

norecopa

TOO LATE !!

HOW CAN WE IMPROVE ANIMAL STUDIES?

RECIPES
NORECOPA.NO/PREPARE

- GUIDELINES
- DATABASES
- INFORMATION CENTRES
- JOURNALS, DISCUSSION LISTS, ETC.

SUGGESTIONS FOR

- A MASTER PLAN
- A CONTINGENCY PLAN
- A CONTRACT (ANIMAL FACILITY & RESEARCH GROUP)

COLLABORATION

- ANIMAL CARERS AND TECHNICIANS
- VETERINARIANS
- FACILITY MANAGERS
- SCIENTISTS AND THEIR STAFF
- ANIMAL WELFARE AND ETHICS COMMITTEES
- REGULATORS

THIS WAY WE CAN

- REDUCE THE RISK OF ANIMALS SUFFERING
- IMPROVE OUR METHODS - DO BETTER SCIENCE!
- WRITE BETTER APPLICATIONS
- IMPROVE MANUSCRIPT QUALITY

PILOTS

CABIN CREW

GROUND STAFF

AIR TRAFFIC CONTROLLERS

- PRECISION
- REPLICABILITY
- HEALTH AND SAFETY
- TRANSLATABILITY

WE ARRIVED BECAUSE WE WERE PREPARED
VISIT: NORECOPA.NO/PREPARE

norecopa

PREPARE FOR BETTER SCIENCE

Annual Report for 2021

Norecopa



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Annual Report for 2021

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About Norecopa

No one wants research animals to suffer unnecessarily. This was part of the background for the founding of the consensus platform¹ Norecopa. The organisation works to promote “**the 3 R’s**” (**Replacement, Reduction, Refinement**)² within animal research. These describe a variety of ways in which animal experiments can be avoided, or methods for reducing the burden on the animals to an absolute minimum.

Norecopa's structure and mission are described in more detail in the Appendix to this Report. Norecopa’s slogan, which express its core aims and values, is:

Norecopa: PREPARE for better Science

Norecopa was 14 years old on 10 October 2021. The organisation has made considerable progress this year as well, despite the fact that the pandemic forced changes upon many of the scientific meetings. This progress is to a large extent due to the interest in Norecopa's online resources.

What have we achieved in 2021?



Norecopa has, among other things:

1. constructed an interactive global map of 3R centres and organisations
2. further developed the PREPARE guidelines
3. presented Norecopa's resources 39 times in 17 countries
4. arranged a 2-day online seminar about Nordic 3R research
5. further developed Norecopa's website and Refinement Wiki

More details and Norecopa's other activities are described in the Appendix.

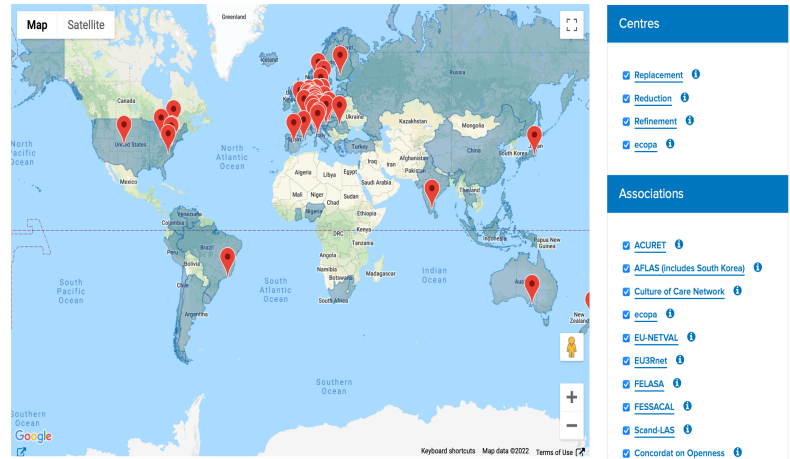
¹ <https://norecopa.no/about-norecopa/consensus>

² <https://norecopa.no/alternatives/the-three-rs>

Milestone 1: We launched an interactive global map of 3R centres and organisations

Norecopa has constructed an interactive global map of 3R centres and animal research organisations, with links to descriptions of each of these³.

Users have access to a large number of filters to decide how much information is displayed on the map. The map itself is from Google Maps, with all the functions with which most people are already familiar. New centres and organisations can be rapidly added to the map. As far as Norecopa is aware, this map is unique worldwide.



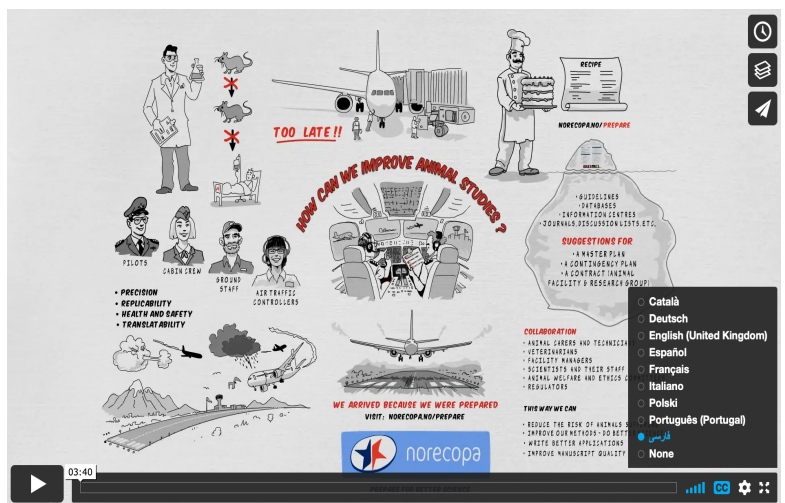
More details of collaboration between the European 3R centres, and Norecopa's website for the *International Culture of Care Network*, are available in the Appendix.

Milestone 2: We further developed the PREPARE guidelines

PREPARE stands for *Planning Research and Experimental Procedures on Animals: Recommendations for Excellence*.

PREPARE is a set of guidelines to help researchers remember all the factors which should be considered when planning experiments which can involve the use of animals. A paper about PREPARE was first published in 2018, and Norecopa has further developed the resource several times since then.

In 2019 Norecopa produced a short whiteboard film illustrating the concept behind PREPARE⁴.



³ <https://norecopa.no/global3R>

⁴ <https://norecopa.no/prepare/film>

What was new in 2021?

Fish constitute the majority of research animals in Norway, and many species are now used globally, not least zebrafish. There are many different challenges when studying aquatic species. It is there necessary to ensure that PREPARE is relevant to fish research, and this will increase its use. Therefore, Norecopa started collaboration in 2021 with the RSPCA⁵ in Great Britain, to expand PREPARE's website. The aim was to make the guidelines more relevant for fish researchers. The RSPCA sponsored some of this work.

The 15-point PREPARE checklist was translated into two more languages in 2021, bringing the total number at the end of the year up to 25. The optional subtitles are now available in 9 languages.

The image shows a screenshot of the Norecopa PREPARE website. On the left, there is a grid of 25 national flags representing the countries where the checklist has been translated. The main content area displays the 'PREPARE Guidelines Checklist' with a table of 15 items. To the right, there is a smaller version of the checklist with a blue header and a table of 15 items.

Norecopa collaborates with the *EQIPD framework for research quality control*⁶, a system for quality assurance of animal research. The PREPARE guidelines are embedded in the toolbox⁷ for this framework. PREPARE is also cited in the sections covering *Animal characterisation and use*⁸, and *Ethical evaluation and authorisation*⁹.

More information about PREPARE is available in the Appendix.

Milestone 3: We presented Norecopa's resources 39 times in 17 countries

Norecopa's Secretary presented Norecopa's resources in these countries:

<i>Belgium</i>	<i>Great Britain</i>	<i>Romania</i>
<i>Canada</i>	<i>Hong Kong</i>	<i>Slovenia</i>
<i>Denmark</i>	<i>India</i>	<i>Sri Lanka</i>
<i>Estonia</i>	<i>Iran</i>	<i>The Netherlands</i>
<i>Finland</i>	<i>Italy</i>	<i>USA</i>
<i>Germany</i>	<i>Portugal</i>	

⁵ <https://science.rspca.org.uk/sciencegroup/researchanimals>

⁶ <https://norecopa.no/3r-guide/eqipd>

⁷ <https://eqipd-toolbox.paasp.net/wiki/PREPARE>

⁸ https://eqipd-toolbox.paasp.net/wiki/3.4.1_Animal_characteristics_care_and_use

⁹ https://eqipd-toolbox.paasp.net/wiki/3.4.1.1_Ethical_evaluation_and_authorization_process_of_animal_use

Of the 39 presentations, 6 were posters and 33 were oral lectures. 25 of the 33 oral presentations were invited lectures. You can find an overview of all the presentations in the Appendix.

**Practical resources for improving the welfare of animals
in research, testing and teaching**

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adrian.smith@norecopa.no

There has never been a greater need for a global clearinghouse of information on how to improve the welfare of animals used in research, testing and teaching, and how to advance the 3Rs (Replacement, Reduction and Refinement). Norecopa's staff have been working since 1991 to collect resources for this purpose.

Norecopa maintains a large database of animal alternatives (norecopa.no/NORMA) and a database of guidelines for animal research and testing (norecopa.no/3R-Guide).

