

Danish 3R-Center



Replacement

Reduction

Refinement

Christine Nellemann, November 2015

Background

- Organisation
- Finances
- Vision and mission

Tasks

- Initiate and support research
- Collect and disseminate information
- International collaboration

Projects launched 2015

- November and December 2015

Political decision to establish 3R-Center in Denmark, June 2013

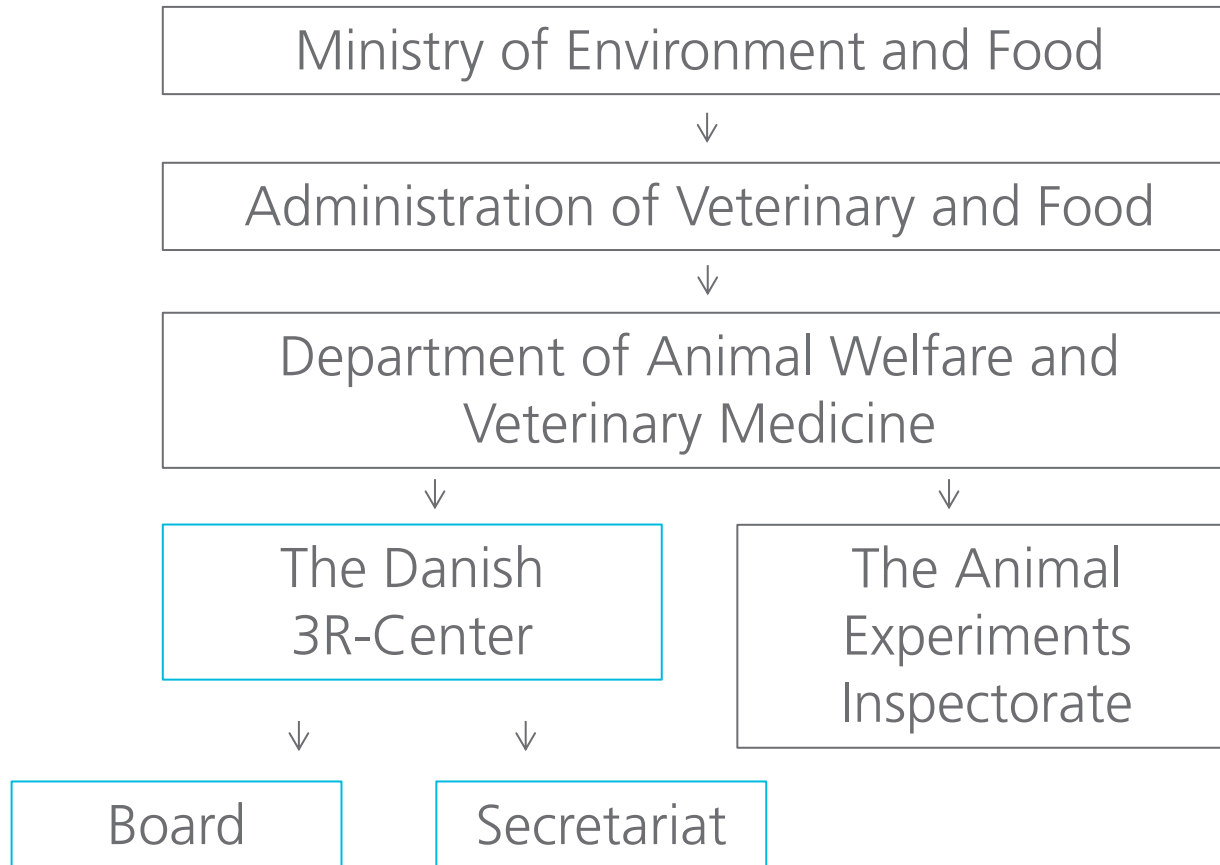
Collaboration between

- Government (Ministry of Environment and Food)
- Pharmaceutical industry (LEO Pharma, Lundbeck, Novo Nordisk)
- Animal welfare organizations (Dyrenes Beskyttelse, Forsøgsdyrenes Værn, Alternativfondet)

Board elected

- Initial board meeting, November 2013

Organization



Board:

- Christine Nellemann
 - Adrian Smith
- Axel Kornerup Hansen
 - Erwin Roggen
 - Jan Lund Ottesen
- Lisbeth E. Knudsen
 - Peter Bollen
- Peter Bie (observer)

Secretariat:

- Tom Bengtsen
- Louise Bjoern Broenden
- Rasmus Normann Nielsen
- Birgitte Vindahl Olsen

The board is also the National
Committee



Ministry of Environment and Food :	1.500.000 DKK.
Stakeholders:	1.200.000 DKK.
	<hr/>
Total:	2.700.000 DKK.

