

EUSAAT

*European Society for
Alternatives to Animal Testing
The European 3Rs Society*



IMP₃ROVE



The rise of 3R centres in Europe and their role in the development of the field of 3Rs

Norecopa's 18th Annual Meeting

20th May 2025

Winfried Neuhaus

Content

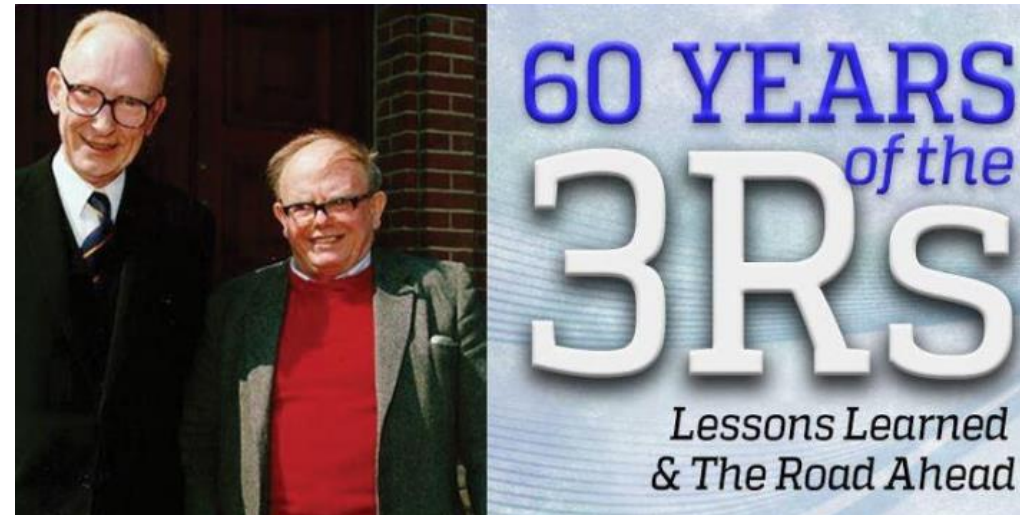
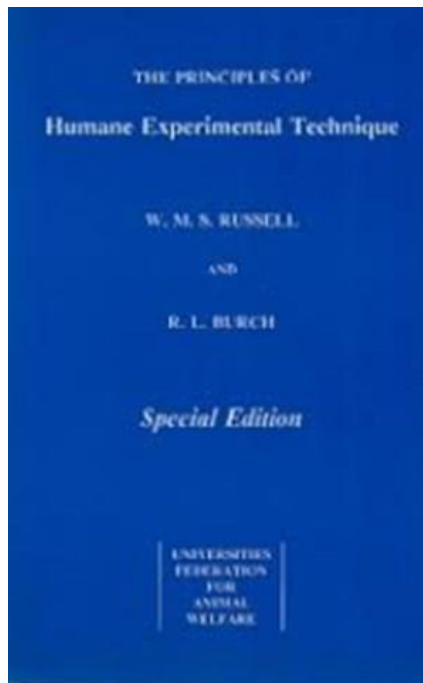
➡ History: 3Rs Milestones & development of 3Rs centres

➡ Current activities of 3Rs centres and COST Action IMPROVE

„The Principles of Humane Technique“

- 1959 groundbreaking book by William Russell and Rex Burch
- For a long time, William Russell and Rex Burch's book was unnoticed, at least barely within the first decade of its publication
- 1992: Second Edition

2024 = 65th anniversary



Read online: http://altweb.jhsph.edu/pubs/books/humane_exp/het-toc

Song video: https://www.youtube.com/watch?v=i7n6_JCOWo8

Before Russell and Burch

- **Ancient Greece:**
 „cutting the throat of pigs to observe swallowing“
 „open the chest to observe heart actions“
- **1500-1600:** Animals got more important during the scientific revolution, discovery of blood circulation
- **1800-1850:** Emerging of modern biomedical science such as physiology, pharmacology, Vivisection no real big issue
- Concerns about Vivisection in Great Britain after e.g. French Francois Magendie, **1824**, lecture-demonstrations with radical surgical procedures on living animals (no anesthetics yet) in London → cruel and unnecessary.
- **1835: Marshall Hall** published as an answer to the reaction on his cruel reflex action investigations his work on „*A critical and experimental essay on the circulation of blood*“



Before Russell and Burch

- **Marshall Hall** published principles:
 - 1.) Never have recourse to experiments when observation provide the information
 - 2.) No experiment should be done without a „distinct and definite object“
→ no unnecessary or useless and thus unjustifiable experiments
 - 3.) Needless repetition of experiments is not justifiable
 - 4.) Experiments should be conducted with least possible suffering
 - 5.) Subject should be the lowest order animal – as least sentient
 - 6.) Facts should be laid before the public in the simplest, plainest terms



Similar to Reduction & Refinement of 3Rs

Before Russell and Burch

- 1876: The Cruelty to Animals Act = first law regulation animal research (UK)

Antivivisectionist discussions/controversy strong since early 1870's led to public pressure.

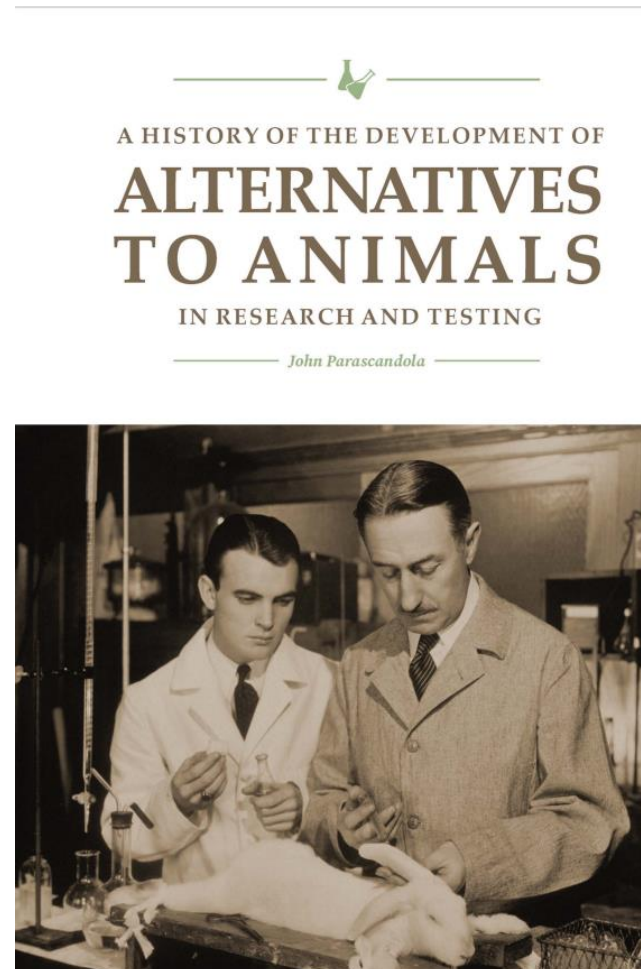
Applications for licences for living vertebrate animal experiments necessary with clear purpose of advancing a new discovery

- 1890s: „Leigh Browne Trust“ in London should promote and encourage original research involving experiments on animals w/o pain. **Physician Benjamin Richardson** was commissioned to explore painless research and related topic, his hope was

„to bring about a reconciliation between extremists of both schools (animal protectionists and scientists)“

1950s: foundation of AWI (Animal Welfare Institute) in NY, USA by Roger and Christine Stevens.