Norecopa has published the PREPARE guidelines for planning animal research and testing. The PREPARE checklist is available in 25 languages. We have made a short film illustrating the principles in PREPARE. norecopa.no/PREPARE

Norecopa hosts the website of the International Culture of Care Network, which aims to improve animal welfare, scientific quality, care of the staff and transparency around animal research. norecopa.no/ioc

Prepare Care Share Flag
Icons and more information from: <https://norecopa.no/icons>

Milestone 4: We arranged a 2-day web-based seminar on Nordic 3R research

On 5-6 May Norecopa, in collaboration with 11 Nordic 3R centres, arranged a 2-day seminar to illustrate the breadth of 3R work in this part of the world. There were presentations from all the 5 Nordic countries: Norway, Sweden, Denmark, Finland and Iceland.

Exciting work is going on to improve studies on two groups of research animals which Nordic researchers often use: fish and wildlife. Some of this work was presented at the seminar.

Two examples:

- In Bergen, an app is being developed to monitor fish health during experiments. The app alerts scientists when they are approaching the limits which have been set for the experiment.
- Researchers from Norway and Sweden described their improvements to field research, showing how it is now possible to perform detailed studies of wild individuals and groups such as wolves, without any form of physical contact. Instead, DNA studies can be performed on biological material left by the animals in the environment.

Nordic 3R webinars, 5-6 May 2021

organised by

- ArcticLAS
- Danish 3R-Center
- Finnish 3R Centre
- Finnish Centre for Alternative Methods (FICAM)
- Karolinska Institutet
- Norecopa
- Swedish 3Rs Center
- Swedish Centre for Animal Welfare (SCAW)
- Swedish University of Agricultural Sciences (SLU)
- University of Copenhagen
- University of Helsinki
- University of Oulu

Other presentations included overviews of how laboratory experiments can be improved to reduce the burden on the animals. The aim of these studies can be to learn more about human disease, such as neurological conditions.

More information about the seminar is available in the Appendix. Pdf files of the 8 presentations can be downloaded from Norecopa's website¹⁰.

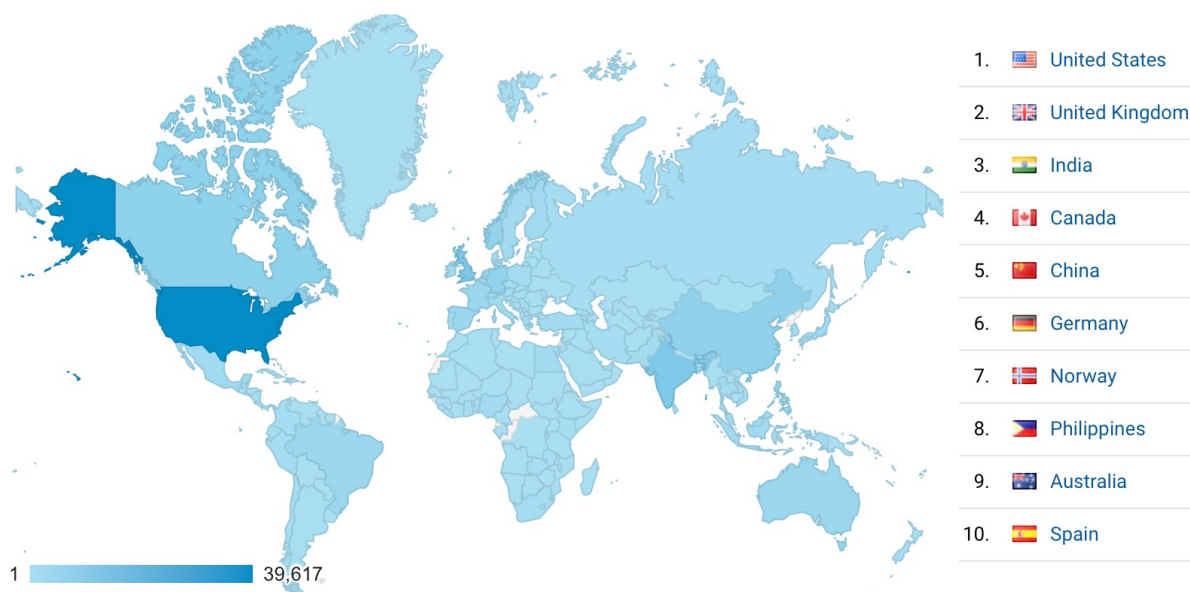
Milestone 5: We further developed Norecopa's website and the Refinement Wiki

The web pages norecopa.no are Norecopa's greatest resource, and they are freely available for all. The pages are organised as one large database, which at the end of 2021 had 8,934 pages.

Major changes "under the bonnet"

We have installed a new search engine (Algolia) and an updated version of the website editor. These changes are not so obvious for site users, but they have increased their functionality considerably. The search engine uses artificial intelligence to give users results which most closely match their search terms. Users can themselves decide whether they will only see exact matches of the search terms, or additional pages containing text that is similar to the search terms. The search engine uses a tailormade synonym list, constructed by Norecopa, which contains terms relevant to the field of animal research.

Figures from Google Analytics show that the website is in use in most countries in the world:



¹⁰ <https://norecopa.no/Nordic-webinars>

About the website and its maintenance

The website contains, among other things, several smaller "databases" which were created in the 1990s, and therefore need regular updating. Norecopa rents help for updating the NORINA database which now consists of 2,822 pages. Norecopa's Secretary also spends a lot of time editing the website. Information about outdated products is deleted from NORINA, and new products are added.

Norecopa's website is driven by computer programs on external servers in several countries. These share the work between them and take backups, under licence and with company support agreements. The software has to be continually updated and the system is regularly checked for functionality. These routine maintenance tasks cost Norecopa at least NOK 100,000 a year. An advantage with Norecopa's platform is that the website is extremely reliable and virtually never has downtime. In addition, upgrades can be prepared on a copy of the website. This means that we do not have to take the site down when construction work is being carried out.

Thanks to these investments, the website has demonstrated that it is extremely reliable. It continues to increase in popularity internationally. The website had 326,500 hits in 2021 (from 163,955 unique users). This corresponds to increases of, respectively, 9% and 21% compared with 2020.

There is more information about the website in the Appendix.

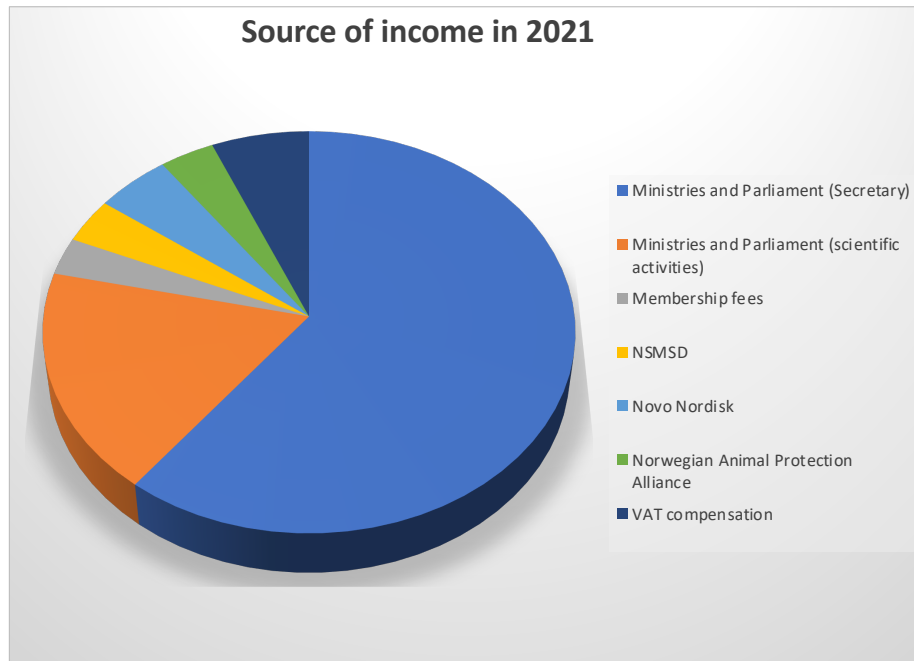
Where has the money come from?

Norecopa receives core funding from two Ministries. This financed the cost of Norecopa's Secretary in a fulltime position and NOK 500,000 for scientific activities, as in 2020. This funding was mentioned specifically in the commentary from the Standing Parliamentary Committee on Business and Industry (Næringskomitéen)¹¹ on the budget proposal for 2021 from the Ministry of Agriculture and Food¹².

The rest of Norecopa's activity was financed by membership fees and funds for which Norecopa had applied. These are described in the Appendix.

