Safeguards and Service – Striking the Right Balance: A Researcher’s Perspective

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My background

• A biologist – certain ‘characteristics’
• Operate a relatively large, NSERC-funded research program; tools include, the animal, physiology, biochemistry/molecular biology, toxicology
• uOttawa ACC and Steering Committee, CCAC Council + Committees, few assessment visits, working group on the SCOPE of CCAC programs
Researcher perspective

• uOttawa Animal Care program
  – ‘full service’ or ‘comprehensive’ university
  – Medical Faculty + research institutes + Faculty of Science
  – Split between 2 campuses (5 km but ---)
  – ACVS located to Medical/Hospital campus - discontinuity

• Must caterer to a broad group of researchers with vastly different perspectives on their use of animals – typical?

• My experience – lab animal facility guidelines /requirements relatively rigid; protocols, anaesthesia, analgesia, endpoints, relatively well defined; lines of communication relatively well structured
Issues for ‘biologists’ - I

• Personality issues:
  • Matter of ‘interest’ – nature has found the answers we need to undercover them!
  • Knowledge of characteristics of the animals and habitats generally high to very high
  • Diversity of animal use and locations – vertebrates and invertebrates, lab and field studies
• Animal of choice – fish species
  - Diversity and evolution
  - Challenging environment – physical/chemical/human waste dump; sentinel species (aquatic ‘canaries’)
  - Practical issues – fish as food
  - Model species
• Many ‘biologists’ follow in their research the August Krogh Principle:

  “For every biological problem there is an organism on which it can be most conveniently studied”
Locomotion?

- Semipalmated sandpiper, *Calidris pusilla* (wikipedia)
- Ruby-throated hummingbird, *Archilochus colubris* (www.birdsinfocus.com)
- Oyster toadfish, *Opsanus tau* (wikipedia)
- Brown-throated 3-toed sloth, *Bradypus variegatus* (wikipedia)
Issues for ‘biologists’ - II

• Structural issues:
  • CCAC documents and efforts initially based on laboratory animals used in ‘medical’ research – pushed by public concern
  • Scientific input into local ACCs weighed towards traditional animal protocols; little expertise for non-traditional animals or field-studies
  • Veterinarian training weighed towards traditional laboratory animals
  • Facility complexities – laboratory and field
Zebrafish, *Danio rerio*

Goldfish, *Carassius auratus*

Rainbow Trout, *Oncorhynchus mykiss*

Photos by A. Morin

Click View then Header and Footer to change this footer
Not so tidy or pristine; no such thing as one-size fits all!!! Evolving facility

Photos by A. Morin
THE field - YIKES???

Vidal-Dorsch et al. EST 46:69, 2012

Hering et al. EST 46:112, 2012
Times have changed - I

- Use of ‘real animals’ - environmental issues, initiated by society, governments and students
- Increases in the use of non-traditional species for research

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<th>2010</th>
<th>2005</th>
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<tr>
<td>Amphibians</td>
<td>69,738</td>
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<td>Marine mammals</td>
<td>1,809</td>
<td>733</td>
<td>2,219</td>
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<td>Canadian wild species</td>
<td>102,661</td>
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<td>3,311,083</td>
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– No longer under the radar
Times have changed - II

  - Drafted and reviewed by researchers/peers
  - Guidelines establish safeguards - interpretation left up to local ACCs and veterinarians
- Yet to have training modules although
  - *Experimental Fish*, Canadian Aquaculture Institute ([http://www.upei.ca/~cai/training.html](http://www.upei.ca/~cai/training.html))
  - DFO Animal-User Training Templates (Salmonids)
  - Canadian Wildlife Service – especially birds
  - Experienced researchers – source of expertise
Times have changed - III

- Better analytical estimates of environmental contaminants
  - Sewage treatments plants could be more effective?
  - Raised societal concerns over what is in effluent and drinking water – legacy chemicals? Consumption restrictions remain
- ‘911’ means ‘security’ has become a major issue
  - Federal and provincial rules/regulations governing movement of products across borders – looks like this may continue to influence movements
  - Although not directly related - issue of transgenic animals is on the radar
- ‘Safeguards’ being imposed from outside rather than from peers as in past - scrutiny of research activities continues to increase (e.g. permits)
Services – expectations?

• Clear and concise communications between ACC and researcher – two-way process

• Establish ‘best practices’ for research and teaching for all animal use
  – Requires veterinarians and ACC have appropriate information/reference base – including membership
  – More training in non-traditional species – individual and group activities
  – Increased ‘sensitivities’ to all animal groups
  – Must ‘listen’ to researcher – may be the expert?
  – Researchers will not know latest requirements imposed from outside
Services - II

• Animal use protocol forms
  – One-size does not fit all – appropriate forms
  – On-going discussions with major researcher groups
  – Researchers should expect questions – protocols need to use clear language?

• PAM – straightforward for some groups?
  – Again one-size does not fit all - flexibility
  – Field studies – video, travel?

• SOPs – especially for facility operations (videos?), but also for animal acquisition, standard procedures
Summary

- Safeguards developed through CCAC guidelines are effective, peer ‘imposed’
- New safeguards - imposed from outside based upon limited knowledge
- Use of non-traditional animals in science and teaching is rapidly expanding
- Some large animal care programs the use of non-traditional animals may become marginalized
- Communications between groups is essential to establish ‘best practices’ and ensure animal welfare and good scientific outcomes
Where do we go now?

• Need opened lines of communication so changes from outside can be acted upon in a timely fashion – issue of fiscal constraints
• Re-focussing of efforts especially within the ACCs and the animal care programs to address needs of non-traditional animal users – training, facilities, forms, representation
• Develop networks for individuals and groups to train in areas not generally covered by a program
• Exchange or posting of appropriate animal use forms for non-traditional species
• Need to remember that possibly the researcher knows more about the animal than those reviewing the animal care document
Thanks!

- University of Ottawa
- Granting agencies, especially NSERC
- CCAC and especially Assessment Directors for helping me see another side of research (and putting up with me!)
- To you for listening!!!