Before Russell and Burch – more to be found in this book



John Parascandola, 2024

What are the 3Rs and „their“ history

- Development of the 3Rs also very closely linked to animal experiments in toxicology and drug development & according legislature
- Maladministration in animal experimentation facilities in the “post - 2nd world war” period
 - Hygiene
 - Standardisation of animal husbandry and experiments necessary
 - Greater need for laboratory animals

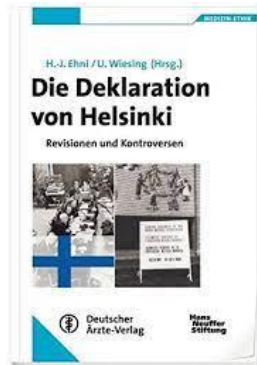
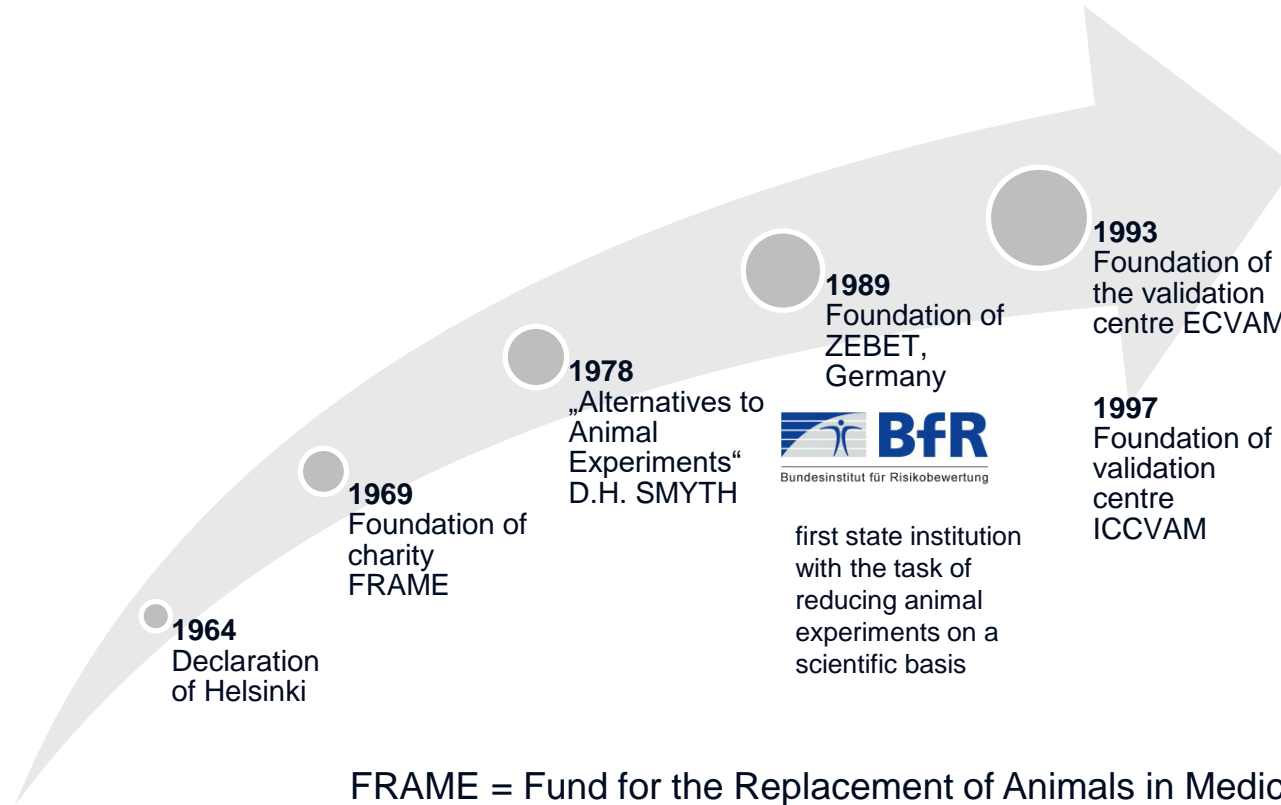
Scandals raised awareness of the need for more intensive preclinical research (**Elixir Sulfanilamide** (U.S) 1937; **Thalidomide** (EU, Australia and Canada) 1950s).

What are the 3Rs and „their“ history

- In the post-war period, the **first experimental animal science societies** emerged, which were initially mainly concerned with standardisation.
- Originally the first developments of 3R approaches in the UK in the 1950s
- Commissioned/Contract work for the **UFAW (Universities Federation for Animal Welfare)**: close co-operation between laboratory animal scientists, animal experimentation laboratory managers, laboratory animal breeders and scientists (**so-called Lab Survey from 1952**)
- In 1959, the groundbreaking book by William Russell and Rex Burch was published

‘The Principles of Humane Experimental Technique’
= is regarded as the standard work of the 3Rs

What are the 3Rs and „their“ history



FRAME = Fund for the Replacement of Animals in Medical Experiments

ZEBET = Central Centre for the Registration and Evaluation of Alternative and Complementary Methods to Animal Experiments

ECVAM (European Centre for Validation of Alternative Methods) at the EU Research Centre in Ispra (Italy); <https://ec.europa.eu/jrc/en/eurl/ecvam>

ICCVAM (Interagency Coordination Committee for the Validation of Alternative Methods) of the US federal authorities.

3R Development in German-speaking countries

„The History of Alternative Test Methods in Toxicology“, Elsevier,
2019

Chapter 2.2

Contributions From the German-Speaking Countries

Horst Spielmann¹, Franz P. Gruber^{2,3} and Walter Pfaller⁴

¹Freie Universität Berlin, Berlin, Germany; ²Doerenkamp-Zbinden Foundation and ALTEX Edition, Kuesnacht ZH, Switzerland; ³ALTEX Editorial Office, ALTEX Edition, Kuesnacht, Switzerland; ⁴Medical University of Innsbruck, Innsbruck, Austria

3R Development in German-speaking countries



1991

Late
1980s/early
1990s

1993 Foundation
of MEGAT
(Germany, Austria
Switzerland)

1994

MEGAT first
congress
organisation,
Linz, Austria

Yearly congresses

2008

re-named in
EUSAAT

EUSAAT
*European Society for
Alternatives to Animal Testing*

MEGAT = Central European Society for Alternatives to Animal Testing.
Dialogue between animal welfare organisations, science, industry,
government and/or regulatory authorities

Efforts to develop the field of alternative methods to animal testing in Central Europe
Internationally, at this time it was focussed/dominated by colleagues
from the UK and USA (different ethical and legal background)

Key moments in the history of the 3Rs

2010: EU Regulation 'Directive 2010/63/EU' on the protection of animals used for scientific purposes.

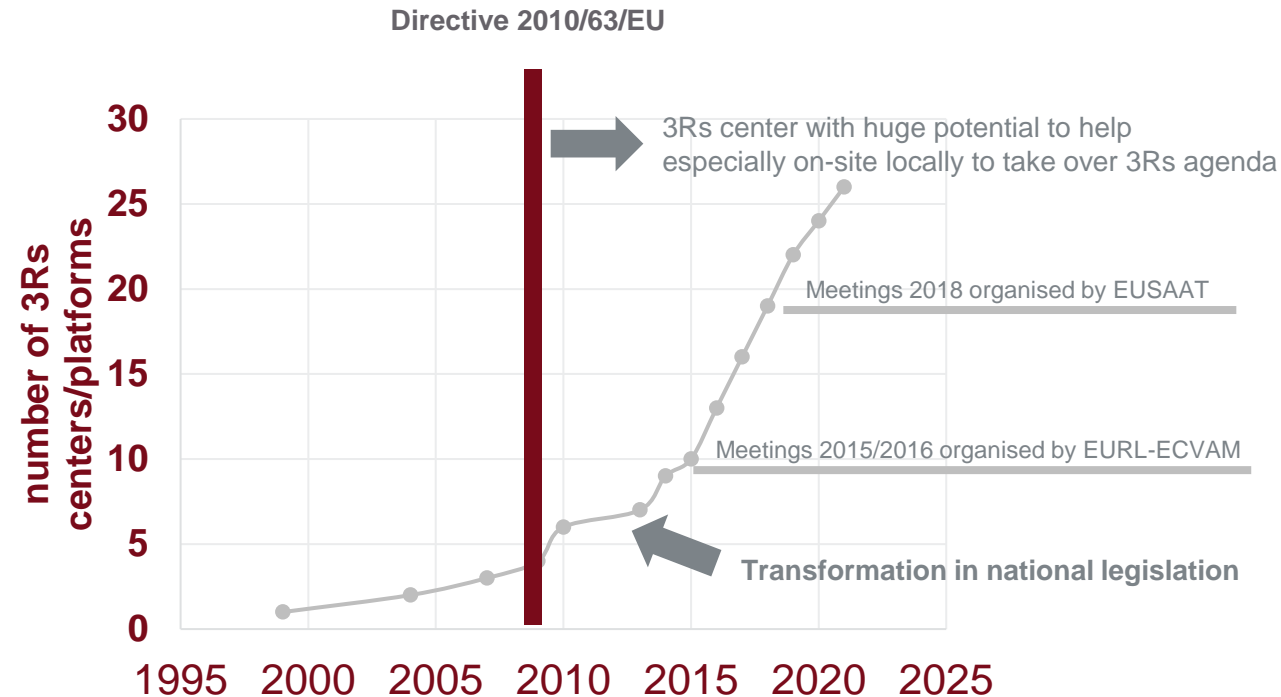
includes a number of tasks to advance the 3Rs of animal procedures.

