



UNIVERSITÀ
DEGLI STUDI
DI MILANO



**4th INTERNATIONAL CONGRESS
OF THE BASEL DECLARATION SOCIETY**

***Presentation of the animal care and welfare of
laboratory animals manual (Italian language)***

EDITORS: SILVIO GARATTINI, GIULIANO GRIGNASCHI, FABIO LUZI, FEDERICA RIVA

PREFACE: GIANLUCA VAGO

October 1, 2015

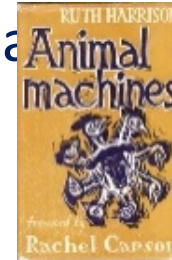
**Accademia Nazionale dei Lincei,
Palazzo dell'Auditorio Via della Lungara, 230, Roma, Italy**

Short Summary

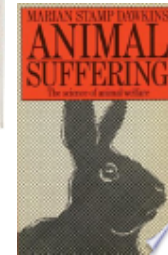
- **Introduction.**
- **The importance of Research using animals where alternative methods cannot be used.**
- **A Pillar of the new European Law is Training, Education and Updating.**
- **The importance of an animal care manual in Italian.**
- **In accordance with Good Laboratory Practices and the 3Rs plus Rehabilitation of Animals and Responsibility of Researchers.**
- **Communication.**

Introduction

Ruth Harrison's book *Animal Machines* (1964) had a profound and lasting impact on world agriculture, public opinion and the quality of life of millions of farmed animals



Peter Singer – *Animal Liberation* , 1975



Marian Stamp Dawkins – *Animal Suffering*, 1980



Tom Regan – *The Case For Animal Rights*, 1983

Experiments using animals have played a crucial role in the development of modern medical treatment, and they will continue to be necessary. (Botting & Morrison, 1997 - Scientific American February 1997 79. Forum: The Benefits and Ethics of Animal Research, Indiana EDU).

A monument to lab rats used for DNA research.
Novosibirsk, Russia



Nature published a paper about the importance
of scientific research using animals

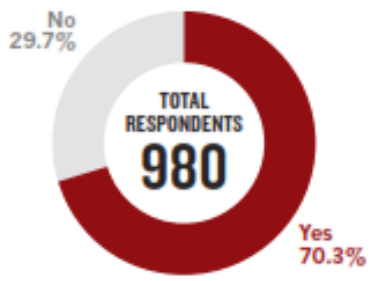
***Published online 23 February 2011 | Nature 470, 452-453 (2011) |
doi:10.1038/470452a***

(Daniel Cressey writes for Nature from London. Survey work was aided by Laura Harper)

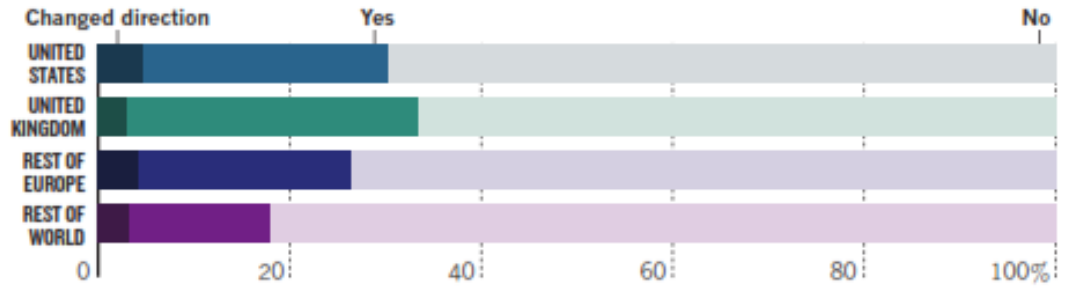
Assessing the threats

Biomedical scientists who responded to a survey mostly support animal experimentation, but attitudes towards animal-rights activists differ around the world.

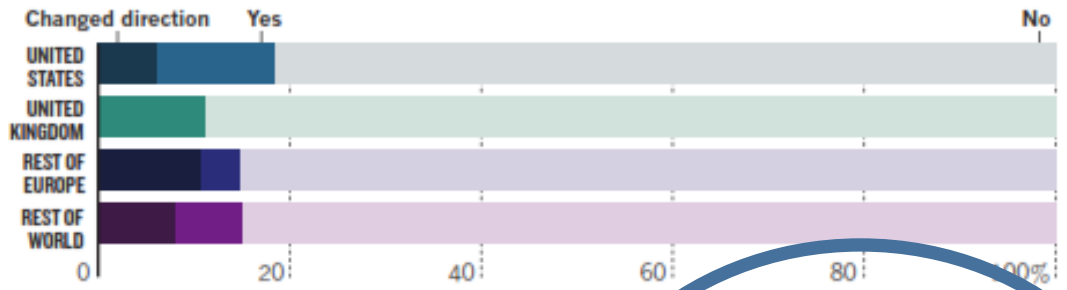
Q Do you conduct experiments on animals?