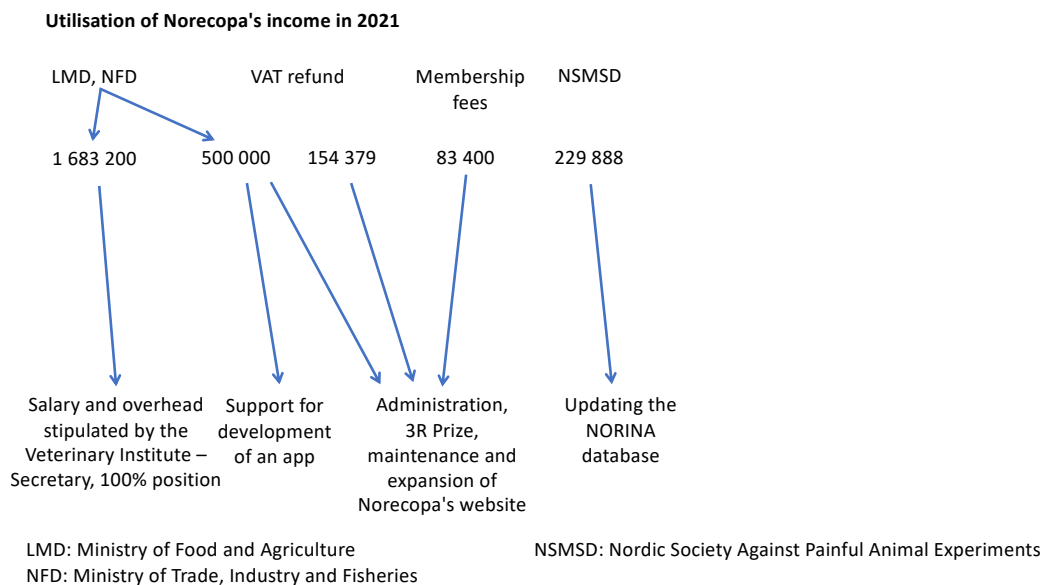
¹¹ <https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2020-2021/inns-202021-008s>

¹² <https://www.regjeringen.no/no/dokumenter/prop.-1-s-20202021/id2768374>



What has the money been used for?

The diagram below indicates roughly how Norecopa's income in 2021 was deployed.



Norecopa had one employee in 2021: Adrian Smith is Norecopa's Secretary, and he has worked in a full-time position. Norecopa has paid Elisabeth Pagels an hourly rate to update the NORINA database¹³.

¹³ <https://norecopa.no/NORINA>

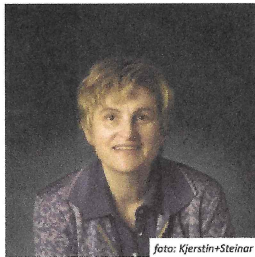
Less than 2% of Norecopa's income was used for office expenses and administration of the organisation, including legal and consultancy fees.

The accounts are described in more detail in the Appendix.

Oslo, March 2022



Bente Bergersen
(Head of the Board)



Chris Noble
(Board Member)



Kristian Straume-Lie
(Board Member)



Birgitte Fineid
(Board Member)



Adrian Smith (Secretary)



Appendix

1) About the organisation

Norecopa's structure and plan

Norecopa is an independent member organisation, registered in Brønnøysund Register Centre, with its own statutes¹⁴, and the Annual General Meeting as its highest authority¹⁵.

Norecopa's Board represents four major stakeholders in animal research and testing:

- Regulators
- Industry
- Academia
- Animal welfare organisations

Norecopa is also a member of the European umbrella organisation for National Consensus Platforms, *ecopa (European Consensus-Platform on Alternatives)*¹⁶.

Norecopa has an Activity Plan¹⁷ which is approved at the Annual General Meetings.

Norecopa's Board and Annual General Meeting

The Annual General Meeting is Norecopa's highest organ. Due to the pandemic, the Meeting in 2021 was held online, on 8 June. There were 24 participants, which was the highest number in Norecopa's history. The Annual Report and accounts for 2020, as well as the budget proposal for 2021 and membership fees (no changes from 2020) were all approved. The Board presented a proposal for a new Activity Plan, and a new Election Committee, both of which were approved.

The Election Committee now consists of:

Regulators: Dag Atle Tuft, Norwegian Food Safety Authority (re-elected)

Research: Hege Løkslett, NINA

Industry: Renate Johansen, PHARMAQ Analytiq

Animal welfare: Live Kleveland, Norwegian Animal Protection Alliance (re-elected)

The Committee was elected for 2 years. Dag Atle Tuft expressed a wish to leave the committee when this is possible, and it was accepted that this could be done before the next Annual General Meeting.

¹⁴ <https://norecopa.no/vedtekter>

¹⁵ <https://norecopa.no/no/om-norecopa/arsmøter>

¹⁶ <http://www.ecopa.eu>

¹⁷ <https://norecopa.no/aktivitetsplan>

No Board Members were due for election¹⁸ in 2021. Norecopa's Board therefore consists of the following:

Bente Bergersen, Norwegian Food Safety Authority, (Head of the Board)*
deputy: Gunvor Knudsen, Norwegian Food Safety Authority *
Susanna Lybæk, Norwegian Animal Protection Alliance*
deputy: Birgitte Fineid, Norwegian Society for Protection of Animals*
Kristian Straume-Lie, Biomark**
deputy: Ingebjørg Sævareid, Salmon Group**
Chris Noble, Nofima**
deputy: Siri Kristine Gåsnes, Norwegian Veterinary Institute**
**until 2022 **until 2024*

Board Member Susanna Lybæk (who changed her name to Susanna Thee Heggli during the course of the year) took maternal leave from November 2021.

All the documents and minutes from the Annual General Meeting are available on Norecopa's website¹⁹.

Three Board Meetings were held in 2021 (on 3 February, 26 April and 20 September). The minutes are available on Norecopa's website²⁰.

The Secretariat

Norecopa's secretariat is affiliated to the Norwegian Veterinary Institute, who therefore have responsibility for Norecopa's personnel and accounts. The position as Secretary was previously located under the Section for Animal Health, Wildlife and Welfare, but is now classified under "other employees". The Secretary receives support from the Institute's Administration, among other things to issue invoices.

Adrian Smith has been permanently employed as Norecopa's Secretary in a 50% position since 2008. In agreement with Norecopa's Board, he works from home. In 2020 he worked in a 100% position, thanks to a decision by Parliament during the budgetary debate in December 2020.

Work conditions, equality and environmental impact

In 2021 Norecopa had one male employee in a 100% position. He had an agreement with the Norwegian Veterinary Institute permitting him to work from home. Norecopa's Board consists of two men and two women (one of the latter being Head of the Board). No injuries or

¹⁸ <https://norecopa.no/styre-og-sekretariat>

¹⁹ <https://norecopa.no/arsmoter>

²⁰ <https://norecopa.no/styrereferater>

accidents to the employees were registered in 2021, nor were complaints about the working environment registered. Norecopa does not perform tasks which can cause significantly detrimental effects to the environment.

Norecopa's members

At the end of 2021, 41 institutions or departments were full members of Norecopa, and 19 private persons were associate members. This is one institution more, and two people less, than in 2020. The majority of the large research institutions in Norway are members of Norecopa. No increases in fees were made in 2020. The membership fee is NOK 2,000 for institutions or departments, and NOK 200 for private persons. The fees for private persons have been unchanged since Norecopa was founded in 2007, and the fees for institutions have been unchanged since 2018.

2) Finances

Accounts for 2021

Norecopa's core funding comes from the Ministry of Agriculture and Food (Landbruks- og matdepartementet) and from the Ministry of Trade, Industry and Fisheries (Nærings- og Fiskeridepartementet). This is provided via funds given to the Veterinary Institute to enable them to carry out tasks for the Government. In December 2020 Parliament voted to allocate a 100% position to Norecopa's secretariat in 2021. The Veterinary Institute runs Norecopa's accounts as a project, which meant that the cost of the secretarial position was stipulated by them to be NOK 1,683,200 in 2021. This amount covers not only the Secretary's salary, but also the Institute's overhead for the position.

In addition to covering this cost, Parliament allocated NOK 500,000 directly to Norecopa as a contribution towards its scientific activities. The rest of Norecopa's activity in 2021 was financed by membership fees and funds for which Norecopa has applied from external sources. For the fiscal year of 2021 these external contributions amounted to a total of NOK 737,779. A deficit of NOK 50,190 was carried over from 2020. The accounts for 2021 showed a surplus of NOK 6,749 which was carried over to 2022.

Norecopa has also an external bank account in Sparebanken Sør. The account is used for donations that Norecopa receives from external sources. This account is monitored by an independent accounting company (SALDO Regnskap, Risør). The purpose of the account is to ensure that any surplus from such donations is carried over to the following year. In 2021 the Nordic Society Against Painful Animal Experiments (NSMSD)²¹ transferred NOK 100,000 to this

²¹ <https://www.nsmsd.no>

account for updating the NORINA database. At the end of 2021 this account had a surplus of NOK 412,658.

