

Animal Research

Bioengineering 100

Fall 2016

If there was ONE cockroach left
on earth, and it was on the floor
right in front of you, would you
step on it?



Animal research provides
valuable contributions to biology
and science that we would not
otherwise be able to test.

Agree or Disagree?

1966 Animal Welfare Act

“Set the standards for humane care and treatment for certain animals that are exhibited to the public, bred for commercial sale, used in medical research, or transported commercially.

Facilities... must provide their animals with adequate housing, sanitation, nutrition, water and veterinary care, and they must protect their animals from extreme weather and temperatures.” – USDA APHIS

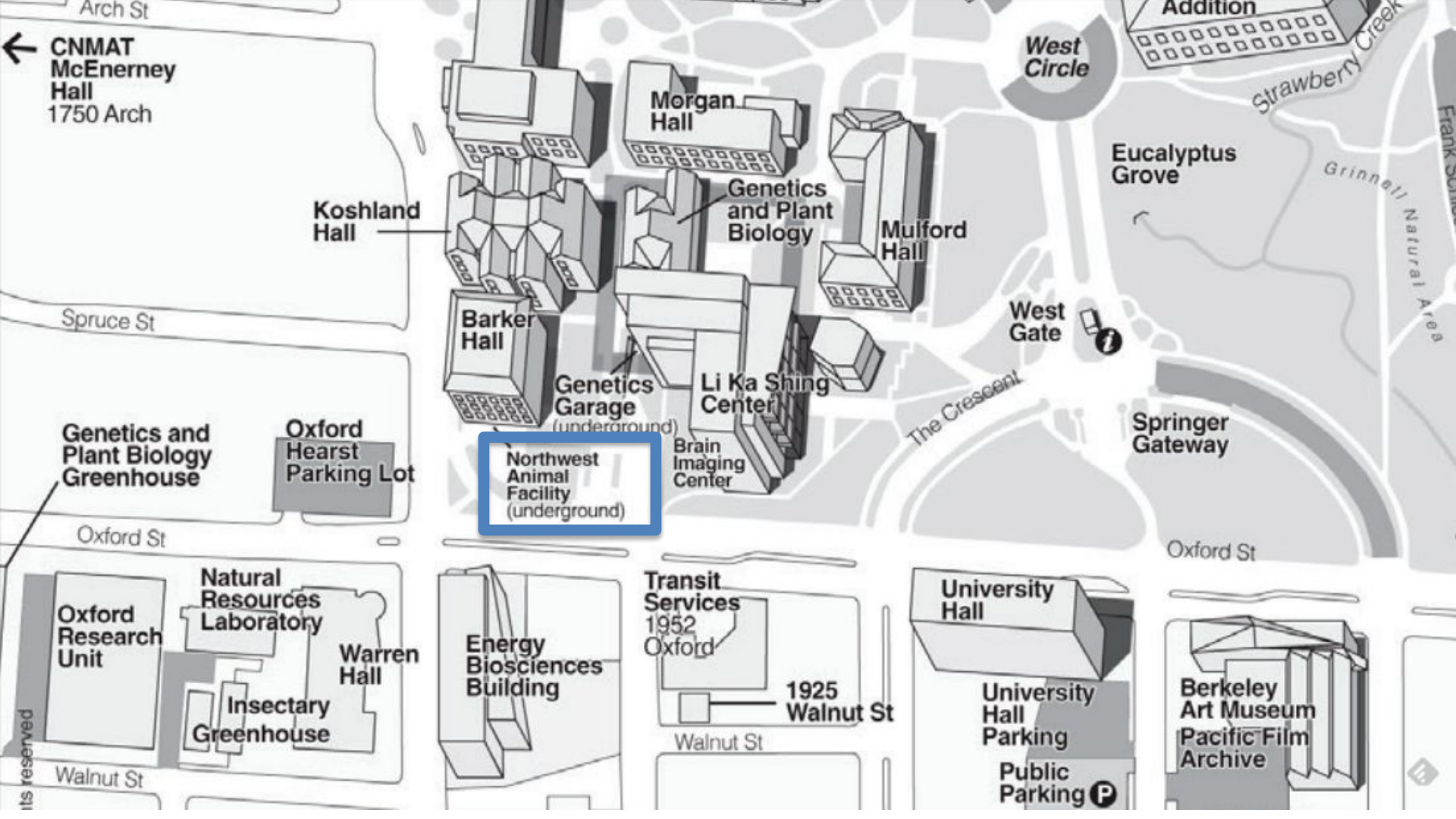
AWA (continued)

- USDA division Animal and Plant Health Inspection Services (APHIS) inspects and enforces AWA
- Excludes: farm animals for food/fiber, cold blooded species, fish, invertebrates, horses not used for research, *rats and mouse bred for research*

Institutional Animal Care and Use Committees (IACUCs)

- At least three members:
 - One veterinarian with lab animal science experience
 - One outside member not affiliated with the facility
- Reviews/approves animal use protocols
- Inspects facilities every 6 months (minimum)
- Submits reports to institutional officials, reviews concerns

Do you know where the UC
Berkeley Animal Facility is
located?