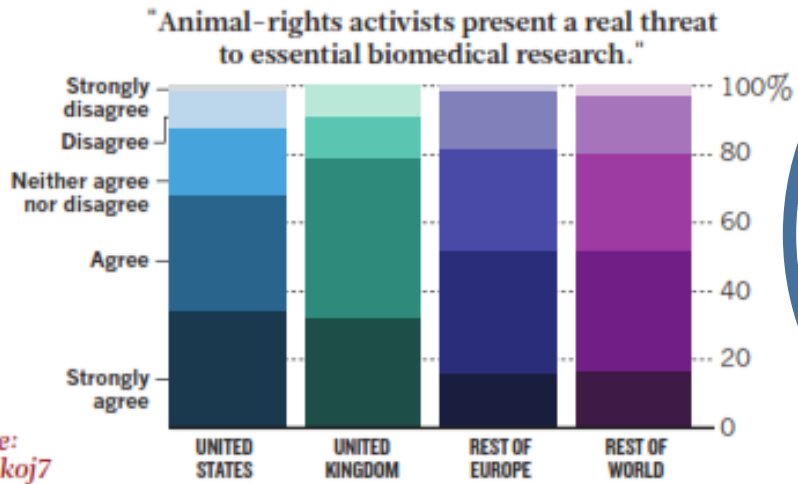
Q During your career, have you or anyone you know been affected negatively by animal-rights activists and have you changed research direction as a result?



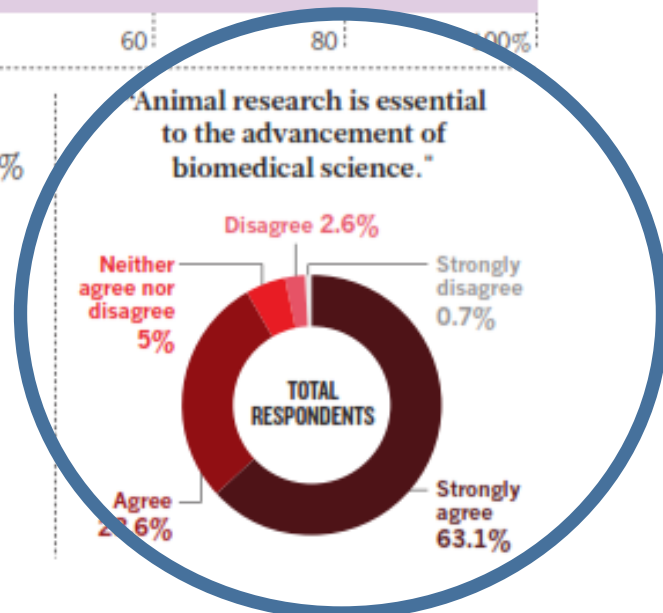
Q Have you ever had misgivings about the role of animals in your research, and did you change research direction as a result?



Q To what extent do you agree or disagree with the following statements?



Animal research is essential to the advancement of biomedical science.

