Training and Assessment for IACUC Members and Staff

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Session Expectations

1. Explain the art and applicability of ‘Andragogy’
2. Compare and contrast basic IACUC functions/tasks
   • Break
3. Share Vanderbilt University (VU) IACUC and staff training program
4. Training Assessment Tools
The Art and Applicability of ‘Andragogy’

Daphne Molnar

“Live as if you were to die tomorrow. Learn as if you were to live forever.” - Mahatma Gandhi
Andragogy

“The Art and Science of helping adults learn” - Malcom Knowles (1968)
Six assumptions of the adult learner

1. Need to know
2. Personal Experience
3. Protect Self-concept (a.k.a. self-esteem)
4. Readiness
5. Orientation
6. Motivation driven by needs
Think, Pair, Share

Discuss IF the trainings you receive or give incorporate the 6 assumptions.
Adult Learner Teaching Strategies

For multi and mono-cultural settings

- Refine communication skills during training
- Avoid use of jargon, idioms, and contextual jokes
- **Shift toward ‘Learner Centered’**
Teaching Strategies

- Use diverse teaching methodologies

- Build in exercises to test comprehension, skill, or knowledge
Teaching Strategies Summary

- Each audience is unique
- What works for one may not work for another
- Consider what’s available
- Blend of methods
- Small vs. large group vs. individual
What can we do?

- Recall how **YOU** learn

- Within group, provide examples on **HOW YOU** have **ATTEMPTED** to ensure retention

- Be prepared to share with majority
5 TED Talk Training Tips

1. Follow 18-minute rule (or less)
2. Tell a **story**
3. Think **visually**
4. Practice being natural
5. **Share** your passion
Something to ponder...

The Cone of Learning

I see and I forget.
I hear and I remember.
I do and I understand.
— Confucius

After 2 weeks, we tend to remember...

- 10% of what we READ
- 20% of what we HEAR
- 30% of what we SEE
- 50% of what we SEE & HEAR
- 70% of what we SAY
- 90% of what we SAY & DO

Source: Edgar Dale (1969)
Conclusion

- Helping adults learn can be complex
- Consider using a multi-prong instructional approach
- Remember, adults learn best when they can apply what they have learned
Compare and Contrast Basic IACUC Functions/Tasks

Erica Armstrong
Vanderbilt University (VU) Background Information

- Home to 20+ different species
- 25 IACUC members
- 7 f/t OAWA employees provide IACUC support
- 358 Principal Investigators with over 900 active protocols
VU IACUC Responsibilities

- **Serve** as an advisory body to the Institutional Official (IO) to maintain compliance
- **Oversee** the VU animal care and use program
- **Establish** institutional policies and guidelines required by the federal regulations
VU IACUC Responsibilities

- **Enforce** regulatory compliance
  - Primary Laws
    1. **Animal Welfare Act (AWA)**
      - USDA- United State Department of Agriculture
    2. **Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals**
      - OLAW- Office of Laboratory Animal Welfare
VU IAC UC Responsibilities

- Review and approve research protocols involving animals
- **Perform** semi-annual review of the animal care and use program, including inspections of the facilities, satellites and laboratories as required by federal regulations
- **Investigate** and **report** animal welfare concerns
IACUC Functions: Most important role?

‘Ethical’ Cost-Benefit Assessment Role

**Ethical Cost-Benefit Relationship**

**FAVORABLE**
- Potential Value:
  - To humans
  - To animals
  - To science
  - To society
- Ethical Cost:
  - Pain
  - Discomfort
  - Distress
  - Morbidity
  - Mortality

**NOT ACCEPTABLE**
- Potential Value:
  - To humans
  - To animals
  - To science
  - To society
- Ethical Cost:
  - Pain
  - Discomfort
  - Distress
  - Morbidity
  - Mortality
Discuss YOUR Institutional IACUC Functions

- Split into groups
- List GENERAL IACUC Functions
- Be ready to share and compare
IACUC Functions