Regnskap og budsjett, Norecopa

Utgifter	Regnskap 2021	Budsjett 2021	Regnskap 2020	Budsjett 2020	Regnskap 2019	Budsjett 2019
1) Dellagelse på ecopas årsmøte	0,00	10 000,00		10 000,00	0,00	10 000,00
Drift av sekretariatet						
2) Bokførte utgifter til sekretærstillingen (Adrian Smith)	1 683 200,00	1 683 200,00	1 683 200,00	1 683 200,00	1 590 040,00	1 590 040,00
3) Bokførte utgifter til konsulent	11 821,20	0,00	0,00	0,00	138 609,39	0,00
4) Kontoutgifter	10 519,28	9 910,00	5 700,00	14 417,00	24 723,82	22 814,00
4a) Kontorevise	904,00	3 910,00	481,00	9 417,00	7 245,00	17 814,00
4b) Kjøp og oppgradering av datamaskin og programvare	9 615,28	6 000,00	5 219,00	5 000,00	17 478,82	6 000,00
Trykningsutgifter						
5) Materiale til årsmøtet	0,00	0,00	0,00	0,00		5 000,00
6) Øvrig informasjonsmateriale	1 115,99	0,00	0,00	20 000,00	74 050,66	100 000,00
7) Medlemsavgift ecopa	1 040,29	1 100,00	1 062,66	1 000,00	982,43	1 000,00
8) Faglige møter	21 742,91	80 000,00	40 893,40	50 000,00	117 667,80	7 000,00
Nettsider						
9) Lisenser og supportavtaler	99 198,00	90 000,00	80 706,32	100 000,00	78 973,84	319 273,00
10) Videreutvikling og reparasjoner av nettsidene	157 600,00	80 000,00	429 937,51	282 200,00	183 062,52	
11) Domenerregistrering	6 825,00	9 000,00	7 368,20	10 000,00	8 481,25	7 670,00
Styremøter, årsmøte, høringer						
Reiseutgifter	1 391,98	0,00	0,00	20 000,00	28 058,69	15 000,00
12) Årsmøte (gjestetforlesere og Norecopas personale)	0,00	0,00	0,00	10 000,00	27 359,73	10 000,00
13) Høringer og lignende	1 391,98	0,00	0,00	10 000,00	698,96	5 000,00
Beverning	0,00	0,00	0,00	7 000,00	6 927,92	5 000,00
14) Årsmøte / annet møte (hvis det er mulig å arrangere det)	0,00	0,00	0,00	7 000,00	6 927,92	
Øvrig faglig aktivitet						
15) Utdeling av SR pins	369 387,10	408 379,00	160 539,80	261 600,00	160 254,00	580 500,00
16) Årsmøte faglig arbeid	335 392,60	370 379,00	156 864,80	220 000,00	30 949,59	30 000,00
16a) FishENDS-Dig	200 000,00	200 000,00				150 000,00
16b) PREPARE for lekeforstørre	135 068,00	160 379,00				
16c) Øvrige utgifter	324,60	10 000,00				
17) Oppdatering av NORINA	0,00	0,00	0,00	0,00		250 000,00
18) ENRICH-Fish	0,00	0,00	0,00	500,00	402,50	500,00
19) Oppgradering av nettsidene	lagt til pkt. 10 ovenfor	lagt til pkt. 10 ovenfor	lagt til pkt. 10 ovenfor	lagt til pkt. 10 ovenfor	71 484,38	100 000,00
20) PREPARE	3 230,00	8 000,00	3 675,00	10 000,00	2 078,26	50 000,00
21) Konsensusmøte	0,00	0,00	0,00	0,00		
Sum utgifter uten midlene til sekretærstillingen	678 359,73	686 395,00	726 307,89	776 117,00	811 792,82	
Relasjoner i forbindelse med ivertatte foretak ikke bokført ovenfor	0,00	0,00	0,00	0,00	-18 946,89	
Sum utgifter	2 363 839,73	2 371 589,00	2 409 907,89	2 459 317,00	2 382 885,72	2 658 297,00
Inntekter						
22) Tildelinger	-2 183 000,00	-2 183 200,00	-2 183 200,00	-2 183 200,00	-1 840 040,00	-1 840 040,00
23) Momskompensasjon	-154 379,00	-154 379,00	0,00	-100 000,00	-122 152,00	-110 000,00
24) Tilskudd fra Stansent/LAL/SAB/Dyrebeskyttelses Fond/Scand-LAS	0,00	0,00	0,00	0,00	-50 000,00	
25) Tilskudd fra Nordisk Samfund	0,00	0,00	0,00	0,00	0,00	-250 000,00
26) ENRICH-Fish	0,00	0,00	0,00	0,00		
27) Novo Nordisk + NSMSD+SAB+LAL+USDA+UFAW+ Rahms+Samøll	0,00	0,00	-56 555,00	-56 555,00		-50 000,00
28) PREPARE	0,00	0,00	0,00	0,00		
29) Medlemsavgift, fullt medlemskap	-80 000,00	-80 000,00	-80 000,00	-80 000,00	-80 000,00	-82 000,00
30) Medlemsavgift, assosiert medlemskap	-3 400,00	-4 200,00	-4 200,00	-4 200,00	-4 200,00	-4 400,00
31) Resultatet fra året før	50 190,00	50 190,00	-35 362,00	-35 362,00	-321 856,62	-321 857,00
Sum inntekter	-2 370 589,00	-2 371 589,00	-2 359 317,00	-2 459 317,00	-2 418 248,62	-2 658 297,00
Resultat	6 749,27	0,00	-50 190,89	0,00	35 362,90	0,00

I tillegg til disse midlene opprettet Norecopa i 2019 en konto i Sparebanken Sør. Kontoen brukes til å ta i mot donasjoner til Norecopa, bl.a. til vedlikehold av NORINA-databasen. Ved inngangen til 2021 var det 248 148 kr på kontoen til bruk på NORINA, og 53 692 kr fra honorarer/prispenger til Adrian Smith. Inntekter i 2021:
 DKK 100.000 fra Novo Nordisk (bokført som 136 561 kr) til vedlikehold av NORINA
 100 000 kr fra Dyrevernalliansens Forskningsfond til et prosjekt som utføres i 2022
 Momskompensasjon for 2019 og 2020 (hhv. 7 225 kr og 16 222 kr)
 100 000 kr fra NSMSD til vedlikehold av NORINA
 Forelesningshonorarer (1999, 18 og 1367,23)
 Utgifter i 2021:
 NORINA: 212 485 kr
 Grafisk design (interaktivt kart og ikoner): 40 063 kr

Erklæring for regnskapet til Norecopa for 2021
 Jeg har gjennomgått regnskapet for 2021 og ikke funnet noe å utsette på det oppsatte regnskapet.

Oslo 2.3.2022


 Jon Li Tjersvaag

The accounts for 2021 were controlled by Norecopa's accountant, Jon Li Tjersvaag. Norecopa's funds from Parliament form part of the Veterinary Institute's accounts, and they are therefore

also controlled by the Office of the General Auditor of Norway. The necessary conditions for the continued existence of Norecopa are present.

In Norecopa's experience it is extremely difficult to run an effective organisation on the 50% position which was initially provided by the Ministries. Extra funds have been provided annually, from 2013 onwards, by the Standing Parliamentary Committee on Business and Industry (Næringskomitéen). The fact that Norecopa had a full-time secretarial position and NOK 500,000 for running costs in 2021 gave the Norecopa the necessary room to achieve the milestones described in the first part of this Report.

Overview of external funding in 2021

1. The proposals for the State Budget for 2021 from the Standing Parliamentary Committee for Business and Industry²² were approved by Parliament, so that Norecopa was allocated a 100% secretarial position and NOK 500,000 towards its activities.
2. Norecopa's agreement with the Nordic Society Against Painful Animal Experiments²³ (NSMSD) for financing the work of developing the NORINA database²⁴ ended in 2020, but the Society sponsored NORINA with an additional NOK 100,000 kr in 2021. This money was deposited in the donor account, for use in 2022.
3. Norecopa applied to Novo Nordisk in Denmark for support for the work of updating the NORINA database²⁵. Norecopa was awarded DKK 100,000. This money (NOK 136,561) was deposited in the donor account in December, for use in 2022.
4. Norecopa applied to the Norwegian Animal Protection Alliance's Research and Development Fund for money to conduct an in-depth analysis of the statistics concerning the use of animals in research and testing in Norway. This analysis will complement the work that will be done as part of a work package in a project led by the Institute of Marine Research, described above. The Fund awarded Norecopa NOK 100,000. This money was deposited in the donor account in December, for use in 2022.
5. Norecopa applied to the Norwegian Gaming and Foundation Authority for compensation for Value Added Tax payments in 2020 for its expenses on the donor account, and received NOK 16,222. The compensation for 2019 on the donor account (NOK 7,225), which was applied for in 2020, arrived so late that it too became part of the accounts for 2021. Likewise, the compensation for 2019 on Norecopa's main account at the Norwegian Veterinary Institute (NOK 154,379) was registered in 2021.
6. Norecopa's members contributed a total of NOK 84,200 in membership fees.

²² <https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2017-2018/inns-201718-008s>

²³ <http://www.nsmsd.no>

²⁴ <https://norecopa.no/NORINA>

²⁵ <https://norecopa.no/NORINA>

7. As mentioned below, Norecopa's Secretary received \$5,000 in prize money in 2021. In addition he received a total of NOK 3,300 in fees for two invited lectures (in Germany and Sweden). All this income was deposited in the donor account.

Norecopa is extremely grateful to all those who support the organisation.

