | October 2021 – September 2022

GOAL: Changing Mindsets

MANDATE: Communication



Background: The co-occurrence of the initiative on the ban of animal and human experimentation and the launch of the NRP79 on 3Rs, calls for a major dissemination effort targeting scientists and the public to increase awareness on the current status of 3Rs in Switzerland and around the globe.



Aim: The aim of the Frontiers Young Minds project is to produce short videos for a broad public presenting the 3Rs through a learning scenario where children (11-12 years old) can ask questions to key scientists in the 3Rs field. The three scientists participating in the interviews will also write one manuscript each, covering replacement, reduction and refinement for school children aged 10-14 that will be published in the *Frontiers Young Minds* journal. The

review process will implicate the same children that partake in the learning scenario and interviews. The articles will be translated to German, French and Italian for further dissemination within Switzerland.



Status: The filming is scheduled in May 2022, hosted by the University of Lausanne (Department of Fundamental Neuroscience) together with three classes from the International School Lausanne. In preparation of the learning scenario and the review process, the 3RCC is collaborating with the European Schoolnet and the European Commission's Joint Research Centre (JRC), as well as the EU Reference Laboratory for alternatives to animal testing (EURL ECVAM), to organize an on-line workshop for teachers on the 3Rs and animal use in science. The workshop titled **"How to teach Replacement, Reduction and Refinement (3Rs) of Animal Use in Science"** is scheduled in March 2022 and provide teachers with tools and learning scenarios on how to teach children about animal experimentation and the 3Rs.

FRONTIERS RESEARCH TOPIC

STATUS: Ongoing | February 2021 – March 2023

GOAL: Changing Mindsets

MANDATE: Education



Background: Knowledge on 3Rs is progressing rapidly yet given the complexity of the field and the large number of disciplines concerned, a global view on the status of research is missing.



Aim: The present project aims at launching a broad Frontiers Research Topic on 3Rs, in order to provide scientists and the public with an update on the status of 3Rs from life sciences (e.g. biology, medicine and veterinary sciences), ethics, to social politics (coinciding with the topics funded by the NRP79). The objective of the project is to generate an eBook on the status of 3Rs knowledge. For this purpose, the 3RCC partnered with several European 3R Centres to gather 10 topic guest editors who will coordinate the review process of nearly 40 contributions that will cover: i) Review of the state of the art ; ii) Replacement technologies using 3D and organoid systems; iii) Reduction in cancer and neuroscience ; iv) Refinement of animal welfare (laboratory animal science) ; v) Computational modelling (machine learning and artificial intelligence); vi) Animal experimentation in society ; vii) Ethics in animal research.



Status: The Frontiers Research Topic on 3Rs was launched mid-December 2021 and will close in November 2022. It cross-links ten journals from Frontiers (Behavioural Neuroscience, Oncology, Cell and Developmental Biology, Genetics, Veterinary Science, Big data, Artificial Intelligence, Toxicology, Pain Research, Applied Mathematics and Statistics). Ten topic editors including three members of the 3RCC Directorate will manage an expected 39 contributions, and one article was published so far. The submission deadline is in November 2022, however depending on the success of the Research Topic, an extension of the deadline may be considered.



4.4 ADVANCING THE 3RS WITHIN THE 3RCC HEI MEMBERS

INVESTMENTS TO ADVANCE THE 3RS

In 2021 the 3RCC’s HEI Members reported varying types of 3Rs investments, as part of their in-kind contributions to the 3RCC. These investments are in line with the 3RCC’s vision and mission and gives one measure of 3Rs implementation in the Swiss academic landscape.

HEI Members reported their efforts in advancement of the 3Rs under five main categories - Infrastructure, Animal Facilities, Programs, Other 3Rs Activities, as well as Education and Training. Further details regarding each category of investment are laid out in the table below. The 3RCC acknowledges the significant amount of work undertaken by the HEI Members reporting these investments to the 3RCC and wishes to thank the Members for their efforts. Refer to financial reported in-kind in → **Figure 11**.