On behalf of the Minister of Environment and Food the Danish 3R-Center can annually hand out 1.500.000 DKK. as research funds.

It is the goal of the Danish 3R-Centre to generate a leading environment within the implementation and dissemination of the 3Rs

- Initiate activities that may lead to the immediate implementation of the 3Rs
- Provide a forum for collaboration, discussion, exchange and dissemination of information on the 3Rs
- Initiate research projects and recommend funds allocation of resources within the area

- Initiate and support research in laboratory animal studies and the development of alternatives
- Collect and disseminate knowledge on alternatives to animal testing
- Cooperate with similar centers abroad

3R-projects supported in 2014

- Refinement of animal models of pain: Establishment of strategies to alleviate avoidable pain in rat models for pain and inflammation (Klas Abelson, University of Copenhagen)
- Pathological and immunological consequences of basic experimental animal procedures in mice (Dorte Bratbo Sørensen, University of Copenhagen)
- Reducing the group size in studies of dermatitis by standardization of the gut microbiota (Axel Kornerup Hansen, University of Copenhagen)
- Establishment of an In vitro model for diabetic atherosclerosis (Mette Bjerre, Aarhus University)

3R-projects supported in 2015

- An in vitro method to predict acute lung toxicity due to pulmonary surfactant inhibition (Søren Thor Larsen, National Research Centre for the Working Environment)
- A Refined Approach to Producing Polyclonal Antibodies in Chickens – Completely Replacing All Invasive Elements by Combining Immunizations with Routine Aerosol-based Vaccinations Otto Kalliokoski, University of Copenhagen)
- An alternative to animal experiments: Development of an in vitro human skin model for evaluation of topical antimicrobial compounds (Mette Elena Skindersø, SSI)

Project status 2015

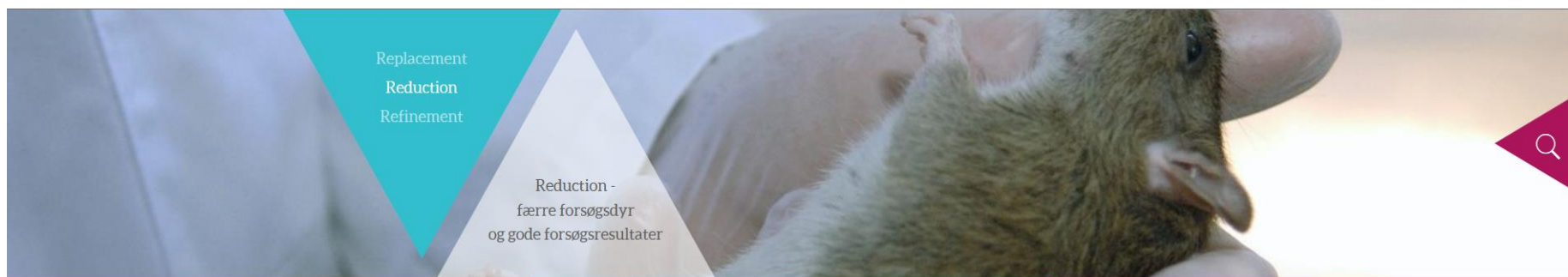
- Otto Kalliokoski, 13.30 today
- Mette Elena Skindersø, 13.50 today
- Søren Thor Larsen, 14.10 today

Projects 2016

- 14 applications received
- December 2015, decision by The Board

Collect and disseminate information

3rcenter.dk – News in Danish



Nyheder fra 3R-verdenen

26. oktober 2015

Eksperimentel design og statistik

Norecopa er medarrangør af et seminar om eksperimentel design og statistik, som afholdes i Norge 1.-3. februar 2016. Ansøgningsfrist 15....

