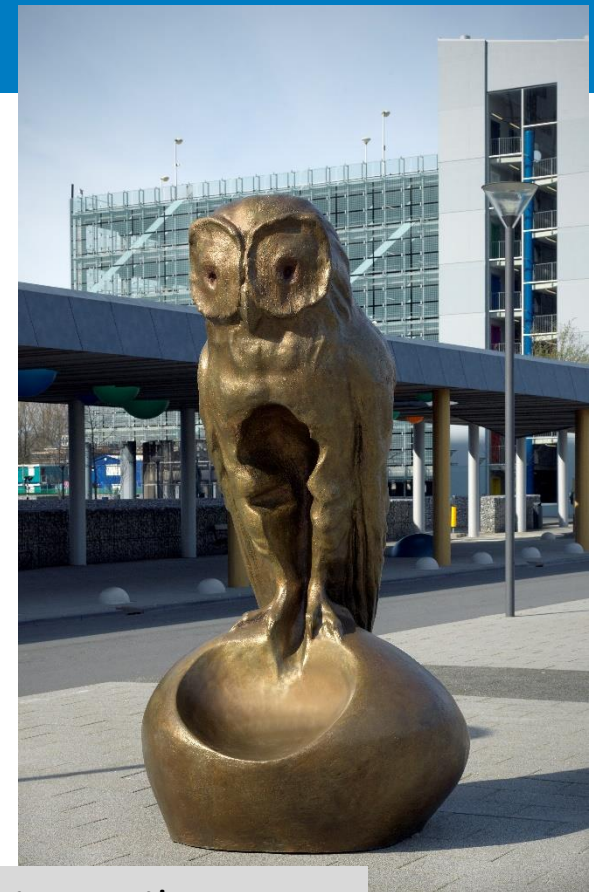


Following the development and outcome of projects

How the Animal Welfare Body contributes to retrospective assessment

Dr. ir. P.S. Verhave
AWB Leiden

STOCKHOLM AUGUST 2022



Animals used for research in and outside of Leiden



Universiteit
Leiden



75%



AWB Leiden



25%



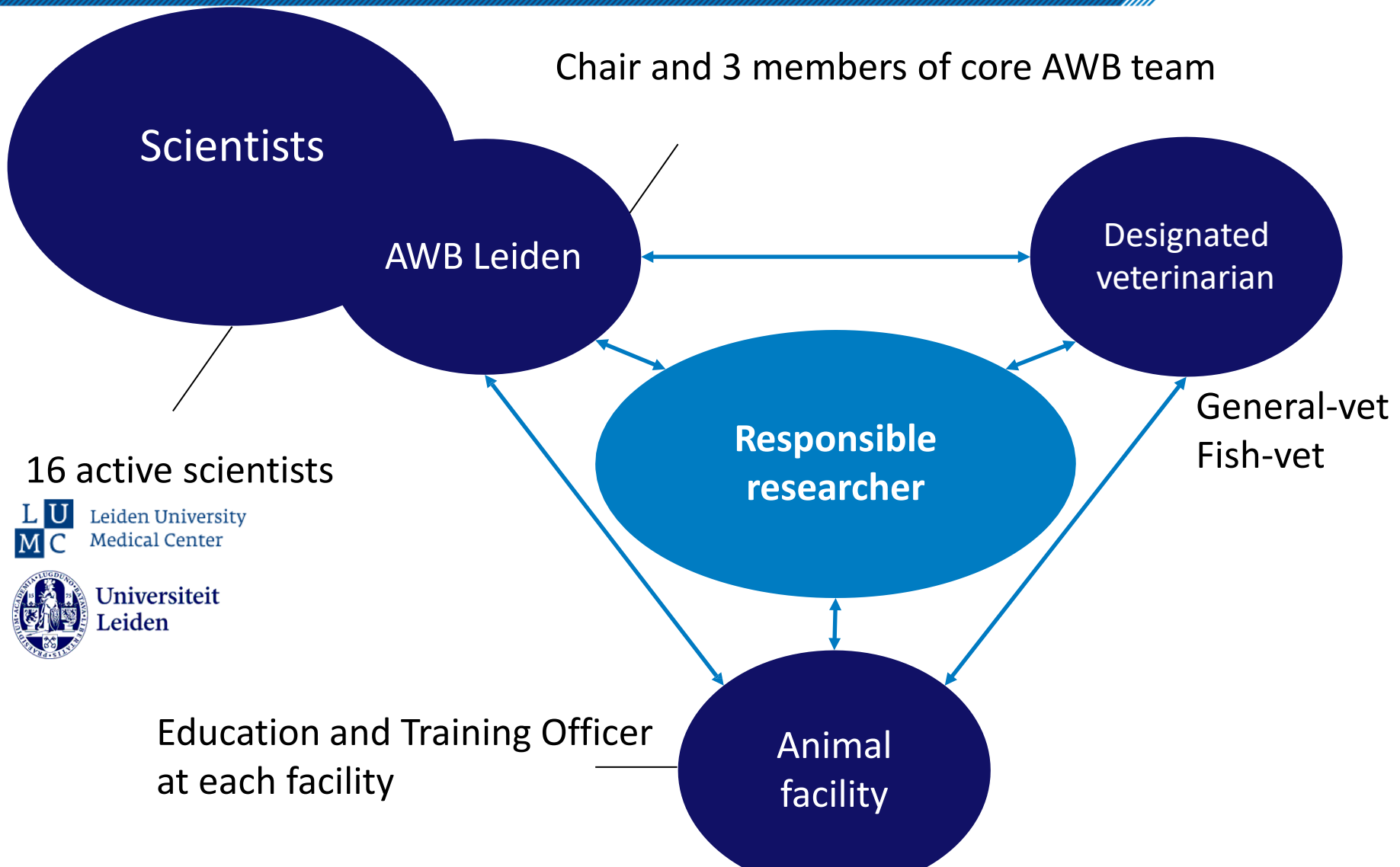
Species housed and used 2021



Daily housing ~29.000 animals



Responsible science with animals



Discuss and support the project licence

Evaluation of research plans

Monitoring of welfare and execution of experiments with animals

Advise on 3R's, communication and legislation



According to article 27 directive 2010/63/EU

Article 14a Wod

Discuss and support the project licence

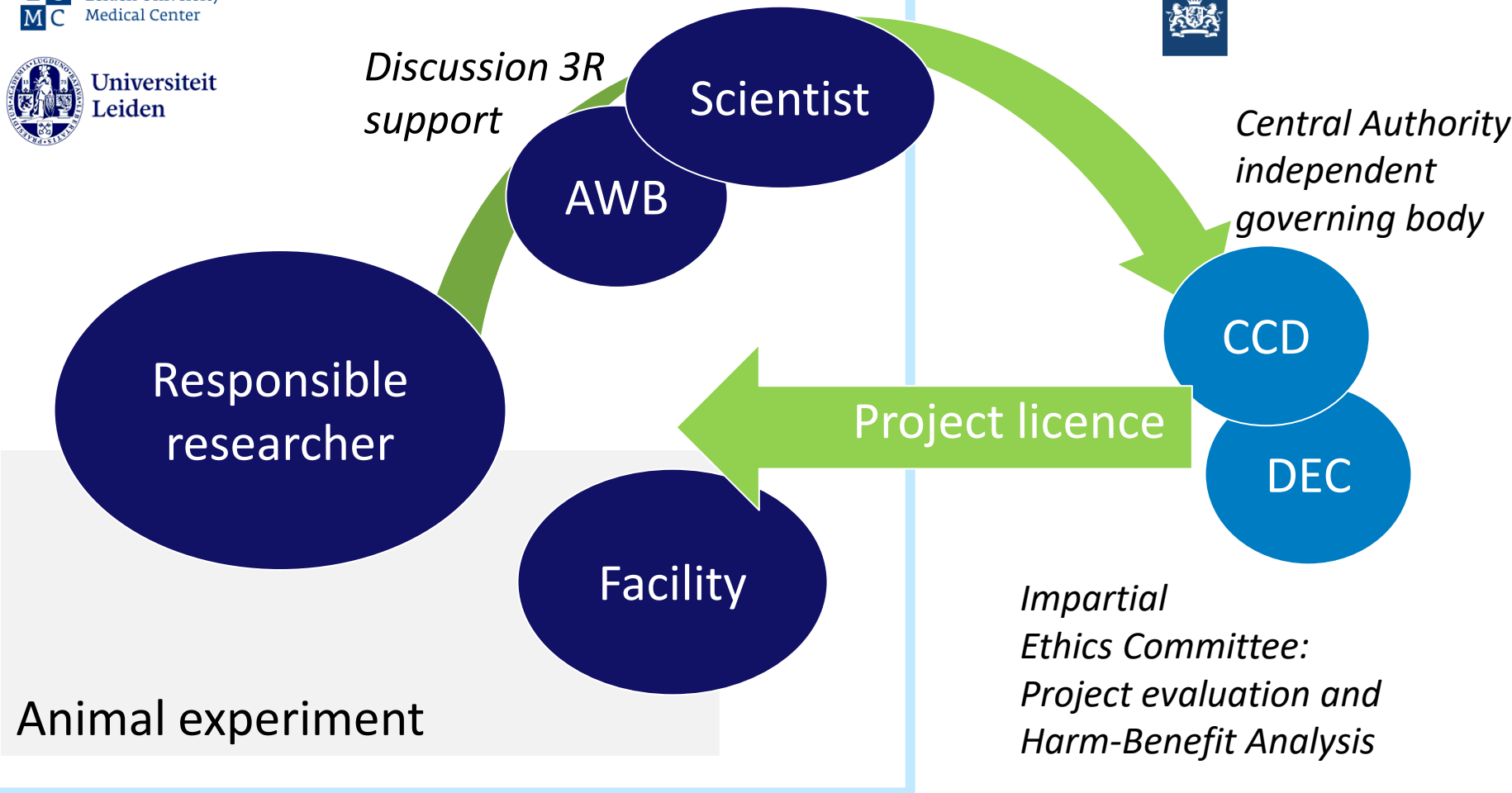
