Appendix

Program Guide for SDSU Occupational Health and Safety in the Care and Use of Animals

GUIDING PRINCIPLES AND GENERAL AUTHORITY

South Dakota State University (SDSU) is committed to the humane and ethical care and use of animals in research, academic, and outreach activities. SDSU strives to advance scientific knowledge, teaching, and research while balancing the use of animals that contribute to these endeavors. This program guide is intended to serve as a guide for the university's program, processes, and procedures regarding occupational health and safety associated with the care and use of animals under Institutional Animal Care and Use Committee protocols. SDSU's program is guided by regulatory obligations and sponsor/agency/organizational requirements/guidelines such as, but not limited to:

- The *Guide for the Care and Use of Laboratory Animals* (Institute of Laboratory Animal Resources, National Research Council, 2011) the *Occupational Health and Safety in the Care and Use of Research Animals* guidebook (Institute of Laboratory Animal Resources, National Research Council, 2003);
- PHS-funded animal research under the authority of the Health Research Extension Act of 1985;
- The Animal Welfare Act (AWA);
- The American Veterinary Medical Association (AVMA) Guidelines on Euthanasia; and
- SDSU Policy 8:6 – Institutional Animal Care and Use.

This guide is an appendix to SDSU Policy 8:6.

The Occupational Safety and Health Act of 1970 (OSH Act) does not apply to public employees working in South Dakota, and these guidelines are not intended to adopt the occupational safety or health standards under the OSH Act. SDSU does not currently perform research involving non-human primates.

SECTION I: PROGRAM PROCESS

APPENDIX D shows the flow of the components outlined below.

1. Principal Investigators (PIs), employees, students, and covered others conducting research on animals must participate in the Occupational Health and Safety Program in the Care and Use of Animals Program (OHSP) and procedures.
    a. Animal researchers working on approved protocols funded by Select Federal Funding Agencies (SFFAs) are required to have an animal care and use occupational health and safety (ACU-OHS) medical evaluation. SFFAs include PHS, Health and Human Services, National Science Foundation and National Aeronautics and Space Administration. Employees working with animals as a service in support of SFFA funded projects (e.g. vivarium) are also required to participate in the OHSP.

b. Animal research participants working on approved protocols funded by other federal funding agencies, private organizations, non-profit organizations, or SDSU are not required, but urged to have an OHS medical evaluation.

Documentation for the OHS medical evaluation will be incorporated into the IACUC protocol approval process. IACUC protocols may not be approved without complete OHSP documentation. Complete OHSP documentation includes a Project Risk Assessment (PRA), PPE requirements if applicable, and Medical Evaluation Report (MER), documentation of completing all interventions, and/or liability waivers for all participants.

2. For each protocol, the PI will consult with the University Veterinarian (UV) and EHS for the proper personal protective equipment (PPE) required for animal researchers.

3. The PI, in collaboration with the UV, completes a Project Risk Assessment (PRA, Appendix A). PRAs remain in effect for up to 12 months if for project conditions remain unchanged. PRAs of one project may be used for other projects initiated within 12 months by the same PI if project conditions and participants are substantially the same.

4. For completion of OHSP documents for animal researchers, the PI will counsel all animal research participants as to the process and required steps. All animal research participants required or electing to participate in the OHSP (Participants) must:

    a. complete the Acknowledgement of Project Risk Assessment and Refusal of Occupational Health and Safety Medical Evaluation Liability Waiver (Appendix B) OR

    b. complete the MER, Appendix C. Here, the Participant will undergo an OHS medical evaluation with a medical provider indicated by SDSU. The Participant will present the MER to the provider during the screening. The provider will complete Copy1 and Copy2 sections of the MER, page 3.

5. ACU-OHS medical evaluations are required for animal research participants only if a) the associated PRA has changed or b) the participants health status has changed.

6. Costs: ACU-OHS medical evaluations for participants in projects funded by SFFAs will be charged as direct costs to the project. Vaccines recommended by SDSU's ACU-OHS medical provider will be charged as direct costs to the project.

7. Participants will deliver hard copies of completed forms:

    a. (1) Acknowledgement of Project Risk Assessment and Refusal of Occupational Health and Safety Medical Evaluation Liability Waiver (Appendix B) OR (2) the MER Copy 1, Human Resources, Morrill Hall 100. and

    b. MER Copy 2 to the PI. Human Resources will forward additional documents as needed to the PI, such as documentation of recommended intervention.

