Are you PREPAREd? How to Design Animal Experiments 19 March 2019 in Copenhagen

DESCRIPTION

The PREPARE guidelines (www.norecopa.no/PREPARE) offer a checklist for planning and conducting animal studies. Based on PREPARE, this course gives an overview of all topics you need to consider when planning your study. We will introduce you to a number of resources which will ease your way to the optimal study design. The course contains lectures, tips and resources on the following topics:

Literature searches: Form a clear hypothesis, consider the use of systematic reviews, decide upon databases and assess the reproducibility and translatability of the project.

Harm benefit analysis & severity classification: Justify any likely animal harm and define objective, easily measurable and unequivocal humane endpoints. Allocate a severity classification to the project.

Communication between scientists and the animal facility: Good and clear communication is likely to be essential for the outcome of your study - but who should you talk to and what needs to be agreed upon?

Experimental design: How to decide on methods for evaluating data - before you conduct the study.
Health monitoring and the impact of the microbiota and nutrition on animal studies: Consider whether these factors are likely to influence your study.

How to write a non-technical summary: Short and understandable for laymen.

Refinement of procedures: Resources on refinement of the care and use of laboratory animals.

AGENDA

10:00-10:30
Introduction - Adrian Smith, Norecopa
- Why do we need checklists? Introduction to the components of PREPARE

10:35-11:20
Literature searches - Birgitte Kousholt, Aarhus University
- The methodology of systematic reviews

11:20-12:10
Harm-benefit assessment and severity classification - Kirsten Bayer Andersen, SCANBUR

12:10-12:50 Lunch

12:50-13:25
Dialogue between scientists and the animal facility - Adrian Smith, Norecopa
- Timescale and need for assistance
- Division of labour and expenses
- Competence of staff members and the need for further education or training
- Risk assessment for all persons and animals affected

13:25-13:50
Experimental design, statistics I - Axel Kornerup Hansen, University of Copenhagen
- Pilot studies, statistical power and significance levels
- Methods of randomisation, observer bias, inclusion/exclusion criteria

13:50-14:25
Experimental design, statistics II - Axel Kornerup Hansen, University of Copenhagen
- Available resources

14.25-14.50
A mouse is not just a mouse - Tine Larsen, SCANBUR
- Introduction to sub-strains, genetic drift and mouse nomenclature
- Charles River Animal Model Evaluation program

14:50-15:10 Coffee break

15:10-15:40
Health monitoring and the impact of the microbiota and nutrition on animal studies - Axel Kornerup Hansen, University of Copenhagen

15:40-16:10
Refinement of procedures: Tips and resources - Adrian Smith, Norecopa

16:10-16:45
How to write a non-technical summary - Kirsten Bayer Andersen, SCANBUR

16:45-17:00
Course evaluation - Kirsten Bayer Andersen, SCANBUR

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LANGUAGE
English

WHEN
19 March 2019

WHERE
Clarion Hotel Copenhagen Airport, Denmark

PRICE
EUR 345 excl. VAT
or Academy points 3200
Includes meals
SCANBUR reserves the right to foreign exchange hedging (EURO)

EDUCATORS
Adrian Smith is the secretary of Norecopa and for many years worked as a professor at the Norwegian School of Veterinary Science. Adrian is one of the authors of the PREPARE guidelines.

Axel Kornerup Hansen is Professor & Head of the Section of Experimental Animal Models, University of Copenhagen. Axel´s research focus is on reduction and refinement, in particular the impact of nutrition and microbiota on health and disease.

Birgitte Kousholt is PhD, Chief Consultant & Veterinarian at Aarhus University. Birgitte is strongly involved in the implementation of systematic reviews and meta-analysis in the planning of animal experiments together with the international research groups CAMARADES and SYRCLE.

Adrian, Axel & Birgitte have arranged and lectured at numerous courses in Laboratory Animal Science.