LU Leiden University
MC Medical Center



Universiteit
Leiden



Central Authority
independent
governing body



According to article 38 directive 2010/63/EU

Article 18a Wod

Evaluation of research plans

Leiden University
Medical Center



Universiteit
Leiden

Detailed Discussion

Exp. design

Monitoring

LAS

AWB

Responsible
researcher

Facility

Project licence

CCD

DEC

Animal experiment

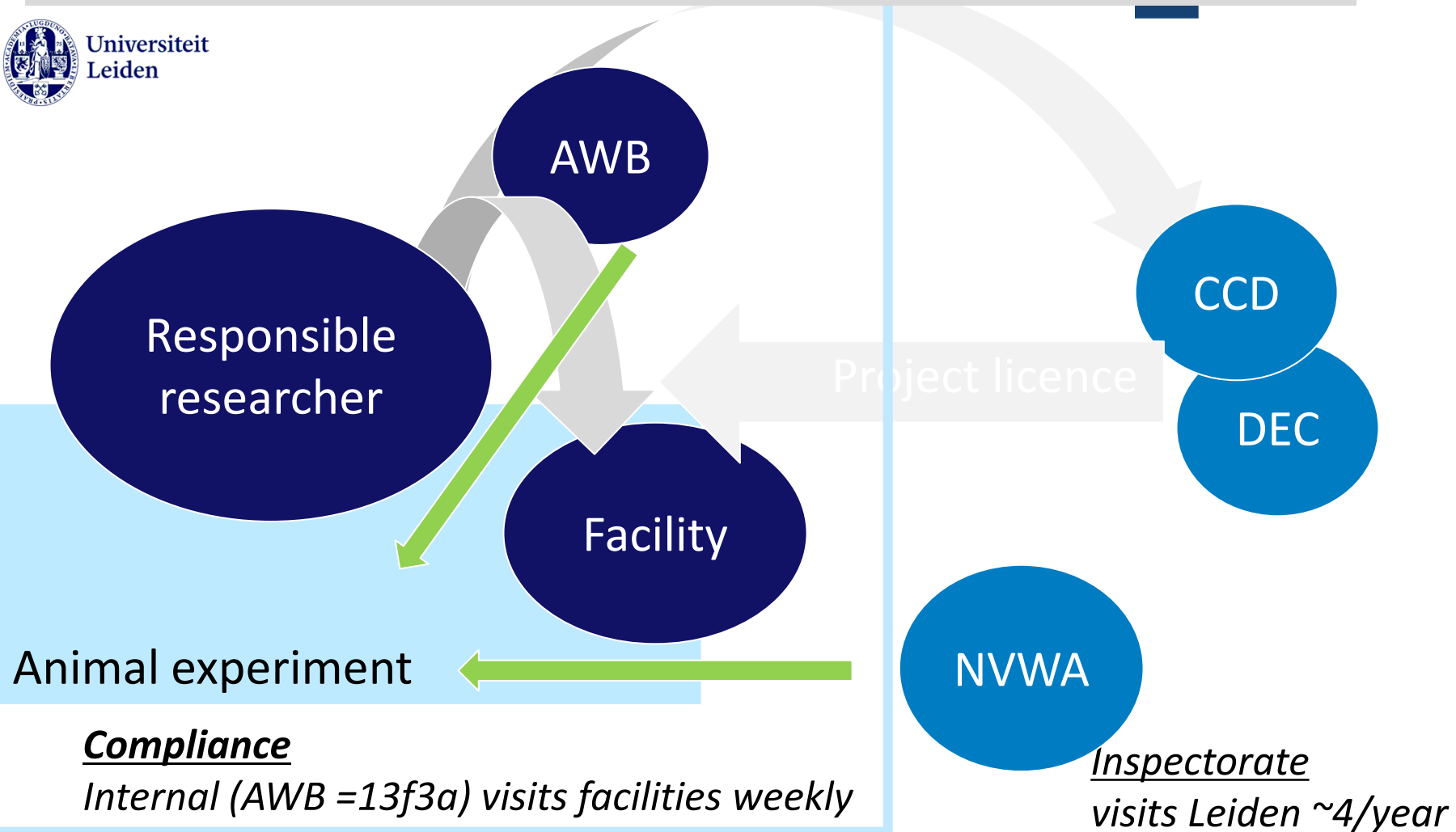


Monitoring of welfare and execution of experiments with animals

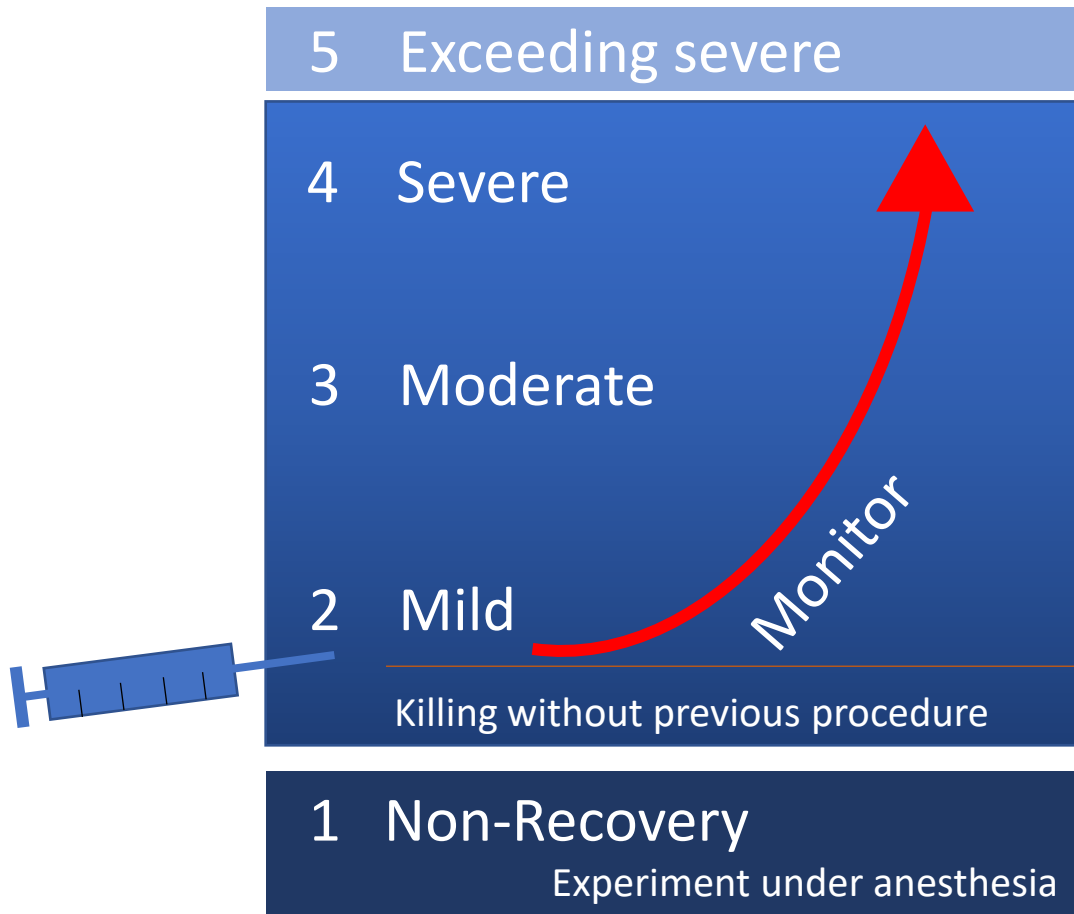
Slide: Verhave, P.S. (2022) How the Animal Welfare Body contributes to retrospective assessment. Focus on Severe Suffering, RSPCA, Karolinska Institutet, Stockholm



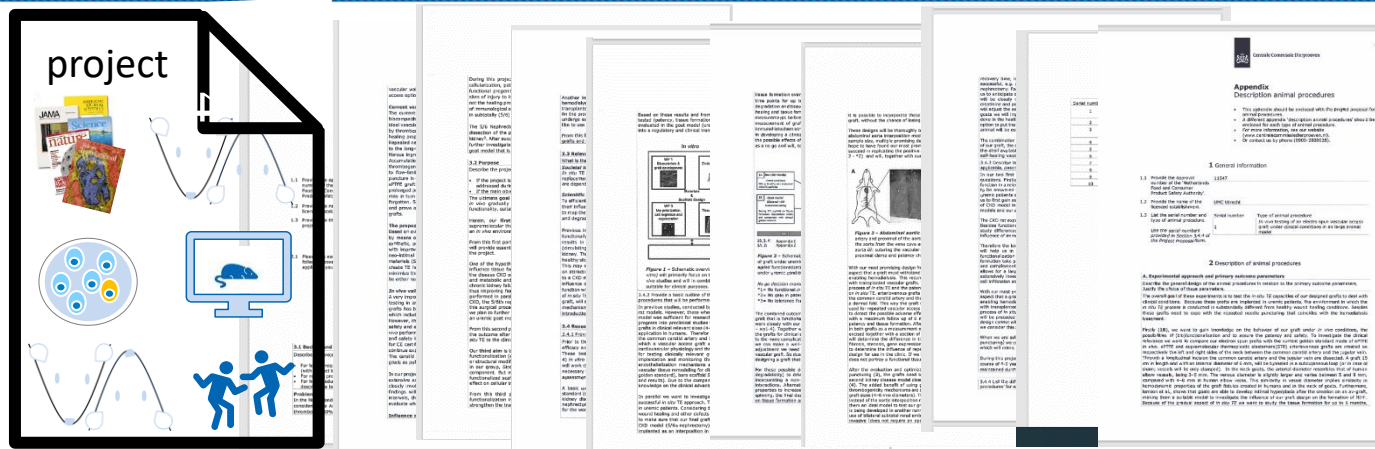
Universiteit
Leiden



