



FONDAZIONE GUIDO BERNARDINI  
BETTER EDUCATION FOR BETTER SCIENCE

## Assessing and alleviating pain and distress in laboratory animals

Karolinska Institute - Stockholm, SE

16-17 November, 2020

**Purpose of the course:** The course provides advanced training in the recognition, prevention and alleviation of pain and distress in laboratory species. The main purpose of the course is to enable participants to apply and assess the value of improvements to the methods used in projects that involve the use of live animals. Implementing such improvements is a key element in Refining animal research – a legal and ethical requirement of Swedish and European legislation.

**Intended learning outcomes:** After completion of this course, the students should be able to apply refinements effectively. They will also be able to evaluate protocols to determine what additional modifications could be made to improve animal welfare. They should also appreciate the ethical, scientific and practical issues involved in assessing and preventing pain and distress.

**Specific entry requirements:** Students need to complete the “Function A” laboratory animal science course (“to carry out scientific procedures on animals”), or must have completed an equivalent course.

## Monday November 16, 2020

<b>Introduction to the course.</b> Rafael Frías	09:00 - 09:15
<b>What is pain and distress?</b> This seminar will discuss what we know about pain and distress in people and animals, and give an introduction to the physiology of pain and nociception.	09:15 - 10:00
<b>Why we need to assess pain and distress, and how to do it?</b> This seminar will give an overview of how methods of assessing pain and distress have evolved, and provide an up-to-date summary of the methods that can be used in a range of different species.	10:15 - 11:00
<b>Why we need to assess pain and distress, and how to do it? (continued)</b> This interactive session will enable participants to practice the pain scoring techniques described earlier, focusing on assessing animal behaviour.	11:15 - 12:00
<b>Break</b>	12:00 - 13:00
<b>Why we need to assess pain and distress, and how to do it? (continued)</b> This interactive session will enable participants to practice the pain scoring techniques described earlier, focusing on assessing pain faces.	13:00 - 13:45
<b>Cage side assessment of pain and distress- moving beyond “clinical impression”</b>	14:00 - 16:00

## Tuesday November 17, 2020

<b>How do analgesics work?</b> This seminar will explain how different types of analgesic act to reduce or eliminate pain. It will link this information with the seminars on pain physiology, and pain perception.	09:00 - 10:00
<b>Analgesics - what to give, when and how</b> This seminar will review the practicalities of managing pain in a research setting.	10:15 - 11:00
<b>What else can we do to reduce pain and distress?</b> This seminar will review methods of reducing, avoiding or alleviating pain and distress by improving perioperative care, providing high standards of animal care, and by refinement of research procedures.	11:15 - 12:30
<b>Break</b>	12:30 - 13:30
<b>Practical exercises in refinement</b> This interactive session will enable participants to apply all the information given during the course to "Refine" some examples of research techniques.	13:30 - 14:30
<b>Using analgesics in a research environment - problems and pitfalls.</b> This seminar will review some of the reasons for the low level of use of analgesics in research animals, and explain how some of these barriers to effective pain relief can be overcome.	14:45 - 15:45
<b>General discussions and Q&amp;A session.</b>	16:00 - 16:30