PHS IV.B 1-8

• Semi-annual inspections (SAI) in areas where animals housed more than 24 hrs and program review every 6 months using the Guide;
• Make recommendations, prepare reports & submit to IO
• Review animal welfare concerns
• Review, approve, require modification, or withhold approval
  - Complete review required once every 3 years
• Be authorized to suspend activity involving animals

USDA 9 CFR 2.31 (c) (1)-(8) and 2.31 (d) (5) (6) & (7)

• SAI in areas where animals housed more than 12 hrs and program review every 6 months using title 9, Ch. 1 subchapter A
• Make recommendations, prepare reports & submit to IO
• Review animal welfare concerns
• Review, approve, require modification, or withhold approval
  - Continuing review of activities required not less than annually
• Be authorized to suspend activity involving animals
IACUC Support Staff Roles & Responsibilities

- Clerical tasks
- Collaborations
- Grant and protocol review congruency
- Professional and administrative duties
- What else????
Day-to-Day IACUC Staff Responsibilities

Think, Pair, Share

Turn to your neighbor to discuss the daily roles and tasks required for an IACUC and/or IACUC support office to run efficiently and effectively.
Conclusion

- Your title does not always match your IACUC role (e.g. functions, tasks, etc.) and are not always clear
- **Institutions differ significantly in how their IACUC and staff function**
- Organizational reporting structures vary
- We can all learn from one another...
Take a Break
Get out of your chair, it's killing you.
Let’s Talk Training of New IACUC and Staff at Vanderbilt University

Daphne Molnar

Disclaimer: The information being presented is based on VU training of new IACUC and staff members. Please be prepared to share your institutional approach.
Training initiatives for IACUC and staff:

- **New IACUC Member Training**

- **Continuing education for IACUC and staff**
New IACUC Member Training Sessions

Session 1
   i. Introduction to IACUC and Regulations in Animal Research
   ii. IACUC Member Responsibilities
   iii. Protocol Management Overview

Session 2
   i. Protocol review process
   ii. DMR in lieu of FCR
   iii. Homework assignment: Independent Training protocol review

Session 3
   i. Training protocol evaluated
Share how YOUR organization provides new IACUC Member Training?
Continuing Education
Outside Training Opportunities
VU Internal Training Opportunities

- Monthly IACUC committee and staff training opportunities as time permits (e.g. *Guide Chapter Reviews, case studies, test protocols, regulatory discussions, etc.)*

- Mentoring

- ACUP Quarterly Meetings/Updates/Question and Answer Sessions

- Annual Emergency Response Training

- Semi-Annual Inspection Refresher Training
  - *Inspection aides*

- Semi-Annual Vanderbilt Environmental Health & Safety ABSL facility training
Semi-annual Inspection

Prior to inspections:

- Occupational health compliance training
- Biosafety training complete
- Provide facility specific highlights and prior inspection deficiencies (i.e. satellite housing, imaging area)
- Guide reminders

**Animal Welfare Issues**
- Overcrowded cages
- Overcrowded Tanks
  - 2L water per adult *Zonata* Leiolepis
  - 5 adult fish per 1L of water
- Animal in Pain/ Distress
- Unapproved Procedure
- Veterinary Care issue
- Unapproved Single Housing of Social Animals

**Recordkeeping/Identification**
- Inability Logs
  - Daily
  - Monthly
  - Annual
- Animal Records
  - Medical
  - Neutered
  - Pregnancy
  - Food and Water Regulation
- Controlled Substance Logs
- Cage Identification
- Signage
- Improper Labeling
  - Name and Contents
  - Date/Expiration Date

**Animal Welfare Issues**
- Animal in Pain/ Distress
- Unapproved Procedure
- Non-pharmaceutical grade compounds
- Property Trained Surgeons
- Animal housed outside of facility for over 12 hours
- Occupancy Issues
  - Housing Technique
  - Separate areas (pre-op, surgery, and animal, surgery, recovery)
  - Sterile areas
  - Property sterilized surgical instruments (before surgery/in between animals)
  - Heat source (during surgery, during recovery)
  - Animal separated from withhold in isolation
IACUC and Staff Training Example