Severity classification and animal welfare



Review of research on project level



~50 pages

Project

Outline of science

Strategy (go/no-go)

Outline of procedures and animals

No names

Maximum discomfort

Maximum humane endpoints

General monitoring

Research Plan

Experiment

Exact go/no-go explained

Exact numbers, procedures and timing

Name and details people involved

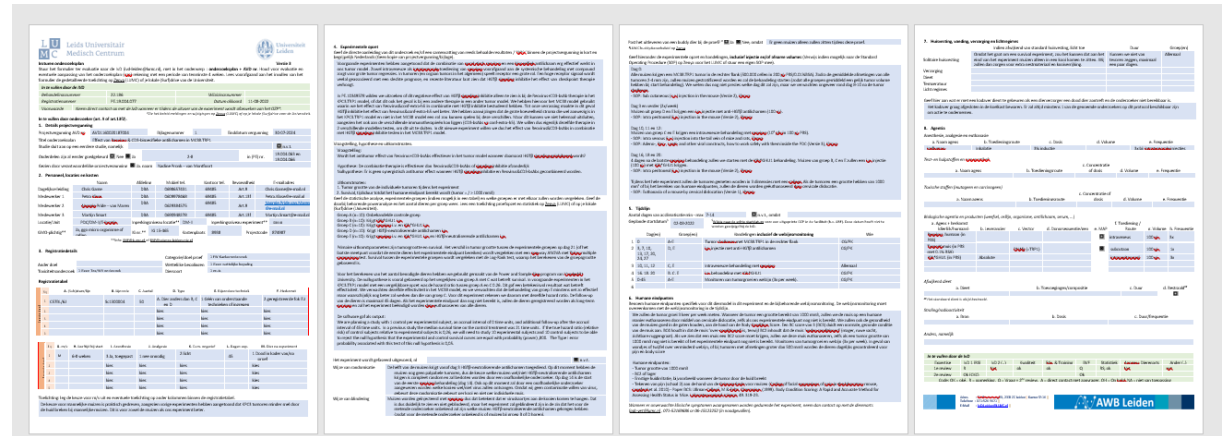
Emphasis on all aspects of discomfort

Specified humane endpoints

Focus on monitoring the animals

Slide: Verhave, P.S. (2022) How the Animal Welfare Body contributes to retrospective assessment. Focus on Severe Suffering, RSPCA, Karolinska Institutet, Stockholm

Review of research on experimental level



~ 4 pages

Project

Outline of science

Strategy (go/no-go)