→ MORE
Figure 11

REPORTED NEW EDUCATION AND TRAINING COURSES IN 2021

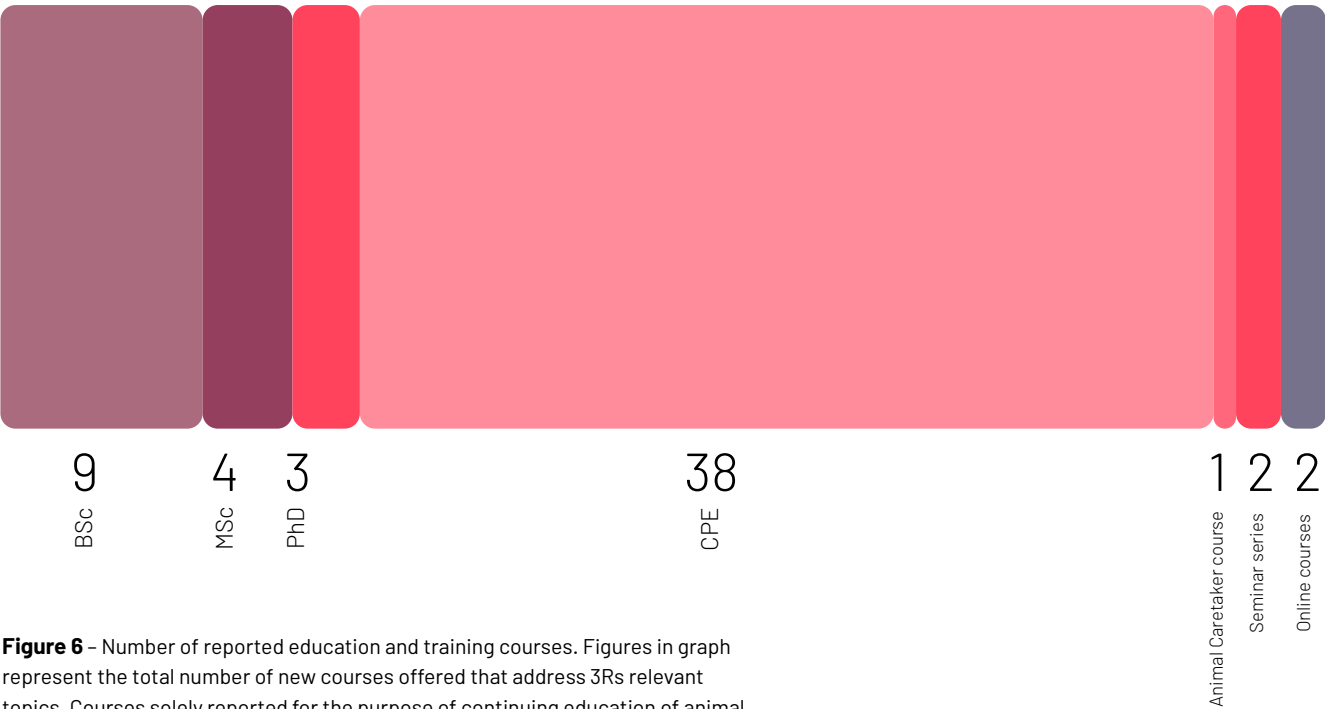
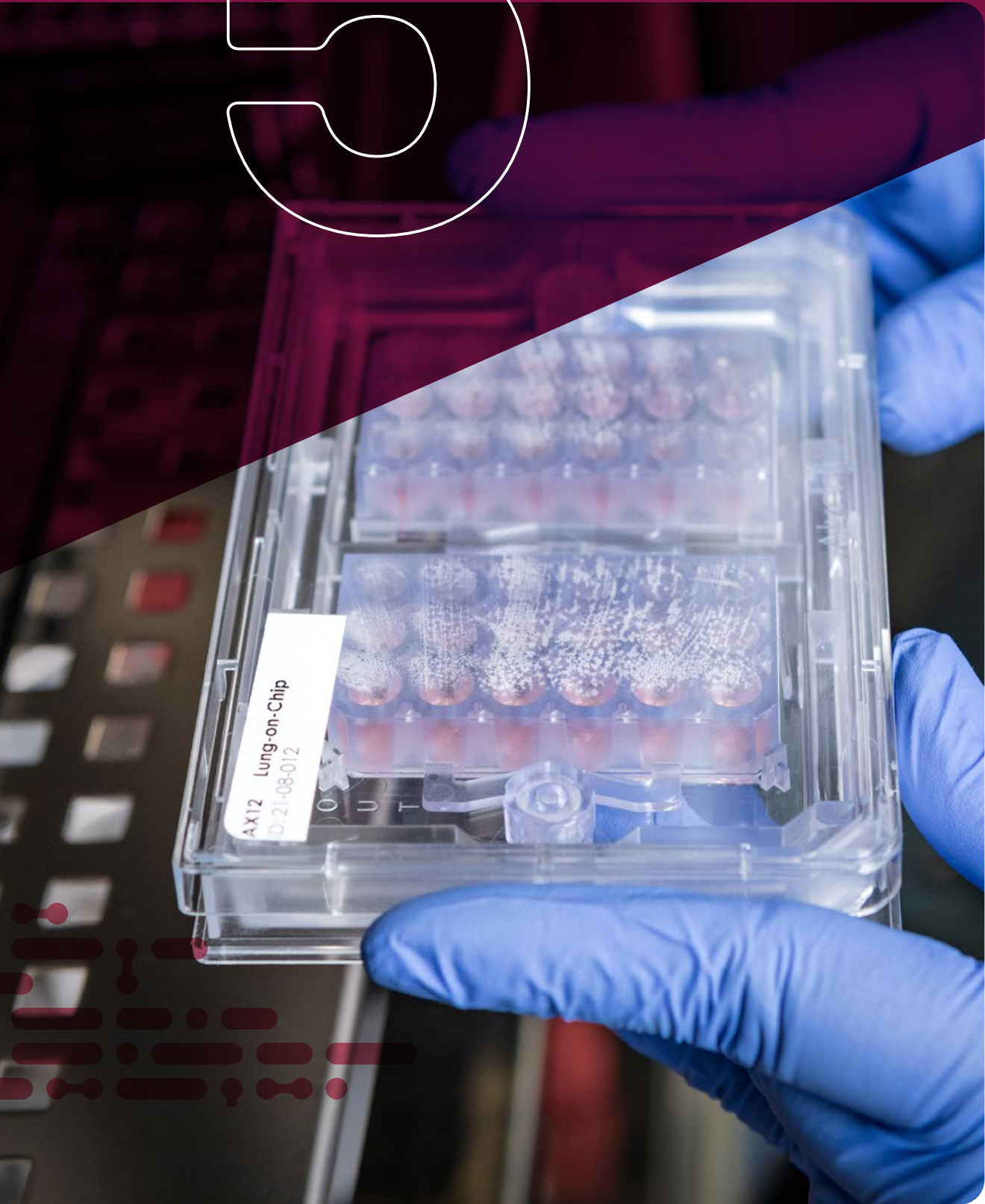


Figure 6 – Number of reported education and training courses. Figures in graph represent the total number of new courses offered that address 3Rs relevant topics. Courses solely reported for the purpose of continuing education of animal technicians (“Technicians”) was 1. However, several CPE courses are directed to researchers and technicians alike.

