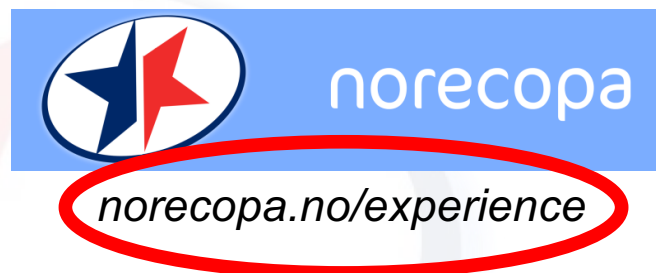


Norecopa: experiences with building 3R databases and international networks

Adrian Smith

adrian.smith@norecopa.no



A brief history of the last 30 years

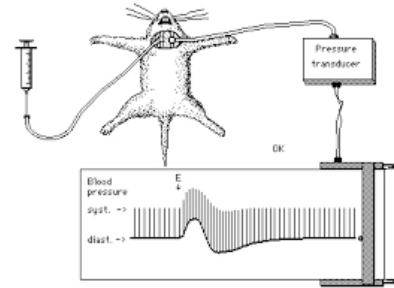


norecopa

norecopa.no



wikipedia.org



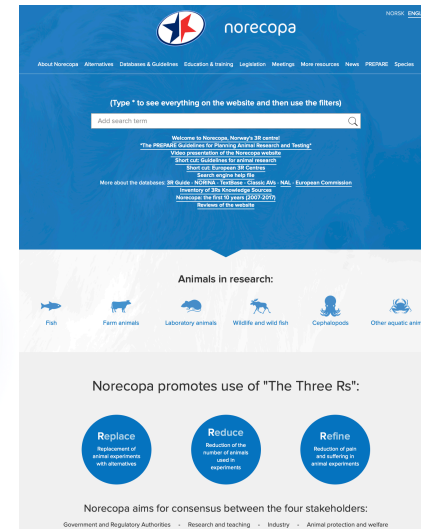
Pharmatutor



NORINA



Laboratory Animals Ltd



Norecopa: PREPARE for better research


FELASA, 10-13 June 2019



ECVAM workshop, Neubiberg, Munich, September 1996:
*Current status and future developments of databases on
alternative methods.*

Poster PE10

The Norecopa website: a collection of Global 3R resources

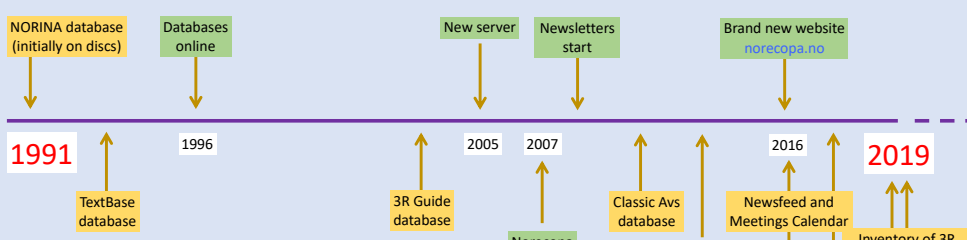


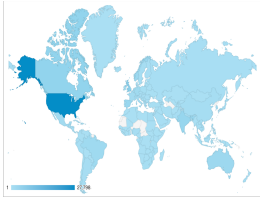
norecopa
norecopa.no

Adrian Smith
adrian.smith@norecopa.no
Norecopa, c/o Norwegian Veterinary Institute, P.O. Box 750 Sentrum, 0106 Oslo, Norway

Norecopa maintains a state-of-the-art website, norecopa.no, consisting of a large database and intelligent search engine tailored to Laboratory Animal Science and the three Rs. Work on the project was started in 1991, and the present format was released in June 2016. The website is updated virtually every day of the year. Norecopa's staff can edit the database from anywhere with an internet connection, and updates appear online immediately.

Timeline for the development of the Norecopa website:






1. United States
2. United Kingdom
3. Canada
4. India
5. Spain
6. Norway
7. Australia
8. Brazil
9. Germany
10. Mexico

7,600 pages, 250,000 page views a year

The Norecopa website is the result of the merger of many smaller databases over the last 28 years, including (but not exclusively):

- NORINA – a database of 3,100 alternatives and supplements to the use of animals in education and training
- TextBase – a database of 1,700 textbooks and other literature within Laboratory Animal Science, the 3Rs and related subjects
- 3R Guide – a database of 380 guidelines, databases, information centres, journals, email lists and other 3R resources
- Classic AVs – a subset of NORINA: products using older technology

It is not necessary to remember the old URLs for these databases: all these now point to their respective pages on norecopa.no



norecopa.no/PREPARE

Norecopa gratefully acknowledges additional financial support from the Norwegian Ministry of Agriculture and Food, Finn Rahn's legacy, Dag Stiansen's Foundation, Laboratory Animals Ltd., the Nordic Society against Painful Animal Experiments (NSMSD), the Norwegian Society for Protection of Animals, Novo Nordisk, the Scottish Accreditation Board, the US Department of Agriculture and the Universities Federation for Animal Welfare (UFAW). Photos: colourbox.com