13. oktober 2015

NordCAW afholder seminar/workshop

NordCAW afholder seminar den 24. november 2015 om at kommunikere dyrevelfærdsmæssige emner.

14. september 2015

3R Forskningsmidler

Danmarks 3R-Center har åbnet for ansøgningsrunden til forskningsmidler.



8. september 2015

3R-symposium

Programmet er nu offentliggjort til 3R-symposium den 10. og 11. september

Collect and disseminate information

en3rcenter.dk – News in English

Replacement
Reduction
Refinement

Replacement -
avoid or replace
the use of laboratory animals

3R-news from around the world

26. October 2015

Training school in experimental design and statistics

The NeXT FRAAME Training School will take place in Norway from 1-3 February 2016. Closing date for applications is November 15.

13. October 2015

Seminar held by NordCAW

A seminar/workshop will be held November 24, 2015 at the Swedish University of Agricultural Sciences in Uppsala, Sweden, by the Nordic network...

14. September 2015

Research funding

The Danish 3R-Center has opened the application round for 3R research funding.



8. September 2015

3R Symposium

The Danish 3R-Center has just released the

Disseminate information and results from supported 3R-projects – especially for professionals

Projects supported by the Danish 3R-Center

3R-projects supported in 2015

- An in vitro method to predict acute lung toxicity due to pulmonary surfactant inhibition (reduction/reduktion)
- A Refined Approach to Producing Polyclonal Antibodies in Chickens – Completely Replacing All Invasive Elements by Combining Immunizations with Routine Aerosol-based Vaccinations (refinement/forfinelse)
- An alternative to animal experiments: Development of an in vitro human skin model for evaluation of topical antimicrobial compounds (replacement/erstatning)

3R-projects supported in 2014

- Refinement of animal models of pain: Establishment of strategies to alleviate avoidable pain in rat models for pain and inflammation
- Pathological and immunological consequences of basic experimental animal procedures in mice
- Reducing the group size in studies of dermatitis by standardization of the gut microbiota
- Establishment of an In vitro model for diabetic atherosclerosis

Publish newsletter (in Danish) – also for professionals



15. juni 2015

Nyhedsbrev fra Danmarks 3R-Center

3R-centeret afholder symposium 10. og 11. november 2015

I lighed med sidste år afholder Danmarks 3R-Center et symposium. I år strækker symposiet sig over to dage og vil foregå på engelsk. Danmarks 3R-Center har inviteret en række nationale og internationale personligheder med ekspertise på 3R-området til at fortælle om deres arbejdsområde.

Dato: 10.-11. november

Sted: Charlottet haven på Østerbro i København

Gratis deltagelse

[Program og tilmelding](#) (Deadline 21. oktober 2015)

Forskningsmidler

Danmarks 3R-Center har åbnet en ny ansøgningsrunde til forskningsmidler. Deadline er 21. oktober 2015. Du kan finde [relevant information og ansøgningskema her](#).

Collect and disseminate information

Disseminate facts about laboratory animals (from The Animal Experiments Inspectorate) – especially for primary school/high school students

Forsøgsdyr / Hvilke dyr bruges som forsøgsdyr?

Hvilke dyr bruges som forsøgsdyr?

Langt størstedelen af de **forsøgsdyr**, som benyttes i Danmark, er mus, rotter, grise og fisk (ca. 95 % i 2013). Nedenfor kan du se en komplet liste over, hvilke dyr, som anvendes som forsøgsdyr i Danmark. Du kan også se, med hvilke formål dyrene anvendes (kilde: [Dyreforsøgstilsynets Årsberetning 2013](#)).