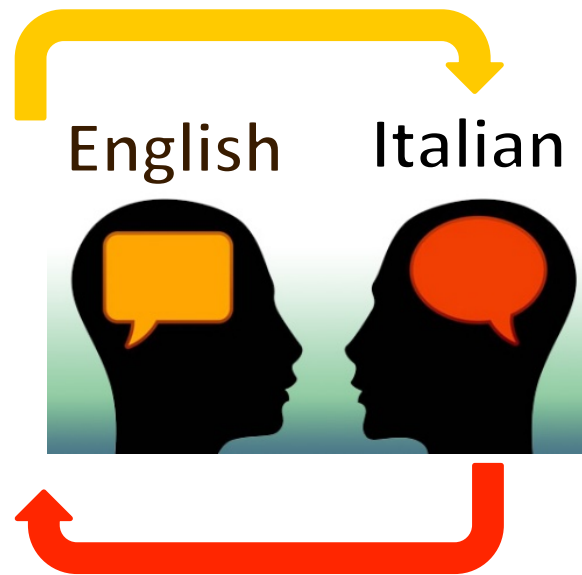


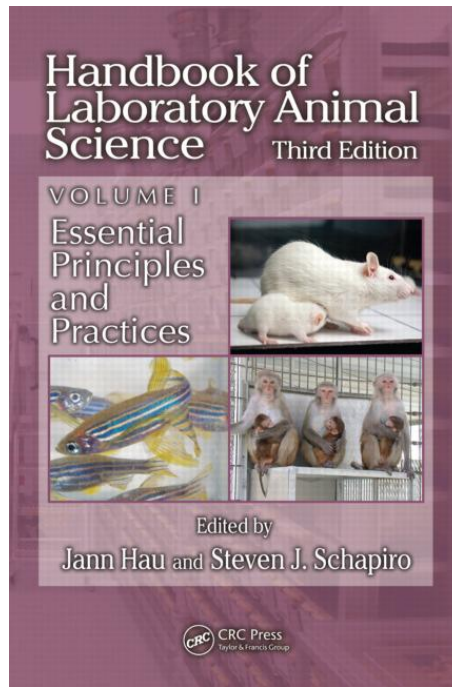
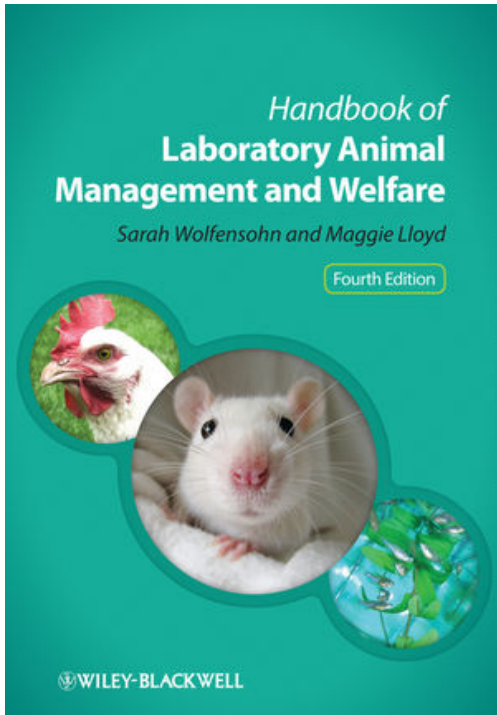
In compliance with the provisions of **D. L. 26/2014** regarding the professional competence of staff designated to carry out the procedures,



a pillar of our research is certainly
Training and Education

"Training and education: the importance of having a handbook written in the national language by local researchers"

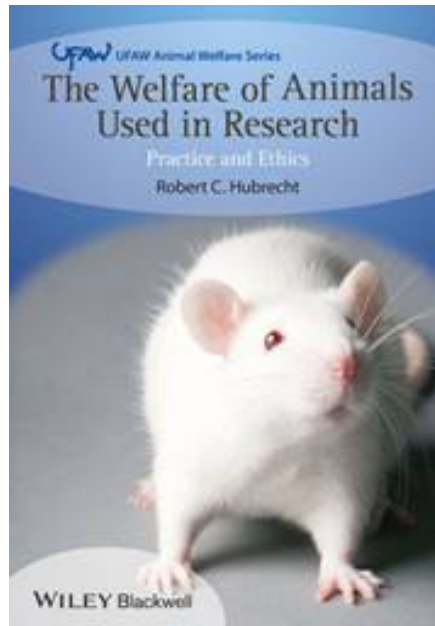
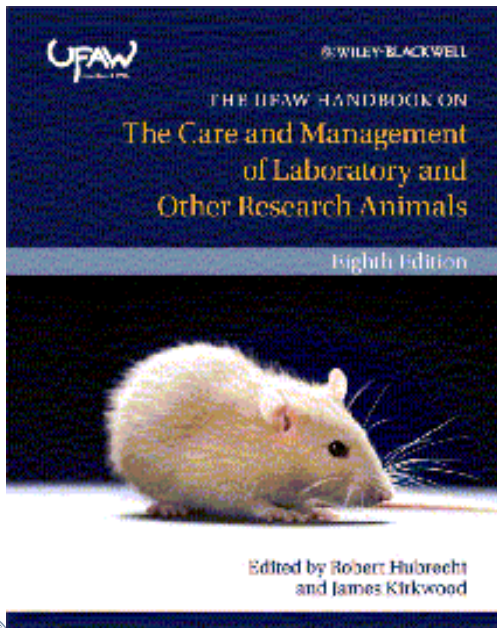