2015-6



Norecopa: PREPARE for better research

FELASA, 10-13 June 2019

Technical specifications

- Responsive – works equally well on mobile phones, tablets and desktop computers
- Editable from anywhere with an Internet connection and instant online delivery
- Prints well: What You See Is What You Get
- One (intelligent) search engine for everything – no longer a need to know the names of the databases
- A newsfeed of articles on animal research and testing from European media

Scientific aims

- Hand-picked material for quality and relevance to Laboratory Animal Science, 3Rs and welfare – based on 30 years of experience and networking in the field.
- An answer to the conclusions from so many congresses: “we need more guidelines”!

Norecopa: PREPARE for better research



norecopa.no

Search engine:



Front and back end:



+ innumerable hours populating the webpages

FELASA, 10-13 June 2019

If you think it's expensive to hire a professional to do the job, wait until you hire an amateur

Red Adair



Red Adair

Photograph of Red Adair in November 1991. Photo by Manoocher Deghati. Courtesy of [Getty Images](#). Image available on the Internet and included in accordance with [Title 17 U.S.C. Section 107](#).

Databases need careful typing...
but fuzzy logic helps:

(Type * to see everything on the website and
then use the filters)

FELISA

[Welcome to Norecopa, Norway's 3R centre!](#)

[*The PREPARE Guidelines for Planning Animal Research and Testing*](#)

[Video presentation of the Norecopa website](#)

[Short cut: Guidelines for animal research](#)

[Short cut: European 3R Centres](#)

[Search engine help file](#)

More about the databases: [3R Guide](#) - [NORINA](#) - [TextBase](#) - [Classic AVs](#) -

[NAL](#) - [European Commission Inventory of 3Rs Knowledge Sources](#)

[Norecopa: the first 10 years \(2007-2017\)](#)

[Reviews of the website](#)

Did you mean: [felasa \(116\)](#) ?

The search did not return any results

Search filters

Order by:

Relevance

Enable synonyms and stemming

Database

- 3R Guide
- Classic AVs
- Website
- European Commission Inventory of 3Rs Knowledge Sources
- NAL
- NORINA
- TextBase

Browse the databases

Quality assurance - translation of the PREPARE checklist

PREPARE



The PREPARE Guidelines Checklist

Planning Research and Experimental Procedures on Animals: Recommendations for Excellence

Adrian J. Smith*, R. Eddie Clutton*, Elliot Lilley*, Kristine E. Aa. Hansen* & Trond Bratteli*

*Norecopa, c/o Norwegian Veterinary Institute, P.O. Box 750 Sentrum, 0106 Oslo, Norway; *Royal (Dick) School of Veterinary Studies, Easter Bush, Midlothian, EH25 9RG, U.K.; *Research Animals Department, Science Group, RSPCA, Wilberforce Way, Southwate, Horsham, West Sussex, RH13 9RS, U.K.; *Section of Experimental Biomedicine, Department of Production Animal Clinical Sciences, Faculty of Veterinary Medicine, Norwegian University of Life Sciences, P.O. Box 8146 Dep., 0033 Oslo, Norway; *Division for Research Management and External Funding, Western Norway University of Applied Sciences, 5020 Bergen, Norway.

PREPARE obsahuje pravidla pro plánování projektu pokusů a je doplňkem k pravidlům pro podávání zpráv, jako je ARRIVE. PREPARE zahrnuje tři oblasti, které určují kvalitu přípravy studií na zvířatech:

- (A) Definice studie
- (B) Dialog mezi vědci a uživatelským zařízením
- (C) Kontrola kvality jednotlivých částí studie

Jednotlivá témata nejsou vždy řešena v uvedeném pořadí a mohou se překrývat. Seznam PREPARE lze upravit pro zvláštní případy, jako např. studie na volně žijících zvířatech. PREPARE obsahuje zásady řízení uživatelských zařízení, jelikož prováděné pokusy jsou závislé na jejich kvalitě. Plná verze seznamu pravidel (v angličtině) je dostupná na webu Norecopa včetně odkazů na celosvětové zdroje na adrese <https://norecopa.no/PREPARE>.

Seznam PREPARE je dynamický soubor, který se vyvíjí v závislosti na publikaci specifických pravidel pro další druhy zvířat a situací a na pokroku v oblasti vědy o laboratorních zvířatech.



