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**UNC Charlotte
Safety and Environmental Health Office**

Vivarium Occupational Health and Safety Program

The University of North Carolina at Charlotte recognizes that an effective Occupational Health and Safety program must be part of the overall program of animal care and use, and must be consistent with all applicable local, state, and federal regulations.

The program relies upon strong administrative support, and effective interaction between researchers, the animal care and use program (represented by the Institutional Animal Care and Use Committee (IACUC) and Attending Veterinarian), the University Safety and Environmental Health (S&EH) Office, and administration. Day-to-day responsibility for safety and health in the Vivarium resides with the Director of Laboratory Animal Resources, and depends on the performance of safe work practices by all researchers, staff and students.

It is the policy of UNC Charlotte that employee and student exposure to infectious hazards associated with animal and animal tissue contact is minimized. Natural infections will be controlled by use of pathogen free animals, where possible, and by a broad program of optimum veterinary care for all animal subjects. Both experimental and natural infections will be controlled by appropriate experimental design, technical methods, containment equipment, and building engineering systems. Occupational health and employee training are an integral part of the employee health program.

Hazard Identification and Risk Assessment –

The goals of the UNC Charlotte Vivarium Occupational Health and Safety Program include the confirmation of qualifications of professional staff working with hazardous biological, chemical, or physical agents to ensure that the risks of using animals and such agents are minimized, and to identify such hazards. Primary responsibility for this component of the program rests with the Biosafety Committee and Chemical Safety Committee, working in conjunction with the S & EH Office, the Occupational Health Nurse and the IACUC. The actual extent and participation of personnel in the program will be based on the hazards posed by the animals and materials; exposure frequency, duration, and intensity; the susceptibility of the personnel; and the history of occupational health issues in the Vivarium.

Personnel Training –

Staff and students at risk are provided with procedures for conducting their work so that they are knowledgeable of the hazards involved and proficient in implementing required safeguards.

Specific training is provided regarding zoonoses, chemical safety, physical and microbiological hazards, project-specific agents or conditions (e.g., use of human tissue or genetically-engineered animals), waste handling, personal hygiene, or other program-relevant considerations.

Medical Evaluation and Preventive Medicine –

With input from an Occupational Health Professional, a program of medical surveillance has been developed. Its key components include:

- A health history evaluation prior to work assignment in the Vivarium.
- A review of immunization history.
- Confirmation of immune status.
- Review of allergies, medications, previous hospitalizations, work restrictions and prior occupational information.
- Contact information.

In addition to completion of the UNC Charlotte Departmental Safety Checklist for New Employees and Transfers, and prior to beginning job duties, the following topics will be reviewed with each individual routinely entering the UNC Charlotte Vivarium:

- Location of Material Safety Data Sheets
- Location and use of Personal Protective Equipment(PPE)
- Location of pertinent equipment operator's manuals
- Incident reporting procedures
- Emergency phone numbers and telephone locations
- Safe work procedures,(including proper lifting, bloodborne pathogens, prevention of slips and falls).
- Spill clean-up
- Vivarium evacuation plan
- Inclement weather procedures and employee reporting procedure, [see UNC Charlotte PIM #12](#)

Medical Requirements–

University employees, student workers, and students that contact animals in the Vivarium shall comply with the following:

1. Preplacement Evaluations

A [Basic Health History Form](#) must be completed at the time of employment or initiation of Vivarium use with annual updates thereafter.

2. Immunizations

Tetanus vaccine will be required every 10 years or administered post-injury if needed per CDC Guidelines.

3. Periodic Monitoring Evaluations

Annual update of [Basic Health History Form](#) to detect changes in an individual's health that might indicate a problem in the work process.

4. Employee Health Record

Records will be maintained as confidential medical information in Student Health Services.

5. Response to Exposures

Personnel exposures can result from a variety of incidents including splashes of liquid into mucous membranes or broken skin, needlesticks, and animal bites. Animals may carry significant pathogens as flora of the oral cavity. Examples of pathogens of concern include streptobacillus moniliformis of rats. This agent is capable of causing illness and may be fatal, especially in immunocompromised individuals. Recommended precautions include ascertaining the patient's immune status by the physician, providing appropriate instructions to the patient and prophylactic antibiotics as needed.

