Refinement in Action - Advanced Laboratory Animal Handling

Translational Animal Research Center

University Medical Center Johannes Gutenberg-University Mainz

Hanns-Dieter-Hüsch-Weg 19

55128 Mainz

2025

Program Generalities

Location and Time

Hanns-Dieter-Hüsch-Weg 19, 55128 Mainz; 8:00 - approx. 16:00, incl. 1h lunch break

Theory: Seminar room, first floor

Practical part: Course room, second floor

We offer the module in face-to-face.

Nature of the module

The module takes three hours for the theoretical session and four hours for the practical session. Training course certified under *§3* of the German Animal Welfare Test Animal Ordinance *(Tierschutzversuchstierverordnung)* - Seven hours.

Language of instruction

German and English.

Maximal number of attendances per session

10 participants.

Target audience

Animal care staff, students and researchers interested in approaches for friendly animal handling.

Minimum requirements

The participant must certify a current or future link to animal husbandry or experimentation.

Module dates

Regular dates: **2025 March (24), June (18) and September (29)**:

For course requests involving more than 10 participants or for courses to be held at your own location, please contact us at las-education@uni-mainz.de

Costs per session

120,0 € for intern 150,0 € for external participants

Contact

Mail: las-education@uni-mainz.de , Tel: 06131 39 21332

Program Content

Routine procedures in animal facilities can be stressful for both laboratory animals and humans, so an approach to friendly animal handling is an asset for science and wellbeing. Through this module, we aim to update and train beginners users who work in animal facilities or are interested in handling animals in specific experimental settings.

In this module, we provide 1) Theoretical up-to-date information about handling of mice and rats, 2) Practical aspects of animal handling in cage and in experimental settings. Conditioning methods**,** emphasizing in clicker training as a tool for habituation to husbandry and specific experimental settings. The participants have the option to deep in on aspect of animal handling by notifying the staff with at least three weeks of advance.

Program content:

Theoretical section

1. Introduction on lab animal welfare
2. Causes and effects of stress of laboratory animals
3. Handling and habituation techniques
4. General discussion

Practical section (Mouse/Rat)

1. **How to approach animals**
2. **Reading animal behavior** (in cage and during handling)
3. **Friendly handling in husbandry** (Cup and Tunnel handling)
4. **Friendly handling during sampling and experimental settings** (sampling/injection)
5. **Habituation** (Clicker training for mice / Tickling for rats)

Competence achieved by the participants after finalizing the module

The students will understand the theoretical basis of handling, housing and habituation in mice and rats. They also will acquire practical knowledge about how to hand, house and habituate animals in husbandries and experimental settings.

Resource Requirements

1. Module managers

Nadine Baumgart (General)
Fernando Gonzalez Uarquin (Coordinator of the module)
Dorothea Pichl (Coordinator of the practical section and instructor)
Sandra Reichel (Instructor)
Vanessa Schoon (LAS Education)

2. Program promotion and recruitment

Advertising is through our website:

https://www.unimedizin-mainz.de/tarc/lehrzentrum/versuchstierkundliche-kurse.html

References

- European Union. Animals used for scientific purposes. Accessed in March, 2023. https://ec.europa.eu/environment/chemicals/lab_animals/reports_en.htm
- Feng, L.C., Howell, T., Bennett, P.C. How clicker training works: Comparing Reinforcing, Marking, and Bridging Hypotheses. Appl Anim Behav Sci (2016). https://doi.org/10.1016/j.applanim.2016.05.012
- Jirkof, P. Refining Research to Improve the Lives of Laboratory Mice. Frontiers for Young Minds. (2022). 10. 10.3389/frym.2022.954413.
- Leidinger, C., Herrmann, F., Thöne-Reineke, C., Baumgart, N., Baumgart, J. Introducing Clicker Training as a Cognitive Enrichment for Laboratory Mice. J Vis Exp (2017), e55415, doi:10.3791/55415.
- Neff, E.P. On the road to refinement. Lab Anim 50, 277–279 (2021). https://doi.org/10.1038/s41684-021-00854-4
- Spanagel, R. Ten Points to Improve Reproducibility and Translation of Animal Research. Front Behav Neurosci (2022). https://doi.org/10.3389/fnbeh.2022.869511
- Tierschutzgesetz: https://www.gesetze-im-internet.de/tierschg/BJNR012770972.html
- Voelkl, B., Altman, N.S., Forsman, A. et al. Reproducibility of animal research in light of biological variation. Nat Rev Neurosci 21, 384–393 (2020). https://doi.org/10.1038/s41583-020-0313-3