GUIDE 8TH EDITION:
CHAPTER 2
D. MOLNAR
- Training Treasures (TTs)
- Chapter comparison of 7th edition versus 8th edition of the Guide
- 5 interactive discussions
- TTs serve as a quick resource
Animal Care and Use Program

Institutional official (IO)

- IO bears ultimate responsibility for the Program; **should** be a shared responsibility among IO, AV, and IACUC.
  - Program needs **should** be clearly and regularly communicated to the IO by the AV, IACUC, and others associated with the Program.
AV responsible for health and well-being of all laboratory animals used at institution
- Institution **must** provide AV with sufficient authority, including access to all animals, and resources to manage the program of veterinary care
  (delegation not specified in 7th Ed.)

8th Ed. Ch. 2 pg. 13 - 14
Training and Education Outlined

- All personnel involved with animal care and use must (7th Ed. should) be adequately educated, trained, and/or qualified in basic principles of laboratory animal science
  - Institutions responsible to provide resources to support personnel training
  - All ACUP personnel training should be documented {new statement in 8th Ed.}
  - Each institution must establish and maintain Occupational health and safety program (7th Ed. word change pg. 14)

Refer to 8th Ed. Ch. 2 15 - 17 for specifics
The Research Team Training

- Institution **should** provide appropriate education and training to members of research teams (e.g. PI, study directors, research technicians, post-doctoral fellows, students, visiting scientists)

8th Ed. Ch. 2 pg. 16 - 17
Training topics for the Research Team should include the following before beginning animal work (8th Ed. Ch. Pg. 16-17):

- Animal care and use legislation
- IACUC function
- Ethics
- Concepts of the Three R’s
- Methods of reporting animal use concerns

- Occupational health and safety issues (e.g. animal use and handling refer to pgs. 17 - 20)
- Aseptic surgical technique
- Analgesia and anesthesia
- Euthanasia

7th Ed. does not specify specific training events for each group
IACUC Training {new}

- IACUC Member Training should include the following to ensure members understand their work and role:
  - Formal orientation to introduce new members to ACUP
  - Relevant legislation, regulations, guidelines, and policies
  - Animal facilities and laboratories
  - Processes of animal protocol and program review

8\textsuperscript{th} Ed. Ch. 2 pg. 17
They **should** be trained regarding zoonoses, chemical, **biologic**, and physical hazards (e.g. radiation and allergies) ....unusual conditions or agents that might be part of experimental procedures (e.g. the use of human tissue in immunocompromised animals), handling waste materials, personal hygiene, **the appropriate use of PPE**,....

8th Ed. Ch. 2 pg. 20 wording changed
Medical Evaluation and Preventative Medicine for Personnel

- Laboratory Animal Allergies (LAA)
  - Medical surveillance **should** promote early diagnosis of allergies
  - Training **should** include information about LAA, preventive control measures, early recognition, reporting allergy symptoms, and proper techniques for working with animals

8th Ed. Ch. 2 pg. 22 is new topic not mentioned in 7th Ed. Ch. 1 pg. 17-18
The Role & Function of the IACUC

Functions
- Protocol Review
- Experimental and humane endpoints
- Unexpected outcomes
  - GMA’s
- Physical restraint
- Food and Fluid Regulation (page 30-31)
- Non-pharmaceutical Drugs (page 31)
Protocol Review

- A clear and concise sequential description of the procedures involving the use of animals that is easily understood by all members of committee (new)
- Nonstandard housing and husbandry requirements
- Conduct of surgical procedures, including multiple operative procedures (7th. Ed. Ch. 1 pg. 10 read, Conduct of multiple major operative procedures)
- Description and rationale for anticipated or selected endpoints (new)

8th Ed. Ch.2 pg. 25
Experimental and Humane End-Points

- Experimental endpoint is when the scientific aims and objectives have been reached.
- Humane endpoint is defined as a point at which pain or distress in an experimental animal is prevented, terminated, or relieved.
- Should be carefully considered during IACUC protocol review.
- Determination of humane endpoints should involve the PI, the veterinarian, and the IACUC and should be defined before start of study.
- Use of pilot studies to identify and define humane endpoints and should be in place before and after such studies.