3) Activities designed to achieve Norecopa's aims

An interactive map of 3R centres and organisations

Norecopa participates in a network of European 3R centres, called *EU3Rnet*²⁶, which was established in 2019. In 2021 Norecopa launched an interactive global map of 3R centres and organisations within the animal research community, with links to descriptions of each resource²⁷. This was financed by prize money won by Norecopa's Secretary (see below for a description of the prize). The map has a simple web address: norecopa.no/global3R

In 2021 EU3Rnet delivered an application for a *COST Action*²⁸ to finance its future activities. The outcome of this application is not yet known. Much time was also spent in 2021 on writing an in-depth report on the development of European 3R centres, which was submitted to a journal towards the end of the year.

The PREPARE guidelines for planning animal research and testing

In 2021 Norecopa collaborated with the RSPCA²⁹ in Great Britain in order to make PREPARE's web pages more attractive for fish researchers. The design of the website was renewed and an extra tab for fish researchers was added. Both new and existing resources were then moved to these tabs. Several international fish experts also contributed links to relevant resources. The RSPCA financed some of this work.

²⁶ <https://norecopa.no/3r-guide/eu3rnet>

²⁷ <https://norecopa.no/global3R>

²⁸ <https://www.cost.eu/about/about-cost>

²⁹ <https://science.rspca.org.uk/sciencegroup/researchanimals>

PREPARE

PREPARE checklist

Comparison with ARRIVE

Endorsements

Film

1-Literature searches ^

1-Literature searches

Literature searches help to:

- identify possible non-animal alternatives to all or part of the proposed study
- prevent unnecessary repetition of animal studies
- identify efforts to reduce animal numbers
- identify refinements to procedures in the planned study

1a Form a clear hypothesis, with primary and secondary outcomes.

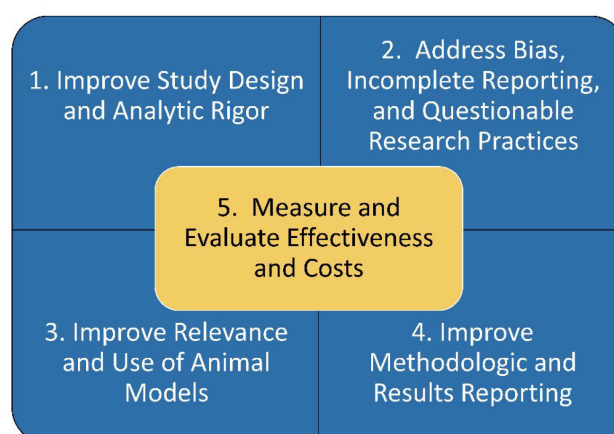
General principles For fish researchers

The PREPARE checklist was translated into Thai and Bahasa Indonesian in 2021. By the end of the year it was available in a total of 25 languages. Norecopa is grateful to colleagues for invaluable help with these translations.

Norecopa's whiteboard film about PREPARE was equipped with an additional optional set of subtitles in Polish, bringing the total number of subtitles up to 9 (English, Catalan, Farsi, French, German, Italian, Polish, Portuguese and Spanish)³⁰. Optional subtitles in English are also available on the Facebook version³¹.

The original article about PREPARE has now been read or downloaded a total of over 21,700 times from the journal website since it was published³² and until the end of 2021 (approximately 5,000 of these occurred in 2021). The paper has been cited over 60 times in scientific papers during the course of the year.

In June 2021 a working group convened by the NIH (National Institutes of Health) in the USA published a report about Enhancing Rigor, Transparency and Translatability in Animal Research³³:



³⁰ <https://vimeo.com/358069203>

³¹ <https://www.facebook.com/Norecopa/videos/3087708787944200>

³² <https://journals.sagepub.com/doi/metrics/10.1177/0023677217724823>

³³ https://acd.od.nih.gov/documents/presentations/06112021_ACD_WorkingGroup_FinalReport.pdf

The report mentions PREPARE as one of the standards that can strengthen critical elements in animal studies, leading to '*a higher quality knowledge base, and will better inform future research*'.

PREPARE is also mentioned in the Annual Report³⁴ from the *Concordat on Openness on Animal Research*³⁵. This is a declaration signed by over 120 research institutions in Britain. The Board of this declaration asked the institutions about their use of PREPARE. Of these, 34 replied that they use PREPARE actively, and 29 institutions have made this mandatory when animal research is planned.

Presentations of Norecopa's resources at scientific meetings

Norecopa's Secretary delivered the following presentations:

1. A presentation about planning animal research for scientists at Karolinska Institutet on 18 January.
2. A poster presentation entitled *Global resources to help us focus on fish* at the RSPCA's meeting *Focus on Fish: Practical refinements for fishes in research and testing*³⁶ (23 February)
3. A presentation on planning animal research for scientists at Karolinska Institutet on 9 March
4. A presentation at the annual meeting of the IAT (Institute of Animal Technology, UK), entitled *Preparing, Caring, Sharing and Flagging: tools for animal care staff*³⁷ and a poster with the title *PREPARE for Better Science: Guidelines for Animal Research*. A paper based upon the poster was published in the August issue of the IAT's journal, *Animal Technology and Welfare*³⁸ (9-25 March)
5. A presentation for scientists at the Max Planck Institute entitled *Can we improve both our scientific output and animal welfare? Experiences with planning animal studies*³⁹ (17 March)
6. A presentation entitled *PREPARE, Refinement Wiki and training tools*⁴⁰ for the EU Commission's meeting for National Contact Points⁴¹ (5 May)
7. A presentation for scientists at Newcastle University entitled *Replacement of animal models in biosciences with non-animal alternatives*⁴² (19 May)

³⁴ <https://concordatopenness.org.uk/wp-content/uploads/2021/12/Concordat-Report-2021.pdf>

³⁵ <https://concordatopenness.org.uk>

³⁶ <https://focusonfish.co.uk>

³⁷ <https://norecopa.no/IAT>

³⁸ <https://journal.atwjournal.com/atwaugust2021#page=87>

³⁹ <https://norecopa.no/Freiburg>

⁴⁰ <https://norecopa.no/NCP>

⁴¹ https://ec.europa.eu/environment/chemicals/lab_animals/ms_en.htm

⁴² <https://norecopa.no/Newcastle>

8. A presentation for the Finnish 3R platform Fincopa⁴³ on *New perspectives on refinement*⁴⁴ (20 May)
9. A presentation at the Annual Symposium of the Canadian Association of Laboratory Animal Science (CALAS) entitled *Preparing, Caring, Sharing and Flagging: tools for animal care staff*⁴⁵ (7 June)
10. At the annual UFAW Symposium on Recent Advances in Animal Welfare Science⁴⁶ a poster with the title *A four-pronged approach for better planning and conducting of animal research and testing*⁴⁷, and (in collaboration with Thomas Bertelsen, Novo Nordisk) a poster about The International Culture of Care Network⁴⁸ (29-30 June)
11. A presentation for doctoral students at Utrecht University entitled *How to plan animal studies well*⁴⁹ (1 July)
12. A presentation for scientists at the Tehran University of Medical Sciences with the title *Can we improve our scientific quality and animal welfare? Experiences with planning animal studies*⁵⁰ (6 July)
13. A presentation at the VetBioNet⁵¹ Summer School entitled *Can we improve both our scientific output and animal welfare? The PREPARE guidelines for planning animal studies* (14 July)
14. A presentation at a meeting of the Sri Lankan Association of Laboratory Animal Sciences on *The PREPARE and ARRIVE Guidelines; for better Science, Welfare and Safety*⁵² (25 July)
15. A webinar organised by the Animal Protection Commissioner of Berlin and Johns Hopkins Center for Alternatives to Animal Testing (CAAT)⁵³ entitled *Norecopa: A National Consensus Platform working to advance the 3Rs internationally*⁵⁴ (19 July)
16. A poster at the 54th International Congress of the International Society for Applied Ethology (ISAE)⁵⁵ entitled *Practical resources for improving the welfare of animals in research, testing and teaching* and an explanatory 2.5-minute video (2-6 August)
17. A webinar for the City University of Hong Kong, with the title *Experiences with planning animal studies. Improved scientific output and animal welfare*⁵⁶ (16 September)
18. A presentation on planning animal experiments for scientists at Karolinska Institutet on 30 September

⁴³ <https://fincopa.fi>

⁴⁴ <https://norecopa.no/Fincopa>

⁴⁵ <https://norecopa.no/CALAS>

⁴⁶ <https://www.ufaw.org.uk/ufaw-events/recent-advances-in-animal-welfare-science-viii>

⁴⁷ <https://norecopa.no/media/dukpjdcg/smith-prepare-poster-ufaw-2021.pdf>

⁴⁸ <https://norecopa.no/media/0grebnfn/culture-of-care-in-animal-research-poster-ufaw-2021.pdf>