"Inflammation of the bladder has returned"

OB4S3
Wed.

| Téma | Doporučení |
|---|---|
| (A) Definice studie | |
| 1. Literární řešení | <input type="checkbox"/> Formulujte jasnou hypotézu s primárními a sekundárními výstupy. <input type="checkbox"/> Vezměte v úvahu využití systematické řešení. <input type="checkbox"/> Oslovte konzultanty - specialisty pro databáze a informatiku - a zvolte klíčové odborné výrazy pro vyhledávání. <input type="checkbox"/> Zhodnoťte relevanci zvoleného druhu zvířat, jeho biologie, vhodnost k naplnění experimentálních cílů za cenu minimálního utrpení a jeho potřeby pro zajištění dobrých životních podmínek. <input type="checkbox"/> Zhodnoťte reprodukovatelnost a přenos výsledků na člověka v daném projektu pokusů. |
| 2. Právní hlediska | <input type="checkbox"/> Zvažte, jak je výzkum ovlivněn příslušnou legislativou v oblasti ochrany zvířat a jiných aspektech, jako je např. transport zvířat, ochrana zdraví při práci a bezpečnost. <input type="checkbox"/> Vyhledejte relevantní předpisy (např. pro hodnocení projektu pokusů v rámci EU). |
| 3. Etické otázky, hodnocení újm a přínosů a humánní ukončení. | <input type="checkbox"/> Vytvořte jednoduchý souhrn. <input type="checkbox"/> Ve spolupráci s etickými komisemi zjistěte, zda nebyl již tento typ výzkumu prováděn. <input type="checkbox"/> Uplatněte principy 3R (Replacement, Reduction, Refinement, tj. nahrazení zvířat, omezení jejich počtu a šetrné zacházení se zvířaty) a 3S (Good Science, Good Sense, Good Sensibilities, tj. správná věda, smysl a citlivost). <input type="checkbox"/> Zvažte předregistraci a zveřejnění negativních výsledků. <input type="checkbox"/> Proveďte hodnocení újm a přínosů a zdůvodněte případné utrpení zvířat. <input type="checkbox"/> Popište vzdělávací cíle, pokud jsou zvířata použita pro edukační účely nebo výcvik. <input type="checkbox"/> Zvolte klasifikaci závažnosti pokusu. <input type="checkbox"/> Vymezte si snadno měřitelný cíl a určete jednoznačné humánní ukončení pokusu. <input type="checkbox"/> Prodiskutujte a obhájte usmrcení zvířete, pokud je výstupem pokusu. |
| 4. Plán pokusu a statistické hodnocení | <input type="checkbox"/> Zhodnoťte pilotní studie, statistickou sílu a hladiny významnosti. <input type="checkbox"/> Definujte pokusnou skupinu a určete počet zvířat v pokusné skupině. <input type="checkbox"/> Vyberte metody pro randomizaci, zabraňte observačnímu zkreslení, rozhodněte, jaká jsou kritéria pro zařazení či vyřazení z pokusu. |

Norecopa: PREPARE for better research

FELASA, 10-13 June 2019

Your feedback

- I have found a mistake on the current page
- I would like to give my opinion about the website
- I know of a resource which is not cited in 3R Guide
- I know of a product which is not cited in NORINA
- I know of a product which is not cited in TextBase
- I know of a product which is not cited in Classic AVs

Name

Email

Comments

Did you find what you were looking for?

Yes, I found it!

No, I did not!

Did you find what you were looking for?