CATEGORY	DEFINITION AND 3RS RELEVANCE	EXAMPLES
Infrastructure	Investments in platforms, infrastructure and other facilities that broadly supports 3Rs implementation at the member institution were considered relevant. Further criteria were that the infrastructure is actively promoted as advancing the 3Rs and that it is broadly accessible to many researchers.	• Organoid and cell culture platforms offering support in developing alternatives to animals. • Cryopreservation facilities for reduction of animal use. • In vivo imaging facilities offering refinement and reduction measures.
Animal Facilities	Investments that surpass legal or regulatory requirements and with a clear purpose to improve animal welfare, or as a specific measure to reduce or refine, were considered 3Rs relevant.	• Gentle handling material. • Enrichment material. • Improvement of health and hygiene monitoring.
Programs	Investments in 3Rs implementation programmes were considered both relevant and impactful, in particular for reduction and refinement advancement.	• Rehoming programmes. • Gentle handling implementation programmes. • Organ or tissue sharing programmes.
Other 3Rs Activities	Investment in staff dedicating time to specific 3Rs-relevant activities that are in excess of any legal or regulatory requirements. Activity has a direct purpose to internally advance 3Rs implementation within the institution.	• 3Rs promotional activities developed by the Node. • Dissemination and training of 3Rs methods to researchers. • Statistics consultation for experimental planning.
Education and Training	Any 3Rs-relevant education and training that is in excess to legal or regulatory requirements could be reported. One further requirement was that the reported courses were an expansion of the course offering as of January 2021 and thus only records the increase as compared to the previous year. Figure 6 shows the number of reported education and training courses. We acknowledge that the current reported figures around education and training offered by our members is incomplete, as some members were unable to provide a complete record of 2021, and some members could not provide any record for 2021.	Some of the topics covered include: Production of transgenic animals, Anaesthesia – Analgesia, Breeding management, Anatomy Necropsy, Surgery, Score Sheet, Basic stats, Systematic review, Animal caretaker course, Pain recognition, Reproducibility in animal research, Weighing of interests.

5



5 WORKING GROUPS

CULTURE OF CARE WORKING GROUP

The Culture of Care (CoC) Working Group was formed in 2019 as a way to bring together dedicated professionals committed to improving animal welfare, scientific quality, care of the staff and transparency for the stakeholders, in order to establish a proactive, empathic and caring mindset. It hosts meetings for interested persons to exchange best practice examples, problems encountered and plans and implements common CoC initiatives. Through meetings, seminars, workshops, and other means of dissemination, the CoC aims to bring together animal housing managers, scientists, animal caretakers, AWOs, 3R coordinators and other experts in the field of animal care, animal welfare and 3Rs.

Activities and status end of 2021 – the CoC Working Group is established. It held regular meetings throughout the year. The videos that present tunnel handling to the public, the animal facility staff and the scientific audience in Switzerland was conceptualised by the working group. In 2021, the development of a Charter of Culture of Care was initiated with the aim of implementing a CoC program at Swiss Institutions. A review is planned for the first quarter of 2022.

COMMUNICATIONS WORKING GROUP

The public communication mandate increased in 2021 with the intensifying activities around the popular initiative *“Yes to the ban on animal and human experimentation – Yes to research paths with impulses for safety and progress”*, which aimed to ban pre-clinical and clinical research as well as trade with products that were tested on animals. Therefore, the 3RCC instated a Communications Working Group, with communications experts of the stakeholders represented, namely swissuniversities, Interpharma, FSVO and SAP. The working group functioned primarily in supporting the 3RCC in its communication towards the general public and politicians. It also facilitated the efforts and ensure that information on the position of the stakeholders is represented in messages that the 3RCC publish.

Activities and status end of 2021 – Already in 2020, the 3RCC contributed to coordinated efforts with its partners in response to the popular initiative, resulting in several factsheets published under the umbrella of swissuniversities throughout 2020 and 2021. In 2021 two small factsheets, one about the 3RCC and its setup and functioning, and the other outlining the 3RCC's members' position on the popular initiative *“Yes to the ban on animal and human experimentation – Yes to research paths with impulses for safety and progress”*, were distributed to the Research and Education Commissions ahead of the parliamentary debates in March.

BIOSTATISTICS TASKFORCE

The 3RCC Biostatistics Task Force, first initiated in 2019 is a collection of biostatisticians from 3RCC member institutions across Switzerland with an interest in improving the quality of experimental design, statistical analysis and reporting of results; especially in experiments using animals. In 2021, the Task Force was involved in the evaluation of the experimental designs of the applications for the Targeted Call 2021. 2022 will see a re-launch of the Task Force with more focused and regular meetings akin to the 3RCC Culture of Care.

6

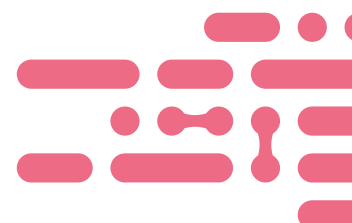


6 OUTLOOK 2022

6.1 FUNDING SCHEME CALLS IN 2022

STRATEGIC GOAL	FUNDING SCHEME	SHORT DESCRIPTION	2022 BUDGET ALLOCATION [CHF]	PLANNED CALL FOR APPLICATIONS	ESTIMATED LAUNCH OF PROJECT(S)
TBD IN 2022	Yearly Targeted Call	The theme is to be developed in Q2 of 2022 taking into account the outcome of various monitoring projects as well as seeking complementarity to the National Research Programme 79 Advancing the 3Rs.	920'000	Aug. 2022	Jun. 2023
CHANGING MINDSETS	3Rs Doctorate Programme	The 3RCC is looking to encourage a new generation of researchers to adopt a 3Rs principle ethos where new methods are transferred and put into active practice. One step on this way is to offer a PhD programme that will focus both on developing this translational thinking in a new generation of researchers, as well as offering a solid anchoring in advancing the application of the 3Rs principle.	280'000	May. 2022	Jan. 2023
CHANGING MINDSETS	Refinement Grant	To encourage the uptake of established refinement techniques and approaches, the Swiss 3RCC is offering project grants in the 3Rs area of refinement. We are looking for proposals which emphasise training and dissemination of methods. As such we would emphasize the use or development of already-existing refinement approaches (as opposed to research on the development of novel techniques).	76'396	Jun. 2022	Jan. 2023
NETWORKS FOR SCIENCE	Knowledge Transfer Grants	One of the challenges facing the implementation of 3Rs approaches is often the initial learning curve that other labs face in changing their standard procedures. There is an understandable concern that a potentially high initial investment may not be successful when applying an approach validated elsewhere. Often undergoing direct training from the institution that developed the novel approach is the best way to gain the expertise and confidence necessary for further implementation.	70'000	Jul. 2022	Dec. 2022
GOOD 3RS PRACTICE	Open 3Rs Science Grants	The 3RCC firmly supports Open Science in all aspects of 3Rs-related research. While open access often also implies cost-free access, publication may come at a cost. We therefore encourage researchers to apply to our Open Science Grants for support in making the research as transparent and accessible as possible.	10'000	Aug. 2022	Dec. 2022

Please refer to our website for the latest information regarding call deadlines and application information.