Directive 2010/63/EU assigns a **strong role to EU member states** to promote and implement alternative methods via reference laboratories and other coordinated initiatives in addition to EURL ECVAM.



Starting point for the establishment of 3R centres

Power of Politics: The Rise of 3Rs centres and platforms in Europe



Data in table obtained from 26 3Rs centres and platforms participated in a survey of EU3Rnet (Neuhaus *et al.*, ATLA, 2022)

Further increase in 2022/2023:

Finish 3R centre

French 3R centre

Portuguese 3R centre (i3S)



European Centre for Validation of Alternative Methods at the EU Research Centre in Ispra (Italy)

Directive 2010/63/EU of the European parliament and of the council of 22 September 2010 on the protection of animals used for scientific purposes

3Rs center/platform Initiative – Retrospective

Platform for European 3R center Meeting

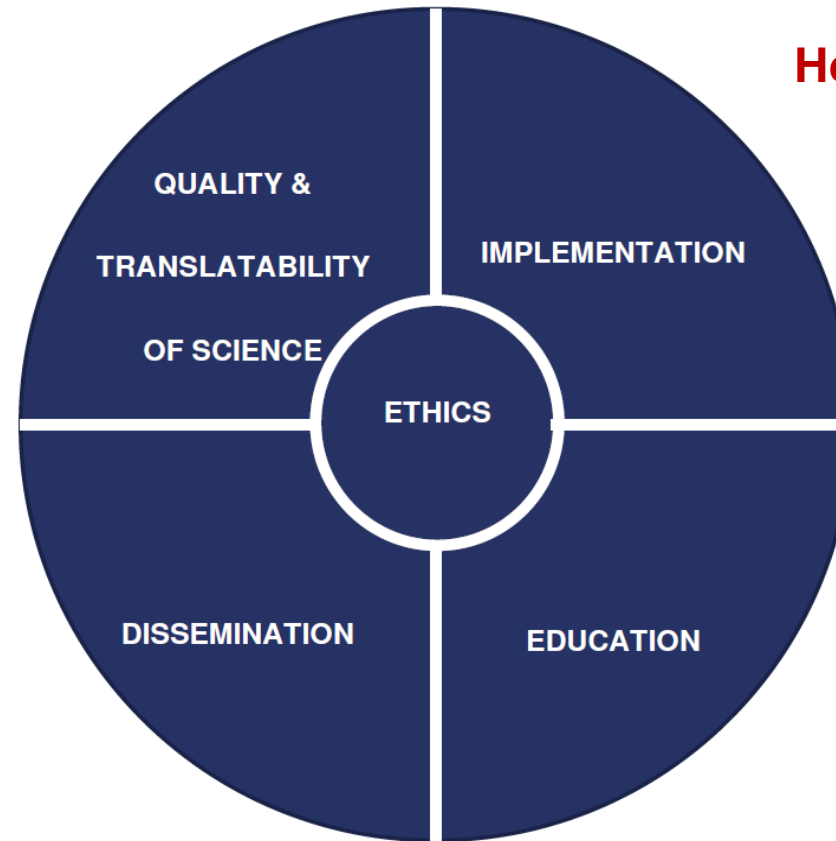
- Meeting - Linz, EUSAAT 2018, September
Network with 3R Centres + European Commission
- Meeting - Berlin March 2019
- Meeting - Prague (FELASA) June 2019
- Meeting – Linz, EUSAAT 2019, October
- ✓ EU-COST Action 2020 as target
- ✓ Consensus statement of 3Rs center platform – EU3Rnet
- ✓ Survey and publications about 3Rs centers activities



3Rs Initiative – 2nd Meeting in Berlin 14th-15th March 2019

Major identified topics:

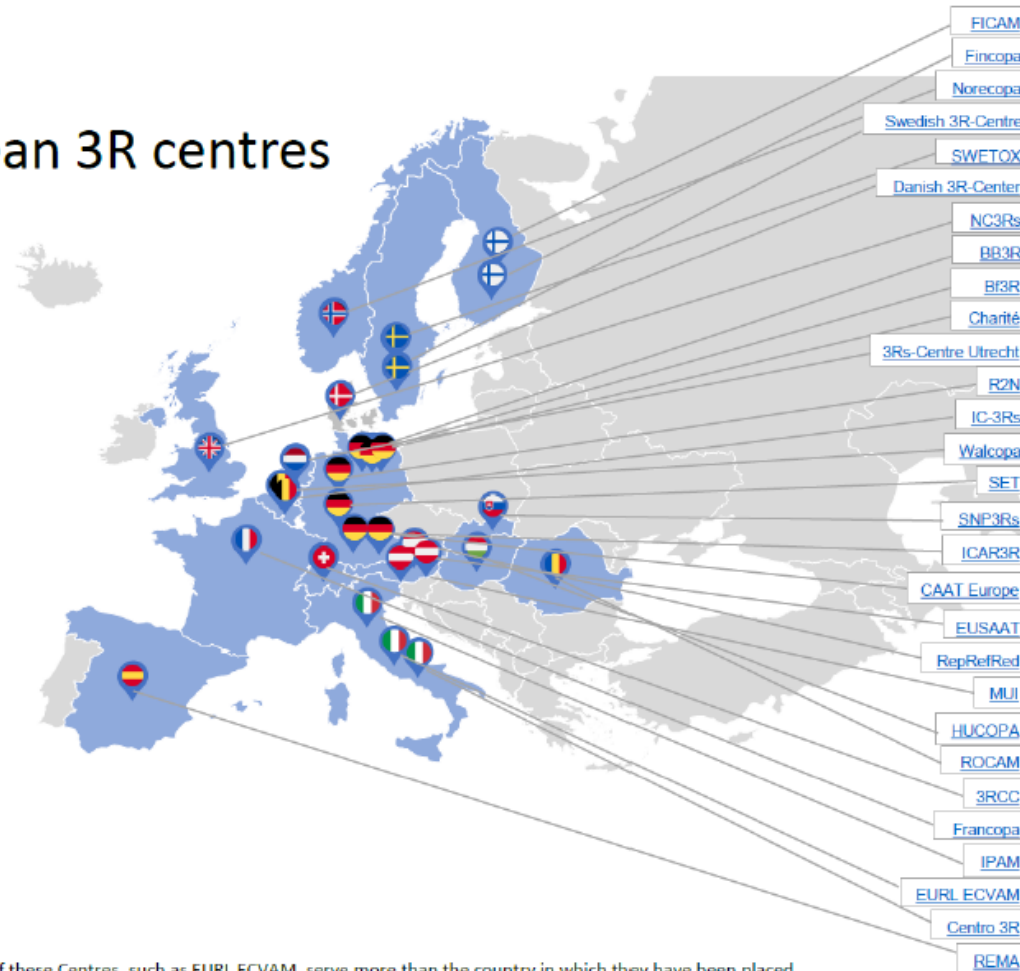
Freie Universität Berlin
Host: Prof. Monika Schäfer-Korting



Formation of working groups on each topic

EU3Rnet – The network of 3Rs centres in Europe

European 3R centres



The map shows 3Rs centres whose main focus is to collaborate with other centres to disseminate 3Rs resources/documents/interests.

