ACADEMY 2020 COURSES, SEMINARS & WORKSHOPS LABORATORY ANIMAL SCIENCES







SCANBUR User Training & Process Optimisation

SCANBUR is Scandinavia's most experienced total solution supplier to animal research facilities. We perform site surveys and assist your layout and project management team to help you optimise your facility.

We offer assistance during the planning and design phase, whether it concerns a single room or an entire wash area in your new or existing facility. Furthermore, we offer hands-on training sessions for your personnel and are of course available should you need any following support:

- On-site technical training: Let our service technicians provide tailor-made training for your personnel. Academy will be of assistance to arrange training
- On-site user training: Whether you need training for newly appointed employees at the facility or brush-up courses for current
 personnel, our Academy department can arrange it for you

We also offer to look at the workflow in the animal facility with fresh eyes and to give suggestions to how you may optimise your internal processes and improve your workflow SOPs, e.g.:

- Establish intervals for service & maintenance of equipment to avoid long down periods
- Optimise use of available rooms
- Optimise use of equipment

Contact <u>academy@scanbur.com</u> for more information about site surveys and on-site training.



WELCOME!

ACADEMY PROGRAMME 2020

We facilitate courses, seminars and workshops targeted for employees working within laboratory animal science: Animal technicians, researchers, veterinarians, facility managers, etc.

In addition to our courses, we offer on-demand courses at a location of your choice (at SCANBUR or at your facility), training in the use of SCANBUR products and help to prepare workflow SOPs.

Contact us with your requests and ideas: academy@scanbur.com

We look forward to welcoming you!

STAY UPDATED

Stay updated on upcoming courses & seminars.

Follow us on LinkedIn www.linkedin.com/company/scanbur-as/ and www.scanbur.com/academy

REGISTER ONLINE

www.scanbur.com/academy#61

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.

PRICES

Prices are stated in EURO and Academy points, excl. VAT. You earn Academy points if your facility has a SCANBUR service agreement. Academy points can be used as payment for Academy courses or technical on-site training.

LANGUAGE

Courses are conducted in English, however, if most course participants are from Scandinavian countries the possibility of conducting the courses in Danish is available, if all participants agree.

Charles River Animal Model Evaluation Program

Selecting the appropriate animal model for your study is critical for the reproducibility of your research and to ensure that no animal's life is wasted unnecessarily.

This program allows researchers to assess animal models in their research protocols, refine or validate their studies or simply to take their research in a different direction at no cost.

BENEFITS

- Reduction: Determine whether an animal model fits your research protocols and avoid using the wrong animal model in large scale projects
- Assess quality: Assess the quality of Charles River animal models on your own terms
- No cost: Select the animal model you would like to evaluate, we provide at no cost*
 *Crate and freight costs will be charged for germ-free models and in certain specific circumstances. Terms and conditions may apply.

Follow this link wwwapps.criver.com/ModelEvalForm eu/ to send your request online.





Sign a SCANBUR Service Agreement & Earn Academy Points

SCANBUR offers service agreements at different levels to suit your requirements:*.

*Service level I	*Service level II
Includes working hours and travel costs for scheduled preventive maintenance visits. As an option, it can also include standard wear and tear parts.	Service level I plus free-call-service ensuring total control of costs, if a service technician is suddenly required at the facility. Should you experience equipment breakdown, then the repair costs are already covered. Spare parts can be included in service level II as an option. Standard wear and tear parts only or all parts that might be necessary.

We tailor-make the service agreement to suit your specific requirements.

With a SCANBUR service agreement you earn Academy points which can be used as payment for Academy courses or for on-site technical training of your colleagues and yourself.

- On-site technical training: Let our service technicians provide tailor-made training for your personnel. Our Academy department will be of assistance to arrange training
- On-site user training: Whether you need training for newly appointed employees at the facility or brush-up courses for current
 personnel, our Academy department can arrange it for you
- Process optimisation: The animal facility workflow will be looked at with fresh eyes, and you will receive suggestions to how you could improve your workflow and optimise your internal processes
- Academy classroom training: Let our Academy department design a classroom course tailor-made for your business or choose among a wide range of courses with internal and external speakers

Contact academy@scanbur.com for more information on how to earn and use Academy points.