8. The PI will include all OHSP documents in the protocol application with documentation

describing how any interventions, as indicated by the health provider, have been implemented. OHSP documents include PRA, MER page 3, Copy2, and waiver if applicable.

9. The PI will attach 1) the PRA; 2) the Acknowledgement of Project Risk Assessment and Refusal of Occupational Health and Safety Medical Evaluation Liability Waiver (Appendix B) or the Medical Evaluation Recommendation Page 3, Copy 2 (Appendix C); and 3) documentation of required CITI training for each animal researcher indicated on the protocol

10. The PI then submits completed IACUC protocol applications with supporting documents through the process established for IACUC review.

11. Refer to the flowchart in Appendix D for assistance in the decision-making process.

DEFINITIONS

- Principle Investigator (PI). The person named on an IACUC protocol is the lead person responsible for the work conducted under the IACUC-approved protocol.
- Participant. Any person other than the PI who is named on an IACUC protocol.
- Select Federal Funding Agencies- National Science Foundation, National Aeronautics and Space Administration and all agencies under the Health and Human Services (including National Institutes of Health) . The Office of Laboratory Animal Welfare determines the Select Federal Funding Agencies hence is subject to change.

SECTION II: PROGRAM RESPONSIBILITIES

SDSU is committed to a safe workplace. This Occupational Health and Safety in the Care and Use of Animals Program (OHSP) replaces the OHSP adopted in 2015 by SDSU. The overall goal of this OHSP is to prevent or mitigate any occupational injury or illness and reduce risks to a reasonable level. This OHSP includes the following components:

1. Identification of hazards to personnel and implementation of appropriate hazard controls;

2. Required personnel health and safety training;

3. Policies and facilities that promote cleanliness and reduce physical injuries;

4. Recommended medical exams, immunizations, or other protective measures; and

5. Program evaluation.

The OHSP is administered under the authority of the Vice-president for Research and Economic Development (VPRED). The coordinated roles and responsibilities of individuals and offices as related to OHSP are outlined below.

EHS

- Assists in identifying potential workplace hazards and recommends remedial action
- Evaluates equipment (fume hoods, safety showers, eye wash stations, etc.).
- Recommends appropriate (PPE) and prevention and safety measures.
- When applicable, manages emergency response in alignment with the SDSU Emergency Management Plan and its Annexes.
- Manages hazardous waste.
- Reviews accidents and injuries in alignment with SDSU and South Dakota policies and protocols.

HUMAN RESOURCES

- Centrally maintains employee records, including medical records when applicable.
- Workers' compensation and other personnel management functions.

FACILITIES and SERVICES

- Maintains ventilation and other building systems.
- Designs and maintains SDSU facilities.

IACUC

- Reviews applications for protocol approval, including review of potential health and safety risks and physical hazards.
- Specifies appropriate related training for PIs and participants if training or training documentation is inadequate.
- Maintains documentation of personnel training for proper use and care of animals.
- Conducts IACUC semiannual program evaluations, including facilities inspections.
- Ensures an OHSP is in place to work under IACUC protocols.
- Facilitates compliance with federal, state, and local OHSP requirements during reviews and inspections.
- Coordinates the animal care and use of OHSP, including related communication, and maintains appropriate information and documentation related to OHSP training, and project risk assessments.

UNIVERSITY VETERINARIAN (UV)

- Aids PI in project design, identifying potential risks and hazards.
- Provides advice on Personal Protective Equipment (PPE) and work-place related safety concerns.
- Suggests possible alternatives to procedures that potentially increase human health and safety risks.
- Facilitates compliance with federal, state, and local regulations.
- Provides zoonotic disease and physical hazards information for the safety and protection of personnel. Coordinates occupational health efforts with the EHS and other offices.

VICE PRESIDENT FOR RESEARCH AND ECONOMIC DEVELOPMENT (VPRED)

- Exercises primary oversight of Animal Care and Use and OHSP, and the Program Director for Research Integrity and Compliance.
- Works collaboratively with the EHS Officer, IACUC, University Veterinarian, and other offices to ensure oversight of this OHSP.