Number of members: ~100

Number of countries: 24

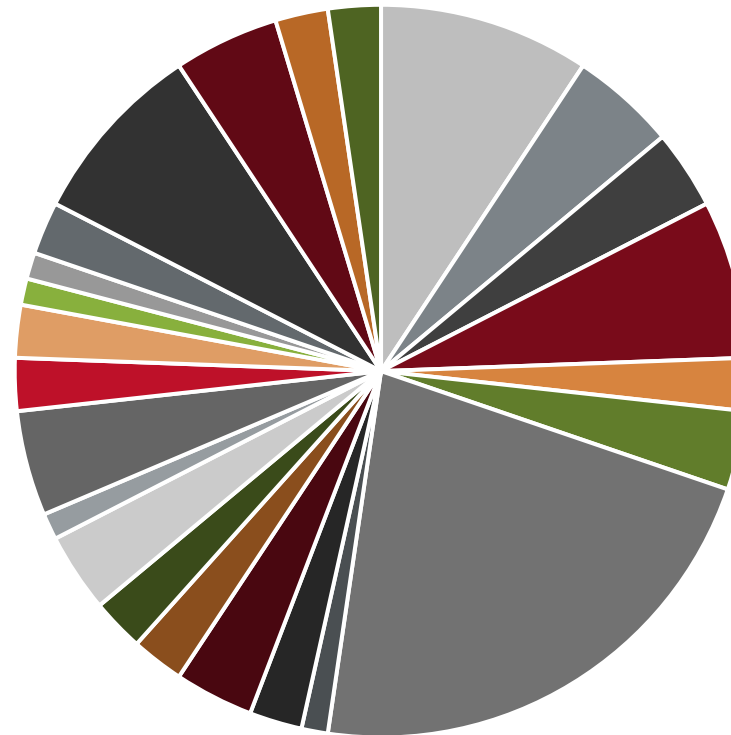
Please note that some of these Centres, such as EURL ECVAM, serve more than the country in which they have been placed.

This overview has been compiled by [Norecopa](#). Please report any errors or send suggestions for additions to post@norecopa.no

Designed by PresentationGo.com. Flags from flaticon.com

Member distribution of the 3Rs platform [%]

- Austria
- Belgium
- Czech Republic
- Denmark
- Estonia
- France
- Germany
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Norway
- Poland
- Portugal
- Romania
- Slovakia
- Spain
- Sweden
- Switzerland
- The Netherlands
- Ukraine
- United Kingdom
- + Finland



Members in the COST Action

Missing: Bulgaria, Croatia, Cyprus, Greece, Malta, Slovenia

Everyone is very much welcome !

3Rs Initiative - Publication in ALTEX 02/2019

Invitation to all interested parties

EUSAAT

*European Society for
Alternatives to Animal Testing*

The European 3Rs Society

The network is a completely independent, open and free community, which is very much driven by the initiatives of its protagonists and personal efforts. It is based upon a bottom-up approach, and every 3R center or society is welcome to join.



„bottom-up approach“

of the network, since they cover many different topics and include experts on Refinement, Reduction and Replacement of animal experiments.

Major common aims were identified: to further advance the 3Rs, to help implement the aims of Directive 2010/63/EU locally, and to develop strategies and methods by which to reach out and connect with scientists in basic research. The network could also be used as a platform to exchange experience on a variety of topics, for example, how the various 3R centers and societies were established, how they organize events, how they secure funding, etc. In addition, it can also be utilized to share teaching strategies and resources to implement the 3Rs in education.

The network is a completely independent, open and free community, which is very much driven by the initiatives of its protagonists and personal efforts. It is based upon a bottom-up approach, and every 3R center or society is welcome to join.

Current coordinator: Winfried Neuhaus
(winfried.neuhaus@ait.ac.at)

3Rs in Europe – Nowadays – 3Rs enters – EU3Rnet

Consensus Statement from the European Network of 3R Centres (EU3Rnet)

Winfried Neuhaus*

AIT - Austrian Institute of Technology GmbH, Center Health and Bioresources, Competence Unit Molecular Diagnostics, Vienna, Austria

A Network of European 3R Centres (EU3Rnet) was established in connection with the EUSAAT conference in 2018 in order to strengthen cooperation between different centres. Increased cooperation has a multitude of benefits, since many of the efforts made by local or regional centres are of national and international importance. As an important step, the members have decided to publish a consensus statement for the network.

Consensus Statement

EU3Rnet embraces *all* of the 3Rs (*Replacement*, *Reduction* and *Refinement*) throughout its work, since the 3Rs are the foundation of improved conditions for research animals and for better science.

EU3Rnet also considers it important to focus on *Non-Animal Methods*¹ as part of its collaborative efforts. *Non-Animal Methods* have largely been developed further after the introduction of the 3R concept by Russell and Burch² in 1959, thanks to technological advances in *in vitro* and *in silico* methods. EU3Rnet will therefore endeavour to promote this approach, so that researchers do not consider animal models by default when answering research questions, and instead consider the range of *Non-Animal*

Methods available, in order to avoid the unnecessary use of animal experimentation. When a relevant *Non-Animal Method* or an alternative *Replacement* method³ to an animal model does not exist, the possibilities for *Reduction* and *Refinement* of the model must be examined.

EU3Rnet considers it important that internationally relevant national efforts to develop and promote the 3Rs and *Non-Animal Methods* are disseminated within the network. The network will disseminate such information to its members, who in turn will disseminate the information further through their communication channels (which include websites, newsletters, symposia, training activities, annual reports and other channels).

EU3Rnet will emphasize the importance of involving all members of the research animal community in these efforts to develop and disseminate 3R resources. These include animal carers, technologists, veterinarians, teachers, lecturers and scientists.

All of the 3R centres in EU3Rnet pledge themselves to prioritization of their dissemination efforts. Whenever possible, they will use publically available platforms to disseminate this knowledge, in order to maximize exposure.

Participants of EU3Rnet, who agreed to the consensus statement:

Institution	Country	URL
EUSAAT – European Society for Alternatives to Animal Testing	Europe	http://www.eusaat.org/
Unit Ethics and Human-Animal Studies, Messerli Research Institute, Vienna	Austria	https://www.vetmeduni.ac.at/en/messerli/science/ethik/
The RepRefRed society / Austrian 3R Center	Austria	https://www.reprefred.eu/EN
MUI animalFree Research Cluster	Austria	https://www.i-med.ac.at/muianimalfree/
Innovation Centre – 3R Alternatives (IC-3Rs)	Belgium	https://www.ic-3rs.org/
3Rs Center Czech Republic	Czech Republic	http://www.szu.cz/
The Danish 3R-Center	Denmark	https://3rcenter.dk/
BB3R - Freie Universität Berlin	Germany	https://www.bb3r.de/
Charité 3 ^R – Charité – Universitätsmedizin Berlin	Germany	https://charite3r.charite.de/
Leibniz Alternatives at IUF – Leibniz Research Institute for Environmental Medicine	Germany	https://en.leibniz-alternatives.de/
R2N – „Replace“ und „Reduce“ aus Niedersachsen	Germany	https://r2n.eu/
TARCFORCE 3R – Medical University Mainz	Germany	https://www.unimedizin-mainz.de/tarc/tarc-force-3r.html
ICAR3R – Interdisciplinary Center for 3Rs in Animal Research	Germany	http://www.ICAR3R.de
Comparative Medicine, Trinity College Dublin	Ireland	https://www.tcd.ie/comparativemedicine/
Centro3R: Italian Interuniversity Center for the Promotion of the 3Rs Principles in Teaching and Research	Italy	http://www.centro3r.it/
LIST – Luxembourg Institute of Science and Technology	Luxembourg	https://www.list.lu/
Norecopa	Norway	https://norecopa.no/
ROCAM – Romanian Center for Alternative Test Methods	Romania	http://rocam.usamvcluj.ro/
Slovak National Platform for 3Rs in Research, Development and Education	Slovakia	https://www.snp3rs.com/
CMCIB-IGTP – Comparative Medicine and Biomedicine Centre of Catalonia, Germans Trias i Pujol Research Institute	Spain	http://www.cmcib.cat/
The Swedish 3Rs Center	Sweden	https://www.jordbruksverket.se/3R
Swiss 3RCC	Switzerland	https://www.swiss3rcc.org/en/
3Rs-Centre of Utrecht University	The Netherlands	https://www.uu.nl/en/organisation/3rs-centre
The National Centre for the 3Rs	UK	https://www.nc3rs.org.uk/

