INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
November 16, 2022
Zoom Meeting

MEMBERS PRESENT: *Chair:* Elizabeth Fozo, *Vice Chair:* Deidra Mountain, Feng Chen, Lezlee Dice, Doris D'Souza, Reza Hajimorad, Brittany Isabell, Jun Lin, Jae Park, Jessica Vélez

Ex-Officio: Carolina Dolislager, Brian Ranger, Jessica Woofter

MEMBERS ABSENT: Marc Caldwell, Lori Cole, Paul Dalhaimer, George Dizikes, Ling Zhao

OTHERS PRESENT: Joseph Jackson, Andrew Monteith

Opening:

The IBC Chair called the meeting to order at 9:33 AM. The minutes for October 25, 2022, IBC Meeting were reviewed and approved pending administrative corrections.

Full Member Review IBC Registrations:

#IBC-13-409-2 (Franc Barrera Olivares) Human Derived Materials & Recombinant DNA, III-E-2-a, 3-year rewrite
Dr. Barrera's research covers the application of biophysical techniques to biological systems of biomedical relevance. Specifically, the research focuses on the maturation and self-assembly of the HIV capsid protein. The gene for the HIV capsid protein (obtained from the NIH AIDS Reagent Program) will be cloned into an IPTG-inducible pET vector and expressed in routine E. coli strains (DH5α). Protein will be purified using standard biochemical techniques and applied to synthetic lipid systems to study the self-assembly processes. Dr. Barrera also registered the use of human cells (HeLa cervical adenocarcinoma) to study the membrane insertion mechanisms of synthetic peptides designed to target tumor cells. The containment level was established at BSL-1 for the recombinant DNA procedures. The culture and manipulation of human cells will be conducted at BSL-2. The committee approved the registration pending the correction of minor typographical errors, the clarification of HIV capsid in the nontechnical summary, the addition of safety glass disinfection procedures, and the removal of the autoclave from 11.2.

#IBC-19-537-2 (Oudessa Kerro Dego) Infectious Agents & Recombinant DNA, III-D-a, 3rd-year rewrite
Dr. Kerro Dego's registration covers the study of *Mycoplasma bovis* mastitis vaccine treatments for dairy herds. Studies will be performed both *in vitro* and *in vivo*. The in vitro research involves monitoring the growth of mutant clones in milk and resistance to the lytic action of the blood defense system. The in vivo research involves the study of cows infected with the wild-type parent strain (*M. bovis* PG45) and two less virulent mutants. Personnel involved in this project will use disposable PPE, including disposable paper coveralls, latex gloves, goggles, disposable masks, and disposable footwear covers in study areas. After use, disposable PPE will be collected in a dedicated bin lined with double autoclave bags, sterilized by autoclave, and disposed of. Personnel will require a full-body shower and change of clothes before tending to other non-study animals or dairying areas. Cows will be milked with separated individual milking machine equipment. After each milking, the machine will be cleaned and disinfected

following site SOP. The floor corresponding to the milking area will be treated with chlorine after milking to eliminate *M. bovis* mutant clones in milk that could be leaked during the milking process. Milk and effluents from these cows will be collected and packaged for disposal through the UTIA bio-waste contractor. At the end of the experiment, cows inoculated with the mutant clones will be euthanized at the CVM, and carcasses will be destroyed through the CVM alkaline digester. The committee approved the registration by Designated Member Review pending the check "Working with genetic materials from pathogenic microorganisms" in Question 6.3; an indication of the source for Question 7.1; add Brehm 430 and remove 436 from Question 9.1; and the addition of the location of PPE laundering and sanitizing for Question 9.5.