PROGRAM DIRECTOR FOR RESEARCH INTEGRITY AND COMPLIANCE OFFICER (PDRIC)

- Ensures compliance with federal, state, local, and SDSU OHSP policies and procedures. Works collaboratively with VPRED, EHS, University Veterinarian, IACUC, and other offices to monitor the effectiveness of the OHSP.
- Reviews and leads revision of the OHSP annually.
- Reports status of compliance and activities to IACUC.
- Reports as required to appropriate federal agencies.

INDIVIDUAL CAMPUS DEPARTMENTS AND EQUIVALENT UNITS

- Supports and reinforces PI's implementation of IACUC OHSP Guide requirements.
- Takes definitive action on program and facility deficiencies identified through review and direction of IACUC, UV, PDRIC, or EHS.
- Purchases PPE and requires appropriate PPE use.
- Develops and maintains standard operating procedures (SOP) for animal care and occupational health and safety associated with animal facilities under departmental jurisdiction, and ensure personnel are trained and adherent to SOPs.

PRINCIPAL INVESTIGATORS (PI)

- Designs research, education, and outreach projects involving animals and prepares complete protocol requests to IACUC for review and approval
- With input from the UV, completes Project Risk Assessments (PRA) to determine if the intended projects pose potential health risks to the Participants. Consults with EHS and UV to verify what PPE is required. PRA of projects involving recombinant nucleic acids or biological agents shall include the Institutional Biosafety registration or approval as an appendix to the PRA.
- Ensures Participants review PRA before beginning work on an approved protocol and ensures any health or safety recommendations from the health screenings are implemented.
- Ensures all participants complete required CITI training.

STAFF, STUDENT EMPLOYEES, STUDENTS INVOLVED IN ANIMAL RESEARCH, CONTRACTORS, AND VOLUNTEERS

- Follows safety practices.
- Knows and follows SOPs applicable to projects, departments or units, or facilities.
- Knows and follows the specifications of the relevant approved IACUC protocol.
- Complies with SDSU Policies and Procedures and OHSP rules and guidelines.
- Completes training programs.
- Reports injuries to the PI, department, and HR.
- Reports health and safety concerns to the PI, and department.

SECTION III: HAZARDS AND RISKS

DEFINING HAZARD AND RISK

A hazard is the inherent danger involved in working with a particular animal species, material, equipment, process, procedure, or system. Risk is a measure of the likelihood of a consequence from working with a certain hazard. There are many hazards involved in working with animals. These range from minor to very serious, and can include things like allergies, bites, zoonotic diseases, exposure to hazardous chemicals or radiation, and handling contaminated waste. The risks range from a low to a high potential of injury or illness from the identified hazards. The primary way to avoid issues in working with animals is to know the hazards and what precautions to take.

Type of Hazard	Some Common Prevention Strategies
Animal Source	Purchase animals from reputable vendors; select the least allergenic animal species/sex; avoid contact with wild animals or animals of unknown origin; take necessary precautions (PPE, proper animal handling instruction) when it's necessary to work with high-risk species.
Animal Housing, Caging, Bedding	Follow SOPs; wear gloves, and protective clothing, use proper posture and body mechanics (lifting, pushing, pulling, etc.).
Hazardous Material Use	Substitute less hazardous material; ensure adequate ventilation or other engineering controls; follow SOPs; attend university training in lab and chemical safety: wear PPE as required or recommended.
Waste Disposal	Follow university policies and procedures for hazardous waste removal.
Animal Transportation	Do not transport animals through common, non-animal corridors or facilities (may expose non-animal personnel); use proper techniques and transport devices.
Emergency Procedures	Know the contact people for each facility; be sure emergency phone numbers are posted in animal facilities; be familiar with standard emergency procedures like evacuation routes and emergency exits, what to do in the event of a chemical spill, which medical providers to go to in medical emergencies, and how to report injuries.
Zoonosis	Obtain appropriate immunizations; wear gloves and protective clothing when handling species with zoonotic disease potential; participate in medical consultations and surveillance; avoid high-risk animals and situations.
Animal Handling	Learn and use proper handling techniques; wear protective gloves, clothing, respirators, etc.
Slips, Trips and Falls	Practice good housekeeping; maintain a clean and organized work area that is free from clutter.
Personal Hygiene & Safety	Wash hands; wear PPE, as necessary.
Medical Assessments & Immunizations	Receive the recommended immunizations to prevent disease transmission; learn strategies (such as wearing a mask) that would reduce or eliminate exposure to health-altering situations (like allergies).