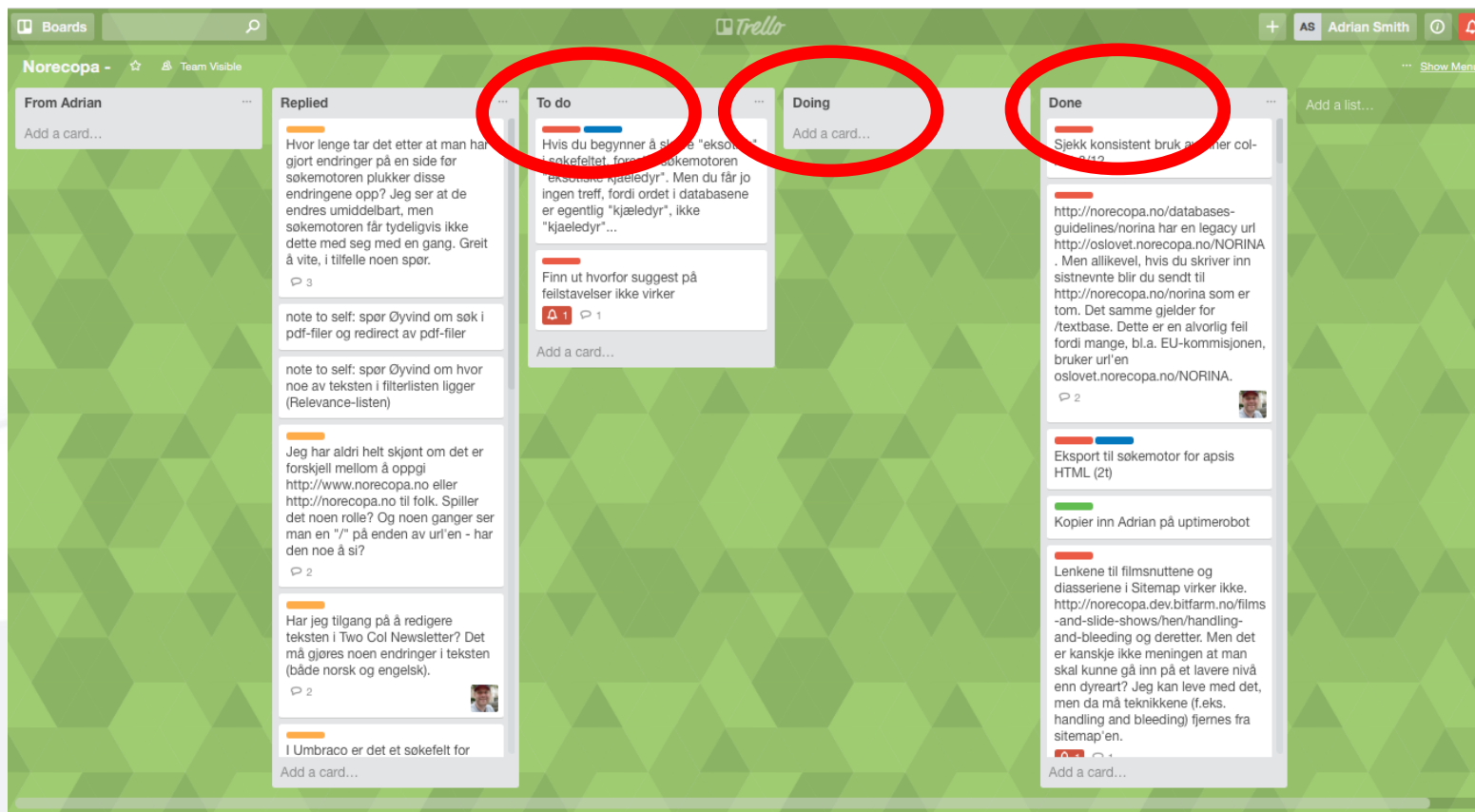
No, I did not!

What are you looking for?

Please give us your feedback so we can improve the information on the page. Thank you in advance for your help. Please add your email address if you would like a reply.

Submit

Please contact us by email if you have any questions.

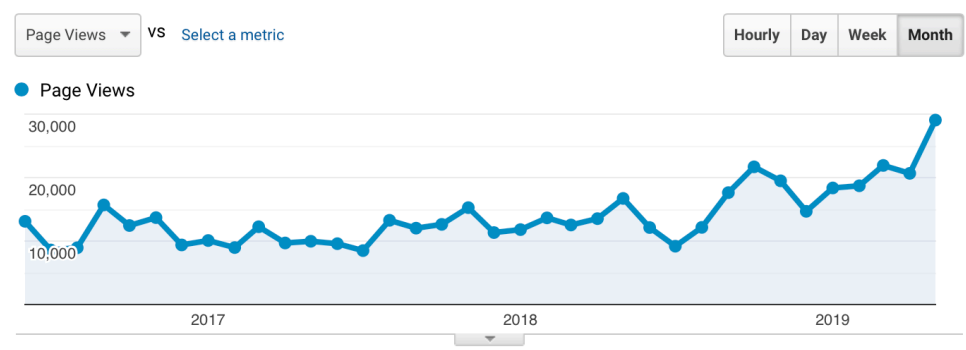


The screenshot shows a Trello board for 'Norecopa' with the following columns and content:

- Replied:**
 - How long does it take after you have made changes to a page for the search engine to pick up these changes? I see that the changes are immediate, but the search engine obviously does not pick up these changes immediately. Greit å vite, i tillegg noen spør.
 - note to self: spør Øyvind om søk i pdf-filer og redirect av pdf-filer
 - note to self: spør Øyvind om hvor noe av teksten i filterlisten ligger (Relevance-listen)
 - Jeg har aldri helt skjont om det er forskjell mellom å oppgi <http://www.norecopa.no> eller <http://norecopa.no> til folk. Spiller det noen rolle? Og noen ganger ser man en "/" på enden av url'en - har den noe å si?
 - Har jeg tilgang på å redigere teksten i Two Col Newsletter? Det må gjøres noen endringer i teksten (både norsk og engelsk).
 - I Umbraco er det et søkefelt for
- To do:**
 - Hvis du begynner å skrive "eksos" i søkefeltet, forsvinner søkemotoren "eksos" "kjæledyr". Men du får jo ingen treff, fordi ordet i databasene er egentlig "kjæledyr", ikke "kjæledyr"...
 - Finn ut hvorfor suggest på feilstavetser ikke virker
- Doing:**
- Done:**
 - Sjekk konsistent bruk av linker col-...
 - <http://norecopa.no/databases-guidelines/norina> har en legacy url <http://oslovet.norecopa.no/NORINA>. Men allikevel, hvis du skriver inn sistnevnte blir du sendt til <http://norecopa.no/norina> som er tom. Det samme gjelder for /textbase. Dette er en alvorlig feil fordi mange, bl.a. EU-kommisjonen, bruker url'en oslovet.norecopa.no/NORINA.
 - Eksport til søkemotor for apsis HTML (2t)
 - Kopier inn Adrian på uptimerobot
 - Lenkene til filmsnuttene og diasseriene i Sitemap virker ikke. <http://norecopa.dev.bitfarm.no/films-and-slide-shows/hen/handling-and-bleeding> og deretter. Men det er kanskje ikke meningen at man skal kunne gå inn på et lavere nivå enn dyreart? Jeg kan leve med det, men da må teknikkene (f.eks. handling and bleeding) fjernes fra sitemap'en.