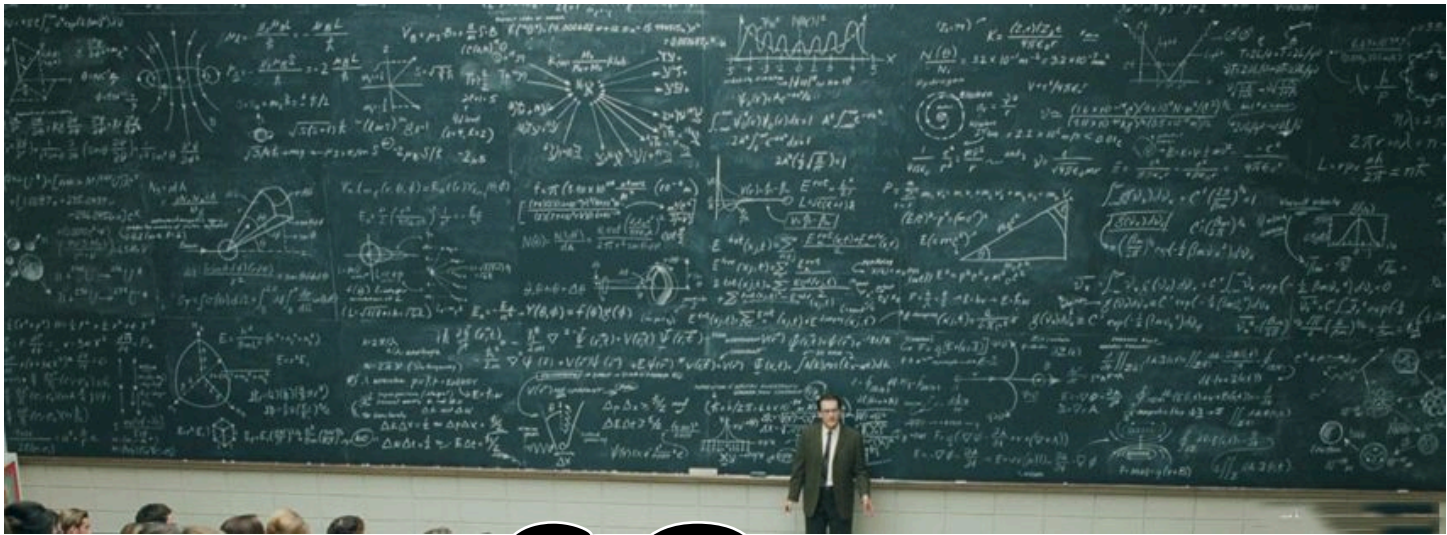


Breeding and care of the albino rat for the research purposes

*Huxley Library
Imperial College
LONDON S.W. 7*

*y? enman & Duhring,
193*





SO...
It is important to have an Animal Care Manual in Italian to give all operators from the initial researcher to technical staff so that they have the same information in order to process it for the purpose of their work.



Presentazione del Manuale



“Benessere e Animal Care dell’Animale da Laboratorio”

con la prefazione del prof. Gianluca Vago, Rettore dell’Università degli Studi di Milano