Neuhaus, W. (2021) “Consensus statement from the European Network of 3R Centres (EU3Rnet)”, *ALTEX - Alternatives to animal experimentation*, 38(1), pp. 138-139. doi: 10.14573/altex.2010061.

The Rise of 3Rs centres and platforms in

50th Anniversary Article

The Rise of Three Rs Centres and Platforms in Europe*

Alternatives to Laboratory Animals
 2022, Vol. 0(0) 1–31

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Winfried Neuhaus¹, Birgit Reininger-Gutmann², Beate Rinner², Roberto Plasenzotti³, Doris Wilflingseder⁴, Joery De Kock⁵, Tamara Vanhaecke⁵, Vera Rogiers⁵, Dagmar Jírová⁶, Kristina Kejlová⁶, Lisbeth E. Knudsen⁷ , Rasmus Normann Nielsen⁷, Burkhard Kleuser⁸, Vivian Kral⁸, Christa Thöne-Reineke⁹, Thomas Hartung¹⁰, Giorgia Pallocca¹⁰, Marcel Leist¹⁰, Stefan Hippenstiel¹¹, Annemarie Lang¹¹, Ida Retter¹¹, Stephanie Krämer¹², Peter Jedlicka¹², Katharina Ameli¹², Ellen Fritsche^{13,14}, Julia Tigges¹³, Manuela Buettner¹⁵, Andre Bleich¹⁵, Nadine Baumgart¹⁶, Jan Baumgart¹⁷, Marcus W. Meinhardt¹⁸, Rainer Spanagel¹⁸, Sabine Chourbaji¹⁹, Bettina Kränzlin²⁰ , Bettina Seeger²¹ , Maren von Köckritz-Blickwede²², José M. Sánchez-Morgado²³, Viola Galligioni²³, Daniel Ruiz-Pérez²³, Dania Movia²⁴ , Adriele Prina-Mello²⁴ , Arti Ahluwalia²⁵, Valeria Chiono²⁶, Arno C. Gutleb²⁷, Marthe Schmit²⁸, Bea van Golen²⁹, Leane van Weereld³⁰, Anne Kienhuis³¹, Erica van Oort²⁹, Jan van der Valk³², Adrian Smith³³, Joanna Roszak³⁴, Maciej Stępnik^{34,35}, Zuzanna Sobańska³⁴, I. Anna S. Olsson^{36,37} , Nuno Henrique Franco^{36,37}, Bogdan Sevastre³⁸ , Helena Kandarova³⁹, Sara Capdevila⁴⁰ , Jessica Johansson⁴¹, Christopher R. Cederroth⁴², Jenny Sandström⁴², Ian Ragan⁴³, Nataliia Bubalo⁴⁴ and Horst Spielmann⁸

New 3R centres developed:

- French
- Fin3R
- Spain requests
- Germany in Bavaria/Germany: WI3R - Würzburg Initiative 3R, coordinated by Fraunhofer



Including history & background of the single centres & platforms

EU3Rnet – The network of 3Rs centres in Europe

50th Anniversary Article

The Current Status and Work of Three Rs Centres and Platforms in Europe*

Alternatives to Laboratory Animals
 2022, Vol. 50(6) 381–413
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Winfried Neuhaus¹, Birgit Reininger-Gutmann², Beate Rinner², Roberto Plasenzotti³, Doris Wilflingseder⁴, Joery De Kock⁵, Tamara Vanhaecke⁵, Vera Rogiers⁵, Dagmar Jírová⁶, Kristina Kejlová⁶, Lisbeth E. Knudsen⁷ , Rasmus Normann Nielsen⁷, Burkhard Kleuser⁸, Vivian Kral⁸, Christa Thöne-Reineke⁹, Thomas Hartung¹⁰, Giorgia Pallocca¹⁰, Costanza Rovida¹⁰, Marcel Leist¹⁰, Stefan Hippenstiel¹¹, Annemarie Lang¹¹, Ida Retter¹¹, Stephanie Krämer¹², Peter Jedlicka¹², Katharina Ameli¹², Ellen Fritsche^{13,14}, Julia Tigges¹³, Eliška Kuchovská¹³ , Manuela Buettner¹⁵, Andre Bleich¹⁵, Nadine Baumgart¹⁶, Jan Baumgart¹⁷, Marcus W. Meinhardt¹⁸, Rainer Spanagel¹⁸, Sabine Chourbaji¹⁹, Bettina Kränzlin²⁰ , Bettina Seeger²¹ , Maren von Köckritz-Blickwede²², José M. Sánchez-Morgado²³, Viola Galligioni²⁴, Daniel Ruiz-Pérez²⁴, Dania Movia²⁵ , Adriele Prina-Mello²⁶ , Arti Ahluwalia²⁷, Valeria Chiono²⁸, Arno C. Gutleb²⁹, Marthe Schmit³⁰, Bea van Golen³¹, Leane van Weereld³², Anne Kienhuis³³, Erica van Oort³¹, Jan van der Valk³⁴, Adrian Smith³⁵, Joanna Roszak³⁶, Maciej Stępnik^{36,37}, Zuzanna Sobańska³⁶, Edyta Reszka³⁶, I. Anna S. Olsson^{38,39} , Nuno Henrique Franco^{38,39}, Bogdan Sevastre⁴⁰ , Helena Kandarova⁴¹, Sara Capdevila⁴² , Jessica Johansson⁴³, Emma Svensk⁴³, Christopher R. Cederroth⁴⁴, Jenny Sandström⁴⁴, Ian Ragan⁴⁵, Nataliia Bubalo⁴⁶, Jens Kurreck⁴⁷ and Horst Spielmann⁸

- Organisational forms
- Financial background
- Activities in 3Rs areas

EU3Rnet – The network of 3Rs centres in Europe

Table 2. Overview of some activities of the Three Rs centres and platforms relevant to possible collaboration opportunities.