6.2 3RCC PROJECTS 2022

This section gives a brief overview of the projects planned for 2022 and their planned progress for the year. These projects are conducted jointly by the 3RCC and its partners.

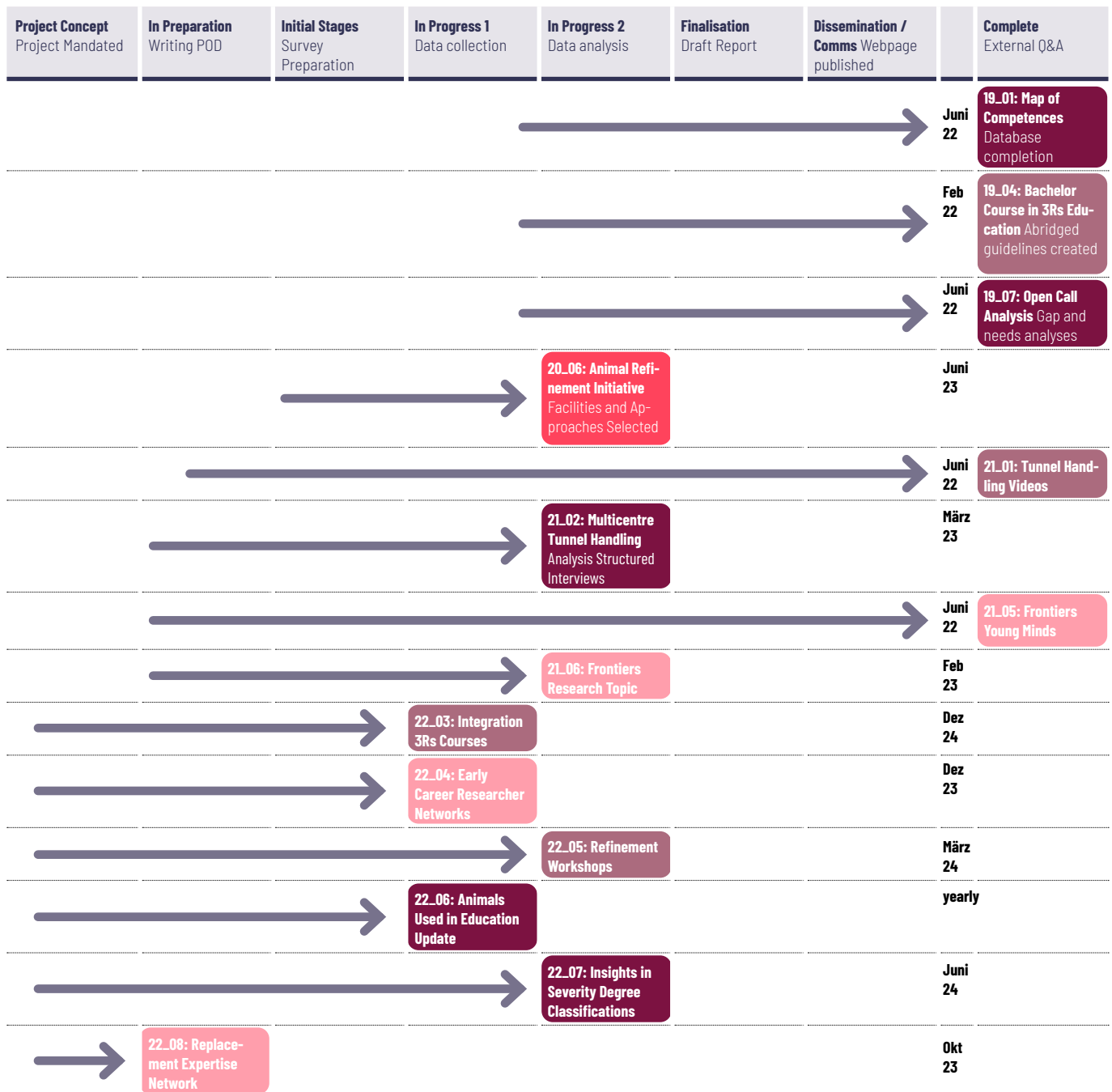


Figure 7 – Prospective project life-cycle chart. Overview of the expected progress of 3RCC-driven projects in 2022. More information on projects scheduled in 2022 can be found below.

● Research ● Education ● Monitoring ● Communication

ESTIMATE PROGRESS OF PROJECTS LAUNCHED BEFORE END OF 2021

Three projects will be completed in 2022, namely: Multicenter Tunnel Handling, Tunnel Handling Videos, Frontiers Young Minds. Two projects will be in their final stages: Animal Refinement Initiative, Frontiers Research Topic.

NEW PROJECTS LAUNCHED IN 2022

In 2022, no specific 3RCC-driven research projects are planned, but focus will be given to Education, Monitoring and Communication projects.

INTEGRATION OF 3RS COURSES

STATUS: In planning – scheduled to start in 2022

GOAL: Good 3Rs Practice

MANDATE: Education/Monitoring



In May 2021, the 3RCC released a set of recommendations for the implementation of courses on 3Rs at bachelor levels. Here, the project will monitor existing courses at all educational levels and provide teaching material adapted for these.