Scheduled Courses

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Anaesthesia & Analgesia of the Laboratory Pig - Theory & Practice	Tuesday 14 and Wednesday 15 January 2020	7
Blood Sampling Techniques in Mice and Rats & Handling of Blood Samples	Thursday 5 and Friday 6 March 2020	9
Laboratory Animal Analgesia & Anaesthesia - Theory & Practice	Thursday 28 and Friday 29 May 2020 & Thursday 3 and Friday 4 September 2020	11
Laboratory Rodent Welfare in Housing & Handling	Tuesday 27 October 2020	12

On Demand Courses

We also offer our courses on demand to be held at your facility or any other location when it suits you.

In addition to the courses already described in this catalogue we offer ready-to-go on demand options as described on the following pages:

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If you have a wish for a course topic that we did not yet cover, please contact <u>academy@scanbur.com</u> and we will do our outmost to create a course that complies with your requirements.

Scheduled Course: Anaesthesia & Analgesia of the Laboratory Pig - Theory & Practice

DESCRIPTION

A 2-day course on anaesthesia and analgesia of the laboratory pig. This course gives a thorough understanding of respiration physiology and pathophysiology, which is the basis of understanding anaesthetic mechanisms, drugs of choice and practical approaches. Furthermore, you learn about pain physiology, assessment and alleviation. You learn the different mechanisms behind acute and chronic pain, why you need to treat pain and which options you have in doing so.

The practical exercises include anaesthesia induction, intubation, anaesthesia monitoring, arterial and venous access (percutaneous and cut-down), epidural catheter/ injection and urinary catheterization. Equipment for anaesthesia, design, function and leakage test will be demonstrated.

There will be good opportunities to discuss specific challenges the participants may be facing regarding anaesthesia and analgesia of pigs.

The course is a 2-day course which includes lectures and practice both days. A maximum of 12 participants ensures that everyone gets hands-on training.

Social programme: On the evening of day 1 we will enjoy dinner together.

EDUCATORS

Carsten Grøndahl, Associate Professor in Anaesthesia & Surgery at University of Copenhagen and Chief Veterinarian at Copenhagen Zoo. Carsten has conducted numerous research projects and seminars on pain modulation and anaesthesiology.

Mette Værum Olesen holds approximately 30 years of work experience as an animal technician, specialising in experimental surgery and anaesthesia. Mette runs MVO Consult Denmark, a consultancy firm with expertise in surgery of the laboratory pig and dog.

LANGUAGE

English or Danish (optional).

WHEN

Tuesday 14 and Wednesday 15 January 2020.

WHERE

University of Copenhagen, Denmark.

PRICE

EUR 1800 excl. VAT or Academy points 16875. Includes meals.

Tighter control of relative humidity improves murine breeding performance – a retrospective analysis

Petersen KE¹, Ringsted, A¹, Woodley, S² ¹SCANBUR A/S, Silovej 16-18, 2690 Karlslunde, Denmark, ²King's College London, New Hunts House, Guy's Campus, SE1 1UL London, United Kingdom

Aim of the study:

In the current study we aimed to investigate the effect of relative humidity (RH) on breeding performance of mice. The breeding of mice housed with RH controlled steadily at cage level was compared to breeding of mice housed in cages with RH controlled less steadily at room level. The comparison was done on data for eight months (January to August) and pups per litter, preweaning mortality and total litter loss was compared between the groups. Data were collected on mice of various backgrounds. The rationale for the study was to evaluate potential effects of RH on breeding performance. An improvement of breeding performance could potentially reduce the number of breeding mice being used for research.

Study design

For group 1 an air handling unit capable of controlling RH (ScanClime®) was used to control RH at minimum 55%. In group 2 a setup with an air handling unit not controlling RH was used, and the animals in this system were subject to RH controlled at room level. The statistical analyses used were t-test comparing the groups after checking the data for normal distribution and binomial testing was used when appropriate (GraphPad Prism 7). The data collection was performed as part of routine data collection on breeding from the facility. Welfare assessments were performed daily and the housing of animals complied to regulations set by the Home Office UK.