For any suspected exposure incident (including all accidents, bites, scratches and allergic reactions) report to supervisor or instructor and obtain medical treatment at the Student Health Center, [see website for hours of operations](#). A [Treatment Authorization Form](#) must be completed when an employee requires medical treatment at Student Health Services. Utilize CMC University Hospital after hours and on weekends. Call 911 in an emergency situation for immediate transport to the emergency room if critical injuries have occurred.

Report all incidents to the University Safety Office in accordance with [PIM-26](#), Accident Reporting/Investigation Procedure. See [Linked Forms](#) at the top of page 1 of this document.

6. Other Special Considerations

Allergens: Individuals with histories of allergies, specifically animal allergies, must be evaluated and advised of the potential health risk of animal exposure.

ZOONOSES SURVEILLANCE

Zoonoses, or the transmission of disease from animals to humans, is a major occupational health hazard for employees working with animals. National Institutes of Health's Guide for the Care and Use of Laboratory Animals requires that zoonoses surveillance be part of an occupational health program and should include records of work assignments, animal bites, and unusual illnesses. Employees and students must report any animal bites, scratches, or other unusual exposure to their PI or lab supervisor.

ANIMAL BITE PROTOCOL

Animal bites or scratches are a major avenue for the transmission of bacteria and viruses, especially rabies. All animal bites are considered to be possible sources of infection and must be treated according to the following protocol.

Procedure

1. A bite is defined as any traumatic event inflicted by an animal causing a break in the skin or mucous membrane of a human. A scratch is defined as a superficial wound that does not cause a break in skin or mucous membrane of a human.
2. Any person having suffered a bite should immediately wash the wound thoroughly with antibacterial soap and water for a period of not less than ten (10) minutes.
3. After thoroughly washing the wound, the injured person shall notify the Vivarium Manager, and their supervisor or instructor. The Vivarium Manager will record the event.
4. Supervisors/instructors must assure that employees/students receive medical attention immediately. Bitten individuals who are UNC Charlotte students and employees must report to Student Health Services (704)–687-4617 for evaluation and treatment. Call 911 in an emergency situation for immediate transport to the emergency room if critical injuries have occurred.
5. Procedures as outlined by UNC Charlotte [PIM-26](#) must be followed for accident reporting and medical treatment. A [Treatment Authorization Form](#) is required to be completed before treatment is initiated at Student Health Services. The Employee must also complete the [Employee Accident Form](#) and the Employees' Supervisor must complete the [Supervisor Accident Form](#) as soon as possible after the incident occurs. Supervisor must insure completion of the [Animal Bite / Scratch Reporting Form](#). The employee or supervisor must complete section I and II of the Animal Bite/Scratch Reporting Form.

EXPOSURE CONTROL

1. Personal Hygiene

All staff and students entering the UNC Charlotte Vivarium will maintain a high standard of personal cleanliness. Clothing (such as scrubsuits or lab coats) suitable for animal facility use is provided and laundered by the University. Disposable masks, head coverings, shoe coverings and gloves are required for animal, cage, waste or test article handling. Outer garments worn in the Vivarium's animal rooms are not worn outside. Sinks for washing of hands, as well as shower and change facilities are available. No eating, drinking, application of cosmetics, manipulation of contact lenses or use of tobacco products are allowed within the animal areas. Rest, break and food storage areas separate from animal and procedure rooms are provided.

2. Experiments involving Hazardous Agents

Any animal experimentation involving hazardous agents must be approved by the University Biosafety Committee. Hazardous agents should be contained through adequate ventilation, physical barriers, appropriate work practices, and use of personal protective equipment.

Short-term students and visitors to the area should not be exposed to potentially infectious materials unless they are trained in safe procedures and familiarized with the laboratory safety plan.

3. Material Safety Data Sheets

Vivarium staff members must have access to MSDS on all chemicals, compounds and products in use in the Vivarium to be adequately informed of all potential physical and/or health hazards associated with their use.