REFINEMENT WORKSHOP

STATUS: Ongoing | February 2021 – February 2023/2024

GOAL: Good 3Rs practice

MANDATE: Education



Providing education on methods to improve animal care and alleviate pain after surgeries is of great importance to propagate state-of-the-art knowledge on best 3Rs practice. The goal is to provide three workshops (on site and for free) on various topics including for instance surgical procedures. The first workshop is planned for September 27th in Zurich. The other ones are in planning.

REPLACEMENT EXPERTISE NETWORK

STATUS: In planning – scheduled to start in 2022

GOAL: Networks for Science

MANDATE: Communication



There are currently no networks of groups and/or organisations whose work is primarily centred around the replacement principle. The goal is coordinate existing groups relevant to replacement/reduction strategies under a single 3RCC-led working group. Regular meetings (planned four times per year), would keep the 3RCC and group members informed about the current issues facing replacement approaches across the Swiss academic, industrial and regulatory environments.

EARLY CAREER RESEARCHERS NETWORK

STATUS: Ongoing | July 2021 – February 2023/2024

GOAL: Networks for Science

MANDATE: Communication



Young researchers developing alternative methods or refined procedures or in silico models may have difficulties interacting with colleagues from other disciplines, who should apply those new methods or procedures to their own project. The 3RCC will create an Early Career Researchers Network (ECRN) in order to expose young researchers to colleagues that ap-

proach animal experimentation from different angles and to promote exchanges with scientists developing different experimental models, working with other species, establishing in vitro models, refining veterinary procedures, tailoring statistical methods, writing software. The ECRN would consist of i) an online forum on the 3RCC website where members can share knowledge and seek advice; ii) organized scientific events (e.g. 3Rs ECRN symposia and 3Rs Day or LS2 meetings; on-line journal clubs); iii) organized social events (e.g. walks and talks); iv) promotion and financial support of laboratory exchanges (e.g. short scientific missions either national or international to allow a PhD student to learn how to perform a surgery or how to refine an existing protocol).

ANIMALS USED IN EDUCATION - UPDATE

STATUS: In planning – scheduled to start in 2022

GOAL: Good 3Rs practice

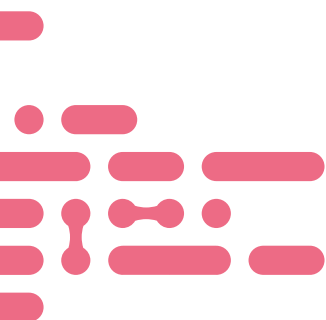
MANDATE: Monitoring

A former report from the 3RCC evaluated the number of animals used for education and training purposes in Swiss Higher Education Institutions in 2018, however it remains unclear how the numbers and the allocated categories (species, education field, and severity) have evolved through time as knowledge on 3Rs have grown and potential replacement methods being developed. The goal of this project is to gather data from 2018 onward and provide a longitudinal assessment of the use of animals in education and training.

COMMUNICATION, DISSEMINATION AND NETWORKING

Communication and public outreach measures (continuous activities throughout 2021–2024)

are means to inform the public about animal research at Swiss academic institutions and biomedical companies. Very often, information regarding the 3Rs and animal welfare is still missing at open days and other events, where the public can meet researchers. The idea of the project is to encourage universities and researchers to participate in public outreach events. The 3RCC aims to support researchers with resources and material so that they are able to initiate or take part in such events. One outreach event per university per year is expected, potentially initiated by 3RCC, or contributed by EB member's organisations.



7



7 FINANCIAL REPORT 2021

→ MORE
section 7.1,
7.2, 7.3

The 3RCC benefits from the direct financial support by SERI, FSV0 and Interpharma. In addition, 3RCC's HEI members contribute to the 3RCC activities with in-kind contributions in the form of services or other investments to advance the 3Rs implementation within the member institutions (the so-called Nodes).

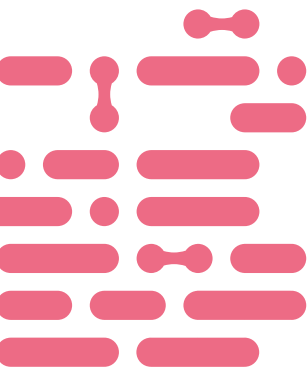
→ **Section 7.1** gives an overview of the collective support of the 3RCC, cash and in-kind, whereas → **section 7.2** gives an account of the expenditures across the strategic service mandates. → **Section 7.3** describes a global account of the financial in-kind support and investments as well as the assessment of 3Rs impact that was made by the external In-Kind Evaluation Committee.

The 3RCC benefits from the direct financial support by SERI, FSV0 and Interpharma. In addition, 3RCC's HEI members contribute to the 3RCC activities with in-kind contributions in the form of services or other investments to advance the 3Rs implementation within the member institutions (the so-called Nodes).

7.1 FUNDING 2021

FUNDING OVERVIEW

The annual funding of the 3RCC in 2021 totalled CHF 4.41 Mio., 2.16 Mio. of operating income and 2.25 Mio. of in-kind contributions by the member organizations. The 3RCC was granted a 34% increase in federal funding as compared to the previous funding period. 2021 reported vs. 2022 projected (→ **Figure10**).