Results

- RH was kept at 55% and above in group 1, where RH was controlled at cage level, whereas group 2 was subjected to RH varying from 34 to 76%. Over 2000 litters were born in the period of data collection.
- The number of pups per litter was significantly higher for group 1 (p<0.001). The same was found when only investigating mice C57BL/6 strains (p<0.001) (figure 1+2).
- Total litter loss registered at weaning was significantly higher in group 2 (p<0.01) (figure 3).
- No significant difference was found in preweaning mortality (graph not shown).
- To investigate how the variations in RH affected breeding performance standard deviations for the RH in gestational period and preweaning period postpartum were compared to the pups per litter and total litter loss. No connections between the variation in RH and pups/litter could be found using this method. However, low variation in RH the first week after birth was associated with the lowest total litter loss observed (figure 4).

Standard deviation of relative humidity

first week after birth ***

0^{,3,1,0}

Figure 4 Standard deviation of relative humidity in the

Figure 4 characteristic deviation of relative normality in the first week postpartum compared to the total litter loss preveaning. The expected value is the average of all values of total litter loss. *** P < 0.001.

10³

7,0



Limitations

15 (%)

10

5

Fotal litter loss

The unit used for adjustment of humidity can only humidify, thus the RH is set to minimum 55% but could go above during periods with high humidity. The animals were housed in different rooms and the breeding data is collected on various strains. The data should be seen as a initial result and we aim to investigate this in further detail. Together with other data we strongly believe that RH affects breeding of mice

Conclusions

Our results strongly suggest that RH can affect murine breeding performance significantly. When controlling RH to not drop below 55% the mice had more pups per litter and fewer total litters were lost preweaning. when compared to the animals housed under less steadily room controlled RH. Further investigation is warranted on how different levels of stable RH versus variation in humidity affect the breeding performance.



Scheduled Course: Blood Sampling Techniques in Mice and Rats & Handling of Blood Samples

DESCRIPTION

Blood samples are an essential part of most animal experiments, but how do we obtain the best possible blood samples while ensuring a high level of animal welfare?

This course includes a theoretical and a practical review of the most frequently used blood sampling techniques, existing guidelines for maximal blood sampling volumes and restitution times.

Furthermore, we will discuss the potential pathological consequences and stress responses due to blood sampling, and how we make sure to minimize these.

Correct handling of blood samples is essential for accurate research results, and thus good practice for stabilisation, centrifuging, cooling and storage will be presented.

We will discuss specific challenges the participants may face regarding blood sampling.

The course includes both lectures and practical exercises on blood sampling techniques in mice and rats.

A maximum of 12 participants ensures that everyone gets hands-on training.

EDUCATORS

Klas Abelson is Associate Professor the Department of Experimental Medicine, University of Copenhagen. Klas' research centres on the development of objective measurement of pain and stress in rats and mice as well as development and refinement of methods for surgery and blood sampling. He is responsible for a wide range of teaching and training activities in lab animal science and animal experimentation.

Lise Nikolic Nielsen is Associate Professor at the Department of Veterinary Clinical Medicine, University of Copenhagen. Lise is the academic manager of the Veterinary Diagnostic Laboratory (VetLab) and Veterinary Clinical Pathology. VetLab analyses samples from many different species and Lise is therefore well aware of the struggles to get adequate samples, how to analyse samples with small volumes and the lack of reference intervals for exotic species.

LANGUAGE

English or Danish (optional).

WHEN

Thursday 5 and Friday 6 March 2020 (1¹/₂ day).

WHERE

University of Copenhagen, Denmark.

PRICE

EUR 1005 excl. VAT or 7510 Academy points. Includes meals.

Does relative humidity affect reproducibility of animal research?

Andersen KB, Petersen KE (kep@scanbur.com), Andersen CH, SCANBUR A/

Research Collaborators: Malgorzata Major et al. University of Turku Beate Obermüller, Medical University of Graz Stephen Woodley & Stuart Newman, Kings College London Rebecca Towns, University College London Bioresearch & Veterinary Services, University of Edinburgh Canadian Nuclear Laboratories

Collaborators on these studies have no affiliation or financial links to SCANBUR A/S

Ongoing studies show interesting preliminary data on rodent welfare and physiology when relative humidity is locally, accurately controlled at 55% compared to when relative humidity is controlled centrally, and thus fluctuating with the variable weather conditions





A patented technology inside ScanClime air handling units ensures a relative air humidity with an accuracy of $\pm 3\%$. In a number of research collaborations we are documenting the impact of the ScanClime air handling unit on reproducibility, breeding and animal welfare.