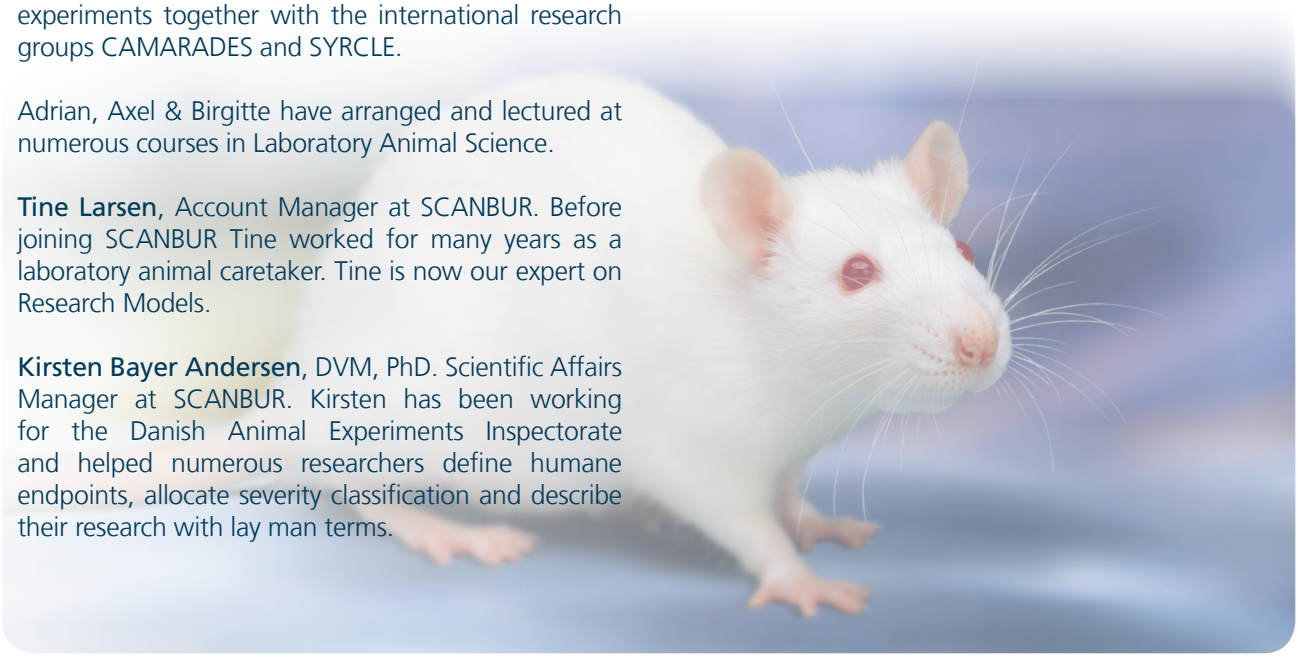
Tine Larsen, Account Manager at SCANBUR. Before joining SCANBUR Tine worked for many years as a laboratory animal caretaker. Tine is now our expert on Research Models.

Kirsten Bayer Andersen, DVM, PhD. Scientific Affairs Manager at SCANBUR. Kirsten has been working for the Danish Animal Experiments Inspectorate and helped numerous researchers define humane endpoints, allocate severity classification and describe their research with lay man terms.

REGISTRATION DEADLINE
25 February 2019

Registration is binding. In case we do not receive enough registrations to compile a fully booked course, the course will be cancelled. This will be announced at least 3 work weeks prior to the course taking place.

REGISTER
www.scanbur.com/academy#61



PREPARE

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The PREPARE Guidelines Checklist

Planning Research and Experimental Procedures on Animals: Recommendations for Excellence

Adrian J. Smith[a], R. Eddie Clutton[b], Elliot Lilley[c], Kristine E. Aa. Hansen[d] & Trond Brattelid[e]

[a]Norecopa, c/o Norwegian Veterinary Institute, P.O. Box 750 Sentrum, 0106 Oslo, Norway; [b]Royal (Dick) School of Veterinary Studies, Easter Bush, Midlothian, EH25 9RG, U.K.; [c]Research Animals Department, Science Group, RSPCA, Wilberforce Way, Southwater, Horsham, West Sussex, RH13 9RS, U.K.; [d]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; [e]Division for Research Management and External Funding, Western Norway University of Applied Sciences, 5020 Bergen, Norway.

PREPARE[1] consists of planning guidelines which are complementary to reporting guidelines such as ARRIVE[2].
PREPARE covers the three broad areas which determine the quality of the preparation for animal studies:

1. **Formulation of the study**
2. **Dialogue between scientists and the animal facility**
3. **Quality control of the components in the study**

The topics will not always be addressed in the order in which they are presented here, and some topics overlap. The PREPARE checklist can be adapted to meet special needs, such as field studies. PREPARE includes guidance on the management of animal facilities, since in-house experiments are dependent upon their quality. The full version of the guidelines is available on the Norecopa website, with links to global resources, at **https://norecopa.no/PREPARE**.
The PREPARE guidelines are a dynamic set which will evolve as more species- and situation-specific guidelines are produced, and as best practice within Laboratory Animal Science progresses.