Outline of procedures and animals

No names

Maximum discomfort

Maximum humane endpoints

General monitoring

Research Plan

Experiment

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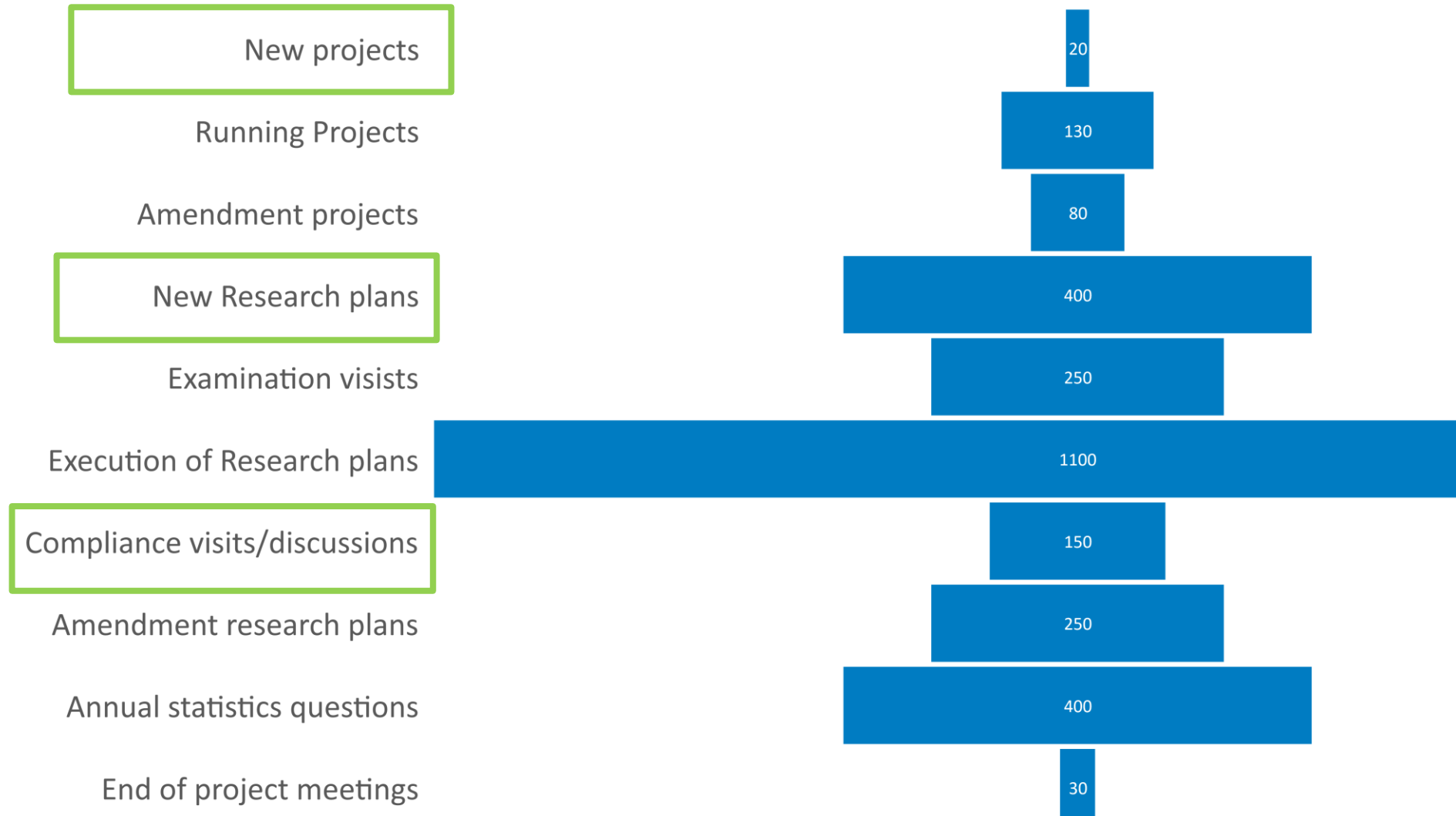
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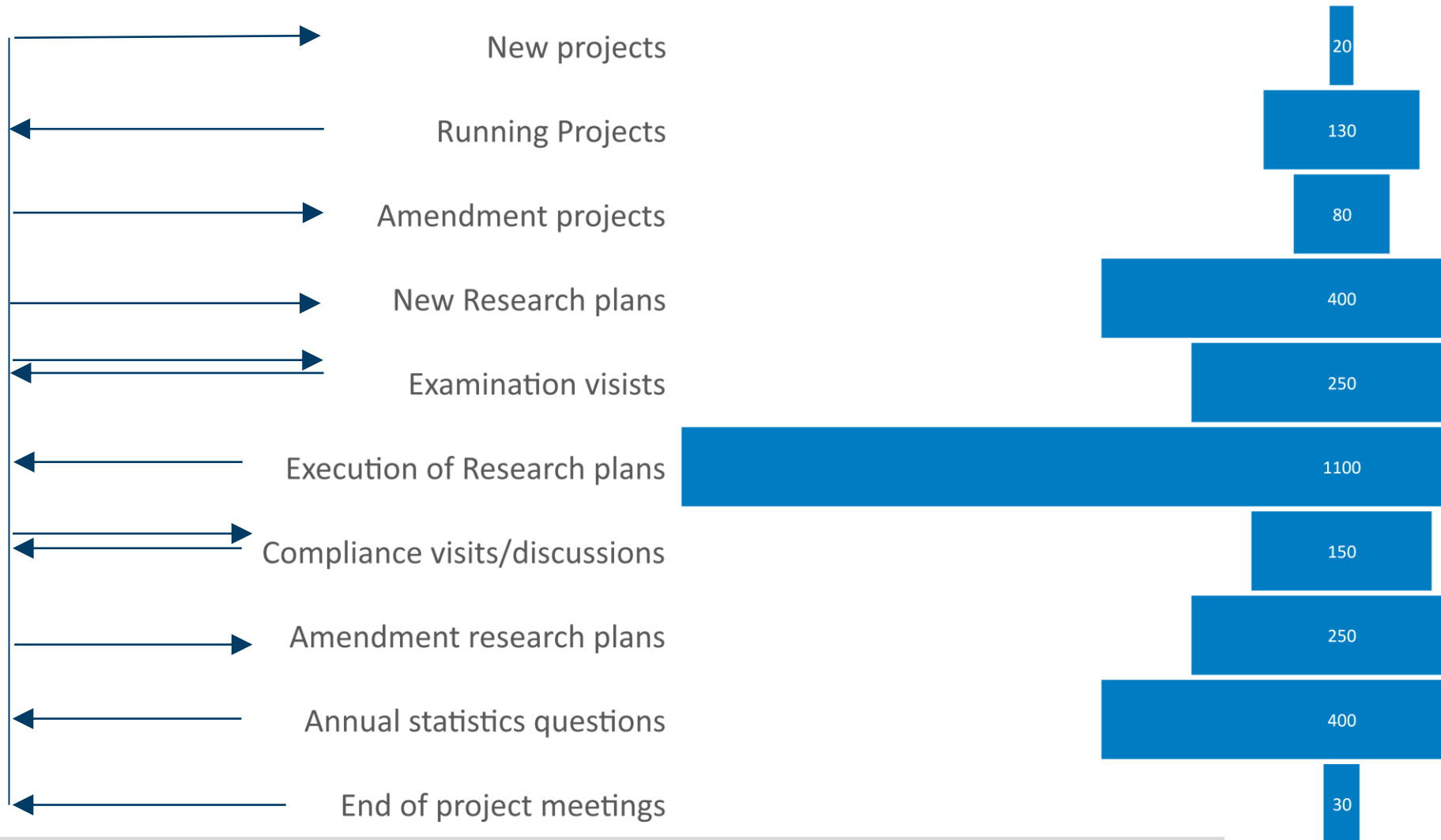
Focus on monitoring the animals

Slide: Verhave, P.S. (2022) How the Animal Welfare Body contributes to retrospective assessment. Focus on Severe Suffering, RSPCA, Karolinska Institutet, Stockholm

Research meets the AWB Leiden



Retrospective assessment



Quality management in an academic environment



New projects

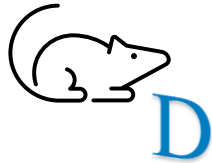
20

Running Projects

130

Amendment projects

80



New Research plans

400

Examination visits

250



Execution of Research plans

1100

Compliance visits/discussions

150



Amendment research plans

250



Annual statistics questions

400

End of project meetings

30

AWB Leiden 3R Projects_focus on welfare

Standard teaching and communication

- All staff involved in animal work is certified and trained
- New staff get an introduction to AWB Leiden and the facilities
- Extra training on welfare monitoring
- End of project discussion on 3Rs and science with the AWB
- Monthly newsletter



Animal Welfare Body (AWB) Leiden Update

Dear Colleagues,
This month's AWB-Update contains more info than normal. You will find information about the NVWA audit at the university, an update on the annual statistics, the new breeding animals with discomfort example, and a reminder that you can still register for the preregistration presentation/workshop. Furthermore, it is good to see that many of you send their new project for evaluation. Be aware that this, in combination with the holiday season, results that our regular reaction times could be longer than normal. We hope to meet you for drinks at the 7th of July to start our summer!