4. Personal Protective Equipment

Personal Protective Equipment (PPE) is provided by the University. This consists primarily of uniforms or lab coats, head coverings, masks, shoe covers, and gloves. Supplemental equipment includes face shields/goggles, rubber boots, and disposable jumpsuits. Additional project-specific items will be supplied as dictated by the nature of the risk and project.

Personal protective equipment shall be worn in instances where engineering controls are not feasible and should not be used as a substitute for engineering controls. Individuals are required to use appropriate personal protective equipment as indicated by the Principle Investigator and/or the Safety and Environmental Health Office.

Gloves must be worn when it can be reasonably anticipated that the employee may have hand contact with potentially infectious materials, or contaminated items or surfaces. Disposable single use gloves shall be replaced as soon as possible when visibly soiled, torn, punctured, or when their ability to function as a barrier is compromised. Disposable gloves shall never be washed or disinfected for reuse. Utility gloves may be disinfected

for reuse if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, discolored, torn, punctured, or exhibiting any sign of deterioration.

Masks and eye protection shall be worn whenever splashes, spray, droplets, or aerosols of potentially infectious materials may be generated and there is a potential for eye, nose, or mouth contamination.

Laboratory coats, gowns, aprons, clinic jackets, or similar outer garment must be worn in situations where there is a potential for exposure to biohazardous agents.

All personal protective equipment shall be removed immediately upon leaving the work area or as soon as possible if overtly contaminated and placed in an appropriately designated area for decontamination or disposal.

When personal protective equipment is removed, it must be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.

GENERAL SAFETY GUIDELINES – VIVARIUM AND LABORATORIES

Falls

Falls are the most common laboratory and office accident. Injuries may result from slips or falls from chairs/stools and elevations. Slip and trip injuries may be caused by wet floors, worn footwear, trash on the floor, or a combination of hazards. Chair falls can occur when a person sits, rises, or moves on a chair. Leaning back and tilting chairs also cause falls. Falls from elevations are usually represented by improper use of climbing devices and standing on counter, chairs, stools or other laboratory or office furniture. . Always use proper climbing devices such as step stools and ladders.

Overexertion

Injuries due to overexertion occur when employees attempt to move heavy objects. Reaching, stretching, twisting, bending down, and straightening the spine are associated with these injuries. Even activities that do not appear likely to strain a person's stamina can result in severely painful injuries. Avoid twisting and extended reaching with one hand to grip a heavy object from a countertop or elevated shelves. This action can cause a body strain injury (i.e. ligament sprain or muscle strain). Try turning your whole body toward the object and using two hands with a good grip to handle it.

Striking Against

"Striking against" includes injuries resulting from bumping into objects such as doors, desks, file cabinets, open drawers, and other individuals. For example, if you are bending down picking up an object, you can bump your head when getting back up. Be conscious of your environment; look out for open file cabinet drawers, cabinet doors, exposed edges, and countertops.

Objects Striking

"Objects striking" usually involves a falling or moving object striking a person, such as lab supplies and chemicals, cabinet and drawer contents, swinging doors, etc.. Consideration should always be given as to how shelves are loaded and secured, especially when someone normally sits beneath the stored materials.

Repetitive Motion

Laboratory researchers are at risk for repetitive motion injuries during routine laboratory procedures such as pipetting, working at microscopes, operating microtomes, using cell counters and video display terminals. Repetitive motion injuries develop over time and occur when muscles and joints are stressed, tendons are inflamed, and nerves are pinched and the flow of blood is restricted. Standing and working in awkward positions in laboratory hoods/biological safety cabinets can also present ergonomic problems. By becoming familiar with how to control laboratory ergonomic risk factors, you can improve employee comfort, productivity, and job satisfaction while lowering chances for occupational injuries. For more information on laboratory ergonomics please following the following link to [S & EH Office – Laboratory Ergonomic Safety](#) If you suspect you are at risk of such an injury, inform your supervisor and request a workstation ergonomic evaluation from the Safety and Environmental Health Office.