Forsøgsdyr og formål (2013)

Dyreart	Grundlæggende biologiske undersøgelser	Forskning i udvikling af produkter og artikler til medicinske, odontologiske og veterinærmedicinske formål	Fremstilling af og kvalitetskontrol med produkter og artikler til medicinske og odontologiske formål	Fremstilling af og kvalitetskontrol med produkter og artikler til veterinærmedicinske formål	Toksikologiske og andre sikkerhedsvurderinger	Sygdomsdiagnosticering	Uddannelse og undervisning	Andet	Total
Mus (Mus musculus)	52.540	73.094	13.608	0	4.523	1.316	2.479	2.148	149.708
Rotter (Rattus Norvegicus)	14.387	22.444	4.394	0	3.246	210	1.829	240	46.750
Marsvin (Cavia porcellus)	117	413	2.969	12	0	0	20	0	3.531
Hamstere (Mesocricetus)	0	8	0	0	0	0	0	0	8

Collect and disseminate information

Including film production

Forsøgsdyr / Undervisningsmateriale om forsøgsdyr / Introducerende film om 3R

Forsøgsdyr og 3R (introducerende film)

Udarbejdet af Aiko Sho Nielsen (freelancejournalist og gymnastelærer i biologi) i samarbejde med Danmarks 3R-Center (copyright)



Ophavsret og kreditering

Ophavsretten til undervisningsmaterialet ligger hos Danmarks 3R-Center.

Freelancejournalist Aiko Sho Niensens navn skal fremgå af materialet i forbindelse med enhver offentliggørelse.

Collect and disseminate information

Our newly produced educational material can be transformed from
highschool material to primary school or even university

Forsøgsdyr / Undervisningsmateriale om forsøgsdyr

Undervisningsmateriale om forsøgsdyr og de 3R'er

Undervisningsmaterialet er tiltænkt de gymnasiale uddannelser i fagene Biologi A og Bioteknologi A.

Undervisningsforløb

Vigtigt: Læs lærervejledningen og følg derefter undervisningsmaterialets 5 trin:

1. Quiz - første del (send dit navn til ranon@fvst.dk og modtag login til quiz indenfor to arbejdsdage)
2. [Forsøgsdyr og 3R](#) (film)
3. [3R - vejen mod færre og mere skånsomme dyreforsøg](#) (baggrundsartikel)
4. Gruppearbejde med udgangspunkt i [ressource-rummet](#).
5. Quiz - anden del

(Undervisningsmaterialet bliver i nærmeste fremtid suppleret med yderligere to artikler)

Vejledning

- [Lærervejledning](#)
- [Quizvejledning](#)

Ophavsret og kreditering

Ophavsretten til materialet ligger hos
Danmarks 3R-Center

Freelancejournalist Aiko Sho Nielsens navn
skal fremgå af materialet i forbindelse med
enhver offentliggørelse

Collect and disseminate information

Publish an Annual Report containing information about 3R trends and research both nationally and internationally

Danmarks 3R-Center har haft et udbytterigt første år, der lover godt i forhold til fremadrettet at sætte større fokus på forsøgsdyrsvelfærd og alternativer til forsøgsdyr.

Vi har i vores første leveår koncentreret vores arbejde om at skabe et fundament for vores fremtidige arbejde i Danmark, men vi har også skabt grobund for et vidtrækkende samarbejde med en lang række internationale 3R-organisationer, hvorfor vi allerede i vores første år har skabt stor opmærksomhed omkring Danmarks 3R-Center.

Denne årsrapport vil i overensstemmelse med foretningsordenen for Danmarks 3R-center give et indtryk af 3R-området i både national og international henseende, ligesom den vil give et indblik i det arbejde, som bestyrelsen og sekretariatet har udført i 2014.

Fordi vi er et nystartet center, vil vi præsentere ophavsmandene til de 3 R'er, W.M.S. Russell og R.L. Burch, idet Danmarks 3R-Centers arbejde i høj grad hviler på deres ideer. Vi har været så heldige, at få David Morton og Michael Balis til at supplere dette afsnit med en mere personlig beretning, idet de havde et indgående kendskab til de to herre.

