

# Developing an Animal Biosafety Level 2 Audit to Assist Staff in Meeting Biosafety Requirements In Animal Care Facilities

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## Abstract

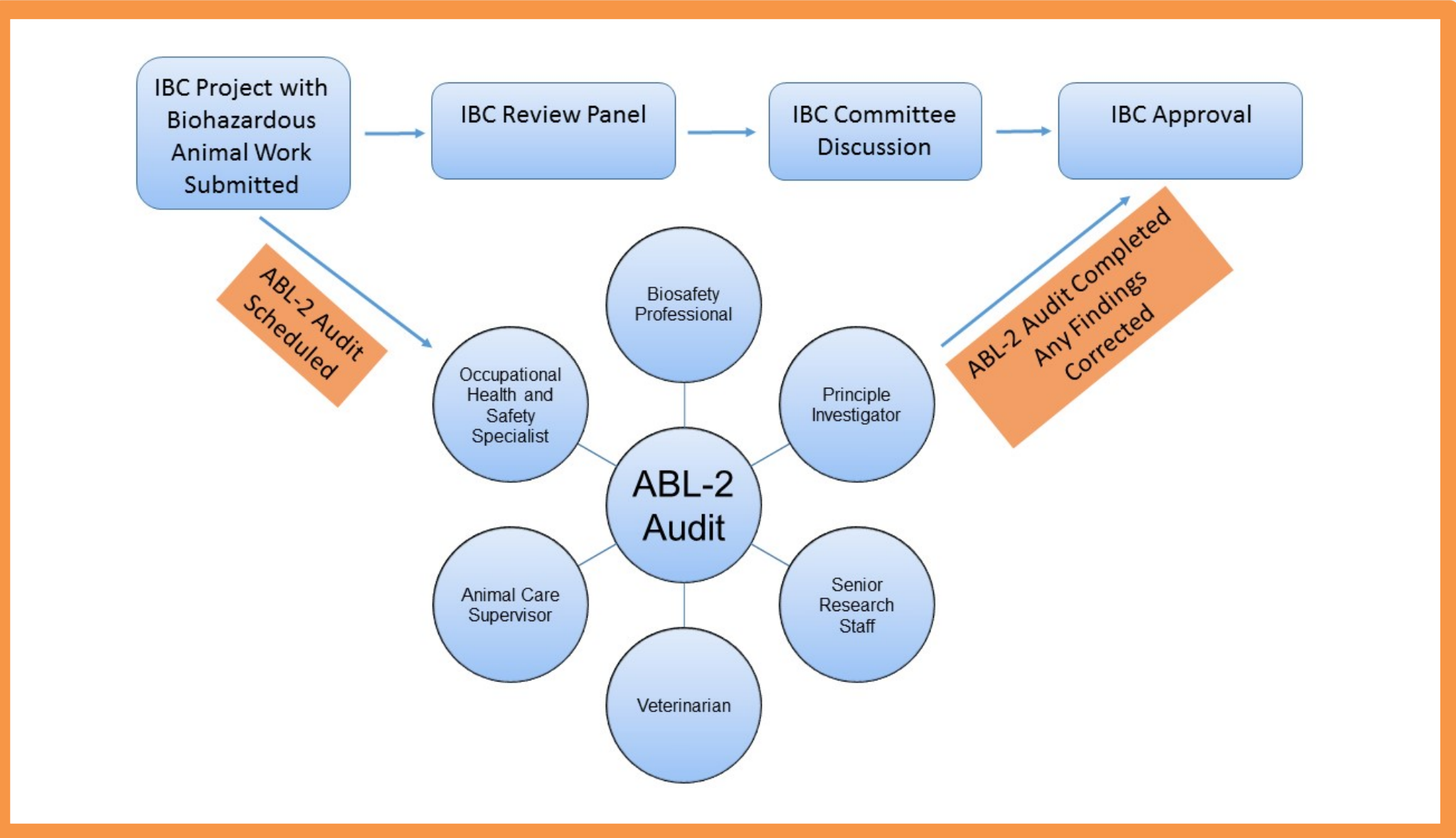
At the University of Illinois at Urbana-Champaign, animal research protocols using biohazardous materials can involve a variety of species housed among many different lab animal and agricultural facilities. The responsibility for the welfare of the animals as well as the safety of the staff and students working on the protocols is provided on campus by different units under the Office of the Vice Chancellor for Research. Through the Institutional Biosafety Committee (IBC) approval process, safety procedures are outlined with the Principle Investigators (PI) and research staff but there was no formal communication of potential hazards to the animal care and veterinary staff. Biosafety Professionals introduced an Animal Biosafety Level 2 (ABL-2) Audit process to assure effective communication of hazards to all personnel caring for or using animals involving biohazardous agents. The audit process allows a platform for discussion to assess the risks, identify unique safety issues, and develop written safety procedures for all staff to follow.

## Introduction

An ABL-2 Audit was initiated by the campus Biosafety Professionals to:

- Integrate federal, state, and local regulations and institutional policies for research that involves animals that are experimentally infected with biohazardous agents.
- Provide a safe and healthy work environment for employees and students.
- Identify safety responsibilities.
- Encourage communication between research and animal care staff.