Topic	Recommendation
(A) Formulation of the study	
1. Literature searches	☐ Form a clear hypothesis, with primary and secondary outcomes. ☐ Consider the use of systematic reviews. ☐ Decide upon databases and information specialists to be consulted, and construct search terms. ☐ Assess the relevance of the species to be used, its biology and suitability to answer the experimental questions with the least suffering, and its welfare needs. ☐ Assess the reproducibility and translatability of the project.
2. Legal issues	☐ Consider how the research is affected by relevant legislation for animal research and other areas, e.g. animal transport, occupational health and safety. ☐ Locate relevant guidance documents (e.g. EU guidance on project evaluation).
3. Ethical issues, harm-benefit assessment and humane endpoints	☐ Construct a lay summary. ☐ In dialogue with ethics committees, consider whether statements about this type of research have already been produced. ☐ Address the 3Rs (replacement, reduction, refinement) and the 3Ss (good science, good sense, good sensibilities). ☐ Consider pre-registration and the publication of negative results. ☐ Perform a harm-benefit assessment and justify any likely animal harm. ☐ Discuss the learning objectives, if the animal use is for educational or training purposes. ☐ Allocate a severity classification to the project. ☐ Define objective, easily measurable and unequivocal humane endpoints. ☐ Discuss the justification, if any, for death as an end-point.
4. Experimental design and statistical analysis	☐ Consider pilot studies, statistical power and significance levels. ☐ Define the experimental unit and decide upon animal numbers. ☐ Choose methods of randomisation, prevent observer bias, and decide upon inclusion and exclusion criteria.

Topic	Recommendation
(B) Dialogue between scientists and the animal facility	
5. Objectives and timescale, funding and division of labour	☐ Arrange meetings with all relevant staff when early plans for the project exist. ☐ Construct an approximate timescale for the project, indicating the need for assistance with preparation, animal care, procedures and waste disposal/decontamination. ☐ Discuss and disclose all expected and potential costs. ☐ Construct a detailed plan for division of labour and expenses at all stages of the study.
6. Facility evaluation	☐ Conduct a physical inspection of the facilities, to evaluate building and equipment standards and needs. ☐ Discuss staffing levels at times of extra risk.
7. Education and training	☐ Assess the current competence of staff members and the need for further education or training prior to the study.
8. Health risks, waste disposal and decontamination	☐ Perform a risk assessment, in collaboration with the animal facility, for all persons and animals affected directly or indirectly by the study. ☐ Assess, and if necessary produce, specific guidance for all stages of the project. ☐ Discuss means for containment, decontamination, and disposal of all items in the study.
(C) Quality control of the components in the study	
9. Test substances and procedures	☐ Provide as much information as possible about test substances. ☐ Consider the feasibility and validity of test procedures and the skills needed to perform them.
10. Experimental animals	☐ Decide upon the characteristics of the animals that are essential for the study and for reporting. ☐ Avoid generation of surplus animals.
11. Quarantine and health monitoring	☐ Discuss the animals' likely health status, any needs for transport, quarantine and isolation, health monitoring and consequences for the personnel.
12. Housing and husbandry	☐ Attend to the animals' specific instincts and needs, in collaboration with expert staff. ☐ Discuss acclimatization, optimal housing conditions and procedures, environmental factors and any experimental limitations on these (e.g. food deprivation, solitary housing).
13. Experimental procedures	☐ Develop refined procedures for capture, immobilisation, marking, and release or rehoming. ☐ Develop refined procedures for substance administration, sampling, sedation and anaesthesia, surgery and other techniques.
14. Humane killing, release, reuse or rehoming	☐ Consult relevant legislation and guidelines well in advance of the study. ☐ Define primary and emergency methods for humane killing. ☐ Assess the competence of those who may have to perform these tasks.
15. Necropsy	☐ Construct a systematic plan for all stages of necropsy, including location, and identification of all animals and samples.

References

1. Smith AJ, Clutton RE, Lilley E, Hansen KEA & Brattelid T. PREPARE:Guidelines for Planning Animal Research and Testing. *Laboratory Animals,* 2017, DOI: 10.1177/0023677217724823.
2. Kilkenny C, Browne WJ, Cuthill IC *et al.* Improving Bioscience Research Reporting: The ARRIVE Guidelines for Reporting Animal Research. *PloS Biology,* 2010; DOI: 10.1371/journal.pbio.1000412.

Further information

https://norecopa.no/PREPARE / *post@norecopa.no* / *@norecopa*