

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
February 19, 2025
Zoom Meeting

MEMBERS PRESENT: *Chair:* Deidra Mountain, Bryce Burton, Paul Dalhaimer, Lezlee Dice, Doris D’Souza, Liz Fozo, Reza Hajimorad, Brittany Isabell, Joseph Jackson, Jun Lin, Jae Park

Ex-Officio: Carolina D. Carter, Bryan Cranmore, Emily Deem, Linda Hamilton, Daniel Thomas

MEMBERS ABSENT: Ashley Carroll, Kelsey Finnie, Tarek Hewezi, Andi Lear, Jessica Velez, Ling Zhao

Ex-Officio: Chris Baker, Brian Ranger, Jessica Woofter

OTHERS PRESENT: Alex Pfothenauer, Kondapa Naidu Bobba, Mariano Labrador-San Jose, Katie Riese

Agenda:

- I. Call to order
- II. Review of December 17, 2024, minutes
- III. Full Committee Review (FMR)
 - a. Bobba, Naidu (HDM, RDNA) New Registration #25-606-2-A
 - b. Owings, Charity (IA) New Registration #25-605-2-A
 - c. Labrador, Mariano (RDNA) 3-Year Rewrite #06-291-1-A
 - d. Gerhold, Richard (IA) 3-Year Rewrite #13-397-2-A
 - e. Lenaghan, Scott (RDNA) 3-Year Rewrite #19-535-1-A
- IV. Administrative Report
 - a. Committee Approvals & Contingencies – Deem
 - b. Administrative Approvals – Deem
 - c. Administrative Terminations – Deem
 - d. Laboratory Report – Carter
- V. Old Business
 - a. None
- VI. New Business
 - a. Biosafety Annual Report 2024 – Hamilton
 - b. March 2025 Meeting – Deem
- VII. Adjourn

Opening:

The IBC Chair called the meeting to order at 11:31am. The minutes for the December 17, 2024, IBC Meeting were reviewed and approved as written with one abstention.

IBC Registrations for Full Member Review:

IBC-25-606-2-A (Bobba, Naidu) Development of radiotheranostics for cancer Imaging and Therapy – New Registration (HDM, RDNA; Section III-D-4)

Dr. Bobba was present to discuss his registration. His lab focuses on radiopharmaceutical development for imaging and therapeutical applications. Dr. Bobba shared his previous experience with handling animals in the lab. This research will use commercially available human cell lines, such as prostate cell lines, which will be grown and treated with radiopharmaceuticals and/or chemotherapeutic agents. All lab members received training on handling the agents and mice. Dr. Bobba clarified that no recombinant work would take place in his lab. The committee asked for assurance of safety measures taken to ensure that lab members are not in danger of radiopharmaceutical or chemotherapeutic agent exposure. Dr. Bobba stated that the delivery of agents is via subcutaneous IV while the animals are anesthetized. Needle recapping is not performed. Dr. Bobba will also be present to assist when the injections occur. The committee requested more technical detail about the *in vitro* and *in vivo* work. The pre-reviewer from Lab Safety Services for this registration clarified that lentiviruses were included on the registration based on the assumption that some non-coding sequences from the expression of the target cell lines would be introduced to the cell. There was confusion as to why an NIH category designation was necessitated; it was clarified that because the cell lines were originally recombinant (even though the source was commercial and Dr. Bobba is not manipulating the cells) *and* they were being introduced into animals, an rDNA subform with an NIH designation was needed for this registration. The committee is also requesting further clarification on the registration about what work involving recombinant DNA will be done in-house or will be obtained otherwise. This work is approved for biosafety level 2 (BSL-2) containment. The committee voted to approve this registration pending designated member review.

IBC-06-291-1-A (Labrador-San Jose, Mariano) Insulator proteins function in genome organization, stability and during stress – 3rd-Year Rewrite (RDNA; Section III-D-4)

Dr. Labrador was present to discuss his registration. His lab is interested in how chromatin proteins organize the genome with *Drosophila melanogaster* as a model organism. Currently, the work focuses on genetic analyses of the flies in an effort to transition to genomic work. Recombinant DNA is used to make the construct for the transgenic flies. The biosafety risk is minimal. This work is approved for biosafety level 1 (BSL-1) containment. The committee voted to approve this registration as written.

