

Research Facilities Improvement Program (RFIP) Workshop

National Center for Research Resources (NCRR)

Reginald W. Miller, DVM, DACLAM
Center for Comparative Medicine
& Surgery
Mount Sinai School of Medicine
New York, NY



MOUNT SINAI
SCHOOL OF
MEDICINE

SERVING SCIENCE AND SOCIETY

Overview: Scientific and Technical Review Board (STRB)

- ◆ Reviewers composed of:
 - Builders - Architects
 - Users – Scientists
 - Managers – Veterinarians
- ◆ Enables full consideration of all relevant aspects of a given proposal
- ◆ Proposals must pass scrutiny of these varying interests

NCRR Grant Mechanisms

- ◆ G20 –Developing and Improving Animal Resources
 - Limited to renovations of existing animal facilities
 - No “New” construction under this mechanism
 - Movable equipment purchases allowed
 - Instructions specific to Animal Facilities
- ◆ C06 – Research Facilities Improvement Program
 - All NIH supported research infrastructure qualifies
 - New Construction and/or Renovation
 - Wide application pool - Instructions very general

Review of C06 Grants Veterinary Perspective

- ◆ Same STRB reviews both G20 and C06
- ◆ Type of applications
 - Research facilities not supporting animal studies
 - Research facilities supporting animal based research
 - Animal facilities renovations or new construction

Facilities (No Animal Studies)

- ◆ Research funding
 - Expiration dates of research benefiting from proposal
 - If significant amount of funding questionable weakens proposal
- ◆ If no animals involved or housed in adjacent areas
 - Details of animal program not required.
- ◆ Animal program data required if:
 - Potential interactions with animal related research.
 - Facilities adjacent to animal labs.
 - Ingress/egress from animal use areas.
 - Significance: Occupational Health & Safety.

Facilities Supporting Animal Studies

- ◆ Laboratories benefiting from proposal will use animals...
 - Full details of animal care and use program required.
 - Lack of detail here common administrative oversight.
- ◆ Review criteria for G20 prior to beginning grant preparation.
 - Program description for C06 very general- d.t. wider applicant pool.

Supporting Animal Studies (cont.)

- ◆ AAALAC Program Description
 - Use as a guide only.
 - *Do not submit entire AAALAC program description*
 - Reviewers not obligated to read appendices !
- ◆ Consult with attending veterinarian (laboratory animal specialists)
 - Small growing programs may need assistance of outside consultant.

Supporting Animal Studies (cont.)

- ◆ **New Laboratories or Core Facilities**
 - Transport of animals and traffic routes
 - **Benefits to Research**
 - Identify animal species used in studies.
 - Helps support census data.
 - **Veterinary Staff**
 - Training of Veterinarians
 - Technician Training
 - Number and experience of staff

Laboratory Construction Species Related Issues

- ◆ Nonhuman primates –
 - Occupational Health & Safety Program
 - Monkey Bite/Scratch/Splash Protocols
 - Enrichment Program
- ◆ Rodents
 - Health Monitoring program
 - Barrier-
 - Describe procedures, equipment
 - Quarantine program

Growing Programs...

- ◆ Avoid appearance of “Build It and They Will Come” approach.
 - Should document history of ongoing research that will benefit.
 - Does not require large amounts of research
- ◆ Remember: Institutions with at least one NIH sponsored project eligible for funding – Make your case !!!

Growing Programs

- ◆ May require additional veterinary expertise
 - Local practitioner vs. Lab Animal Specialists
- ◆ Describe how new facility will be operated
 - Staffing: current and post construction
 - Employee training for scope of new program

Animal Facilities

- ◆ All of the above
- ◆ Competing with large, non-animal based research facilities.
- ◆ Must demonstrate benefits to sponsored research that accrues from proposed construction.
 - Single most deficient aspect of vivaria focused submittals
- ◆ Collaborate with someone in Administration to write this section of grant
 - Generally more familiar with total scope of research program

Animal Facilities...

- ◆ AAALAC Accreditation Status
 - If any problems with current AAALAC status explain why and institutional plans to remedy.
 - Do not overlook problems NOT rectified by construction proposal (Administrative/Programmatic).
- ◆ Experience and training of veterinary staff closely scrutinized
 - Most significant in growing or non accredited programs
- ◆ Clearly outline IACUC procedures

Animal Facilities...

- ◆ Document deficiencies that will be corrected
 - USDA Reports, IACUC site visits, AAALAC Reports
 - Listing of deficiencies without institutional plan for correction not recommended
 - Indicates lack of institutional commitment

Animal Facilities...

- ◆ Previous institutional investments in the program of animal care and use
 - Construction, equipment, faculty recruitment
 - Grants submitted/funded by NCRR, NSF, etc.
- ◆ Research funding
 - Expiration dates of research benefiting from proposal

Animal Facilities...

- ◆ **Animal Care and Use Program**
 - All requirements of G20 should be fulfilled in proposal
 - IACUC procedures
 - Use AAALAC program description as a guide only



Trends in Animal Facility Proposals



Observations from a Reviewer

Expansion of rodent barriers

- Current barrier procedures
 - Health surveillance, Investigator training program, etc.
- Document research expansion to support claims of increased rodent capacity
- Census data – Population trends
 - Should roughly correlate with research funding

Trends in Barrier Expansion...

◆ Air Showers

- Significant design issues.
- Unless new construction – Hard to justify.
- Costs of “proper” installation in renovations too high.
- Benefits highly questionable.

Trends in Barrier Expansion.

◆ Equipment

- Ventilated Rodent Caging
 - Not considered “movable” when connected to building exhausts
 - Document growth in research/census to justify costs.
- Provide quotes from vendors

Trends in AF...

- ◆ Cage wash facility
 - Robotics controversial.
 - Document deficiency with current washer .
 - Traffic flow of equipment.
 - Operational plan during construction.

Trends in AF...

- ◆ Floor plans
 - Should be at least CAD quality.
 - Consult with institutional engineers.
 - Dual vs. Single Corridor
 - No right or wrong approach
 - No current consensus on benefits of either
 - Defend your choice with sound operational description

Trends in AF...

◆ Floor plans...

- Traffic Patterns – very helpful to reviewers
- Include a floor plan with directional arrows
 - Movement of animals from vivarium to labs
 - Flow of equipment to/from cage wash
 - Personnel traffic as applicable

Trends in AF...

- ◆ Biohazard suites (BSL-3/4)
 - HVAC must be well described
 - Occupational Health and Safety Program
 - Established or plans for development
 - Operating procedures well thought out
 - Show adjacency to non-biohazardous areas

Trends AF...

◆ Sterilizers

■ Barriers

- Bulk vs Standard

■ Biohazard suites

- Steam vs Hydrogen Peroxide (H_2O_2)
- H_2O_2 Gas
 - ◆ Non-penetrating
 - ◆ Inactivated by moisture

Conclusion – Veterinary Review

- ◆ Research benefits must be well defined.
- ◆ Consult with laboratory animal specialists.
- ◆ Use AAALAC Program description as guide.
- ◆ Review G20 Instructions for Animal Facility Proposals.
- ◆ Document facility deficiencies to be corrected.