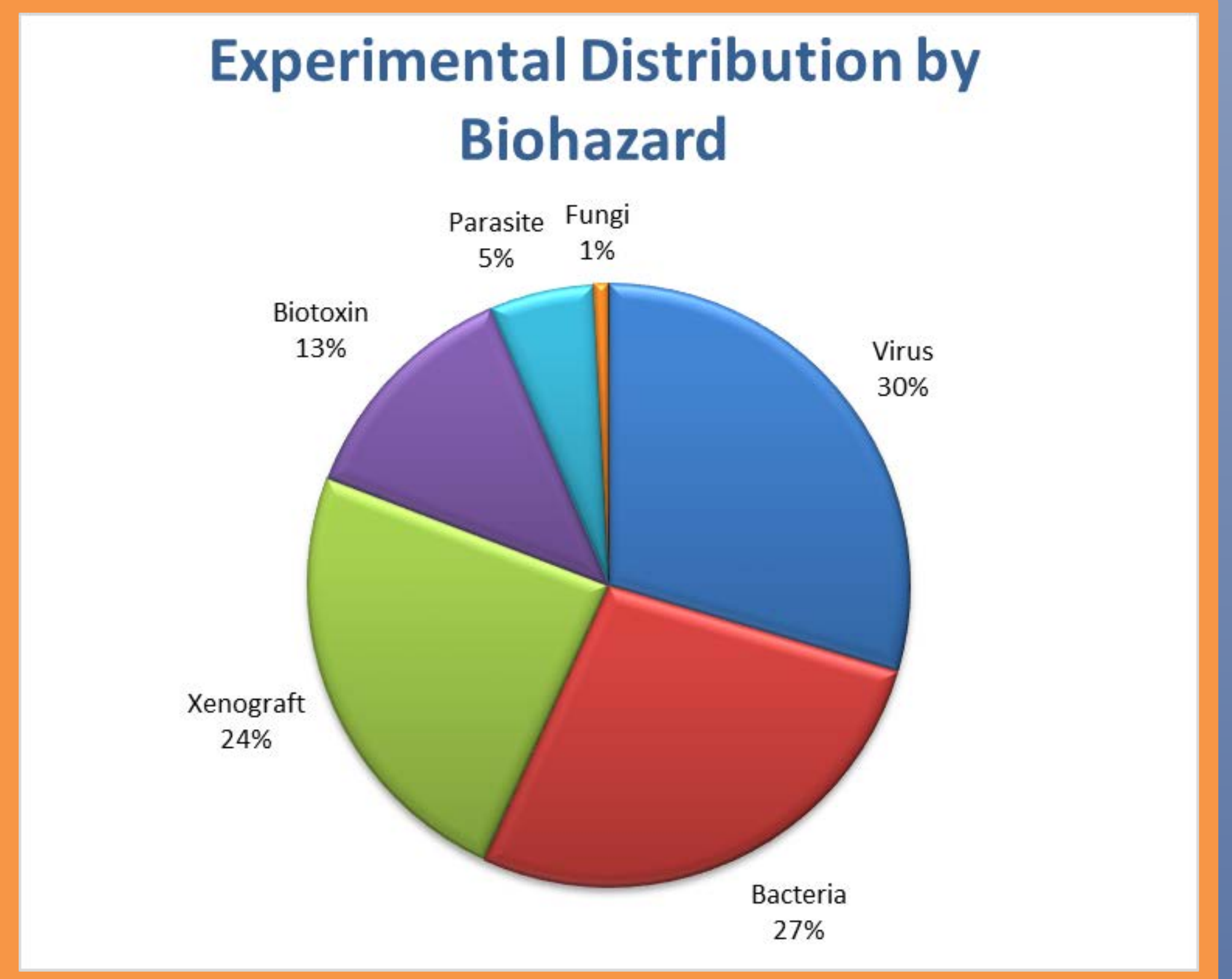
## IBC Review & ABL-2 Audit Flow Chart



## Materials and Methods

An onsite animal audit process was developed for all projects working at ABL-2. The ABL-2 audit is coordinated by the campus Biosafety Professionals and is attended by the Animal Care Occupational Health and Safety Specialist, PI and senior research staff, animal care supervisors, and veterinarians. The audit is conducted at the animal facility and allows a platform for discussion about biosafety and biosecurity concerns associated with the protocol. An audit checklist of animal biosafety criteria was adapted from the *Biosafety in Microbiological and Biomedical Laboratories* (BMBL). All projects with work conducted at ABL-2 must have an ABL-2 audit performed and any findings addressed before the IBC will approve the project.