Have a nice summer!

Best regards,
AWB Leiden team
- Nefeleke, Nadia, Chih Kit & Ronald -

NVWA audit update

We are in the midst of the NVWA audit. As an AWB we are showing the inspectorate all relevant evaluations, documents and procedures. This contains a lot of work from you as a community as well. We have had and will have personal meetings between the inspectors and researchers and research technicians concerning this work. The conclusions of the NVWA will be shared with you after the summer.

Thank you all for keeping animal welfare and science up to standard! The self-check is an important tool for this. We strongly advise to fill out this form at least once for each research plan, and send it to the project owner. You can find the document your local (surfdrive (LEI) and on [Zanva](#).



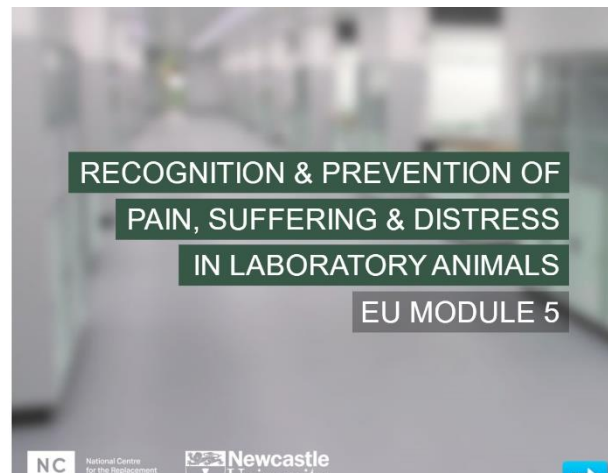
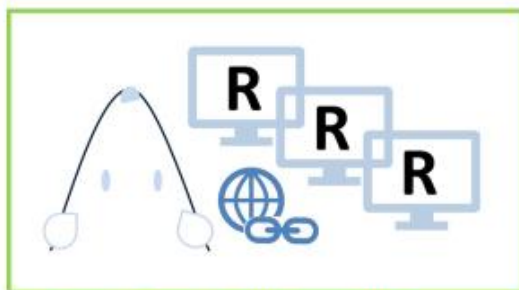
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A preview of the data:

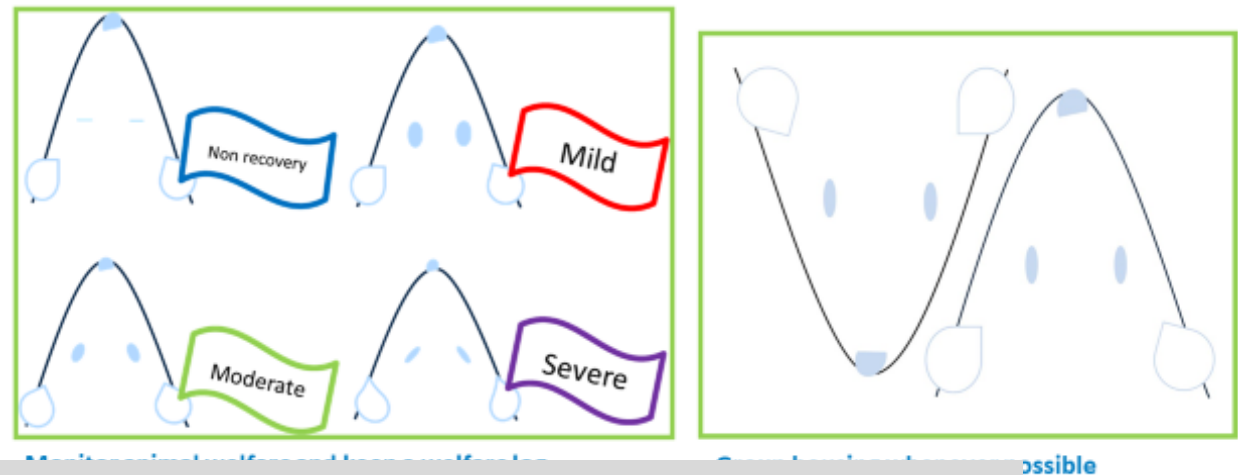
Number of animals used in procedures
2020



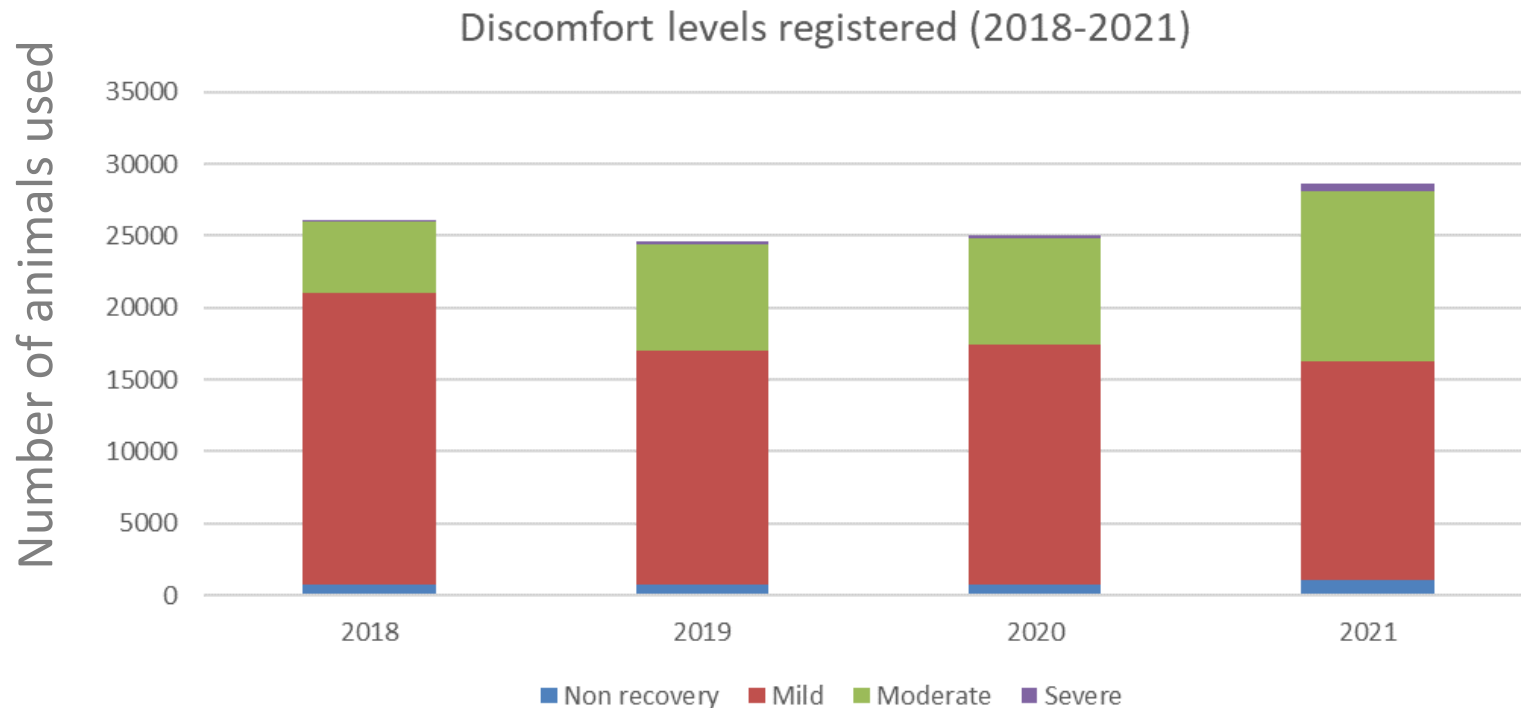
AWB Leiden 3R Projects_focus on welfare

Improving animal welfare

- Buddy animal program to reduce solitary housing
- Workshop on estimating discomfort
- Teaching on clear humane end-points for welfare and science
- Tumor/mouse model welfare database (in prep.)
- Workshops on e.g. peri-operative care, handling technique, procedures and pathology