← **CNMAT
McEnerney
Hall**
1750 Arch

**Koshland
Hall**

**Morgan
Hall**

**Genetics
and Plant
Biology**

**Mulford
Hall**

**Barker
Hall**

**Genetics
Garage**
(underground)

**Li Ka Shing
Center**

**Brain
Imaging
Center**

**Northwest
Animal
Facility**
(underground)

**Oxford
Hearst
Parking Lot**

**Genetics and
Plant Biology
Greenhouse**

Oxford St

**Oxford
Research
Unit**

**Natural
Resources
Laboratory**

**Warren
Hall**

**Insectary
Greenhouse**

**Energy
Biosciences
Building**

**Transit
Services**
1952
Oxford

1925
Walnut St

Walnut St

**University
Hall**

**University
Hall
Parking**

**Public
Parking** **P**

**Berkeley
Art Museum**
**Pacific Film
Archive**

**Eucalyptus
Grove**

**West
Gate**

**Springer
Gateway**

**West
Circle**

Addition

Strawberry Creek
Grinnell
Natural Area

Franklin

February 1989

“Six protesters scaled a construction crane – and refused to leave their perch – in an effort to halt construction of a new animal research building at UC Berkeley.

But the crane had nothing to do with construction of the \$14-million Northwest Animal Facility, which began Dec. 1. The demonstration did, however, disrupt an adjacent project, the building of a \$42-million genetics and plant biology facility.

The protesters went 150 feet up the crane and hung banners protesting germ warfare and "toxics." A state Court of Appeal has refused to block the construction while In Defense of Animals and Berkeley Citizens for a Toxic Free Environment appeal an Alameda County Superior Court ruling that the environmental impact report for the project was satisfactory.”

The State; LA Times; February 22, 1989

One week protest: ~\$30,000/day cost to university and construction companies because of delay.

Free Speech? Or Domestic Terrorism?

- Activists held protests outside UC Berkeley professors' homes
- Researchers (graduate students, post docs) harassed with threatening phone calls
- Bombs planted in cars.

Activists stage 'die-in' to protest animal testing in UC Berkeley labs

“Protesters began their demonstration in front of the Valley Life Sciences Building but moved to Sproul Hall to attract a larger audience”

Daily Cal; June 19, 2014



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Image courtesy of Dr. Ernest Olfert, University of Saskatchewan; http://ccac.ca/en/_training/niout/vivaria/animal_care



Housing





PROTOCOL NUMBER:

INVESTIGATOR:

SPECIES:

STRAIN:

ARRIVED:

SEX:

AGE/WEIGHT:

SUPPLIER:

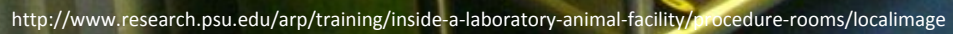
NUMBER OF ANIMALS:

DATE

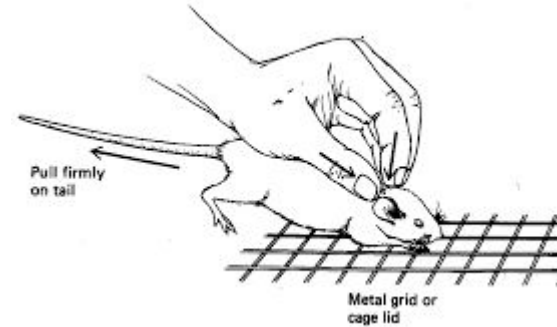
MANIPULATIONS

Surgery





How are small animals sacrificed?



Silver Springs Monkeys Case Study

Discussion Questions

- *“Researchers see hope; animal rights groups see cruelty”* (NYT article) Where do you stand? Do you see hope? Cruelty? Somewhere in the middle?
- Would you conduct animal research? What kinds would you feel comfortable with and why?
 - animal experiments for basic research
 - pre-clinical animal studies for safety/efficacy testing of drugs or medical devices
 - behavioral studies (grape and cucumber video)
 - field animal studies (in natural environment)

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and science that we would not
otherwise be able to test.

Agree or Disagree?



<http://www.radiolab.org/story/91696-new-nice/>



Aggressive vs.
Tame



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Agree or Disagree?