Roma, 1° ottobre 2015

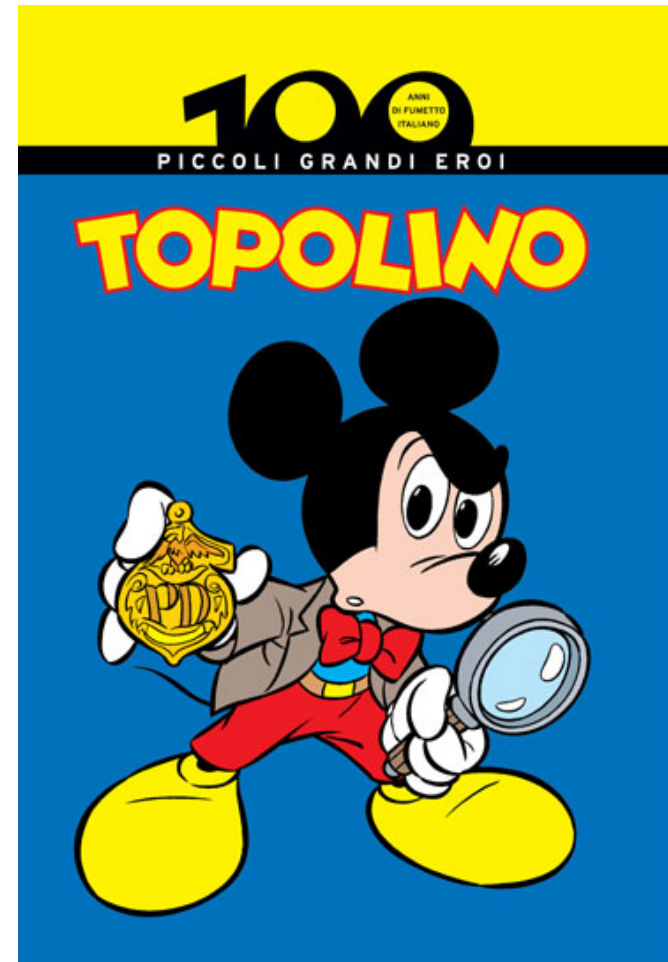
Accademia nazionale dei Lincei, Palazzo dell’Auditorio,
via della Lungara 230 nell’ambito del 4th International Congress
of the Basel Declaration Society



**Printed
on 30 09 2015!**



The research must be carried out following the Principles of Good Laboratory Practice the rules of ISO 9001, according to the principles of the 3Rs



In compliance with the 3Rs **(Reduction - Replacement - Refinement) +**

(Replacement means the substitution for conscious living higher animals of insentient material. Reduction means reduction of the number of animals used to obtain information of a given amount and precision. Refinement means any decrease in the incidence or severity of inhumane procedures applied to those animals which still have to be used «W.M.S. Russell and R.L. Burch. The Principles of Human Experimental Technique, London Methuen and co., 1959)

HOW?

*(The Circular of the Italian Ministry of Health, 6 of May 2001, about the protection of animals used for scientific purposes, ranks among its priorities to decide **to keep the animals alive at the end of the trial**, with the consequent application of the institute of custody for adoption, according to the animal's health conditions)*

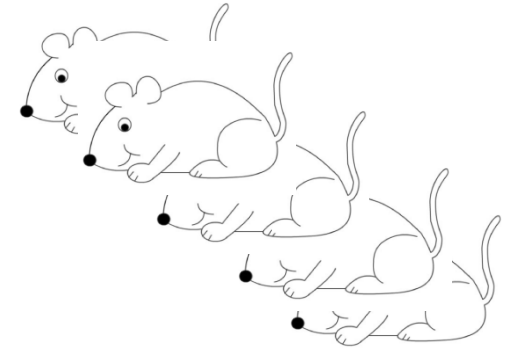
5° R (Responsibility)

(Fairness and intellectual honesty of the researcher about the use of animals in accordance with the experimental protocol and with the standards of animal care and welfare)



by Fray Mollo

REDUCTION



CH. 6 - CREATION OF GENETICALLY MODIFIED MODELS

Cecilia Garlanda

Federica Riva

CH. 8 - BIostatISTICS

Elia Biganzoli

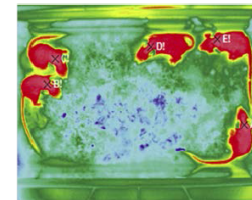
Giuseppe Marano

REPLACEMENT



CH. 4 – CURRENT STATE OF ALTERNATIVE METHODS Maura Ferrari,
Silvia Dotti,
Guerino Lombardi,
Stefano Cinotti,
Francesca Caloni