8th Ch. 2 pg. 27 - 28
Unexpected Outcomes

Genetically Modified Animals (GMA)

- If see a condition that negatively affects animal well-being, this **should** be reported to the IACUC
- Monitoring and Reporting may help determine if proactive measures can circumvent/alleviate impact on animal’s well being AND establish endpoints

8\textsuperscript{th} Ed. Ch. 2 pg. 28
Physical Restraint

- Veterinarians **must** (7th Ed. Ch. 1 pg. 11 said should) be contacted if lesions occur
- Alternatives to physical restraint **should** be considered {new statement}
- Animals that fail to adapt **should** be removed from the study {new statement}
- Purpose of the restraint, duration **should** be clearly explained to personnel involved with study {new statement}

8th Ed. Ch. 2 pg. 29 - 30
Evaluation criteria

Animal protocols involving use of food and fluid regulation require:
1. Necessary level of regulation
2. Potential adverse consequences of regulation
3. Methods for assessing the health and well-being of the animal
Food and Fluid Regulation

Documentation {new}

- Written records should be maintained for each animal?
  - Record food and fluid consumption
  - Hydration status
  - Any behavioral and clinical changes used as criteria for temporary or permanent removal of an animal from a protocol
Use of Non-pharmaceutical-Grade Chemicals and Other Substances {new}

- Use of non-pharmaceutical-grade chemicals or substances **should** be described, justified, and approved by the IACUC; note USDA required

- When approved, consideration **should** be given to grade, purity, sterility, pH, pyrogenicity, osmolality, stability, side and route of administration, formulation, compatibility, pharmacokinetics of the chemical or substance, as well as animal welfare/scientific issues relating to its use

8th Ed. Ch. 2 pg. 31
Multiple Survival Surgical Procedures

- Multiple surgical procedures on single animal should be evaluated; non-regulated animals should conform to those required by regulated species
- Acceptable only if they are:
  1. Included in and essential components of single research project/protocol
  2. Scientifically justified
  3. Necessary for clinical reasons
  4. If approved, IACUC should pay attention to animal well-being through continued evaluation of outcomes

8th Ed. Ch. 2 pg. 30
Post Approval Monitoring

- Continuing IACUC oversight is required by federal laws, regulations, and policies
- IACUC, veterinary, animal care, compliance staff may all conduct PAM
- Level of formality and intensity should be tailored to institutional size and complexity
- Should support culture of care focusing on the animals’ well being

8th Ed. Ch. 2 pg. 34
Disaster Planning and Emergency Preparedness

- Facilities **must** have a disaster plan
  - **should** have triaging priorities
  - **should** describe how to preserve critical or irreplaceable research animals
  - **Must** humanely euthanize animals that can not be protected or relocated

Wording changed in 8th Ed. Ch. 2 Pg. 35 from the 7th Ed. Ch. 2 pg. 46
CHECKING IN

Are all questions answered on your Guide Chapter 2 Training Treasure Handout?
Focused Discussion

How do you provide on-going training opportunities for your IACUC and support staff?
Conclusion

- All personnel involved with animal care and use must be adequately educated, trained, and/or qualified

- IACUC member and staff training should include:
  - Formal orientation
  - Relevant legislation, regulations, guidelines, and policies
  - Animal facilities and laboratories
  - Processes of animal protocol and program review

- Be creative with your training approach
Conclusion

I climbed on the desk to remind myself that we must always look at things from different angles. And the world looks different from up here.