⁴⁹ <https://norecopa.no/Utrecht>

⁵⁰ <https://norecopa.no/TUMS>

⁵¹ <https://norecopa.no/3r-guide/vetbionet>

⁵² <https://norecopa.no/250721>

⁵³ <https://caat.jhsph.edu/programs/index.html>

⁵⁴ <https://norecopa.no/190721>

⁵⁵ <https://isae2021.exordo.com>

⁵⁶ <https://norecopa.no/HK>

19. A presentation at the annual meeting of Centro 3R⁵⁷ entitled *Norecopa: a database of global 3R resources for better Science*⁵⁸ (1 October)
20. A presentation at the 18th ESBRA Congress⁵⁹ in Timisoara, Romania, entitled *The PREPARE guidelines: An overarching guidance on how to plan animal experiments* (9 October)
21. A pre-recorded presentation for the Aquatic Life Conference⁶⁰ entitled *Norecopa: A source of global 3R resources for better animal research*⁶¹ (15-18 November)
22. A presentation at a symposium about *Better Animal Research through Open Science*⁶² arranged by Utrecht University, entitled *PREPARE for better animal research* (26 October)
23. Participation at the Scand-LAS Symposium in Tallinn. He held two workshops, had two oral presentations and a poster. (2-4 November)
24. A pre-recorded presentation (8 minutes) for the Annual General Meeting of *ecopa*⁶³ entitled *Norecopa: an update for ecopa*⁶⁴ (4 November)
25. A presentation entitled *The PREPARE guidelines for planning animal research: checklists and resources* at a symposium on *Best practice in pre-clinical animal research: Navigating the guidelines and principles*⁶⁵, arranged by the University of Helsinki (10 November)
26. A webinar for the Slovenian Society for Laboratory Animals⁶⁶ entitled *The path to good reporting of animal experiments*⁶⁷ (11 November)
27. A presentation at the annual symposium of the Danish 3R centre, entitled *A new era of 3R resources and networking: the European 3R centres*⁶⁸ (16-17 November)
28. A presentation at a scientific meeting arranged by the Portuguese Society for Laboratory Animal Science (SPCAL)⁶⁹ with the title *How to plan better experiments: the PREPARE guidelines*⁷⁰ (10 December)
29. A presentation for the annual meeting of the Indian Society for Alternatives to Animal Experiments (SAAE-I)⁷¹ entitled *How to plan better experiments*⁷² (11 December)

⁵⁷ <https://norecopa.no/3r-guide/centro-3r>

⁵⁸ <https://norecopa.no/Centro3R>

⁵⁹ <https://esbra.medevents.ro/scientific-program>

⁶⁰ <https://sites.google.com/ali.fish/aquaticlifeconference>

⁶¹ <https://norecopa.no/AquaLife>

⁶² <https://ivd-utrecht.nl/en/news/better-animal-research-through-open-science-1>

⁶³ <https://www.ecopa.eu>

⁶⁴ <https://norecopa.no/ecopa21>

⁶⁵ <https://www.biocenter.fi/events-news/best-practice-in-pre-clinical-animal-research-navigating-the-guidelines-and-principles>

⁶⁶ <https://www.slas.si/index.php/en>

⁶⁷ <https://norecopa.no/Slovenia>

⁶⁸ <https://norecopa.no/171121>

⁶⁹ <https://www.spcal.pt/en>

⁷⁰ <https://norecopa.no/Peniche>

⁷¹ <https://www.saae-i.org>

⁷² <https://norecopa.no/SAAE>

Participation at all of these meetings was virtual, except for nos. 20 & 24.

PREPARE for better science: guidelines for animal research

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The present debate about the so-called 'reproducibility crisis' within preclinical studies has been dominated by eloquent papers focussing on the very real, but more 'mathematical' issues. These are only part of the problem.

The solution to this crisis must involve greater attention to the animal-related issues and the facilities in which they are kept. These issues may be less obvious to those who have not worked in an animal unit but they constitute by far the greatest potential source of variation in preclinical studies.

To make matters worse, it is frequently stated that the

solution lies in better reporting of animal studies. An experiment cannot be improved by describing it. Our firm belief, after many years of working within animal facilities, is that the clue lies in closer collaboration between all parties from day one of planning. In this way, specialists in laboratory animal science, statisticians and scientists can attend to the many factors which will determine the outcome of the study: both its validity and the animals' welfare.

The PREPARE Guidelines have been written to solve this challenge. They are based on experiences over the last 30 years in conducting and supervising preclinical research.



PREPARE consists of a 2-page checklist, in 20 languages and importantly, webpages with guidance on each of the 15 topics on the checklist. The PREPARE webpages are part of the Norecopa website, which contains over 8,500 pages of resources designed to attend to the 3Rs: Replacement, Reduction and Refinement of animal research.

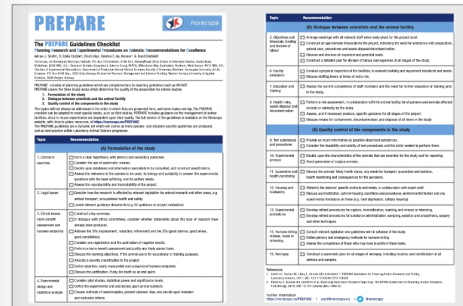
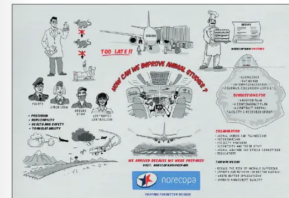


Figure 2. PREPARE checklist.

We have produced a 3-minute cartoon film to illustrate this, using the aviation industry as an analogy with its impressive ability to ensure quality and reproducibility, despite variable traffic conditions and the risk of human errors.



https://norecopa.no/PREPARE_film

Acknowledgements

The PREPARE checklist is published with permission from: Smith AJ, Clutton RE, Lilley E, Hansen KEA, Anderson A & Brattelid T (2018): PREPARE: Guidelines for planning animal research and testing. *Laboratory Animals*, 52(2): 135-141. doi: 10.1177/0023677217724823.

Presentations at the World Congress on alternatives to animal experiments

Norecopa's Secretary participated actively in the *World Congress on Alternatives and Animal Use in the Life Sciences* (23 August - 2 September)⁷³. The Congress was originally to be a physical event in Maastricht (first in 2020, and then postponed to 2021), but eventually it became a totally virtual meeting, with 1,300 participants.

He held 4 oral presentations at the Congress:

- *Norecopa: A hub of international resources* (recording⁷⁴ and presentation⁷⁵)
- *Are we Car Salesmen, Boy Scouts or Airline Pilots? Preparing for robust and humane research* (recording⁷⁶ and presentation⁷⁷)
- *A Refinement Wiki* (recording⁷⁸ and presentation⁷⁹)
- *Is wildlife research "second-rate science"? What can lab animal and field scientists learn from one another?* (recording⁸⁰ and presentation⁸¹)

⁷³ <https://www.wc11maastricht.org>

⁷⁴ <https://vimeo.com/606464715>

⁷⁵ <https://norecopa.no/WC11>

⁷⁶ <https://vimeo.com/606470758>

⁷⁷ <https://norecopa.no/WC11-PREPARE>

⁷⁸ <https://vimeo.com/606480055>

⁷⁹ <https://norecopa.no/WC11-wiki>

⁸⁰ <https://vimeo.com/606488956>

⁸¹ <https://norecopa.no/WC11-wildlife>

Charles River Excellence in Refinement Award

During the World Congress Adrian Smith was awarded the *Charles River Excellence in Refinement Award* for his work on improving animal research. The prize consisted of a diploma and \$5,000. This prize was originally to have been awarded during the Congress in 2020. He therefore had time to use the prize money before the Congress in 2021. The money was used for two projects (described above):

- creation of an interactive global map of 3R centres and animal research organisations⁸²
- construction of a set of animated icons for free use when making presentations about planning animal research⁸³



A recording of his acceptance speech⁸⁴, and photos from the presentation⁸⁵, are available. The award was mentioned in several Norwegian media, including the newspaper Nationen⁸⁶.

⁸² <https://norecopa.no/global3r>

⁸³ <https://norecopa.no/prepare-care-share-flag>

⁸⁴ <https://vimeo.com/606496815>

⁸⁵ <https://norecopa.no/CR>

⁸⁶ <https://www.nationen.no/nyhet/har-i-mange-ar-jobbet-med-alternativer-til-dyreforsok-fikk-pris>

Online seminar about Nordic 3R research

In collaboration with all the Nordic 3R centres, Norecopa arranged an online seminar on 5-6 May, where all the 5 Nordic countries had the opportunity to present selected 3R projects.

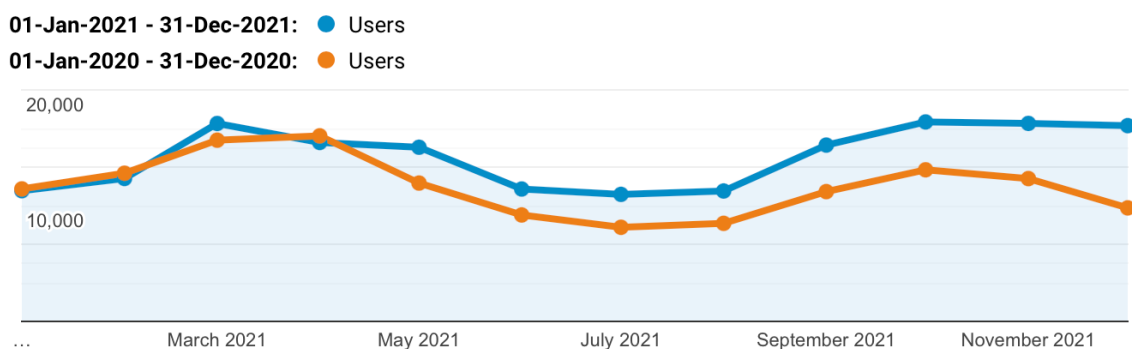
There were two presentations from Norway: Norecopa's 3R prizewinner Øystein Flagstad described his use of environmental DNA to track wild animals. Aurora Brønstad introduced the app *FishEnds-DIG*⁸⁷ which is under development, sponsored by Norecopa. More information about the seminar, and pdf files of the 8 presentations, are available⁸⁸.