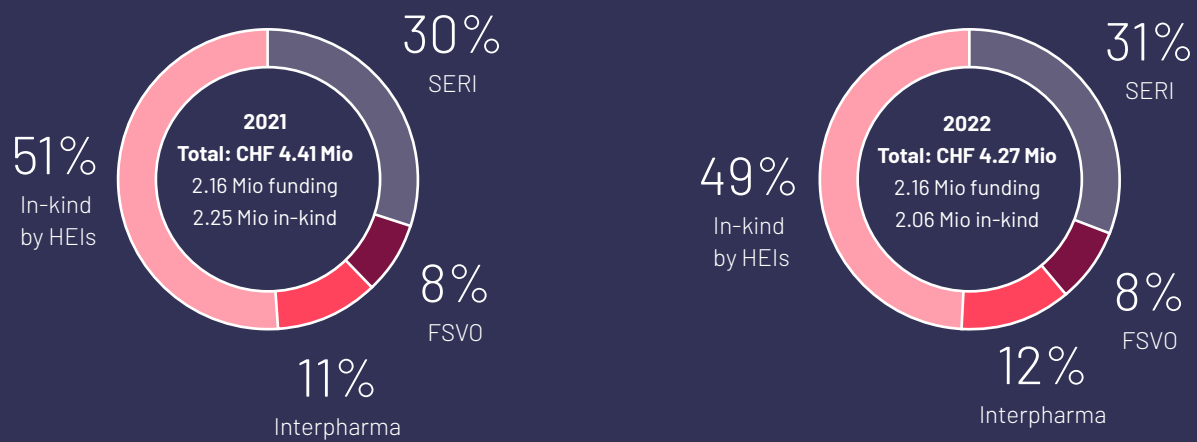


Figure 8 – 3RCC’s funding and in-kind support in 2021 and the projection for 2022. The annual variance in funding distribution is due to the variance in the in-kind contributions, whereas the federal and sponsor funding remains constant. In 2021 the reported in-kind made up 51% of the total, whereas the projection for 2022 in-kind contribution decreases with 8%. This means SERI funding made up 30% of the total in 2021, and 31% in 2022, BLV 8% and Interpharma 11% versus 12% respectively in 2021 compared to 2022.

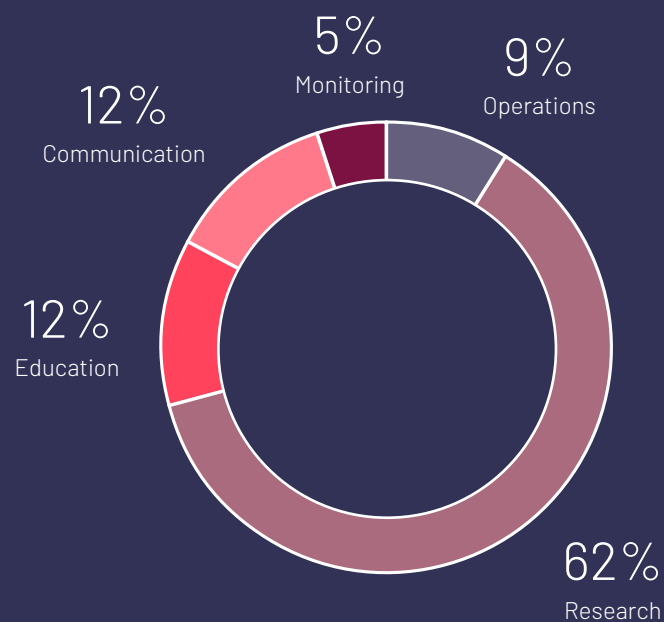


Figure 9 – Funding allocation across the four strategic service mandates and operational cost according to the service level agreements with the funders.

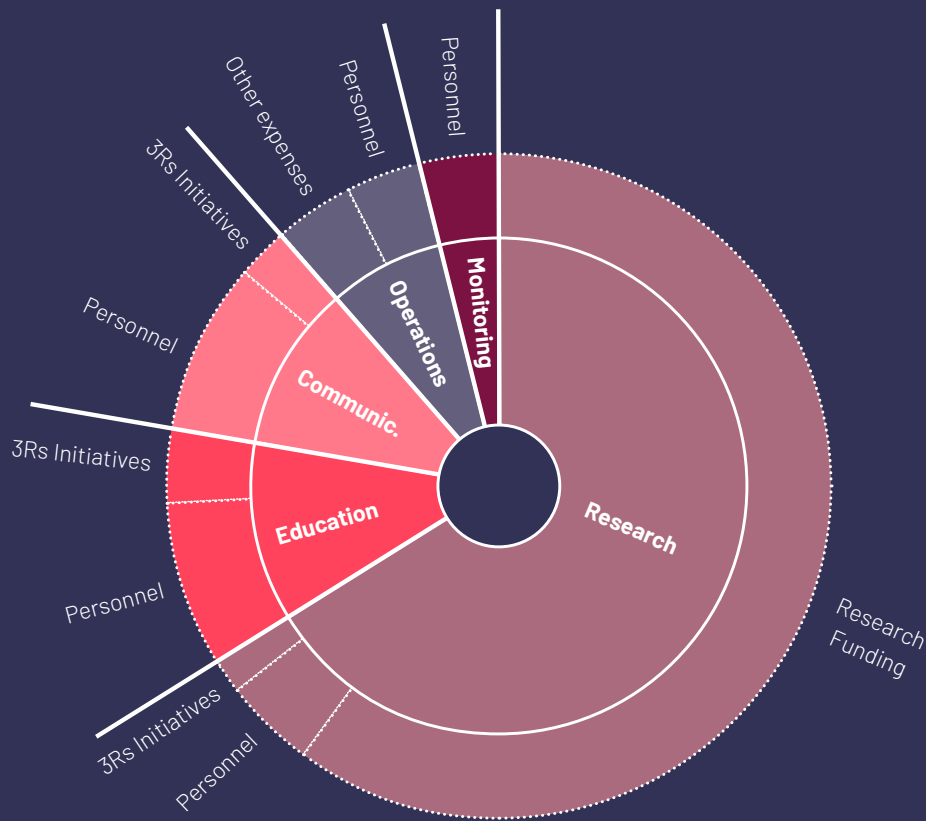


Figure 10 – Expenditures across mandates and financial reporting categories.