Name of the institution	Country	Uses (and is able to provide) educational material on the Three Rs	Holds workshops or training on Three Rs methods	Has a searchable NAMs database	Organises public and regular Three Rs meetings	Has an <i>in vitro</i> laboratory available for collaboration	Is a member of EU-NETVAL	Funds research
RepRefRed Society	Austria	Yes	Yes		Yes			
Innovation Centre–3Rs (IC-3Rs)	Belgium	Yes		Yes	Yes	Yes		
3Rs Centre Czech Republic	Czech Republic	Yes	Yes			Yes	Yes	
The Danish 3R-Center	Denmark	Yes			Yes			Yes
BB3R–Freie Universität Berlin	Germany	Yes	Yes		Yes			
CAAT Europe	Germany	Yes	Yes	Yes	Yes	Yes		
Charité 3R	Germany	Yes	Yes		Yes	Yes		Yes
Einstein Center 3R	Germany	Yes	Yes		Yes	Yes		Yes
ICAR3R–3R Centre JLU Giessen	Germany	Yes	Yes		Yes			
Leibniz Alternatives at IUF– Leibniz Research Institute for Environmental Medicine	Germany	Yes				Yes		
R2N	Germany	Yes			Yes	Yes		
TARCforce3R	Germany	Yes	Yes		Yes			
3R Center Rhine Neckar	Germany		Yes		Yes			
VZET Hannover	Germany	Yes	Yes		Yes	Yes		
Trinity College Dublin	Ireland	Yes	Yes			Yes		
Centro 3R	Italy	Yes	Yes		Yes	Yes		
Luxembourg 3Rs Platform	Luxembourg					Yes		
NCad	Netherlands	Yes						
3Rs Centre of the Utrecht University and University Medical Centre Utrecht	Netherlands	Yes	Yes	Yes	Yes	Yes		

(continued)

EU3Rnet – The network of 3Rs centres in Europe

Table 2. (continued)

Name of the institution	Country	Uses (and is able to provide) educational material on the Three Rs	Holds workshops or training on Three Rs methods	Has a searchable NAMs database	Organises public and regular Three Rs meetings	Has an <i>in vitro</i> laboratory available for collaboration	Is a member of EU-NETVAL	Funds research
Norecopa	Norway	Yes	Yes	Yes	Yes			Yes
National Center for Alternative Methods to Toxicity Assessment (CMA)	Poland	Yes	Yes			Yes	Yes	
i3S	Portugal	Yes	Yes		Yes	Yes		
ROCAM	Romania	Yes						
Slovak National Platform for 3Rs– SNP3Rs	Slovak Republic	Yes	Yes					
CMCiB-IGTP–Comparative Medicine and Bioimage Centre of Catalonia, Germans Trias i Pujol Research Institute	Spain	Yes	Yes			Yes		
Swedish 3Rs Center	Sweden	Yes	Yes		Yes			
3RCC	Switzerland	Yes	Yes		Yes			Yes
National Center for the 3Rs (NC3Rs)	UK	Yes	Yes					Yes
The Ukrainian 3Rs Center	Ukraine	Yes				Yes		

Uses (and is able to provide) educational material on the Three Rs	Holds workshops or training on Three Rs methods	Has a searchable NAMs database	Organises public and regular Three Rs meetings	Has an <i>in vitro</i> laboratory available for collaboration	Is a member of EU-NETVAL	Funds research
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EU3Rnet - Output

- Establishment of an active network of ~100 members from ~24 countries
- Interactions within the platform (Newsletter, Symposia organization)

- Publications:

Consensus statement from the EU3Rnet (ALTEX, 2021)

“The Rise of 3Rs centres and platforms in Europe”
(ATLA, 2022, 50th edition) → >60 authors

“The current status and work of 3Rs centres and platforms in Europe”
(ATLA, 2022, 50th edition) → 70 authors

In progress: “The future of European 3Rs centres”

- COST Action IMPROVE proposal granted (~ 40 applicants, learnt to enter social sciences)

COST Action:

= perfect tool to establish networking and future EU projects

COST Actions shall be implemented through a set of networking tools such as meetings (Action MC meetings, Working Groups, workshops, conferences), Short-Term Scientific Missions (STSMs), Training Schools and Dissemination activities.

➡ Deliverables such as reports, data bases, progress in research question, new project applications, support of the field...

COST Action CA21139
3RS CONCEPTS TO IMPROVE THE QUALITY OF BIOMEDICAL SCIENCE (IMPROVE)

Therefore, the main aim of the COST Action IMPROVE is:

To establish a network which will work to refine, harmonise and promote data, documents and 3Rs concepts, in order to improve the quality of biomedical science.

Main topics → Four working groups

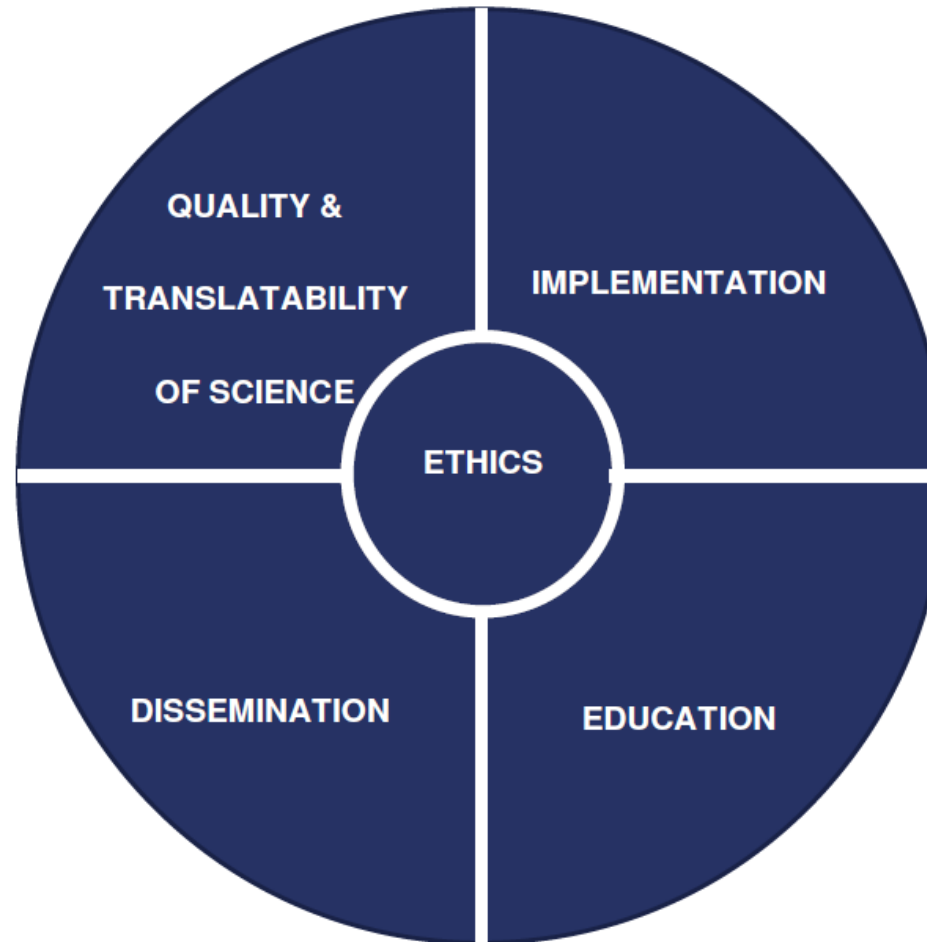


Figure 1: Main topics of the COST Action IMPROVE



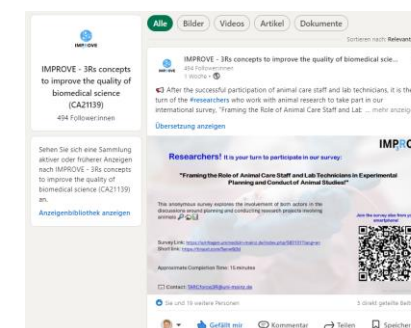
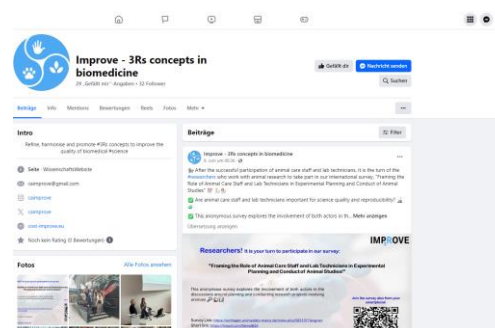
IMPROVE



150-200 k€/year for 4 years

Website: www.cost-improve.eu

[LinkedIn](#); [X](#); [Facebook](#); ...