Scheduled Course: Laboratory Animal Analgesia & Anaesthesia - Theory & Practice

DESCRIPTION

For how long can you hold your breath? That is the amount of time you have to Google, if your anaesthesia protocol fails! Thus, you are highly dependent on ready knowledge when doing anaesthesia of laboratory animals. This course gives you a thorough understanding of respiration physiology and pathophysiology, which is the basis of understanding Anaesthetic mechanisms, drugs of choice and practical approaches.

How much pain does a laboratory animal feel after being exposed to e.g. surgery? We cannot ask and thus often it is up to caretakers, veterinarians and researchers to decide which pain relief should be given. On this course you learn about pain physiology, assessment and alleviation. You learn the different mechanisms behind acute and chronic pain, why you need to treat them and which options you have in doing so.

On Day 1 of this course, interactive lectures take the participants through the theory of respiratory and pain physiology and with that onset, moves on to the principles of anaesthesia and analgesia. The participants get an overview of drugs of choice for different anaesthesia levels and purposes. Likewise, the options for pain relief dependent on type of procedure and physiological impact will be taught. Social program: After a day of lectures, Day 1 includes a guided tour in Copenhagen Zoo. We get to meet some of the animals up close and enjoy a delicious barbecue while the sun sets in Copenhagen Zoo.

On Day 2 we do practical exercises on rat and rabbit anaesthesia using the theoretical knowledge obtained. Various techniques will be used to illustrate the benefits and challenges of different anaesthesia protocols. Besides anaesthetic protocols, the participants will be taught intubation on both the rabbit and rat and get an introduction to the use of the larynx mask in the rabbit as a much better option. The importance of oxygenation will be thoroughly demonstrated.

A maximum of 12 participants ensure that everyone gets hands-on training.

EDUCATORS

Klas Abelson is Associate Professor the Department of Experimental Medicine, University of Copenhagen. Klas' research centres on the development of objective measurement of pain and stress in rats and mice and novel methods for alleviating pain and stress in these species.

Carsten Grøndahl is Associate Professor in Anaesthesia and Surgery at University of Copenhagen and Chief Veterinarian at Copenhagen Zoo. Carsten has conducted numerous research projects and seminars on pain modulation and anaesthesiology.

LANGUAGE

English or Danish (optional).

WHEN

Thursday 28 and Friday 29 May 2020 & Thursday 3 and Friday 4 September 2020.

WHERE

Day 1: Copenhagen Zoo, Denmark. Day 2: University of Copenhagen, Denmark.

PRICE

EUR 1275 excl. VAT or 9520 Academy points. Includes meals.

Scheduled Course: Laboratory Rodent Welfare in Housing & Handling

DESCRIPTION

What is animal welfare and how do we assess it in our laboratory rodents?

At this course the sensory and cognitive abilities of mice and rats will be presented as well as the concepts of habituation, socialization and training.

We will present and discuss options for housing laboratory rodents. Based on this, we will discuss if we can optimise the way we house and handle the animals to better meet their physical and psychological needs?

The course includes lectures on the following topics:

- What is animal welfare?
- Visual, auditory and olfactory perception in mice and rats
- Laboratory rodent cognition and empathy
- Habituation, socialization and training
- Types of caging and enrichment
- Influence on behaviour and physiology
- Examples from the EU directive and national legislation on requirements for housing

A workshop will round up the learning outcomes of the day and bring the experience of the participants into play when we explore new options of refining the way we house and use laboratory rodents.

This 1-day course is also made on demand at SCANBUR or at your facility. Please contact <u>academy@scanoun.com</u> for further information on available dates and estimated costs.

EDUCATOR

Dorte Bratbo Sørensen is a veterinarian and an associate professor at the University of Copenhagen. Her research concerns laboratory animal behaviour and training as well as refinement of a number of behavioural assays used on animals to investigate human and animal behaviour and disease.

LANGUAGE

English or Danish (optional).