REFINEMENT



CH . 5.1 - RODENTS

5.2 - WATER MODELS

5.3 - LAGOMORPHS

5.4 – SWINE

5.5 - NON-HUMAN PRIMATES

5.6 - CEPHALOPODS

5.7 - POULTRY

Gianpaolo Milite

Vittorio M. Moretti & Mauro Vasconi

Fabio Luzzi & Gerardo Marsella

Monica Forni & Leonardo Nanni Costa

Augusto Vitale & Marta Borgi

Anna Di Cosmo

C. Bertapelle

G. Polese

L. Zullo

A. Palumbo

Lebana Bonfanti

Franco Mutinelli

Guido Di Martino

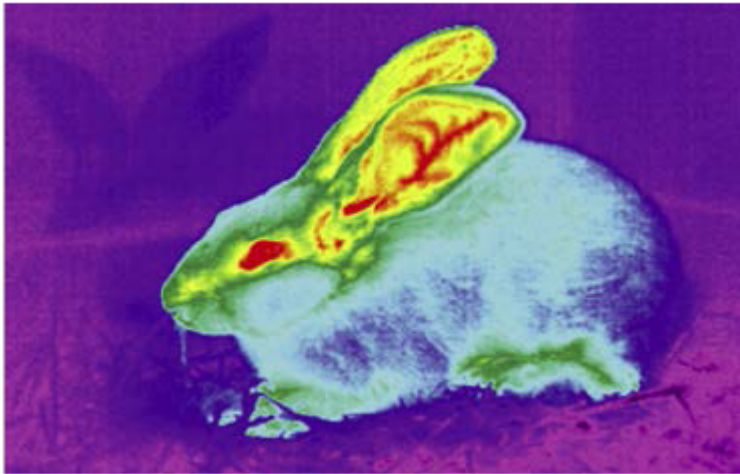
CH. 7 - INTRODUCTION TO TECHNICAL IN VIVO IMAGING

Adriana Maggi

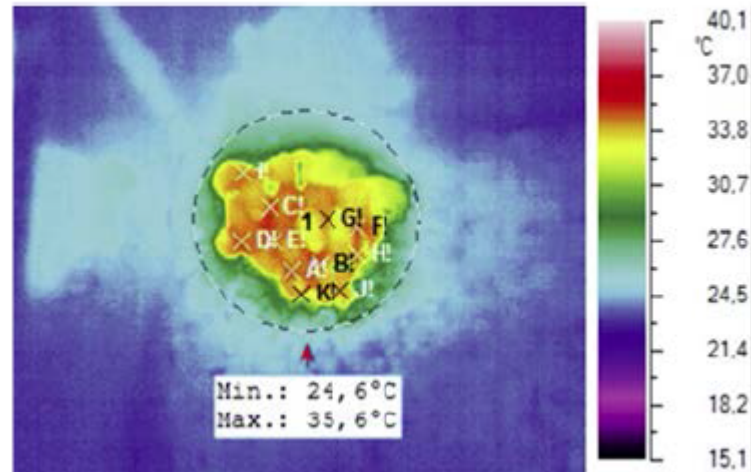
Nicoletta Rizzi

Veronica Redaelli

In vivo imaging: Infrared Thermography



Thermal image in false colors of a rabbit. The skin temperatures are derivable from the temperature scale. In particular, in the ear and in the eye the details, due to the different blood supply, are detectable.



Example of thermal image of a nest during the change of the cage. By making a sequence of images you can verify variations in the skin temperature of the animals and then the presence of any thermal stress.

REHABILITATION



CH. 10 - Adoptions in the framework of D. Lgs. 26/2014 and their importance in the context of animal welfare.

Francesca Cirulli Alessandra Berry Marina Giorgi

RESPONSIBILITY



CH. 2 – New rules for animal experimentation and presentation of research projects

Paola Fossati

CH. 3 – Animal experimentation: ethical issues

Simone Pollo

Gemma

Perretta

CH. 11 - The role of communication in the debate on animal experimentation

Giuliano Grignaschi

A. Maria Zaccheddu

Short Summary

Introduction.

The importance of Research using animals where alternative methods cannot be used.

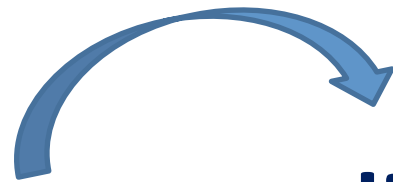
A Pillar of the new European Law is Training, Education and Updating.

The importance of an animal care manual in Italian.

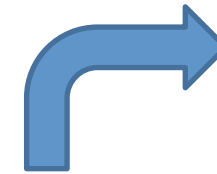
In accordance with good laboratory practices and the 3Rs plus Rehabilitation of Animals and Responsibility of Researchers.

Communication.

communicators



listeners



Informed people



AUTHORS

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Corso di Perfezionamento in Benessere degli Animali da Laboratorio – Università degli Studi di Milano

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Istituto Zooprofilattico Sperimentale delle Venezie

Ministero della Salute - Istituto Superiore di Sanità

Associazione Italiana Scienze Animali da Laboratorio

TeleThon

Società Italiana Veterinari Animali da Laboratorio

Point Veterinaire Italie

ALL of YOU !