3Rs concepts to improve the quality of biomedical science (IMPROVE) - Cost Action CA21139



**Funded by
the European Union**

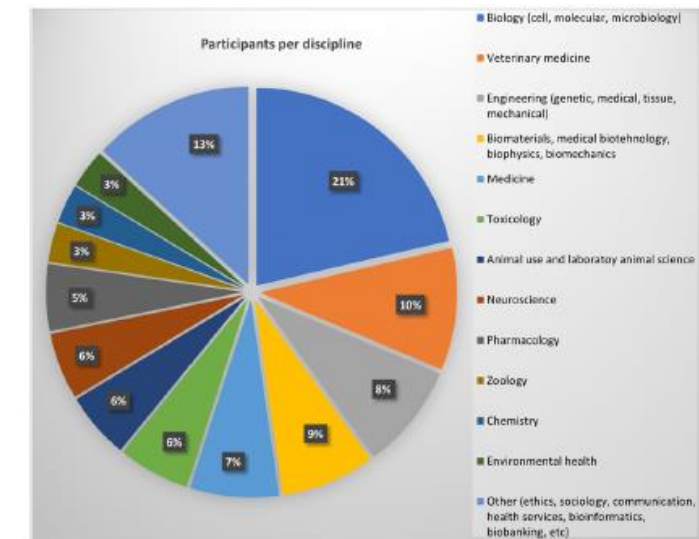
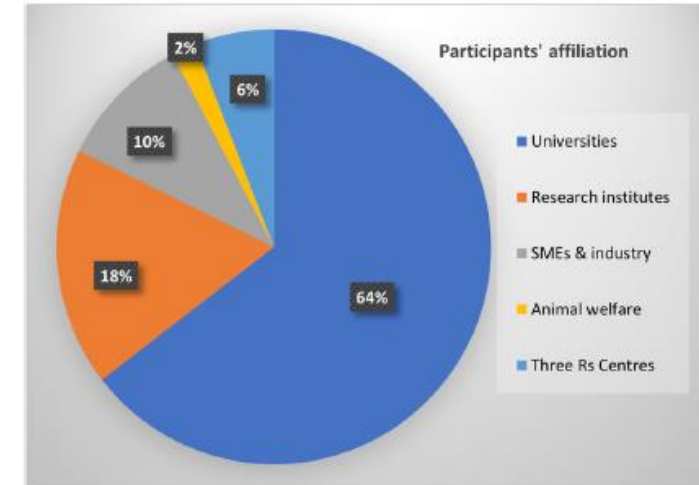
Current status of the Cost Action IMPROVE

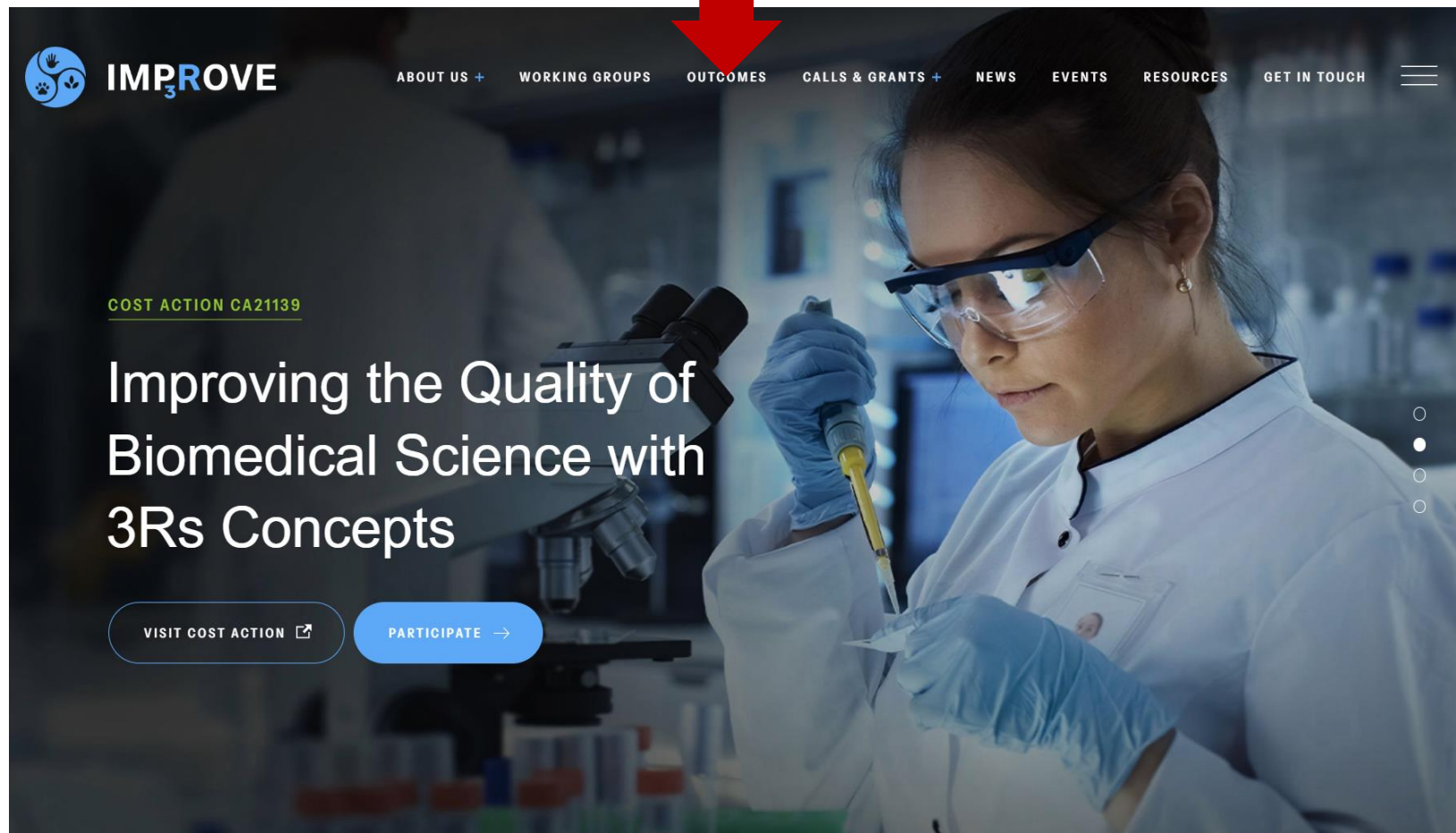
Currently grown to ~ 260 participants

(Oct-Dec 2022: 135 → Jan-Jun 2023: 172 → Jul-DEC 2023: 201)

- 42 countries including USA, Israel, Tunesia (21 ITC)
- 135 ITC (inclusiveness target countries)
- 148 female
- 117 Young Researchers & Innovators (under age of 40)

Kitsara et al., 2024, ATLA





46 Outcome reports until now:

FILTER BY TYPE

- ☒ All Categories
- ☐ Conferences (4)
- ☐ Dissemination Conference Grant (4)
- ☐ ITC Conference grant (3)
- ☐ Lectures & Talks (14)
- ☒ Meetings (3)
- ☐ Publications (5)
- ☐ STSM (5)
- ☐ Training Schools (2)
- ☐ Virtual Mobility Grant (3)
- ☐ Webinar (2)
- ☐ Workshops (2)

Some activity highlights

- Mindset workshop series; 3Rs webinar series in collaboration with TARCforce
- TATA Box workshop, 21.5.2024 (game about the implementation of NAMs from different perspectives)
- Career development workshop series
- STSMs (at BfR Germany, Swansea, Rome, Porto), ITC & Dissemination grants
- Austrian 3Rs Days (Dec 2023), Japanese Society for Alternatives to Animal Experiments (Nov 2023),
FENS Forum (June 2024) – go to basic research !
- **Asian 3Rs congress (Dec 2024) in New Delhi (Inauguration of the Asian Federation of 3Rs societies)**
- Publications:
 - „COST Action Improve – Introduction“; ATLA 2024 (Kitsara *et al.*)
 - „Toward a Common Interpretation of the 3Rs Principles in Animal Research“; Lab Animal 2024