Further development of Norecopa's website

Norecopa has had its own webpages, <https://norecopa.no>, since February 2008. In addition, the suffices *.info*, *.com*, *.eu*, *.net*, *.org* og *.cn* are registered for the domain name. Norecopa uses Google Analytics to monitor the use of the website.

Norecopa has employed two companies, NetLab and Bitfarm, to maintain and develop the website. Norecopa has a support and licensing agreement with Bitfarm. The company Webhuset is used to register Norecopa's domains, og Getonnet provides the software for a discussion forum run by Norecopa (see below).

The statistics show that the website is in use in the majority of countries worldwide. According to Google Analytics there were 326,500 hits on the website in 2021, from 163,955 unique users, who represented the majority of countries in the world. The corresponding figures for 2020 were 300,693 hits and 135,728 unique visitors, i.e. increases of (respectively) 9% and 21%. Thus the trend of increasing use continues - the figures for the increases from 2019 to 2020 were 19% and 18%, respectively.



⁸⁷ <https://norecopa.no/species/fish/projects/fishends-dig>

⁸⁸ <https://norecopa.no/Nordic-webinars>

In addition to these visits, files were downloaded from Norecopa's website over 5,400 times, which is approximately the same number as in 2020.

Norecopa's website includes several databases. Among these is NORINA⁸⁹, which contains information on products which can replace or supplement the use of animals in education and training, and TextBase⁹⁰, which contains information on literature within laboratory animal science. In 2018 the Nordic Society Against Painful Animal Experiments (NSMSD) renewed its support of the work of maintaining and updating these databases. In 2021 the majority of this work was conducted by Elisabeth Pagels (employed by Bitfarm), according to a 3-year agreement med Bitfarm which was signed at the end of 2018. The work this year has largely consisted of deleting out of date records and the creation of entries for new products. The total number of records in the databases therefore reflects both these tasks. At the end of 2021, NORINA contained information on about 2,800 products, while TextBase had roughly 1,500 entries. These figures are approximately the same as in 2020.

In addition to the website, Norecopa runs a closed discussion forum via email, for those with special responsibility for the country's animal research facilities. This forum is, as of now, the only channel by which this group can discuss matters of common interest. In 2021 the forum had 45 members, which was one more than in 2020.

Norecopa continues to finance the website for the ENRICH Fish project⁹¹, which was terminated in 2017.

Further development of Norecopa's Refinement Wiki

In collaboration with colleagues in Norway and abroad, Norecopa has greatly expanded its user-managed website (*Refinement Wiki*, wiki.norecopa.no) that was launched in 2020. The number of pages in the Wiki roughly doubled in 2021.

Seminar on the ethics of animal research

On 27 May Norecopa and the Norwegian Council on Animal Ethics arranged a virtual seminar about the ethics of animal research⁹². There were presentations on the ethical review of applications for animal research, the ethics of the use of fish and wildlife in research, and on the Norwegian Parliament's attitude to ethics and research animals. There was also some time for questions and discussion among the approx. 100 participants.

⁸⁹ <https://norecopa.no/norina-database>

⁹⁰ <https://norecopa.no/textbase-database>

⁹¹ <https://norecopa.no/fish/projects/enrich-fish>

⁹² <https://www.radetfordyreetikk.no/webinar-26-mai-forsoksdyr-og-etikk>

Gunvor Knudsen from the Norwegian Food Safety Authority (Mattilsynet) described how they performed the ethical review of applications. Ingunn Sommerset from the Norwegian Veterinary Institute cast light on the many ethical dilemmas around fish research, and Jon Arnemo from the Inland Norway University of Applied Sciences described the challenges associated with wildlife research, especially the artificial distinction between the use of animals for pure research and the capture of animals for population management. The leader of Parliament's Standing Committee for Business Affairs and Industry, Geir Pollestad⁹³ (the Centre Party), rounded off the meeting by giving his opinion of Parliament's awareness of the ethics of animal research.

The presentations may be downloaded from the seminar's website⁹⁴.

Inclusion of data sets from the EU Commission and AWIC

Norecopa embedded another inventory of 3R resources from the EU Commission's Joint Research Centre (JRC) in its website⁹⁵. The inventory was the result of an evaluation, published in 2020, of advanced animal-free models for research into respiratory disease. The inventory contains 280 resources. By embedding it in Norecopa's website it can be searched simultaneously with Norecopa's other resources, and filters can be used to narrow down the list of search hits.

In addition, Norecopa continued its collaboration with AWIC (the Animal Welfare Information Center at the National Agricultural Library in the USA)⁹⁶. AWIC sent Norecopa 80 bibliographic references on the 3Rs which their staff had identified, and these were embedded in an existing data set from AWIC on Norecopa's website, which now contains 1,688 references.

Production of animated icons

Norecopa's Secretary commissioned a set of animated icons which can be used to explain four central principles when animal experiments are planned and conducted. The icons illustrate the following principles:

- *PREPARE* - use guidelines when experiments which may involve the use of animals or animal material are being planned
- *CARE* - make sure that there is a good culture of care at the research facility, to increase both animal welfare and staff satisfaction

⁹³ <https://www.stortinget.no/no/Representanter-og-komiteer/Representantene/Representant/?perid=GP>

⁹⁴ <https://norecopa.no/no/moter/fellesseminar-om-forsoksdyr-og-etikk>

⁹⁵ <https://norecopa.no/databases-guidelines/eu-commission-dataset-on-respiratory-disease-models>

⁹⁶ <https://www.nal.usda.gov/legacy/awic/about-awic>

- *SHARE* - ensure that advances related to the 3Rs become known in the research community, for example by use of Norecopa's Refinement Wiki
- *FLAG* - encourage scientists to display 3R advances prominently in their publications, if necessary in separate method papers



Norecopa constructed a dedicated webpage for these icons and the principles associated with them. The icons can be downloaded for free use from that page⁹⁷.

Norecopa's 3R prize

Norecopa received 8 nominations⁹⁸ for its 3R-pris⁹⁹. The prize, which consists of NOK 30,000 and a diploma, was awarded on 8 June, for the tenth time. It went to Carlo Lazado and Elisabeth Ytteborg, researchers at Nofima Ås. The prize winners are using innovative methods to study mucosal health in fish. They plan to use the prize money to arrange a national seminar about the 3Rs and fish research in 2022.



photo: Nofima

⁹⁷ <https://norecopa.no/PREPARE-CARE-SHARE-FLAG>

⁹⁸ <https://norecopa.no/media/0ildtgvc/3r-prisutdeling-2021.pdf>

⁹⁹ <https://norecopa.no/about-norecopa/3r-prize>

Support to the FishEnds-DIG project

Norecopa continued to support a group that is developing software (an app) to monitor fish health¹⁰⁰. The aim of the app is to be able to measure the fish's clinical state during experiments. This will allow researchers to compare their state with the conditions given to them by the regulatory authorities for the experiment. The app will be especially useful in connection with the use of the humane endpoints that have been set for the study. Norecopa supported the project with NOK 200,000 this year.

Contact meetings

Parliament

In order to maintain political interest in the 3Rs and to demonstrate the need for more resources for alternatives to animal experiments, Norecopa's Secretary has continued to have contact with Members of Parliament from several parties.

On 25 October he held a presentation¹⁰¹ (that was recorded¹⁰²) and delivered a written statement¹⁰³ during the Standing Committee for Business and Industry's hearing concerning the Government's budgetary proposal for 2022. It is this committee which debates the section of the budget from which Norecopa receives its state funds.

The National Committee for the Protection of Animals Used in Research

Norecopa's Secretary has had sporadic contact with the committee in 2021, to discuss items of common interest.

Collaboration with the other Nordic 3R centres

Norecopa's Secretary has had particularly close contact with the Danish 3R centre¹⁰⁴, since he was elected to the Board in 2013 (the whole Board was re-elected in 2017). The Board also functions as the Danish *Committee for Research Animals and Alternatives*. He participates in these activities as a private individual, not as Norecopa's representative, but his experiences with this work have been useful for Norecopa. He participated in 4 Board meetings. He left the Board and Committee on 1 November when his term expired.

¹⁰⁰ <https://norecopa.no/species/fish/projects/fishends-dig>

¹⁰¹ <https://norecopa.no/media/v0rjm1zc/innlegg-næringskomite-en.pdf>

¹⁰² <https://vimeo.com/639478786>

¹⁰³ <https://norecopa.no/media/ceslevnz/norecopa-notat-næringskomitéen-2021.pdf>

¹⁰⁴ <http://www.3rcenter.dk>

He held a presentation at the Centre's annual 3R symposium on 17 November (see above).