Focus on severe suffering

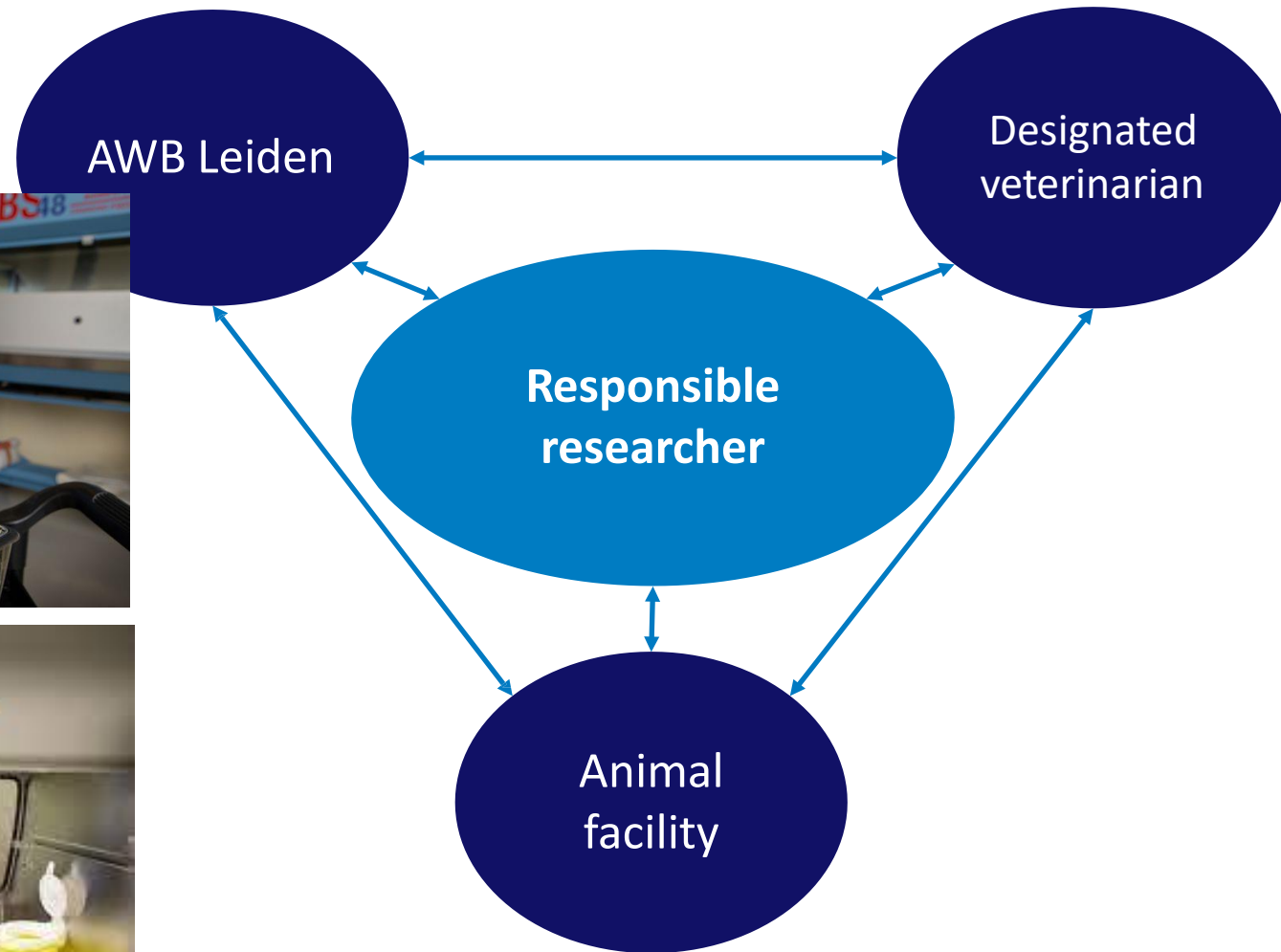


Increase in 2021.....

402 animals in SARS-COVID 19/influenza challenge

170 animals unexpected discomfort or found dead

Focus on humane end-point and monitoring



2 March 2022

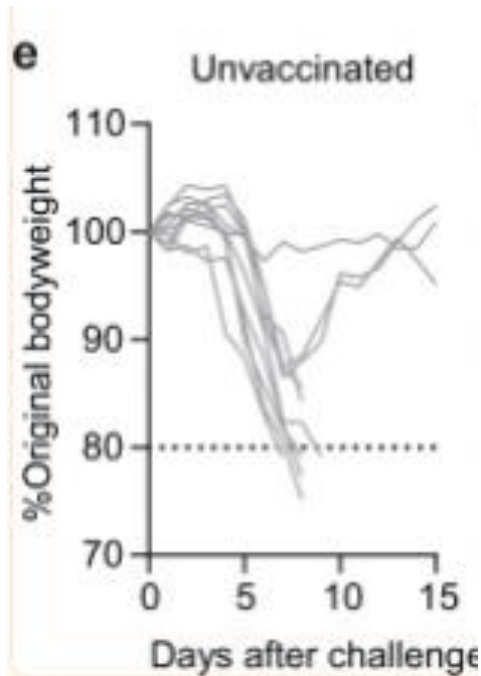
Humane end-points are never generic, but tailor made for a certain procedure and linked to the scientific end-point of the study as well be in line with ethical principles

Specific Measurable Assignable Realistic Time related

[illegible]