FORORD

INDHOLD

1 Russell & Burch Replacement, Reduction, Refinement	04 07
2 Danmarks 3R-Center Bestyrelsen Sekretariatet	10 12 15
3 Året der gik (2014) Hjemmeside Symposium Samarbejde med udenlandske 3R-organisationer Igangsættelse af forskningsprojekter → Forfinelse (refinement) af dyremodeller for smerte: udvikling af metoder for at begrænse smerte hos forsøgsrotter i smerteforskningen → 'Den kunstige blodåre' – en model til undersøgelse af åreforkalkning hos diabetikere → Standardisering af tarmforaen hos mus som et redskab til at formindske antallet af dyr i de enkelte forsøg → Patologiske og immunologiske konsekvenser af blodprøvetagning på mus	16 18 19 22 24 25 26 26 27
4 3R – nationalt 3R fra Statens side 3R på universiteterne 3R i medicinalindustrien 3R og dyreværnsforeninger Andre tiltag	30 32 33 36 37 37
5 3R – internationalt Verdenskongressen 3R i EU	38 38 41
6 Arbejdet kalder (2015)	44

Collect and disseminate information

Participation in meetings with oral presentation and poster

3rcenter.dk

The Danish 3R-Center

Danish 3R-Center
RRR
Refinement Reduction Replacement

The Danish 3R-Center is currently working on four different projects, all expected to have a direct influence on the 3R's

- Producing educational material for high-school students, on the use of laboratory animals and the 3Rs.
- A statistical analysis of ten years of license data from the Danish Animal Experiments Inspectorate. The project aims to detect trends, identify reduction potential and evaluate development of predicted severity.
- Mapping the use and knowledge of 3R's in academia. This is a scientific study performed by University of Copenhagen.
- Developing the Danish 3R-center website. The site focuses on promoting international news on the 3R's to the national and international scientific community.

The Danish 3R-Center is currently supporting seven 3R-projects:

- Refinement of animal models of pain: Establishment of strategies to alleviate avoidable pain in rat models for pain and inflammation
- Pathological and immunological consequences of basic experimental animal procedures in mice
 - A Refined Approach to Producing Polyclonal Antibodies in Chickens – Completely Replacing All Invasive Elements by Combining Immunizations with Routine Aerosol-based Vaccinations
- An alternative to animal experiments: Development of an in vitro human skin model for evaluation of topical antimicrobial compounds
- Reducing the group size in studies of dermatitis by standardization of the gut microbiota
- An in-vitro method to predict acute lung toxicity due to pulmonary surfactant inhibition
- Establishment of an in-vitro model for diabetic atherosclerosis

Miljø- og Fødevareministeriet

Collect and disseminate information

Annually symposium

- In English
- Foreign presenters
- 3R award



- Participate in international meetings, councils, seminars and networks concerning 3R and Best Practice
- Organize meetings with other 3R Centers worldwide
- Maintain good international relations
- Connect with national parties involved in international 3R collaborations
 - PARERE national contact person
 - The Danish Health and Medicines Authority contact involved in the 3R work in EMA

Collaborators

Nationally

- Animal welfare organisations
- Animal welfare bodies
- Pharmaceutical industry
- Universities
- Danish Ministry of the Environment /PARERE
- The Danish Health and Medicines Authority / EMA

Collaborators

Internationally

- 3R Research Foundation (Switzerland)
- NC3R (U.K.)
- ZEBET (Germany)
- EURL-ECVAM (EU)
- FICAM (Finland)
- SCAW, SWETOX (Sweden)
- CCAC (Canada)
- RIVM (The Netherlands)

Educational material

- Focus on A-level students in biology, biotechnology and microbiology
- Articles
- Movie
- Quiz
- Web based
- Free
- Two introduction arrangement in Copenhagen and Jutland

The 3Rs: on animal scientists perceptions, awareness and practices

- Scientific study
- Questionnaire
- Institut for Fødevarer og Ressource Økonomi, KU
- Small steering group
- Questionnaire summer 2015 to license holders and users of non-animal models

Statistical analyzes of 10 years of data from the Danish Experiments Inspectorate

- Find trends
 - Identify reduction potential
 - Evaluate development of severity
-
- Performed in August – September 2015
 - Designated data analysts

Projects launched 2015

- Educational material, Aiko Sho Nielsen, 15.00 today
- The 3Rs: on animal scientists perceptions, awareness and practices, Jesper Lassen, 15.30 today
- Statistical analyzes of 10 years of data from the Danish Experiments Inspectorate, Louise Broenden, 16.00 today

Danish 3R-Center



Replacement

Reduction

Refinement

Thank you for your attention