100 Top Dogs



Alphon
20kg - 24kg



Airedale
18kg - 29kg



American Eskimo
9kg - 15kg



Australian Cattle Dog
15kg - 18kg



Australian Shepherd
18kg - 26kg



Basenji
9kg - 12kg



Beagle
10kg - 20kg



Beauceron
16kg - 18kg



Bedford Cocker
10kg - 27kg



Belgian Tervuer
9kg - 10kg



Belgian Sheepdog
27kg - 34kg



Bernese Mountain Dog
30kg - 50kg



Bichon Frise
3kg - 5kg



Bloodhound
30kg - 50kg



Border Collie
12kg - 20kg



Border Terrier
5kg - 7kg



Bosai
27kg - 48kg



Boston Terrier
4.5kg - 11.5kg



Bouvier des Flandres
20kg - 50kg



Boxer
24kg - 32kg



Britney
14kg - 18kg



Bull Mastiff
54kg - 60kg



Bul Terrier
20kg - 36kg



Bulldog
20kg - 25kg



Cairn Terrier
6kg - 8kg



Cocker King Charles Spaniel
5kg - 8kg



Chesapeake Bay Retriever
20kg - 24kg



Chihuahua
1kg - 3kg



Chow Chow
20kg - 32kg



Cocker
20kg - 34kg



Corgi
11kg - 16kg



Dachshund
8kg - 12kg



Dalmatian
10kg - 22kg



Doberman
20kg - 40kg



Dogue de Bordeaux
54kg - 65kg



English Cocker Spaniel
20kg - 16kg



English Setter
20kg - 30kg



English Springer Spaniel
20kg - 30kg



Flat Coated Retriever
27kg - 32kg



Fox Terrier
6kg - 8kg



French Bulldog
4.1kg - 10kg



German Shepherd
20kg - 41kg



German Shorthaired Pointer
20kg - 32kg



Golden Retriever
20kg - 30kg



Gordon Setter
20kg - 30kg



Great Dane
40kg - 90kg



Great Pyrenees
28.5kg - 65.5kg



Greyhound
27kg - 30kg



Irish Setter
20kg - 34kg



Irish Wolfhound
40kg - 67kg



Italian Greyhound
3kg - 5kg



Jack Russell
5kg - 8kg



Keeshond
15kg - 2.0kg



Labrador Retriever (Black)
20kg - 30kg



Labrador Retriever (Chocolate)
20kg - 30kg



Labrador Retriever (Yellow)
20kg - 30kg



Lhasa Apso
5.5kg - 6.5kg



Luxor
27kg - 32kg



Maltese
3kg - 4kg



Mastiff
45kg - 91kg



Miniature Pinscher
3.5kg - 4.5kg



Newfoundland
45kg - 60kg



Norfolk Terrier
4.5kg - 5.5kg



Norwich Terrier
4.5kg - 5.5kg



Norwegian Elkhound
10kg - 27kg



Old English Sheepdog
20kg - 40kg



Papillon
5kg - 10kg



Pekingese
3.5kg - 4.5kg



Pointer
20kg - 30kg



Pomeranian
1kg - 3kg



Poodle
10kg - 22kg



Portuguese Water Dog
10kg - 20kg



Pug
6kg - 9kg



Rhodesian Ridgeback
20kg - 41kg



Rottweiler
30kg - 35kg



Samoyed
15kg - 30kg



Schipperke
5.5kg - 8kg



Shetland Sheepdog
14kg - 20kg



Shih Tzu
8.5kg - 10.5kg



Shar Pei
10kg - 25kg



Sheltie
8.4kg - 12.2kg



Silky Terrier
6.8kg - 11kg



Silky Terrier
6kg - 7kg



Silky Terrier
10kg - 27kg



Silky Terrier
6kg - 8kg



Soft Coated Wheaten Terrier
14kg - 20kg



St. Bernard
64kg - 120kg



Staffordshire Bull Terrier
10kg - 17kg



Tibetan Terrier
8.2kg - 13.6kg



Vizsla
10kg - 27kg



Weimaraner
20kg - 32kg



Welsh Springer Spaniel
10kg - 20kg



Welsh Terrier
9kg - 9.5kg



West Highland White Terrier
6kg - 10kg



Whippet
11kg - 27kg



White Shepherd
20kg - 30kg



Yorkshire Terrier
2kg - 3kg



https://img.buzzfeed.com/buzzfeed-static/static/2015-10/20/7/campaign_images/webdr08/10-weirdes-dog-breeds-which-one-would-you-take-h-2-18946-1445341372-8_dblbig.jpg