norecopa.no



Users
196,933

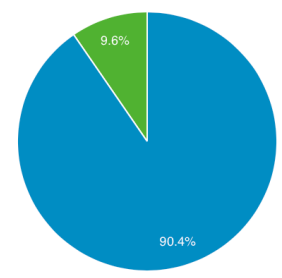
New Users
196,814

Sessions
245,857

Number of Sessions per User
1.25

Page Views
499,372

New Visitor Returning Visitor



250,000 in 2019

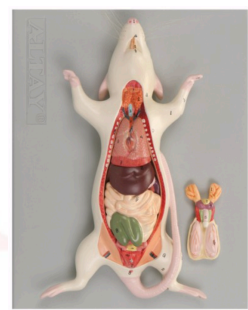
Norecopa: time for better research

FELASA, 10-13 June 2019




Examples of networking due to experience with databases

- Animalearn (US loan system for schools) – dissections still use millions of animals






Norecopa: PREPARE for better research



Danish 3R-Center
RRR


3R-news from around the world



07-06-2019

Annual Report 2018

Our 2018 Annual Report has been published.




R Swiss 3R
C Competence
Centre

07-06-2019

Swiss 3Rs Day

Swiss 3Rs Day - 60 years of Replacement, Reduction and Refinement of Animal Experimentation. Held on 2 September.

 Swiss 3R Competence Centre

FELASA, 10-13 June 2019

& Guidelines Education & training Legislation **Meetings** More resources News

Alerting services

Newsfeed

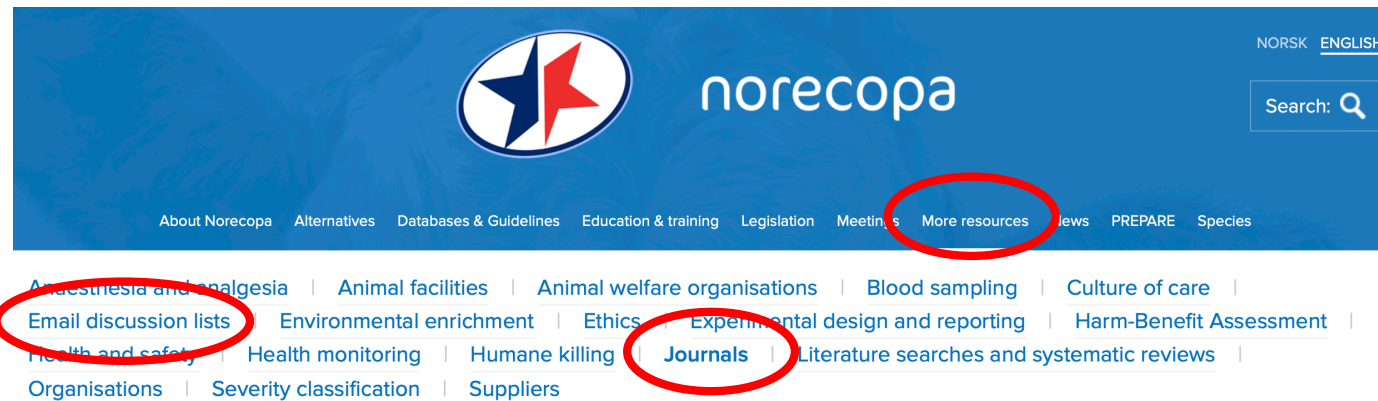
Newsletters

norecopa.no / Meetings / **Meetings Calendar**

Meetings calendar

[\(Links to a selection of past meetings can be accessed here\)](#)