Cf: Dead Poets Society

http://www.youtube.com/watch?v=6RbY2iTOUQA
ASSESSMENT TOOLS

Mental Ability Tests
(Analytical and logical Reasoning)

Physical Ability Tests
(Manual Dexterity)

Ability Tests

Bio-data Inventories / Demographic Inventories

Competency Based Training (CBT) Assessment Instruments
- Communication Indicators
- Active Listening Inventory
- Business Analysis Questionnaire
- Stress Management Questionnaire
- Planning and Prioritization Score Card
- Honesty and Integrity Checklist

Behaviour Profiling Instruments
- MBTI
- t6 PF
- DISC
- SL II
- Firo B
- Neo Five

Behaviour Event Interviews (BEI)

Knowledge Tests
(Buss. Comm.)

Achievement / Proficiency Tests

Assessment / Development Centre (AC/DC) Tools
- Focus Group Discussions (FGD)
- In-basket exercises
- Simulations
- Role Plays
- Case Analysis
- Mile Stone Trackers

Performance / Work Sample Tests
(Customized tools to measure on job performance.)

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Assessment by/of Learners

- Level 1 - evaluating reaction
- Level 2 - evaluating learning
- Level 3 - evaluating behavior
- Level 4 - evaluating results
Evaluating Learning

- How is learning measured?
- Have before and after evaluation
- Simulations
- Tests
- Potential challenges?
Evaluating Behavior

- How is behavior measured?
- Must allow time for behavior change
- Workplace evaluation (baseline data is valuable)
  - Repeat at appropriate times
- Potential challenges?
Evaluating Results

- What were the goals of the program and were they met?
- How do you assess or evaluate results?
VU Assessments: Learning Evaluation Considerations

- **Training Protocol**
  - Level 2: evaluation what was learned from training

- **Random Test Protocols Distribution**
  - Level 3: evaluate behaviors that have changed as a result of training
  - Level 4: evaluation of results of implementation of ongoing training
Test Protocol Assessment: Number of Issues Identified per IACUC Reviewer
VU Assessments: Learning Evaluation

Can we assess a learning level?

- Track Protocol
- Review Turn Around Times
- New protocols
- Amendments
- Training Attendance
Protocol Review Turn-around Time

<table>
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<tr>
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<th>Average Days to Agenda</th>
<th>Average days w/ IACUC</th>
<th>Average days w/ Reviewers</th>
<th>Average days w/ PI</th>
<th>AVERAGE TOTAL DAYS TO APPROVAL</th>
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<td>10</td>
<td>32</td>
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<td>New Protocols</td>
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<tr>
<td><em>Excluding protocols where PI had &gt;100 days</em></td>
<td>5</td>
<td>10</td>
<td>32</td>
<td>17</td>
<td>64</td>
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<tr>
<td>Protocol Amendments</td>
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<tr>
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<td>14</td>
<td>51</td>
</tr>
</tbody>
</table>

Average Days: New Protocols = 5, Protocol Amendments = 5
Average days w/ IACUC: New Protocols = 10, Protocol Amendments = 20
Average days w/ Reviewers: New Protocols = 32, Protocol Amendments = 12
Average days w/ PI: New Protocols = 20, Protocol Amendments = 14
AVERAGE TOTAL DAYS TO APPROVAL: New Protocols = 67, Protocol Amendments = 51

Chart showing average days to protocol review turn-around time with and without IACUC, reviewers, and principal investigator (PI) involvement for new protocols and protocol amendments.
Assessment Criteria

- Each reviewer assessed on the following:
  - Attendance of IACUC related functions, to include training
  - Occupational health compliant
  - Turn-around time
  - Performance rating
  - Number of protocols reviewed
Conclusion

- Training is provided for all IACUC members
  - Use of the checklist and training sessions provide new members with regulatory knowledge and expectations
  - Semi-Annual inspection refresher keep members informed and prepared

- Reviewer process assessments
  - Reviewer report cards and protocol review turn-around times provide awareness and opportunities for improvement

- Continuing education opportunities for IACUC and support staff improve knowledge base necessary for quality customer service interactions
Students can escape bad teaching

...but they can’t escape bad assessment

(David Boud)
Final Thoughts

- Remember the **six assumptions** of the adult learner

- Institutions differ significantly in how their IACUC & staff function and **LEARN**

- Training should be applicable and **on-going**

- **Assess** routinely; **adjust** as necessary