ANIMAL CARE AFTER HUMAN INJURY AND EMERGENCY MANAGEMENT PLAN

Injured personnel should seek appropriate medical attention first and foremost. Special procedures may be required to identify the risk of human exposure to disease. All samples, animals, or equipment involved in a human injury shall be preserved and have special identification to aid in further testing and/or procedures.

The responsible employee, PI, and the UV should be notified immediately for appropriate care of the animal(s). All injuries are reported to the department head or equivalent with oversight of the animal facility involved. The department head or the UV may each determine if facility, SOP, or investigative actions should be taken to ensure ongoing human health and safety. The facility manager under the authority of the department head works collaboratively with the UV, EHS, State of South Dakota designees, and PI to investigate as needed. Based on the investigation's findings, the facility manager, department head, UV, EHS, and State of South Dakota designees work collaboratively to develop a corrective action plan if necessary.

All human injuries are required to be reported as a First Report of Injury to SDSU, the facility manager, or the manager designee even if medical treatment is not requested or immediately required. This includes animal bites or any other injury which occurs on the job. When an emergency occurs, the SDSU Emergency Management Plan and its Appendixes should be immediately followed. Call 911 from an off-campus phone and 111 from an on-campus phone. The emergency responders will immediately respond, and the Emergency Management Team will begin communications and response activities as needed.

The following signage are posted in the Animal Facilities:

- Emergency contact information
- Signage for any biological, chemical, etc. hazards

SECTION IV: PROGRAM EVALUATION

This OHSP will be evaluated annually for compliance with federal, state, and local regulations and SDSU policies through the IACUC Semiannual Program Review. Documentation of this self-evaluated Semiannual Program Review (which becomes part of the Semiannual Report to the VPRED) is maintained by the IACUC.

This review will be based on the requirements from the PHS Office of Laboratory Animal Welfare (OLAW). IACUC and SDSU will consider, evaluate, and make certain that the following considerations are part of the OHSP and, when appropriate, part of the SOPs of the respective animal facilities:

- Established and implemented
- Covers all personnel who work in animal facilities
- Provide personnel training based on risk topics like zoonosis, hazards, health precautions, etc.