- > [14th FELASA Congress](#), Prague, 10-13 June 2019
- > [Using organ-on-a-chip technology to reduce animal testing](#), Geneva, 17-18 June 2019
- > [Pathology of non-human primates, pigs and ferrets](#), Leiden, 17-19 June 2019
- > [René Remie Rodent Surgery Training Course](#), Almere, 17-21 June 2019
- > [5th meeting of the Large Animal Research Network \(LARN\)](#), Edinburgh, 19 June 2019
- > [Bioimaging Part II: Equipment, Facilities, and Workflows](#), AALAS webinar, 19 June 2019
- > [2nd Centro 3R Annual Meeting](#), Genova, 20-21 June 2019
- > [One sample and two sample comparisons \(t-tests and non-parametric equivalents\)](#), ESLAV webinar, 24 June 2019
- > [Charles River Short Course on Laboratory Animal Science](#), Carlsbad, 24-26 June 2019
- > [LAWTE Biennial Conference: A Little Less Conversation, A Little More Action: Employing Active Learning Strategies in Animal Welfare and Training](#), Memphis, 24-26 June 2019
- > [ESLAV/ECLAM Summer School: Experimental and Surgical Techniques, Design and Conduct of Research Programmes and Animal Experiments](#), Stockholm, 24-27 June 2019
- > [Workshop on Surgical Techniques in the Laboratory Mouse](#), Paris, 24-27 June 2019



norecoba.no/more-resources

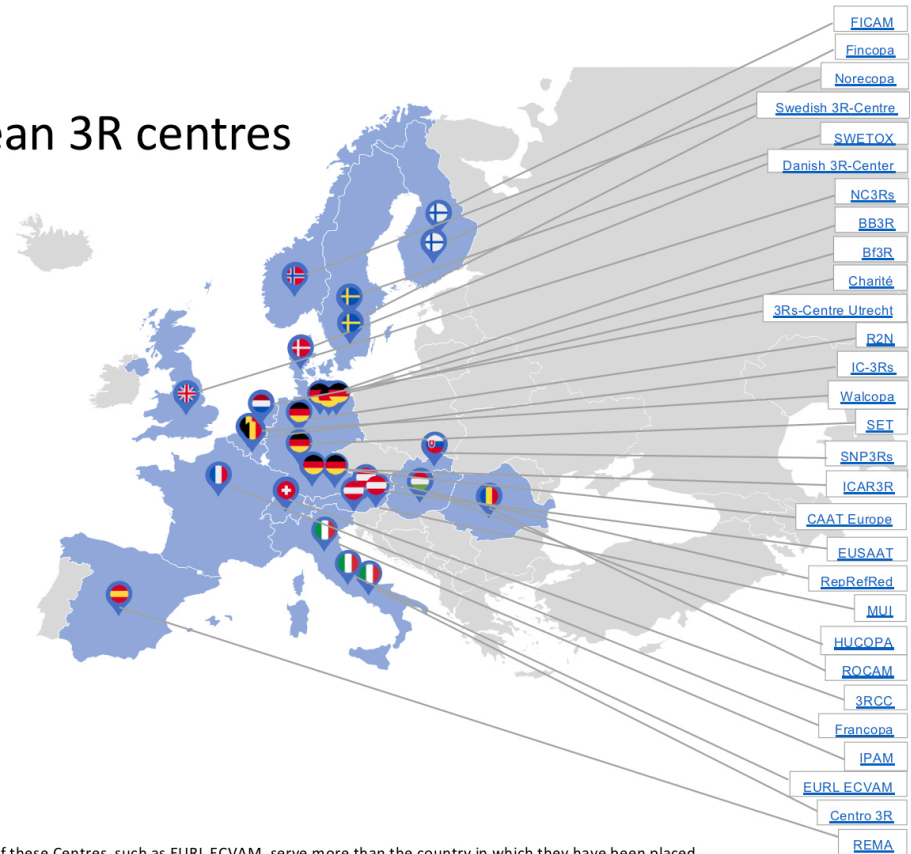
Examples of networking due to experience with databases

- Interactive map of European 3R Centres

European 3R centres

Map:
norecopa.no/3REuropeOverview

List of centres:
norecopa.no/3REurope

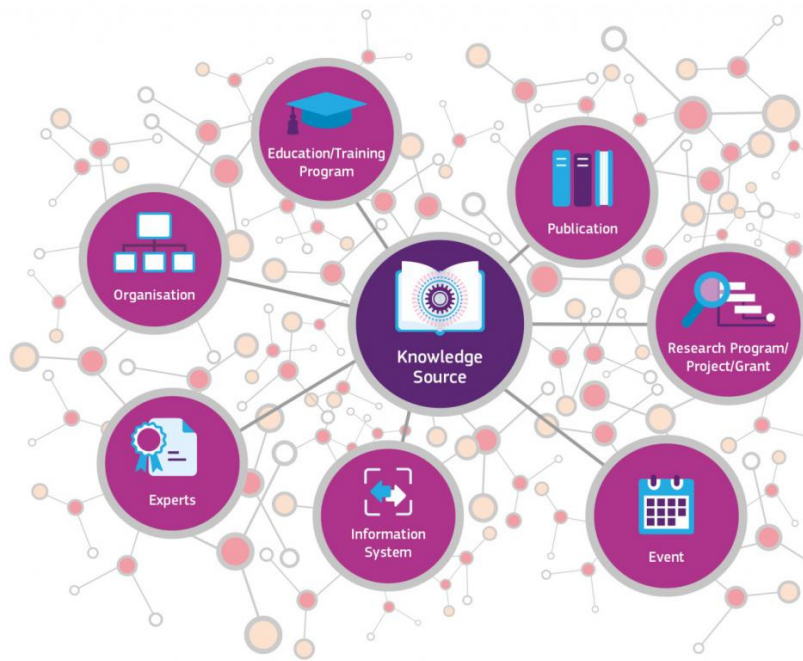


Please note that some of these Centres, such as EURL ECVAM, serve more than the country in which they have been placed.