*An experiment is a question that Science poses to Nature,
and a measurement is the recording
of the response of Nature. (Max Planck)*



(The Big Wave - Katsushika Hokusai)

Have you got
any questions,
please?



Comitato promotore:

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In collaborazione con:

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Salute, la Produzione Animale e
la Sicurezza Alimentare
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e

IRCCS Ist. di Ricerche Farm.
Mario Negri
Via La Masa, 19 – Milano



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In treno:

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Milano Porta Genova, Milano Cadorna e
Milano Porta Garibaldi

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fermata Piola.

Dalla stazione ferroviaria di Milano Lambrate:

linea 2 della metropolitana
(direzione Abbiategrasso), scendere alla
fermata Piola.

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Leonardo da Vinci.
Linea 91 e 93: fermata Romagna-Pascoli.
Linea 61: fermata Strambio-Gorini.



**UNIVERSITÀ
DEGLI STUDI
DI MILANO**

Giornata di Studio

STATO DELL'ARTE DELLA
TECNICA TERMOGRAFICA e
ANIMAL CARE

**PRESENTAZIONE DEI NUOVI
MANUALI DI TERMOGRAFIA E
ANIMAL CARE**

29 OTTOBRE 2015

(h 9-17)

**SEDE: DIPARTIMENTO
DI FISICA**

AULA CONSIGLIO

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**(Si prega di inviare alla
Segreteria la propria adesione
entro lunedì 26 ottobre 2015)**

PROGRAMMA del Mattino

- 9.00 Registrazione dei partecipanti
- 9.15 Introduzione – Nicola Ludwig & Fabio Luzi (UNIMI)
- 9.30 Presentazione del manuale ed attività editoriale del CRC “Tecniche di *imaging* multispettrale” – Fabio Luzi (UNIMI)
- 9.45 L’evoluzione della termografia – Roberto Ricca (Libero Professionista - Milano)
- 10.15 *Imaging* termico e misura della temperatura – Nicola Ludwig (UNIMI)
- 10.45 Pausa caffè
- 11.15 Relazione su invito: La termografia: stato dell’arte e sviluppi nella ricerca scientifica – Paolo Bison (IsIB CNR - Padova)
- 12.00 Applicazioni in ambito sportivo – Damiano Formenti (UNIMI)
- 12.30 Discussione



La **TERMOGRAFIA**: TEORIA e APPLICAZIONI

A cura di: Nicola Ludwig, Roberto Ricca, Fabio Luzi

Autori:

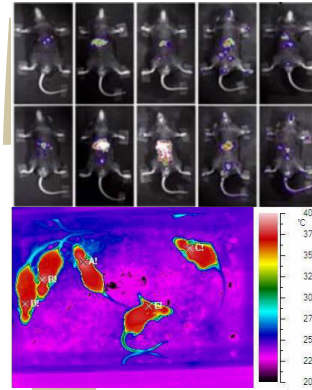
**D. Bruno, G. Fabbri, M. Gargano,
N. Ludwig, F. Luzi, L. Marchetto,
L. Nanni Costa, V. Redaelli,
R. Ricca, E. Rosina**

EDIZIONI



PROGRAMMA del Pomeriggio

- 14.00 Registrazione dei partecipanti
- 14.15 Introduzione – Prorettore alla Ricerca - UNIMI
- 14.30 Presentazione del manuale – Giuliano Grignaschi, Fabio Luzi, Federica Riva (IRFMN - Milano, UNIMI)
- 14.45 Relazione su invito - Il ruolo della formazione e della comunicazione.
Giuliano Grignaschi (IRFMN - Milano)
- 15.30 Pausa caffè
- 15.45 Il ruolo dell'OPBA nel D.L. 26/2014
Maurizio Crestani (UNIMI)
- 16.15 Gli animali geneticamente modificati nella ricerca scientifica
Federica Riva (UNIMI)
- 16.45 Discussione



BENESSERE e ANIMAL CARE dell'ANIMALE da LABORATORIO

A cura di: Silvio Garattini, Giuliano Grignaschi, Fabio Luzi, Federica Riva

Autori: A. Berry, C. Bertapelle, E. Biganzoli, L. Bonfanti, M. Borgi, F. Caloni, S. Cinotti, F. Cirulli, P. Costa, A. Di Cosmo, G. Di Martino, S. Dotti, M. Ferrari, M. Forni, P. Fossati, C. Garlanda, M. Giorgi, G. Grignaschi, G. Lombardi, F. Luzi, A. Maggi, G. Marano, G. Marsella, G. Matteucci, G. Milite, V.M. Moretti, F. Mutinelli, L. Nanni Costa, A. Palumbo, F. Parise, G. Polese, G. Perretta, S. Pollo, V. Redaelli, F. Riva, N. Rizzi, M. Vasconi, A. Vitale, A.M. Zaccheddu, L. Zullo