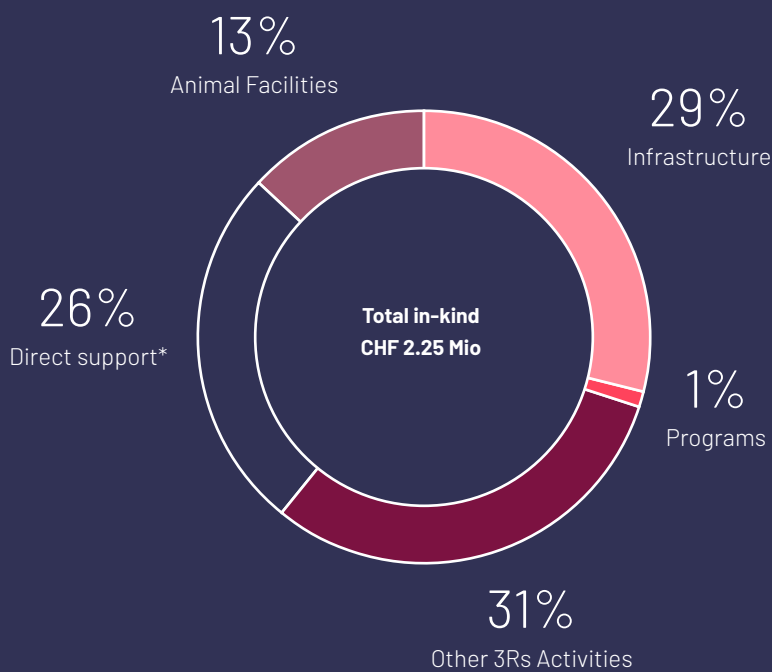


Figure 11 – In kind reporting categories.

* Direct support is defined as the salaries of staff that directly support the operative activities of the 3RCC. Examples of the reported investments under the other four categories are listed under section 4.4.

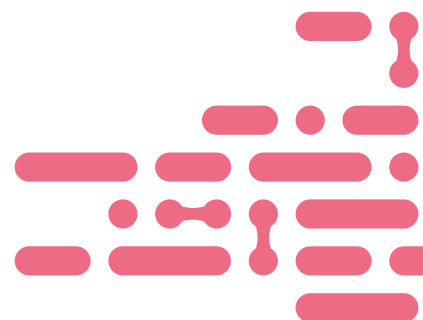
7.2 BUDGET ALLOCATION AND EXPENDITURES 2021

Under the 2021-2024 performance agreements the resource distribution across the four mandated strategic service areas allocate 62% to research, 12% to education, 12% to communication, and 5% to monitoring (→ **Figure 11**). The operative costs of the Centre account for 9% of the budget allocation.

In 2021, research funding accounted for 66% of the total expenditure worth CHF 1,461 Mio. 3RCC-driven projects in the four strategic service mandate areas, research, education, monitoring and communication, received 26 % of the funds and operative costs were 8% of total expenditure.

7.3 IN-KIND INVESTMENTS 2021 FROM HEIS

In 2021 the 3RCC formalised in-kind contributions from HEIs to allow monitoring of monetary investments made by the HEIs to advance 3Rs implementation in line with the Centre's own goals. The HEIs directly contribute to the 3RCC in-kind by covering expenses of Node Coordinators and further staff salaries, infrastructural investments (e.g. platforms and facilities) and other expenses (e.g. 3Rs programmes and other activities). The total value of investments evaluated by the 3RCC to further the advancement of the 3Rs within the HEIs amounted to CHF 2.25 million in 2021. Information regarding the categories of investments can be found under → **section 4.4**.





TABLE

TABLE OF ABBREVIATIONS

3RCC	Swiss 3Rs Competence Centre
3Rs Principle	Replacement, Reduction, Refinement of animal experimentation
ATs	Animal Technicians
AWO	Animal Welfare Officers
AWON	Animal Welfare Officers Network
BSc	Bachelor of Science
CHF	Swiss francs
CoC	Culture of Care
CPE	Continued Professional Education
EAWAG	The Swiss Federal Institute of Aquatic Science and Technology
EB	3RCC Executive Board
EPFL	Federal Institute of Technology Lausanne
ETH Zürich	Federal Institute of Technology Zurich
FHNW	University of Applied Sciences and Arts Northwestern Switzerland
FOPH	Federal Office of Public Health
FSVO	Federal Food Safety and Veterinary Office
GA	3RCC General Assembly
HEI	Higher Education Institution
Interpharma	Swiss association of research-based pharmaceutical companies
LAS/LTK	Institute of Laboratory Animal Sciences/ Institut für Labortierkunde
Mio.	Millions
MSc	Master of Science
NC3Rs	The United Kingdom National Centre for 3Rs
OC	Open Call
RESAL	Réseau des animaleries lémaniques (Lemanic Animal Facility Network)
RIPA	Federal Act on the Promotion of Research and Innovation, SR 420.1
SAB	3RCC Scientific Advisory Board
SAFN	Swiss Animal Facilities Network
SAP	Swiss Animal Protection
SB	3RCC Strategic Board
SERI	State Secretariat for Education, Research and Innovation
USI	Università della Svizzera Italiana
ZHAW	Zurich University of Applied Sciences



3RCC'S BOARDS AND DIRECTORATE COMPOSITION IN 2021

MEMBERS OF THE STRATEGIC BOARD IN 2021

AFFILIATION	NAME	ROLE	FROM - TO
Former Member of the National Council	Kathy Riklin	President	Mar 2018 – Dec 2021
University of Bern	Christian Leumann	Vice President	Mar 2018 – Dec 2021
Member of the National Council	Simone de Montmollin	Board Member	May 2021 – Dec 2021
Ecole Polytechnique Fédérale de Lausanne (EPFL)	Didier Trono		Mar 2018 – Dec 2021
Federal Institute of Technology Zurich (ETH Zürich)	Detlef Günther		Mar 2018 – Dec 2021
Food Safety and Veterinary Federal Office (FSVO)	Kaspar Jörger		Mar 2018 – Dec 2021
Interpharma	Birgit Ledermann		Mar 2018 – Dec 2021
Interpharma	René Buholzer		Mar 2018 – Dec 2021
Swiss Animal Protection (SAP)	Julika Fitzi-Rathgen		Mar 2018 – Dec 2021
Università della Svizzera Italiana (USI)	Benedetto Lepori		Mar 2018 – Dec 2021
University of Applied Sciences and Arts Northwestern Switzerland (FHNW)	Falko Schlottig		Mar 2018 – Dec 2021
University of Basel	Rolf Zeller		Mar 2018 – Dec 2021
University of Fribourg	Gregor Rainer		Mar 2018 – Dec 2021
University of Geneva	Doron Merkler		June 2020 – Dec 2021
University of Lausanne	François Bussy		Mar 2018 – Aug 2021
University of Lausanne	Liliane Michalik		Aug 2021 – Dec 2021
University of Zurich	Onur Boyman		July 2020 – Aug 2021
University of Zurich	Hanns Ulrich Zeilhofer		Aug 2021 – Dec 2021
Zurich University of Applied Sciences (ZHAW)	Urs Hilber		Mar 2018 – Dec 2020?
State Secretary for Education, Research and Innovation (SERI)	Cyrille Girardin	Observer Member	Mar 2018 – Dec 2020?
Federal Office of Public Health (FOPH)	Markus Hoffmann	Observer Member	Mar 2018 – Dec 2020?