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

Examples of networking due to experience with databases

- EU Commission Inventory of 3Rs Knowledge Sources



norecopa.no/3Rinventory

replace conventional animal testing in the field of local tolerance, dermal penetration, phototoxicity and immunotoxicity. It represents the leading methodological center for alternatives in the Czech Republic. The Laboratory evaluates specific functions of active and protective ingredients of consumer products by means of alternative methods in vitro, instrumental and clinical studies with the aim of public health protection and promotion. EU-NETVAL member.

In Silico Pharmacology

European Commission Inventory of 3Rs Knowledge Sources/97746

In Silico Pharmacology provides a forum for research articles conceiving the interface between computational and experimental work in pharmacology and toxicology. Primarily, interdisciplinary papers are published that address computational approaches in drug-design and multi-scale analysis of bioactive substances from the cellular up to behavioral level. The journal especially encourages deterministic and stochastic modeling of biological (e.g., biochemical, biophysical and immunological) processes leading to therapeutic advancements as well as mathematical methods characterizing the pharmacology of substances within the living organism. Papers investigating substance- or material-induced morphological and genetic alterations are also welcome. It is anticipated that all computational and experimental approaches are represented within In Silico Pharmacology.

CAAT Academy Hands-on training in toxicology

European Commission Inventory of 3Rs Knowledge Sources/97501

CAAT Academy is an extension of a joint venture of Johns Hopkins University Center for Alternatives to Animal Testing (CAAT) and CAAT-Europe (University of Konstanz). CAAT Academy is not-for profit and connects experts from Europe and the U.S. to provide hands-on-training in human-relevant alternative methods and technologies for toxicologists of all levels of experience, from entry level technician (BS) to laboratory or department manager (MS/PhD).

In Vitro and Alternative Methods - SOT Specialty Section

European Commission Inventory of 3Rs Knowledge Sources/97796

The In Vitro and Alternative Methods Specialty Section (IVAM) is a specialty group within the Society for Toxicology (SOT) whose members have expertise in the application of

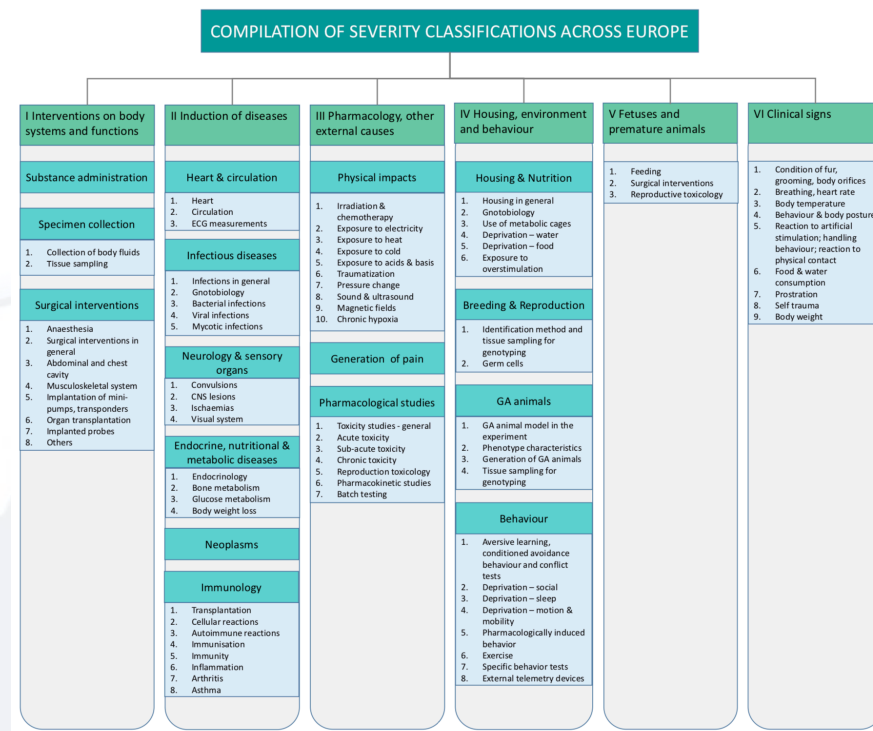
| Category | |
|--------------------------|-------------------------------------|
| <input type="checkbox"/> | Education/Training (64) |
| <input type="checkbox"/> | Event (32) |
| <input type="checkbox"/> | Experts (53) |
| <input type="checkbox"/> | Information System (131) |
| <input type="checkbox"/> | Organization (262) |
| <input type="checkbox"/> | Publication (200) |
| <input type="checkbox"/> | Research Program/Project/Grant (74) |
| Owner/Developer | |
| | Owner (abbr.) |
| | Country |
| | Language |
| | Channel |
| | Audience |
| | Potential Audience |
| | User access |
| | Update frequency |
| | 3R Relevance |
| | Purpose |
| | Legislation framework |