#IBC-21-567-2 (Amit Joshi) Human Derived Materials & rDNA, III-D, Amendment
Dr. Joshi's research covers the study of two organelles, peroxisomes, and lipid droplets, which are involved mainly in lipid degradation and storage. They are interested in understanding how they are formed and function in eukaryotic cells. The study mainly involves utilizing high-resolution live-cell microscopy, transient expression by plasmid transfection, and using CRISPR to knock-in and knock-out a gene in mammalian cells. The committee tabled the amendment pending clarification if a 3-plasmid or 4-plasmid-based system will be used; clarification about whether the Principal Investigator plans to concentrate the lentivirus, what genes are being targeted, how the lab plans to produce the virus, transduce the virus into cells, and dispose of the virus-containing supernatant; the addition of the Infectious Agents section, biosafety cabinet certification date, cleaning method for reusable protective eyewear, and the biosafety spill response; and changing the on-site autoclave indicated in Question 11.2 to the medical contractor, Advantra.

#IBC-22-584-2 (Andrew Monteith) Human Derived Materials, Infectious Agents, & rDNA, III-D-1; D-2; D-4, New registration
Dr. Monteith was present to discuss their research on neutrophil and macrophage responses to *S. aureus*. The outcome of these studies will be identifying how metabolism shapes inflammatory and antibacterial processes during staphylococcal infection. The long-term goal is to generate therapeutic strategies based on these findings to metabolically manipulate the innate immune cells and promote a more efficacious antibacterial response. The containment level was established at BSL-2. The committee approved the registration by Designated Member Review pending the removal of *Escherichia coli* DH5a from the infectious agents table; correction of a minor typographical error; the addition of a justification statement for needle recapping and what happens to the mice after infection; correction of the bleach shelf life from six months to one week; and the removal of the autoclave from the solid/non-sharp waste section.

Old Business:

Administrative Report

i. *Contingencies*
Following up on October 25, 2022, IBC Meeting, Dr. Daniel Robert's registration (#06-302-1) was corrected to include additional *E. coli* strains to the host section, added "binary" to the vectors, added promoter genes CML38 and NIP2;1, added insert genes RNA-binding protein SGS3 and RBP47B and autophagy genes ATG5, ATG7, ATG9, and ATG8 from plants, reporter genes: Yellow Fluorescent Protein, Cyan Fluorescent Protein, Red Fluorescent Protein, Green Fluorescent Protein, GUS (beta-glucuronidase), added the growth chamber location, and clarified that autoclave waste was done in Fisher autoclave bags. Dr. Thomas Denes' registration (#16-444-2) was corrected to rename *Haemophilus somnus* to *Histophilus someone*, and the addition of a statement in the Technical Summary indicating corresponding procedures for the agents listed.

ii. *Administrative Approvals*
The Biosafety Officer approved Dr. Bhavya Sharma's 3rd-year renewal of registration (#16-440-2) for using human-derived materials (brain tissue and CSF). The Biosafety Officer approved Dr. Elizabeth Barker's 3rd-year renewal of registration (#19-540-2) to use commercially available human-derived tumor cell lines. The Biosafety Officer approved Dr. Joseph Jackson's amendment to registration (#21-573-2) for adding an IACUC protocol number (2936-1022) and the UTMCK RB6 Animal Facility location and an update to the autoclave validation date. Dr. Dustin Osborne's new registration (#22-582-2) was approved by the Biosafety Officer for using NCI-60 and mast cell lines.

iii. *Administrative Terminations*
None.

iv. *Administrative Exemptions:*
None.

v. *Accidents, Injuries/Exposures:*
None.

vi. *Laboratory Report:*
None.

vii. *iMedRIS Update, Manual Reviews, & System Orientation:*
None.

IBC Registration Form
The IBC Chair notified the committee that they would be requested to review the sections of the IBC Registration for the January meeting.

New Business:

EHS Moving to Middlebrook Pike Bldg.
Brian notified the committee that EHS is moving quicker than anticipated from the East Stadium Hall location to the Middlebrook Pike Building before the upcoming holidays due to construction scheduled for Neyland Stadium.

2023 Meeting Schedule
Jessica notified the committee that the January IBC meeting poll had been created and shared with the committee members. The IBC Chair requested that a poll deciding a regular schedule for 2023 be created and distributed for the January meeting.

The meeting adjourned at 10:45 AM. The next meeting scheduled is for January 2023,