EDIZIONI



Bonadonna, Telesforo

3: Ovini, suini, conigli, uccelli domestici, animali da pelliccia e piccoli mammiferi da laboratorio, bibliografia / Telesforo Bonadonna

Milano : Varese : Istituto editoriale Cisalpino, stampa 1951

Fa parte di: Zootecnica speciale / Telesforo Bonadonna

Monografia - Testo a stampa [IT\ICCU\PUV\0254292]

Gruppo italiano di scienze dell'animale da laboratorio

L'animale da laboratorio : principi etico-scientifici, tecnici e legislativi / Gruppo italiano di scienze dell'animale da laboratorio ; a cura di Amalia Guaitani, Alessandra Cocilovo, Ivan Bartosek

Milano : Organizzazione Editoriale Medico Farmaceutica, 1991

Monografia - Testo a stampa [IT\ICCU\MIL\0088001]

Modelli sperimentali nella ricerca biomedica : aspetti tecnici e scientifici : manuale pratico / a cura di G. Scalvini, A. Guaitani Pavia : La Goliardica pavese, 1994

Monografia - Testo a stampa [IT\ICCU\MIL\0204236]

Anatomia degli animali da laboratorio : roditori e lagomorfi : sistematica e storia naturale, anatomia macroscopica, anatomia microscopica, principi di legislazione, medicina, etica e benessere, bibliografia specialistica / B. Cozzi ... [et al.] ; con la collaborazione tecnica di Giovanni Caporale ed Emanuele Zanetti

Milano : Casa Editrice Ambrosiana, 2006

Monografia - Testo a stampa [IT\ICCU\PUV\1076468]

Fossati, Paola

Il diritto degli animali da esperimento / Paola Fossati

Torino : C. G. edizioni medico scientifiche, 2010

Monografia - Testo a stampa [IT\ICCU\CFI\0747253]

- **Among the main innovations of the D. L. N. 26/2014 are detected:**
- **Introduction** of the term "procedure" to indicate any form of use of the animals, for experimental or educational purposes, which may cause a level of pain, suffering, distress lasting harm, equivalent to or greater than that caused by the insertion of a needle according to good veterinary practices;
- **It is valid** from ~~the from~~ birth or hatching of an animal or by the creation and maintenance of a **line** genetically modified animal with phenotype suffering;
- **It is, however,** excluded from the definition, the killing of animals for the sole purpose ~~to~~ **use of using** their organs or tissues.
- **Obligation to** always get (**also planned simplified form**) prior authorization ~~of from~~ the Ministry for the execution of **research** projects ~~research~~ involving the use of animals;
- **Prohibition** to breed dogs, cats and non human primates for use in procedures;
- **Prohibition** of dogs and cats if not scientifically proved impossible to reach the purpose of the procedure using different species;
- **Ban on** using great non human primates.

- **The educational** goals allowed are those related to higher education or training for the acquisition, retention or improvement of professional skills
- **They were, however, excluded, and then not be authorized exercising** educational activities in primary schools, secondary and university courses, except the university training of medical doctors and veterinarians and higher education college of medical doctors and veterinarians.
- **May be** authorized procedures that:
 - a) use the minimum number of animals;
 - b) using animals with the lowest capacity of pain, suffering, distress or harm **prolonged**;
 - c) they are able to minimize pain, suffering, distress or **lasting** harm;
 - d) they have the highest probability to show satisfactory results;
 - e) have the most favorable ratio between harm and benefit.
- **As a measure of animals protection utilised** it is expected to be introduced the figure of the "designated veterinarian", **an** expert in laboratory animal medicine and
 with the required experience and specific training, responsible for the welfare and therapeutic treatment of animals.
- **We were also** introduced two new bodies:

The animal welfare body, in all the establishments of breeders, suppliers and users of animals for scientific purposes and research.

The National Committee for the Protection of animals used for scientific purposes, with consulting and coordinating functions together with the committees of **the** other EU countries.