## Experimental Distribution by Biohazard

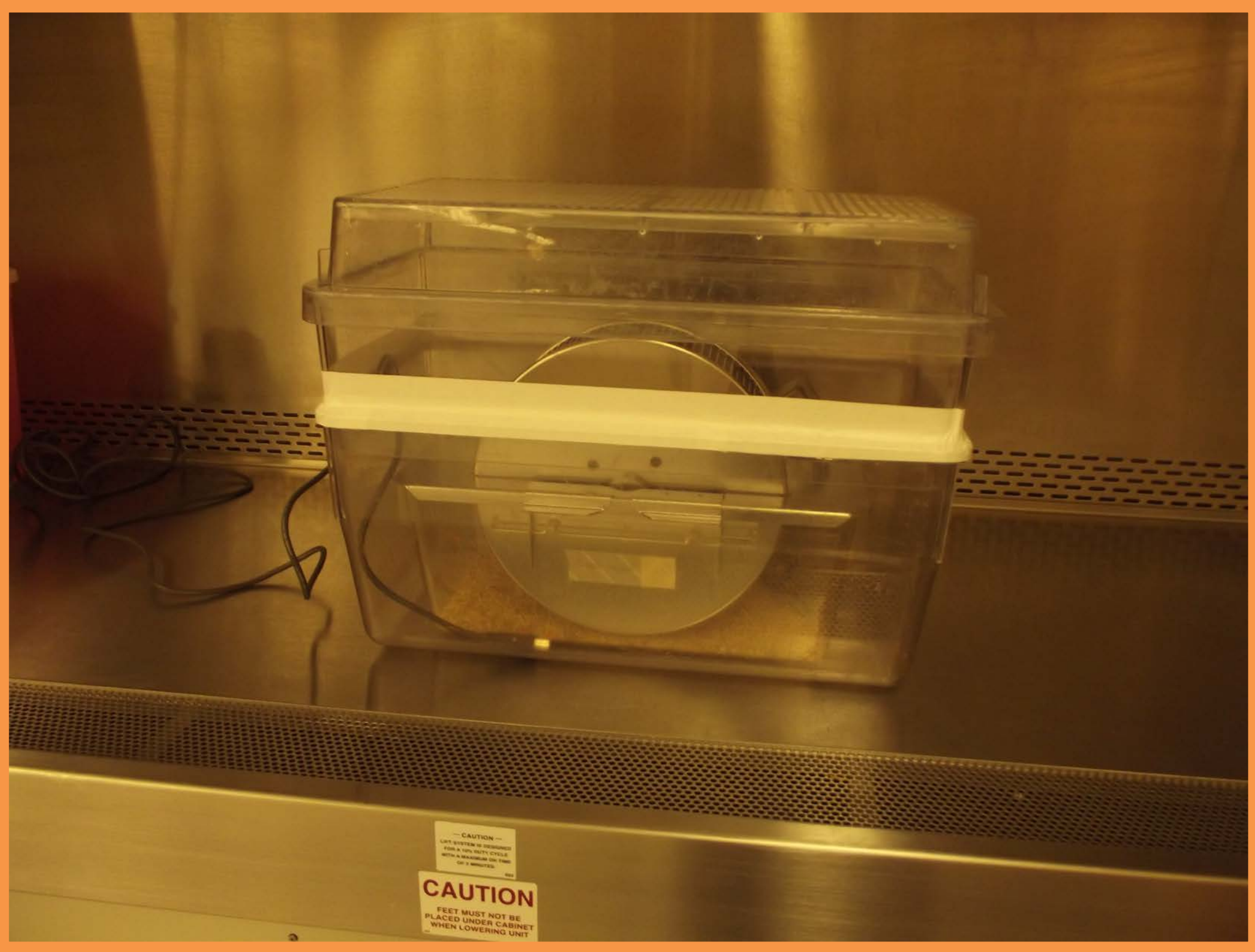


## Results

The ABL-2 Audit has increased safety awareness and practices throughout the campus animal facilities and by developing written safety procedures, identifying safety responsibilities of key personnel, addressing unique safety needs of individual projects, and promoting communication between all stakeholders.

- Standard Operating Procedures (SOP) are written for all animal rooms operating at ABL-2 and outline biosafety requirements such as room entry and exit, personal protective, and equipment decontamination. PI Summaries are written to highlight any additional needs of a projects not addressed in the SOP. These documents are posted in the ABL-2 room for easy access.
- Biohazard door signs are generated from the audit and posted by the animal care staff when work is being conducted.
- Safety responsibilities of researchers and animal care staff are identified at the audit including transport of animals, proper treatment of bedding and wastes, and carcass disposal. Injury reporting and emergency procedures are also reviewed.
- ABL-2 Audits have resulted in a new safety procedures or design of equipment because of the biohazardous agent. Examples include decontamination of a water maze when Influenza A virus is used in mice and use of modified rat cages to contain aerosols generated from mice infected with Vaccinia Virus in an activity cage.
- ABL-2 Audits have helped identify key personnel involved in making sure animal research is performed safely on campus. Any questions or concerns can easily be directed to the appropriate department.

## Modified Cage for Running Wheel Experiments



## Conclusion

Positive benefits of incorporating the animal audit process.

- The ABL-2 Audit enhances the biosafety environment at the University of Illinois animal facilities.
- Coordination of research staff, animal care staff and safety professionals is essential to provide a safe and healthy work environment for personnel when animal research protocols utilize biohazards.
- Established procedures for written and direct communication between groups.
- Provide guidance to facilitate compliance with IBC requirements and proper ABL-2 procedures.