IBC-13-397-2-A (Gerhold, Richard) Molecular, in vivo, and in vitro parasitology research – 3rd-Year Rewrite (IA)

Katie Riese was present to discuss Dr. Gerhold's registration. His lab studies parasites and diseases

of wildlife and some domestic animals. Most of the work involves opportunistically sourced deceased animals, such as wild birds, for necropsy. Serum samples are sourced from across the United States from cervids for testing. Avian influenza is a concern with the wild birds. When wild birds are received, extra precautions are taken when handling. The animals are also tested for avian influenza; the state veterinarian is alerted if there is a positive and the animal is not necropsied. If the bird is negative, a necropsy will take place in the appropriate containment with lab members wearing PPE. In addition to the work with birds, Dr. Gerhold's lab also traps medium-sized mammals such as raccoons and skunks. Only trained lab members that are rabies-vaccinated are approved to assist with that project. The committee requested that the above risk mitigation steps taken should be added to the registration. The committee also asked for clarification of the pre-screening for avian influenza. Katie clarified that isolates are used for PCR screening to test for the presence of avian influenza, but they are then deactivated, and no live virus is retained if there is a positive. The committee requested that this registration be linked with the approved IACUC protocol related to animal trapping. This work is approved for biosafety level 2 (BSL-2) containment. The committee voted to approve this registration pending designated member review.

IBC-19-535-1-A (Lenaghan, Scott) Plastid engineering in relevant crop species for production of high-value products and crop improvement – 3rd-Year Rewrite (RDNA; Section III-E-2)

Alex Pfothenhauer was present to discuss Dr. Lenaghan's registration. This work focuses on plastid engineering for plants. Chloroplasts have a genome that is separate from the nuclear genome. Either portions or the whole plastid genome are replaced with synthetic sequences for later engineering. Large amounts of plasmid cloning are performed, and then the plasmids are transformed in the chloroplasts of plant leaves via gene gun. The plants are then grown in greenhouses or growth chambers. Safety concerns are focused on safely disposing of reagents and recombinant DNA with the proper waste contractor. Plant tissues are also autoclaved prior to disposal. The committee requested more information on the second goal of the registration that was not discussed and involves the development of sense-and-report circuits in potato. This work is approved for biosafety level 1 (BSL-1) containment. The committee voted to approve this registration pending designated member review.

IBC-25-605-2-A (Owings, Charity) Detection of *Histomonas meleagridis* DNA in blow flies – New Registration (IA)

Dr. Owings' registration proposes a proof-of-concept study for using insect scavengers (e.g., blow flies) in the environment to detect and mitigate wildlife disease outbreaks. This project proposes that blow flies can be used to sample carcasses of decaying turkeys to detect break-out of disease. Tissue from wild turkeys with known disease and non-diseased tissues will be used to feed blow flies in containment vials. The flies will then be frozen in their feeding cups and killed prior to dissection and extraction and PCR. Dr. Owings manages her own blow-fly colony as collected from the surrounding areas. The remainder of the tissue from the feedings will be disposed of in biohazardous waste. The committee requested discussion of this procedure due to the infectious nature and potentially other unknown infections. It was clarified that the flies will only be feeding on a few grams of tissue, so the waste will be minimal and biohazardous waste is the most appropriate. In addition, any remaining infected tissue that is not used in feeding will be stored in the UTCVM freezer. This work is approved for biosafety level 2 (BSL-2) containment. The committee voted to approve this registration pending administrative corrections.

Administrative Report

i. Approvals (FMR)

IBC-09-342-2-A – Wall, Jon (HDM, RDNA): 3rd-year rewrite approved on 12/19/2024.

IBC-12-382-1-A – Millwood, Reggie (RDNA): 3rd-year rewrite approved on 1/7/2025.

IBC-15-431-1-A – Buchan, Alison (RDNA): 3rd-year rewrite approved on 1/30/2025.

IBC-21-573-2-A – Jackson, Joseph (HDM, IA, RDNA): 3rd-year rewrite approved on 2/10/2025.

IBC-06-276-2-A – Eda, Shigetoshi (HDM, IA): 3rd-year rewrite approved on 2/10/2025.

ii. Approvals (DMR)

None

iii. Administrative Approvals

IBC-22-585-2 – Dalhaimer, Paul (HDM, NANO, RDNA): 2nd-year annual update to include personnel changes, the addition of a fluorescent protein, and a description of containment practices for nanoparticles approved on 1/7/2025.