*The Management Team was instated in the fourth quarter of 2020

MEMBERS OF THE EXECUTIVE BOARD IN THE PERIOD 2017-2020

AFFILIATION	NAME	ROLE	FROM - TO
University of Zurich	Paulin Jirkof	Chair	June 2019 – Dec 2021
University of Bern	Homare Yamahachi	Vice Chair	Jan 2021 – Dec 2021
Federal Institute of Technology Zurich (ETH Zürich)	Annamari Alitalo	Member of the Board	Mar 2018 – Dec 2018
Institut für Labortierkunde (LTK)	Philippe Bugnon	Member of the Board	Mar. 2018 – Dec 2021
Réseau des animaleries lémaniques (RESAL)	Christelle Cadilhac	Member of the Board	Sep 2021 – Dec 2021
Animal Welfare Officer Network (AWON)	Gieri Camenisch	Member of the Board	Mar 2018 – Dec 2021
University of Lausanne	Stéphanie Claudinot	Member of the Board	Jul 2018 – Dec 2021
Università della Svizzera Italiana (USI)	Santiago Gonzalez	Member of the Board	Mar. 2018 – Dec 2021
Swiss Animal Facilities Network (SAFN)	Anne Planche	Member of the Board	Oct 2018 – Dec 2021
Zurich University of Applied Sciences (ZHAW)	Michael Raghunath	Member of the Board	Mar 2018 – Dec 2021
University of Basel	Anke Rohlf	Member of the Board	Mar. 2018 – Dec. 2021
University of Geneva	Daniele Roppolo	Member of the Board	Mar. 2021 – Dec 2021
3RCC Executive Director	Jenny Sandström	Member of the Board	Oct. 2020 – Dec 2021
University of Applied Sciences and Arts Northwestern Switzerland (FHNW)	Laura Suter-Dick	Member of the Board	Mar 2018 – Dec 2021
Ecole Polytechnique Fédérale de Lausanne (EPFL)	Alexandre Widmer	Member of the Board	Sep 2020 – Dec 2021
University of Bern	Hanno Würbel	Member of the Board	Mar. 2018 – Dec. 2021
University of Fribourg	Andrina Zbinden	Member of the Board	Mar. 2018 – Dec. 2021

MEMBERS OF THE SCIENTIFIC ADVISORY BOARD IN 2021

AFFILIATION	NAME	ROLE	FROM - TO
Professor at the Department of cell physiology and metabolism University of Geneva, Switzerland	Pierre Cosson	Chair	Sep 2018 – Dec 2021
Professor and Head of the Laboratory of Stem Cell Bioengineering EPFL Lausanne, Switzerland	Matthias Lütolf	Member of the Board	Sep 2018 – Feb 2021
Professor and group leader at the Laboratory Animal Science University of Porto, Portugal	Anna Olsson	Member of the Board	Sep 2018 – Dec 2021
Head of Experimental Design and Reporting National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), London, United Kingdom	Nathalie Percie du Sert	Member of the Board	Sep 2018 – Dec 2021
Dr Global Head of Comparative Medicine, Roche, Basel, Switzerland	Tobias Schnitzer	Member of the Board	Sep 2018 – Dec 2021
Emeritus professor Newcastle University, United Kingdom	Paul Flecknell	Member of the Board	Sep 2018 – Dec 2021
Director of the 3Rs-Centre Utrecht Life Sciences, Utrecht University, the Netherlands	Jan van der Valk	Member of the Board	Sep 2018 – Dec 2021
Head of the Neural Connectivity and Visual Function Laboratory at King's College London	Robert Hindges	Member of the Board	As of Dec 2021
Professor of Medical Technologies and Regenerative Medicine at the Medical Faculty of the University Tübingen	Katja Schenke-Layland	Member of the Board	As of Dec 2021

MEMBERS OF THE MANAGEMENT TEAM IN 2020*

AFFILIATION	NAME	ROLE	FROM - TO
University of Bern	Christian Leumann	Representative of the Strategic Board (vice President)	Nov. 2020 – Dec. 2021
University of Zurich	Paulin Jirkof	Representative of the Executive Board (Chair)	Nov. 2020 – Dec. 2021
Swiss 3RCC	Jenny Sandström	Representative of the Directorate (Executive Director)	Nov. 2020 – Dec. 2021

MEMBERS OF THE DIRECTORATE TEAM IN 2021

ROLE	NAME	FROM - TO
Executive Director	Jenny Sandström	Oct. 2020 – Dec. 2021
Scientific Officer	Armand Mensen	Aug. 2018 – Dec. 2021
Scientific Officer	Christopher Cederroth	Feb. 2021 – Dec. 2021
Communications Officer	Chantal Britt	Sep. 2018 – Dec. 2021
Financial and Administration Officer	Kathryn Sadowski	Feb. 2021 – Dec. 2021

*Swiss 3RCC The Management Team was instated in the fourth quarter of 2020

CONTACT

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