Applications to the Norwegian Research Council

Norecopa participated in two applications to the Research Council:

- A project led by the Institute of Marine Research (Havforskningsinstituttet) with the title *WELFARE SEVERITY* (Frameworks for classifying the welfare of farmed Atlantic salmon based upon the principles of severity assessment)¹⁰⁵
- A project led by the Norwegian Institute for Water Research (NIVA) entitled *SPHERTOX* (Hepatic 3D spheroids: the next generation of testing in toxicology)¹⁰⁶

Both applications were successful (among the 10% and 20%, respectively, of those in their group). The work will start in 2022.

Other activities in 2021

Norecopa's Secretary has also

1. participated in the International Culture of Care Network, which was established after the FELASA congress in June 2016. Norecopa hosts the Network's website¹⁰⁷, which was expanded in 2021, among other things with a *Quick Start Guide* for those who wish a rapid improvement in the culture at their place of work.



Poster at the UFAW Symposium on Recent Advances in Animal Welfare Science, June 2021

2. recorded a podcast¹⁰⁸ for Alvertox Academy¹⁰⁹ about the origins of Norecopa and its visions.

¹⁰⁵ <https://norecopa.no/species/fish/projects/severity-assessment-and-salmon-welfare>

¹⁰⁶ <https://norecopa.no/species/fish/projects/sphertox>

¹⁰⁷ <https://norecopa.no/coc>

¹⁰⁸ <https://open.spotify.com/episode/1xC6EVwNy57cBdELr9f6Lk>

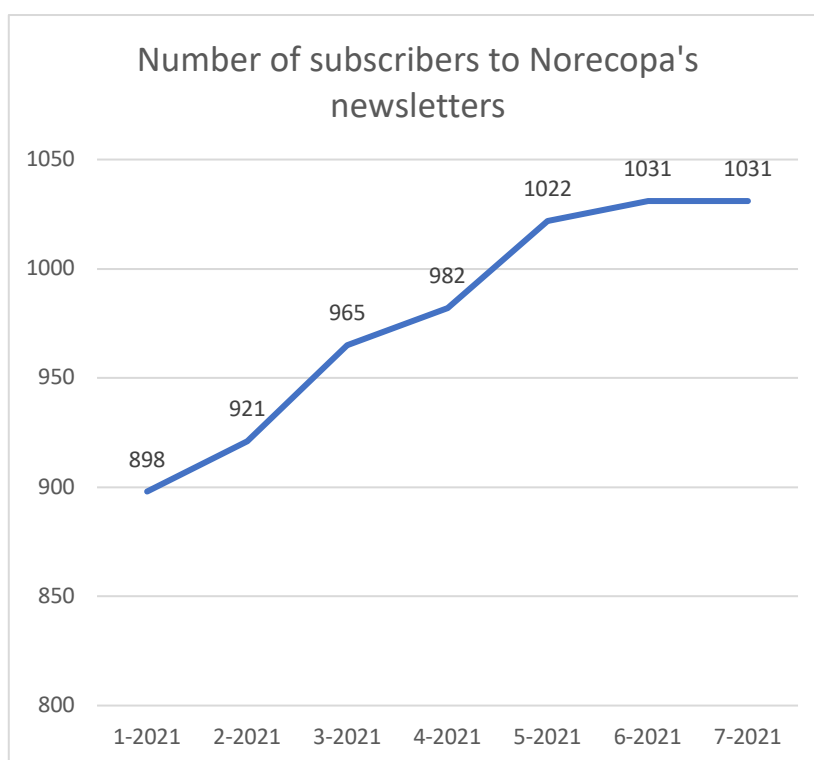
¹⁰⁹ <https://academy.alvertox.be>

3. held presentations about Norecopa's resources at internal meetings for three commercial companies and a research institution.

Norecopa's publications in 2021

Newsletters

Norecopa's Secretary published seven electronic newsletters, in English, for Norecopa's members and other interested parties. All of these are archived on Norecopa's website¹¹⁰, such that their contents is searchable, which increases their value. The number of subscribers increased by over 15% in 2021, from 892 at the beginning of the year to 1,031 subscribers at the end of December.

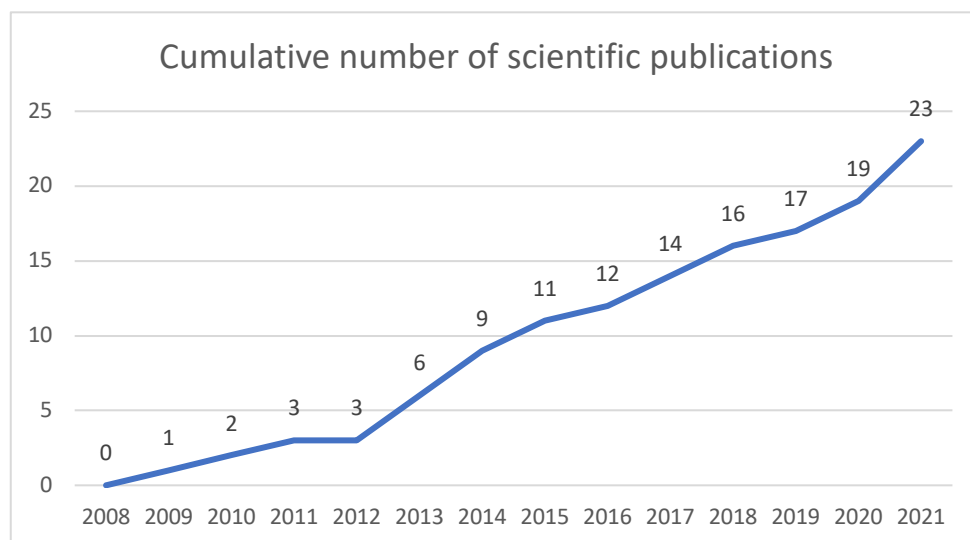


¹¹⁰ <https://norecopa.no/news/newsletters>

Scientific papers

Norecopa's Secretary published the following scientific papers and book chapters:

1. Smith AJ (2021): Norecopa: A database of 3R resources for better Science. *Biomedical Science and Engineering*, 4(s1).144¹¹¹
2. Smith A (2021): A Path through the Jungle: Norecopa's 3Rs Resources. *Laboratory Animal Science Professional*, May 2021, pp. 14-15.¹¹²
3. Fry D, Smith A, Storey J, Bate S & Ritskes-Hoitinga M (2021): Design of Procedures and Experiments. In the book *Practical Handbook on the 3Rs in the Context of the Directive 2010/63*. Elsevier, ISBN 978-0-128-21180-9. pp. 375-400¹¹³
4. Smith AJ (2021): Planning Animal Experiments. In the book *Experimental Design and Reproducibility in Preclinical Animal Studies*. Springer, ISBN 978-3-030-66147-2 pp.263-277¹¹⁴



Chronicles and other articles

The Head of the Board, Bente Bergersen, Secretary Adrian Smith and Ingunn Sommerset (responsible for fish health at the Norwegian Veterinary Institute) published a chronicle in the newspaper *Nationen* on 10 August, with the title *Fiskens kår i Norge*¹¹⁵. The article was also published in *Fiskeribladet* (3 September) and the Norwegian Veterinary Journal (*Norsk Veterinærtidsskrift*, issue no. 7-2021)¹¹⁶.

¹¹¹ <https://doi.org/10.4081/bse.2021.144>

¹¹² <https://norecopa.no/media/u1bekwwc/a-path-through-the-jungle.pdf>

¹¹³ <https://norecopa.no/textbase/practical-handbook-on-the-3rs-in-the-context-of-the-directive-201063eu>

¹¹⁴ <https://norecopa.no/textbase/experimental-design-and-reproducibility-in-preclinical-animal-studies>

¹¹⁵ <https://norecopa.no/media/f10hsbfz/fiskens-kår-i-norge-nationen-100821.pdf>

¹¹⁶ https://nvt.vetnett.no/journal/2021/7/m-114/Et_hav_av_muligheter_-_også_for_forsøksfisker

Adrian Smith submitted written evidence to the Science and Technology Committee in the British Parliament. The Committee evaluated the reproducibility and integrity of research in 2021¹¹⁷. This evidence could not be circulated to Norecopa's Board for approval because of time constraints, so it was submitted on his behalf only¹¹⁸.

Norecopa and social media

At the start of the year, 691 personer followed Norecopa's Facebook account¹¹⁹. By the end of the year this number had risen to 726. Norecopa has spent more time updating Twitter than Facebook this year.

Norecopa's Twitter account (@norecopa)¹²⁰ received 87,700 "impressions" in 2021, compared to 94,000 in 2020. In addition, Adrian Smith has his own Twitter account which he mainly uses to advertise Norecopa's activity, and this account received 56,700 impressions in 2021. Norecopa has also a LinkedIn page¹²¹, and the Secretary also posts information about Norecopa on his LinkedIn page¹²².

¹¹⁷ <https://committees.parliament.uk/work/1433/reproducibility-and-research-integrity>

¹¹⁸ <https://committees.parliament.uk/writtenevidence/39646/html>

¹¹⁹ <https://www.facebook.com/Norecopa>

¹²⁰ <https://twitter.com/norecopa>

¹²¹ <https://www.linkedin.com/company/23545108>

¹²² <https://www.linkedin.com/in/adrian-smith-bb567b5a>

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