WHEN

Tuesday 27 October 2020.

WHERE

Karlslunde (Copenhagen), Denmark.

PRICE

EUR 275 excl. VAT or Academy points 2050. Includes meals.



On Demand Course: Ergonomics & Wellbeing in the Animal Facility

DESCRIPTION

Working in the animal facilities subject laboratory animal caretakers and technicians to a challenging physical work environment. Repetitive movements, overhead lifts or awkward work positions may result in pain and work disability.

This course will teach you how to perform your work while avoiding work-related musculoskeletal disorders. The educator will help you understand the importance of physical wellbeing, how much potential you have to increase your wellbeing and the impacts you may earn from this.

You will get tips and tricks on how to practice for healthier work positions and learn how to construct your work day and working environment for optimal implementation of the course content.

This course contains interactive lectures and practical exercises. The course will build on the specific challenges in the physical work environment of the course participants.

EDUCATOR

Søren Hald is a physiotherapist and partner at REDMINKROP ("SAVEMYBODY"). Søren has for more than 10 years worked to help people obtain a better physical work environment and thus a better wellbeing. Søren is an experienced consultant on ergonomics in laboratories and has worked with several Danish animal facilities to improve their physical work environment.

LANGUAGE

English or Danish (optional).

This 1-day course is also made on demand at SCANBUR or at your facility. Please contact **academy@scanbur.com** for further information on available dates and estimated costs.



On Demand Course: How to Avoid Allergy & Infections When Working with Laboratory Animals

DESCRIPTION

Working with laboratory animals pose a risk of employees being exposed to allergens and potential infectious agents.

On this course you learn how allergens and infectious agents spread and where bacteria, vira and parasites can be found in the surroundings and on the laboratory animals. You will learn how to optimise your workflow and use of personal protective equipment.

The course contains lectures and practicals on the following topics:

- Bacteria, vira, fungi and parasites where are they found in the environment?
- How do microorganisms spread between animals, personnel and the environment
- Spot the microorganisms in your surroundings
- Infectious hygiene guidelines on hand hygiene and personal protection equipment
- Decontamination of equipment and surroundings
- Keeping your work area clean
- Evaluate your own work procedures

EDUCATORS

Mette Bar Ilan is a nurse specialized in infection control. Mette is employed at the Central Unit for Infection Control and the Lifestock Associated MRSA advisory service at Statens Serum Institut. Mette is an experienced teacher as her daily work comprises guidance and education on infection control as well as preparation of national guidelines and information within this area.

LANGUAGE

English or Danish (optional).

This 1-day course is also made on demand at SCANBUR or at your facility. Please contact **academy@scanbur.com** for further information on available dates and estimated costs.

On Demand Course: Fifty Shades of Laboratory Animal Science? - Ethical Aspects of Working with Laboratory Animals

DESCRIPTION

Using animals in research and within the world of medicine has been a controversial subject for many years. Is it justifiable to sacrifice other living creatures to gain a better understanding of the world and alleviate and cure human diseases? Existing and emerging techniques like cloning, GMO and CRISPR-Cas9 adds new aspects to the debate both which purposes that can justify animal research and what methods are acceptable.

The course begins with a talk that situates the debate on laboratory animals in the broader context of animal ethics and illuminates the ethical conflicts and dilemmas integral to the use of animals in research with a special emphasis on the challenges related to the use of modern biotechnologies. Afterwards the participants will be challenged to reflect on some examples of how animals are used for scientific purposes. Finally, a very important part of this course is the opportunity for the participants to consider ethical dilemmas in their own work with laboratory animals and to discuss these with colleagues.

EDUCATOR

Mickey Gjerris: M.Th., PhD, Associate Professor, Department of Food and Resource Economics, The Faculty of Science, University of Copenhagen. Mickey is a bioethicist and works primarily with ethical aspects of human use of nature in relation to climate change, agriculture, food, research animals and biotechnology. He has published several articles on animal research ethics and is a co-author of Animal Ethics in Animal Research, a textbook published in 2017 at Cambridge University Press.

LANGUAGE

English or Danish (optional).

This 1-day course is also made on demand at SCANBUR or at your facility. Please contact **<u>academy@scanbur.com</u>** for further information on available dates and estimated costs.





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