

Occupational Health and Safety (Revised 4/11/07)

Administrative Procedures

The IACUC considers OHS issues when conducting protocol reviews. The Committee specifically considers potential risk from infectious agents, recombinant-DNA molecules that are not exempt from federal guidelines, hazardous chemicals, radiation, and the use of animals that present unique hazards. The W&M Protocol Compliance and Management system allows protocol submissions to multiple committees if necessary.

Facility Design and Operation

Facilities Maintenance staff follow a regular program of maintenance of equipment. Staff and researchers are required to report potentially harmful conditions promptly to facilities maintenance staff and to their supervisor. Training of staff and researchers includes instruction regarding potentially harmful conditions. New or replacement equipment is planned and selected with consideration of ergonomic principles and safety issues. Planning for new space uses professionals with experience and training in designing laboratory animal facilities. Engineering controls being considered for future space, currently in planning stages, include fume hoods, biological safety cabinets, isolation cages, and directional air flow. The facilities inspections carried out by the IACUC consider OHS operational issues.

Exposure Control Methods

General: Chemical fume hoods are used for control of chemical hazards, and safety cabinets are used as appropriate for storage of hazardous chemicals. Biological safety cabinets are used for the protection of personnel from aerosols produced by experimental procedures involving etiological agents. Researchers, students, and staff are instructed to use protective equipment to protect against airborne dust and animal dander, in particular. Barriers are used when working with some animals. Cage filter tops are used to minimize exposure to some animals. When additional hazards are identified by researchers, staff, or the IACUC, additional precautions may be recommended or required.

Work Practices: Access to work areas is restricted to staff, researchers, and students working under approved protocols. Workers are provided with preliminary training materials with an established animal care OHS guide, and must pass an exam on the material. Workers are instructed to reduce exposure by: (1) direct and indirect contact by appropriate hand washing, decontamination of surfaces, and use of protective equipment, including gloves, gowns, and eye protection, and good personal hygiene; (2) reducing percutaneous exposures from sharp objects; (3) reducing exposure by ingestion by not eating, drinking, or smoking in animal holding areas and protecting the mouth from contamination; and (4) reducing exposure by inhalation by using fume hoods, HEPA filters in vacuum equipment, and careful handling of liquids.

Housekeeping: Employees and researchers are instructed to minimize clutter and to follow good housekeeping standards, with regular cleaning scheduled according to the research and animals being held. Dust suppression methods are used to minimize dust exposure.

Waste Disposal: All waste from experiments is disposed of at a permitted facility. The College's

Environment, Health, and Safety Office coordinates the waste transport and disposal. Please see: [Request for Hazardous Waste Disposal Form](#).

Restraint of Animals: Species-specific safe techniques are used to restrain animals, including appropriate protective gloving against rodent bites. Primates, dogs, cats, and other mid-sized to large laboratory animals are not used in our facilities, and thus physical restraint of potentially dangerous animals is not routinely required. The IACUC considers restraint issues in review of protocols, and can recommend or require appropriate restraint methods.

Cleaning Cages: Removing animals of some species from cages is carried out in escape-proof chambers as necessary. Workers are instructed to use protective clothing and equipment for protection during cage changes. Additional precautions are required for handling of some waste materials.

Personal Protective Equipment: Staff are instructed to use gowns, masks, and eye protection by safety glasses or goggles during work with cleaning, disinfecting, cage changing, and potentially hazardous agents.

Education and Training

Researchers, staff and students are required to complete an OHS safety module that includes instruction on safe working habits. Further instruction is provided by written guidelines specific to particular research units. Employees are instructed about hazards from potential allergens, and on ways to minimize exposure to allergens. These include documents on zoonoses specific to rodents or birds (e.g., Hantavirus, Lyme disease, and West Nile Virus) or to specific hazards (e.g., Pfisteria). Employees working on animals are in regular and direct contact with scientists carrying out the projects, and scientists play an active part of the education and training process. Finally, key employees receive additional instruction in helping to train and monitor other workers and students. Documentation of education and training exercises and materials should occur regularly, overseen by an institutional health and safety officer.

Occupational health-care services

The College contracts with an occupational medicine specialist for services. The College complies with OSHA standards for training, fitting, and pulmonary examinations wherever necessary.

Equipment Performance

Fume hoods are tested annually by the EH&S Office to ensure that they meet standards. Biosafety cabinets are tested and certified annually by a third party testing company. Air filters are changed regularly as determined by their stated useful life. Water handling units and water filters for fish and amphibians are checked daily, and cleaned and maintained on weekly and monthly schedules. Areas with potentially hazardous cleaning or other materials are tested and monitored according to needs for the materials being used. Sterilizing devices are maintained regularly to ensure continued ability to perform adequately. Checks are performed to ensure proper sterilization temperatures are reached during each sterilization activity as well as monthly.

Information Management

Information on employees and researchers exposed to potential risks is available from research protocols and duty assignments. Occupational Health and Safety training records for staff and researchers are maintained in a computer data base. Material safety data sheets are filed for materials used in research and cleaning and are available through the web to W&M users. Accident and injury records are maintained centrally by the University for any job-related injury. Accident and injury records are reviewed by the DH&S Office for follow-up as necessary.

Emergency Procedures

Emergency situations are responded to by the supervisors of facilities following established guidelines. Prior to predicted emergencies such as hurricanes or snow storms, additional checks are made of back-up systems, and specific sets of duties for the post-event period are assigned to researchers and staff. Specifications are established for acceptable conditions for animal care work or research. Animals and systems are arranged to maximize protection from the emergency. A telephone tree is established for personnel back-up and for reporting on completion of duties. The telephone tree moves up through notification of the supervisor and campus emergency responders (via Campus Police), department chair, IACUC chair, and outward to individual researchers and technicians. The specific individuals called depend upon the nature and extent of the emergency. If any individual is not reachable by phone, contacts are made at the higher level. Back-up procedures are agreed upon for safe performance of duties if phone service fails. Emergency veterinary services are planned for, and temporary animal housing space checked. Potential hazards are indicated by prominent labels on doors. In unexpected emergencies, supervisors of each facility take responsibility following established procedures to maintain facilities and animals, with back-up provided by researchers or staff. An automated system monitors temperatures and power near especially sensitive facilities, and automatically cycles through a telephone number tree of responders until receiving a manual acknowledgment. Both the William and Mary Police Department and Facilities Management have animal facilities ranked as vital for frequent checks and reporting to supervisors. Finally, the Chair of the IACUC or his/her designate checks with supervisors, staff, the Police Department, and Facilities Management to stay informed on the condition of facilities during or after an emergency. Following an emergency, the adequacy of the protection and response is evaluated, and changes instituted as necessary.

Program Evaluation

Program evaluation takes place at the request of the senior official of the University. Members of the evaluation group are appointed by the senior official of the institution. Appointees include members of each major activity in the occupational health and safety program. Chairpersons of relevant committees participate as requested, and managers of the environmental health and safety group serve as resources for the group. Evaluations measure effectiveness of the program to reduce occupational risks to an acceptable minimum. Three major elements are reviewed: the institution's injury and illness experience, its regulatory-compliance performance, and the results of efforts to promote occupational health and safety through involvement of participants in the occupational health and safety program. Data sources include material taken from injury or illness records, exposure monitoring (if performed for any purpose), training records, minutes and reports of institutional health and safety committees, actions and minutes of the IACUC, and results of inspections conducted by the IACUC or regulatory agencies.

References

Occupational Health and Safety in the Care and Use of Research Animals, (1997), Institute for Laboratory Animal Research (ILAR). Website:

<http://books.nap.edu/books/0309052998/html/106.html>.