Some activity highlights

„Toward a Common Interpretation of the 3Rs Principles in Animal Research”; Lab Animal 2024 published

lab **animal**

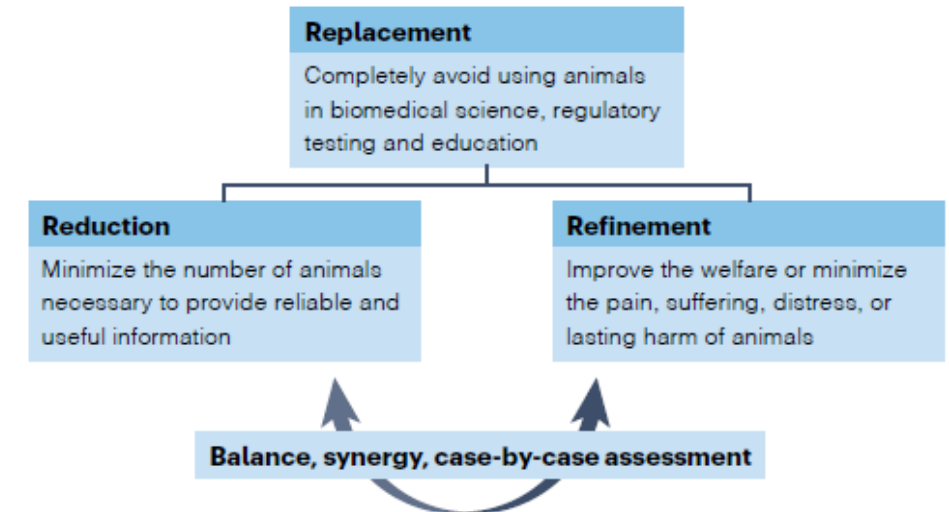
Comment



<https://doi.org/10.1038/s41684-024-01476-2>

Toward a common interpretation of the 3Rs principles in animal research

Jan Lauwereyns, Jeffrey Bajramovic, Bettina Bert, Samuel Camenzind, Joery De Kock, Alisa Elezović, Sevilay Erden, Fernando Gonzalez-Uarquin, Yesim Isil Ulman, Orsolya Ivett Hoffmann, Maria Kitsara, Nikolaos Kostomitsopoulos, Winfried Neuhaus, Benoit Petit-Demouliere, Simone Pollo, Brígida Riso, Sophie Schober, Athanassia Sotiropoulos, Aurélie Thomas, Augusto Vitale, Doris Wilflingseder & Arti Ahluwalia



The 3Rs in practice

- Accurate experimental design and reporting
- Technological innovations
- Promotion of open science
- Use of systematic reviews
- Use of human tissue and data
- Use of existing in vivo data and longitudinal studies
- Data (also negative results) and sample sharing
- Project pre-registration
- Cross-species translation
- Track animal model validity
- Appropriate breeding methods
- Adoption of GSP and checklists (e.g. GCCP, PREPARE¹⁶, ARRIVE¹⁷)

Some activity highlights

- Surveys about
 - terms of NAMs by different stakeholders → **publication in preparation (pip)**
 - role of animal care takers in animal research – care takers asked, separately researchers asked → **pip**
- Topic subgroups
 - Overview about systematic reviews on Refinement
 - Systematic review on specific refinement measure(s) on the data quality of a refinement specific animal model
 - Survey on status quo of the use of housing/husbandry refinement measures across Europe
 - Pregistration of *in vitro* research
 - Landscape analysis on „Implementation 3Rs“
 - What's in a NAM (definition paper) → **pip**
 - NAMs expert data base
 - Survey about NAMs with journal editors
 - Dissemination of 3Rs in Europe
 - Educational 3Rs activities within Europe
 - Evaluation of interdisciplinary research approaches to potentiate the 3Rs

Meetings

- Training school „3D cell models for 3R research" in Kaunas (Lithuania) on May 9-10 2024
Outcomes: Lectures, practical courses

17 participants

Talks:

- Wonderful life of organoids
- 2D vs. 3D models (focus on BBB)
- 3D reconstructed Epidermis models
- Reproducibility of 3D models
- 5D in vitro models

Practical courses:

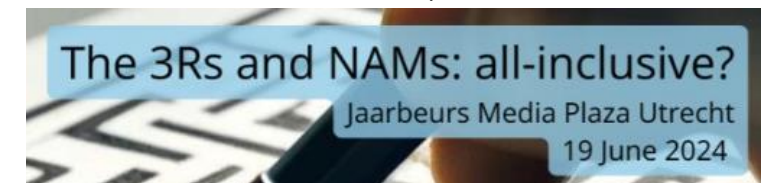
- Skin irritation testing
- 3D tumor spheroids
- 3D fibrous scaffolds for cell culture



Meetings

- WG 1+2 meeting in Utrecht (Netherlands) on June 17-18 2024, coupled with 3Rs centre conference on June 19 (**The 3Rs and NAMs: an all-inclusive ?**)

Outcomes: work on Working group 1+2 topics;
Number of participants: 48 + ~ 20 online



<https://tpi.tv/watch/132>




Meetings

- Ethical X-over Workshop, 2./3.9.2024, Istanbul, „**Ethics, 3Rs, One Health**“
Outcomes: Publications



Meetings

- EUSAAT congress, 18./19.9.2024, Linz



EUSAAT
European Society for Alternatives to Animal Testing
The European 3Rs Society

Program & Facts

- 24 sessions
- >130 oral talks including 3 keynote lectures
- 1 round table discussions (Thu)
- 2 poster sessions (Thu, Fri)
- >100 poster
- >280 registrations from 30 countries
- 15 Exhibitors with booth
- 35 Sponsors & Supporters
- 20+1+2+3+2 = 28 YSTA awards supported from 5 sponsors
- YOU – Young Scientist in Action events (Wed)
- Welcome Reception (Wed)
- Gala Dinner (Thu)

➔ **Largest 3Rs congress in Europe**

EUSAAT 2024 / Linz 2024 program & facts



EUSAAT
CONGRESS '24

From September 18 – 20
at the University of Linz, Austria

WWW.EUSAAT.EU ➔

AIT
AUSTRIAN INSTITUTE OF TECHNOLOGY



Meetings

- 3Rs centre meeting, 17.9.2024, Linz – co-organized with at the EUSAAT congress 2024
Outcomes: Support of founding new 3Rs centres, Organisational development



Participant number:

- 30 + 28 online
- from > 20 countries

Upcoming Cost Action Meetings

- Workshop „3Rs in a CRO“ + MC meeting + WG3 dissemination meeting, Athens, Greece, [29.-30.5.2025](#)
- 3Rs centre Workshop, Genova, Italy, [17.-18.9.2025](#)
- Training school for WG4 Education „Train-the-trainer“, Porto, Portugal, [29.9.-1.10.2025](#)



NEWS ARTICLE | 28 February 2025 | Brussels | Directorate-General for Research and Innovation | 2 min read

Commission adopts proposal for the next European Research Area Policy Agenda 2025-2027

Benefits of the 3Rs centres network for the national authorities, national committees, competent authorities tasked with project evaluation and even to animal welfare bodies at establishment level:

- Resources of knowledge/experts (e.g. cases of questions within the network for 3Rs work)
- Bottom-up approach: very flexible/easy contacts
- Knowledge/stakeholder lists & contacts for the different specific fields
- Getting as stakeholders involved in the COST Action
- Collaboration between end-users and developers (e.g. industry, regulators, biotech companies, policy makers) increases the chance that developments meet performance criteria
- Provide dissemination channels (outreach to (basic) scientists/ public / targeted stakeholders); concerted European activities (public awareness days)
- Connect educational 3Rs related activities within Europe and share experience, methodology and best practices
→support for the implementation in curricula
- Networking events/participation in COST Action events
- Establishment of common/European projects
- Etc.



Prevent duplication of work !

(JRC EURL ECVAM, ETPLAS, European Schoolnet)

KICK OFF - Meeting of Management Committee 21.10.2022 Brussels



Interested ?
Contact us – apply for Working groups online
(read the MoU) !

Everyone is invited and needed
(all stakeholders and various science fields)