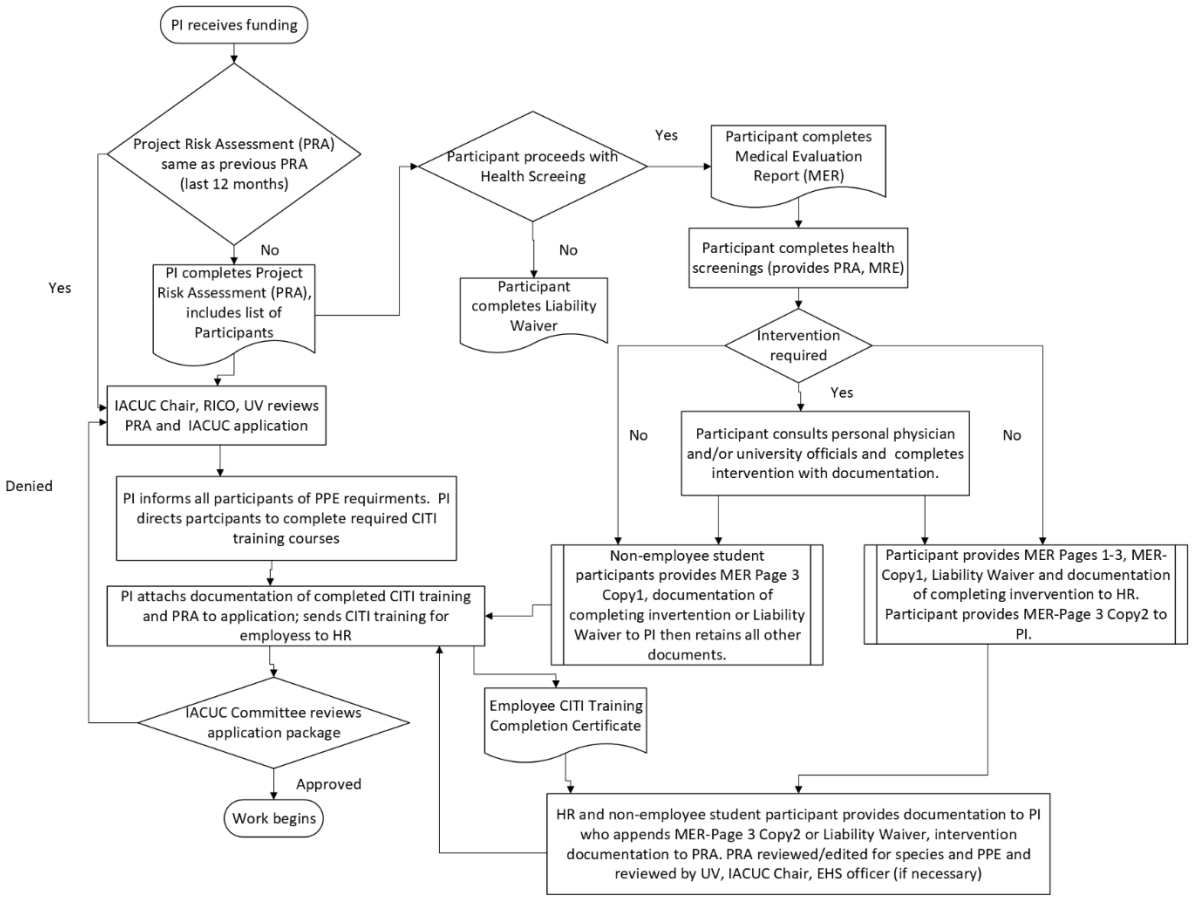
- Includes personal hygiene procedures (e.g., work clothing, eating/drinking/smoking policies)
- Has procedures for the use, storage, and disposal of hazardous biological, chemical, and physical agents
- Includes specific procedures for personnel protection (e.g., shower/change facilities, injury protection)
- Includes procedures for reporting and treating injuries, including bites, allergies, etc.
- Considers confidentiality and other legal factors as required by federal, state, and local regulations
- Includes scavenging of waste anesthetic gases
- Provides hearing protection in high-noise areas
- Makes respiratory protection available for airborne particulate work
- Reviews occupational safety and health of field studies

After the evaluation has been conducted, any deficiencies or suggestions for improvement regarding the OHSP will be brought to the attention of the IACUC, EHS, and the VPRED for consideration and action.

Any concerns about this program should be communicated at any time to the EHS officer (605-688-4264), the IACUC Chair (sdsu.iacuc@sdstate.edu), the U V (605-688- 6528), or the PDRIC (605-688-4027).

EHS assists with investigations of injuries and illnesses and assists Human Resources, Risk Management, and other offices with tracking trends in and between facilities and activities in order to identify any areas for improvement.

APPENDIX D


PI receives funding
Project Risk Assessment (PRA) same as previous PRA (last 12 months)
No
Yes
PI completes Project Risk Assessment (PRA), includes list of Participants
Participant proceeds with Health Screeing
Yes
No
Participant completes Liability Waiver
Participant completes Medical Evaluation Report (MER)
Participant completes health screenings (provides PRA, MRE)
Intervention required
Yes
No
No
Participant consults personal physician and/or university officials and completes intervention with documentation.
IACUC Chair, RICO, UV reviews PRA and IACUC application
Denied
PI informs all participants of PPE requirments. PI directs partcipants to complete required CITI training courses
Non-employee student participants provides MER Page 3 Copy1, documentation of completing invertention or Liability Waiver to PI then retains all other documents.
Participant provides MER Pages 1-3, MER-Copy1, Liability Waiver and documentation of completing invervention to HR. Participant provides MER-Page 3 Copy2 to PI.
PI attachs documentation of completed CITI training and PRA to application; sends CITI training for employess to HR
IACUC Committee reviews application package
Employee CITI Training Completion Certificate
Approved
Work begins
HR and non-employee student participant provides documentation to PI who appends MER-Page 3 Copy2 or Liability Waiver, intervention documentation to PRA. PRA reviewed/edited for species and PPE and reviewed by UV, IACUC Chair, EHS officer (if necessary)