IBC-14-415-2-A – Calhoun, Tessa (IA): Amendment to indicate lab move approved on 1/15/2025.

IBC-21-555-2-A – Sultana, Hameeda (RDNA, HDM, IA): Amendment to include personnel changes and an update to the biosafety cabinet certification date approved on 1/24/2025.

IBC-21-562-2-A – Sultana, Hameeda (RDNA, HDM, IA): Amendment to include personnel changes and an update to the biosafety cabinet certification date approved on 1/24/2025.

IBC-21-560-2-A – Neelakanta, Girish (HDM, IA, RDAN): Amendment to include personnel changes and an update to the biosafety cabinet certification date approved on 1/29/2025.

IBC-11-177-1 – Nebenfuehr, Andreas (RDNA): 2nd-year annual update to include personnel changes and update to the biosafety cabinet certification date approved 2/1/2025.

IBC-22-576-2-A – Crouch, Colleen (HDM): 3rd-year rewrite approved on 2/13/2025.

IBC-22-581-2 – Chaple Gore, Ivis (HDM): Amendment to include personnel changes and new human cell lines approved on 2/18/2025.

IBC-05-207-1 – Hajimorad, Reza (IA, RDNA): 2nd-year annual update to include new plant virus that is endemic to TN approved on 2/19/2025.

iv. Administrative Terminations

IBC-22-578-2 – Jones, Daleniece (IA): Registration terminated due to PI's exit from university.

IBC-20-545-2 – Anderson, David (IA): Registration terminated due to completion of project.

IBC-16-441-2 – Johnson, Jeremiah (HDM, IA, RDNA): Registration terminated due to PI's exit from university.

v. *Administrative Exemptions*

None

vi. *Accidents, Injuries/Exposures*

None

vii. *Laboratory Report*

Noncompliant work in Dabney Buehler

Carolina D. Carter presented the lab report. It was reported to the Biosafety Office in January that work with microorganisms was occurring in a common-use space as the result of an incomplete decommissioning when the previous PI left the university. The PI that was reported to be performing the work was contacted and agreed to stop the current work until a meeting with the Biosafety Office could occur. There were concerns due to the PI having two registrations with the IBC involving recombinant work. It was discovered that no recombinant or synthetic nucleic acid work had occurred and therefore would not constitute a report of noncompliance with the NIH OSP. However, work with a risk group 2 agent (*Aspergillus fumigatus*) had occurred that was not registered with the IBC. The Biosafety Office instructed the PI to stop work, and disinfect affected lab equipment and surfaces, and to ensure future work was registered with the IBC. It was agreed that the Biosafety Office would continue to investigate this matter and issue a formal letter of violation that includes the department head. The IBC will be notified of the conclusion of this follow-up.

viii. *Safety Status Update*

None

Old Business:

i. None

New Business:

ii. **2024 Biosafety Annual Report**

Linda Hamilton presented a summary of the annual report from 2024 regarding biosafety services. The stakeholders evaluated were UTK, UTIA, UTCVM, and UTGSM. In total,

the IBC reviewed 48 registrations during committee meetings, which spanned 76 review categories. An additional 83 registration annual updates and amendments were administratively approved. Linda also reported on online trainings offered for biosafety-related topics such as biosafety principles and practices, biosafety refreshers, regulated medical waste, dry ice shipping, and category B shipping. Other trainings are offered in person. A total of 107 annual lab inspections occurred for BSL-1/BSL-2 labs. The biosafety program also facilitated lab commissioning and decommissionings and reviewed and verified 74 material transfer agreements, among other compliance services performed. Programmatic highlights included professional development of staff through webinars, courses, trainings, and conferences. In 2024, the Lab Safety Compliance Manager position was filled by Emily Deem, and Linda Hamilton was appointed interim BSO and Program Leader. 2024 was the first full-calendar year of the transition to Safety Stratus, which will continue in 2025. Objectives in 2025 involve assessing and improving IBC structure and function among other goals for the biosafety program.

iii. **March 2025 Meeting**

Due to conflicts with UTK's spring break, the March IBC meeting will be moved, but will still be held in March.

Closing:

The IBC Chair adjourned the meeting at 1:29pm. The next meeting will take place in March 2025 via Zoom.