Examples of networking due to experience with databases

- Mild, Moderate or Severe? A compilation of severity classification

norecopa.no/severity

Anne Zintzsch, Nikolaos Kostomitsopoulos & Jan-Bas Prins



Poster PF12

'One Europe': The challenge of consistency in severity classification

Anne Zintzsch¹, Adrian Smaliv², Nikolaos Kostomitsopoulos³ & Jan-Bas Prins⁴

¹ DL Centre for Animal Welfare Science and Proficiency for Laboratory Animal Science and Animal Welfare, Germany; ² Norecopa, Norway; ³ Biomedical Research Foundation of the Academy of Athens, Greece; ⁴ The Francis Crick Institute, UK & London University Medical Centre, The Netherlands


<https://norecopa.no/severity>

Background
Severity classification is an important factor in the project authorization of animal experiments and... (text continues)

Conclusion
The compilation gives an overview of systems severity is used to design for severity classification of techniques and procedures, and for genetically altered laboratory animals.

The way forward
The next step is to review the severity classifications, add more guidance notes and include more examples of severity classification... (text continues)

<https://norecopa.no/severity>



Norecopa: PREPARE for better research

FELASA, 10-13 June 2019

Examples of networking due to experience with databases

- An International Culture of Care Network

norecopa.no/CoC

The International Culture of Care Network

Thomas Bertelsen, Novo Nordisk A/S, Denmark; **Nikolaos Kostomitsopoulos**, Biomedical Research Foundation Academy of Athens, Greece; **Anja Petrie**, University of Aberdeen, UK; **Adrian Smith**, Norecopa, Norway

Background

Recital 31 of the Directive 2010/63/EU states that breeders, suppliers and users of research animals should have an animal-welfare body which fosters a **climate of care** and provides tools for implementation of the 3Rs. Many user establishments use the phrase 'Culture of Care' on their websites, but no clear definition of this exists.

The aims of the Culture of Care Network

To provide a forum for the quick and efficient dissemination of ideas and efforts to create a culture of care

To promote a mindset and behaviour that continuously and proactively works to advance laboratory animal welfare and the 3Rs

To aim for more than a culture of compliance

To encourage a culture of challenge, rather than accepting established practice

The experience gained by the network will be useful for the review of Directive 2010/63/EU, which is due by November 2017.



Our members

The network consists of people with a large range of backgrounds:

- Laboratory animal scientists & technicians
- Laboratory animal veterinarians
- Members of Animal Welfare Bodies & National Committees
- Representatives of National competent authorities
- Communications experts
- Members of animal welfare organisations

This diversity of competency and perspectives ensures that the network encourages a culture of care both for the animals used in research and those working with them.

We are currently 28 members in 14 countries.

Interested in joining?
 Members are expected to work actively with Culture of Care. Please contact Thomas Bertelsen (tb@novonordisk.com)

References:

- M H Lloyd, B W Foden, S E Wolfensohn. Refinement: promoting the three Rs in practice. *Laboratory Animals* 2008; 42:284-293
- J Klein, K A Bayne: Establishing a Culture of Care. *ILAR Journal* 2007; 48(1):3-11
- H Herzog: Ethical Aspects of Relationships Between Humans and Research Animals. *ILAR Journal* 2002; 43(1):27-32
- <https://norecopa.no/alternatives/culture-of-care>
- http://ec.europa.eu/environment/chemicals/lab_animals/pubs_guidance_en.htm



Political networking

- Standing Committee on Business Affairs, Norwegian Parliament



Our vision:

To aid dissemination of 3R resources between the different scientific fields



kmonadollaraday.files.wordpress.com/2011/03/information-silos.jpg



london-gifts.co.uk

Norecopa: PREPARE for better research

There are lots of platforms...



...but are there enough trains?

**Norecopa aims to be a fast train
to global 3R resources**

Photo: <http://www.bbc.com/news/uk-england-london-35882068>

FELASA, 10-13 June 2019

Thanks to Norecopa's main sponsors:

- Standing Committee on Business Affairs, Norwegian Parliament
- Norwegian Ministries of Agriculture and Fisheries
- Research Council of Norway
- Laboratory Animals Ltd.
- Nordic Society Against Painful Experiments (NSMSD)
- Norwegian Society for Animal Protection
- Novo Nordisk
- Scottish Accreditation Board
- Stiansen Foundation
- Universities Federation for Animal Welfare (UFAW)
- US Department of Agriculture



norecopa.no/experience



SCOTTISH ACCREDITATION BOARD



Norecopa: PREPARE for better research

Dyrebekyttelsen Norge

FELASA, 10-13 June 2019