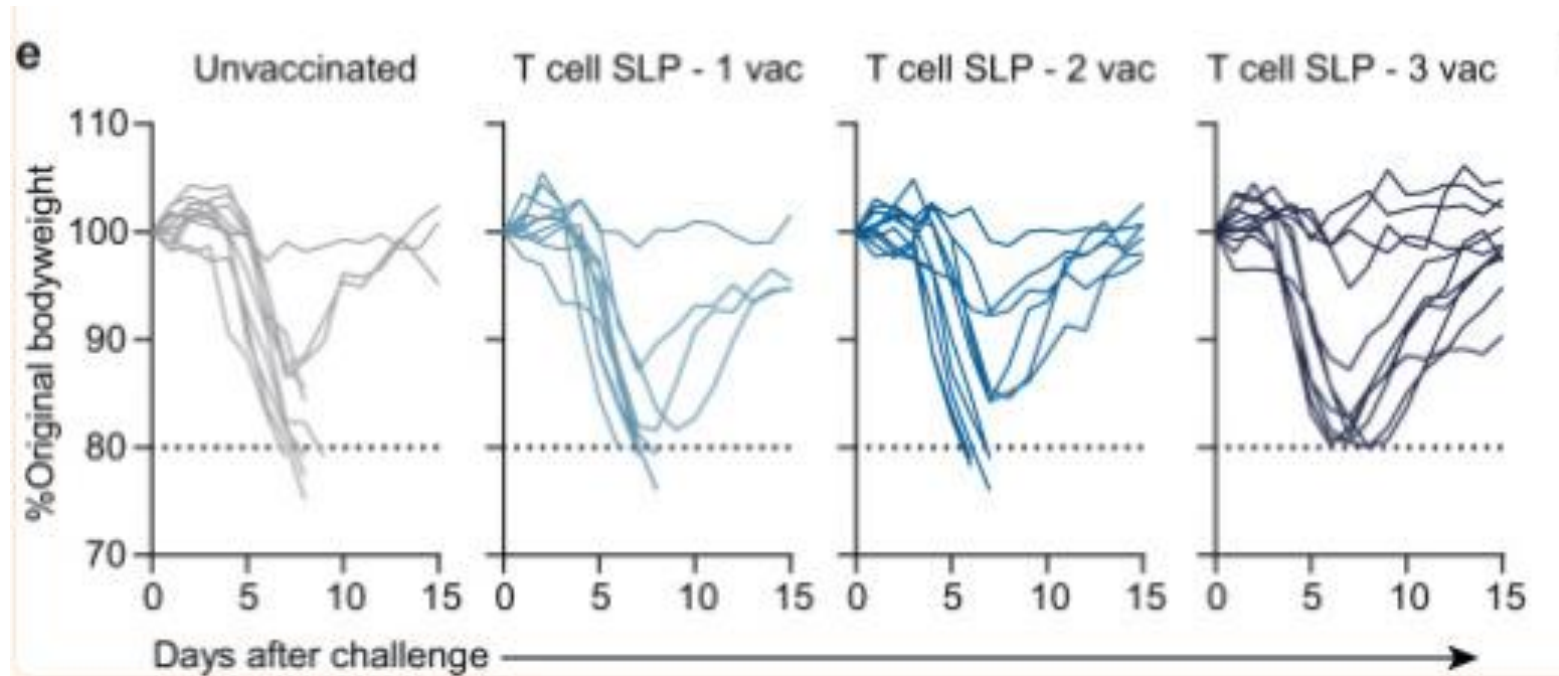
31-Mar-23

Focus on humane end-point and monitoring



“K18-hACE2 mice were challenged intranasally with a lethal dose of SARS-CoV-2 and body weight and clinical symptoms were measured daily as parameters of disease.”

Focus on humane end-point and monitoring



“Four weeks after the 3rd vaccination, the K18-hACE2 mice were challenged intranasally with a lethal dose of SARS-CoV-2 and body weight and clinical symptoms were measured daily as parameters of disease.”

Contact leads to communication

Always start talking

- Room for discussion
 - Design, Handling and procedures
- Animal work = teamwork
 - Responsibility is taken by each team member
- Culture where expertise is involved
 - Literature
 - Veterinarian
 - Statistician
 - Animal caretaker
 - Scientist

Communication and the Culture of Care

International Culture of Care Network*

Effective two-way communication between scientists and animal technologists is essential for a good Culture of Care. The European Commission suggests the 'development of formal and informal communication channels, for mutual benefit with respect to science and animal welfare'. Here are some examples from International Culture of Care network members

Regular meetings

Scheduled meetings for scientists, animal technologists, vets, unit managers and AWERB members



Regular refresher/update meetings for all organised by NTCO



Special events

Duo-talks: researcher talks about their science, and animal technologists talk about techniques and animal care within the project



ELH organises an **informal meeting** for all, in which anyone can raise welfare issues



Building communication into existing processes

Each study has a **pre-start** and **wash-up** meeting involving **everybody**



Three Rs improvements reported to AWERB & shared at external user meetings



Other ideas

A **'boxless'** event: anyone can submit 'out of the box' ideas to improve practice



A **staff survey** for all e.g. how much do you agree with statements such as 'in our group we listen to each others' ideas about animal welfare'



*norecona.no/culture-of-care

poster prepared by Penny Hawkins, RSPCA Research Animals Department
International Culture of Care Network

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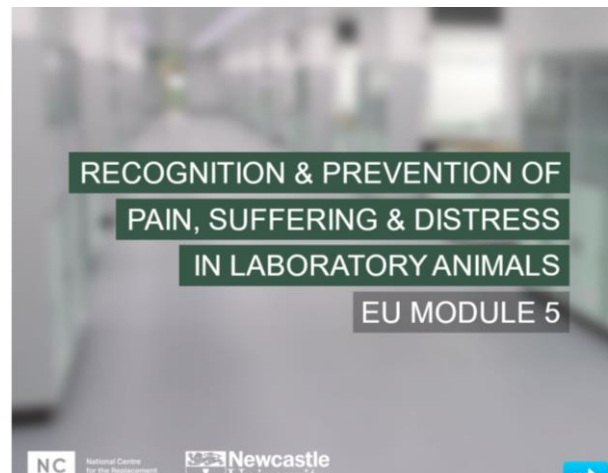
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Number of animals used in procedures
2020



AWB Leiden 3R Projects

Improving research quality

- Published Randomization tool
- Workshop on Blinding your experiment
- Statistician involved in all research plans
- Workshop on preregistration



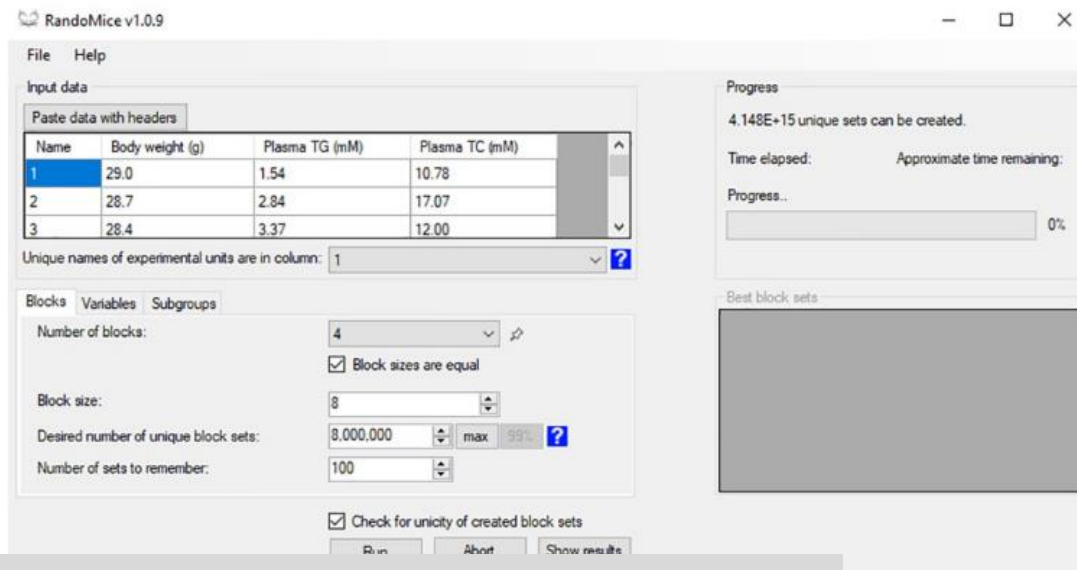
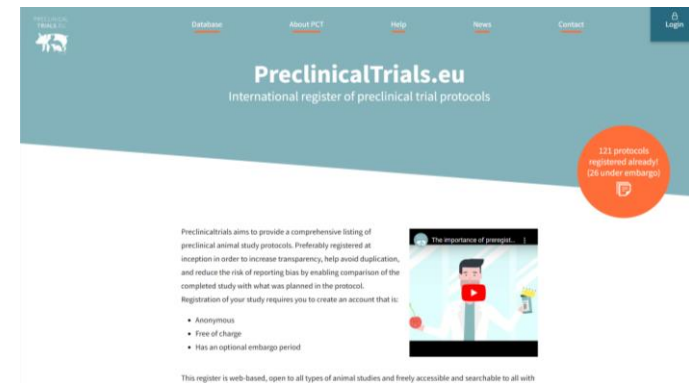
Avoid experimental bias

RESEARCH ARTICLE

RandoMice, a novel, user-friendly randomization tool in animal research

Robin van Eenige^{1,2}, Peternella S. Verhave³, Peter J. Koemans⁴, Ivo A. C. W. Tiebosch⁵, Patrick C. N. Rensen^{1,2}, Sander Kooijman^{1,2*}

¹ Department of Medicine, Division of Endocrinology, Leiden University Medical Center, Leiden, the Netherlands, ² Einthoven Laboratory for Experimental Vascular Medicine, Leiden University Medical Center, Leiden, The Netherlands, ³ Animal Welfare Body, Leiden University Medical Center, Leiden, The Netherlands, ⁴ Independent Consultant, Gouda, The Netherlands, ⁵ Animal Welfare Body Utrecht, Utrecht, The Netherlands

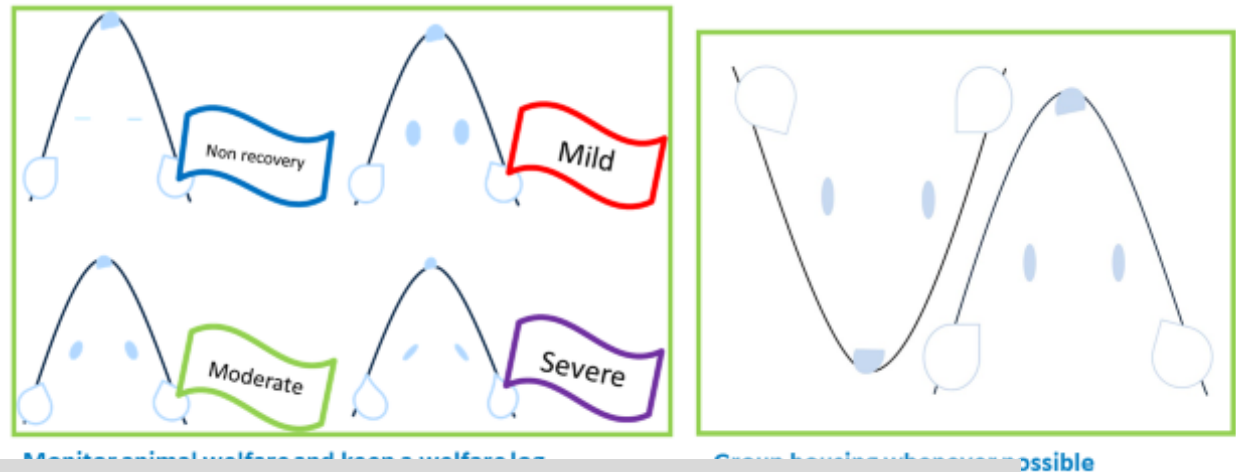


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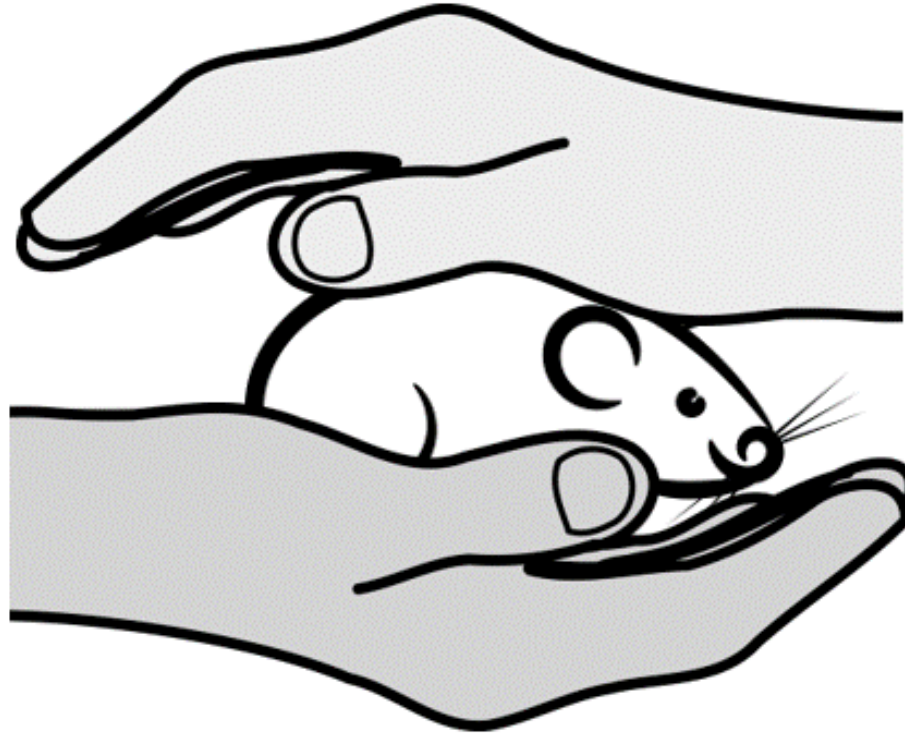
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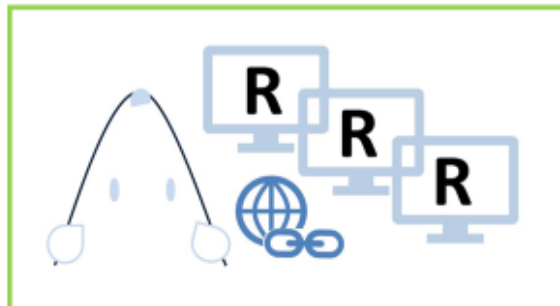


Responsible science with animals

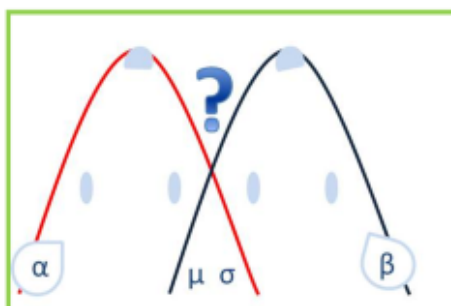


Our goal is minimal discomfort to all animals
in our care and high-quality research data.

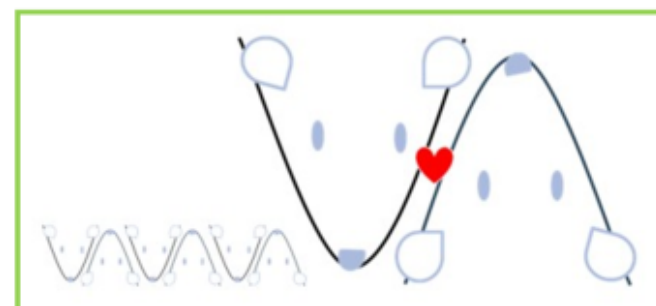
Responsible science with animals



Systematically explore 3R opportunities



Focus on experimental design



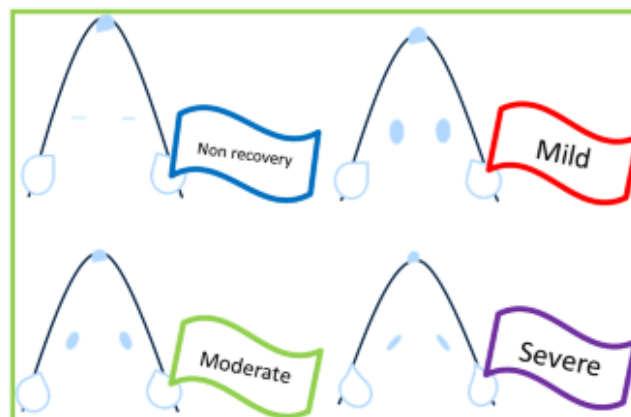
Smart use of experimental animals



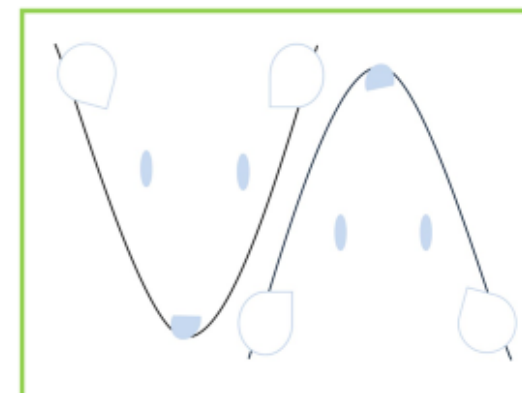
Avoid experimental bias



Apply for project licence, research plan or amendment



Monitor animal welfare and keep a welfare log



Group housing whenever possible