INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
April 21, 2021
3:00 PM, Zoom Meeting

MEMBERS PRESENT:	Chair - Elizabeth Fozo, Vice Chair-Stephen Kania, Lori Cole, Feng Chen, Lezlee Dice, George Dizikes, Doris D'Souza, Reza Hajimorad, Melissa Kennedy, Jun Lin, Ling Zhao
	Ex-Officio – Bryan Cranmore, Linda Hamilton, Ahmad Mitoubsi, Sarah Pruett, Brian Ranger, Jessica Woofter
MEMBERS ABSENT:	Marc Caldwell, Paul Dalhaimer, Brittany Isabell, Deidra Mountain, Jae Park
OTHERS PRESENT:	Reggie Millwood

Opening:

The IBC Chair called the meeting to order at 3:02 PM. The minutes of March 26, 2021, were reviewed and approved as written. There were five abstentions.

Full Member Review IBC Registrations:

#IBC-06-280-2 (Barry Rouse) Human-Derived Materials, Infectious Agents, & Recombinant DNA, III-D-2-a;4-b, 3-year rewrite
Dr. Rouse's registration uses the mouse model to study herpes simplex virus (HSV) induced immunopathology via ocular HSV infection. The goals of this research are 1) to design an approach that can inhibit virus-induced ocular immunopathology and 2) design an efficacious vaccine against HSV. Briefly, recombinant constructs encoding for viral proteins (e.g., glycoprotein B) or murine cytokines (e.g., IL-15) will be injected into mice intranasally or intramuscularly to enhance the immune response to virus infection and reduce the viral loads. Animals will then be challenged with HSV to determine DNA vaccine efficacy. Containment was set at BSL-2/ABSL-2. The committee approved the registration pending the correction of IACUC protocol information in the nontechnical and technical summaries and rDNA section; the addition of additional cytokine genes; inclusion of ongoing screening mechanism for bloodborne pathogens; clarification about work being conducted in the animal facilities; removal of the on-site autoclave and replacing this with the medical waste contractor (Advantra); and the removal of language for Influenza A and inclusion of the Hepatitis B offer for all personnel. There was one abstention.

#IBC-12-376-1 (Neal Stewart) Recombinant DNA, III-E-2-a, 3-year rewrite
Dr. Millwood was present to discuss Dr. Stewart's research covering the enhancement of biofuel productivity through the generation of transgenic plants. Investigations will focus on cell wall biosynthesis/modification genes and genes involved in terpenoid production. Standard Agrobacterium-based transformations are used. Modified plants include switchgrass, rice, Arabidopsis thaliana, and tobacco. Most of the experiments are conducted in small-scale, lab-

contained tissue cultures. Transgenic plants, primarily switchgrass, are evaluated under field conditions for growth and agronomic performance to determine their potential as a biofuel feedstock. All field release studies are conducted under the authority of USDA APHIS BRS. The committee approved the registration as written, and there was one abstention.

#IBC-12-379-1 (Neal Stewart) Recombinant DNA, III-E-2-a, 3-year rewrite
Dr. Millwood was present to discuss Dr. Stewart's research on developing transgenic plants (e.g., *Arabidopsis thaliana*, tobacco, and soybean) as phytosensors that can detect early pathogen attack and herbicide contaminants in agricultural lands. Bioreporter constructs include condition/challenge-sensitive promoters fused to a red fluorescent protein (RFP) and red-colored pap1 reporter genes. Standard Agrobacterium-based transformations are used. Challenge pathogens include *Pseudomonas syringae* and *Pseudomonas marginalis*. Soybean cyst nematodes (Heterodera glycines) are used as a challenge pest for transgenic soybean constructs. The committee approved the registration pending the addition of yeast vectors and promotors to the nontechnical and technical summaries; removal of Figure 1a from the technical summary; the addition of information about the induction and treatment methods; the addition of details about constructs; and an update to the biosafety cabinet certification dates.

Designated Member Review IBC Registrations:

#IBC-10-352-2 (Elizabeth Fozo) Human-Derived Materials, Infectious Agents, & Recombinant DNA, III-D-1-a, Amendment
Dr. Fozo's research investigates the role of genes encoding small regulatory RNAs (sRNAs), small proteins, and membrane fatty acids in the Risk Group 2 pathogens *Escherichia coli O157:H7* and *Enterococcus faecalis*; specifically, their role in survival/growth under extreme environmental conditions and in inducing disease. Briefly, mutants will be generated using standard recombinant DNA/molecular techniques (e.g., temperature-sensitive recombination systems; constructs to generate fatty acid gene deletions in *E. faecalis* delivered via conjugation) to disrupt the target genes with selectable marker genes. Similarly, fluorescent reporter genes (e.g., mCherry) will be used to replace the target gene so that gene expression can be monitored. Mutants will then be examined for any growth defects compared to the wild-type organism. Genes of interest may also be overexpressed in *E. coli MG1655* under native or inducible promoters. The amendment covers the addition of tobacco hornworm, *Manduca sexta,* to examine how well our *E. faecalis* gene deletion strains colonize the intestine or cause systemic disease compared to the wild-type *E. faecalis* strain. The committee approved the amendment as written.

Old Business:

Administrative Report

i. *Contingencies*
Following up on March 26, 2021, IBC Meeting, Dr. Jurat-Feuntes corrected his registration (#06-288-1) to include a clarification of outcomes in the nontechnical summary; correction of typographical errors in the technical summary; the addition of information regarding procedures and biosafety measures for the use of dsRNAs for bioassays testing gene silencing and insect mortality; the addition of information about bispecific nanobodies; and

an update to the biosafety cabinet certification date. Dr. Donohoe corrected his registration (#13-410-2) to include the addition of students working in the lab to the personnel section; inclusion of the BSV work in the nontechnical summary; clarification about centrifugation procedures for Question 7.3; additional information on cell lines used; confirmation that the -80 degree freezer is in Room 301D; addition of disinfection procedures for goggles and safety glasses; identification of disinfectants used; and the addition of the autoclave validation dates.

ii. *Administrative Approvals*
Dr. Campagna's registration (#21-565-2) was approved through DMR and corrected to include a statement indicating that bloodborne pathogen precautions in the nontechnical and technical summaries; inclusion of the source of the material for human patient samples in Section 7.1; clarification about freezer storage and biosafety cabinet locations; and the addition of statement for a Hep B vaccine offered to all personnel handling human samples. Dr. Mountain's amendment to registration (#18-527-2) was administratively approved by the Biosafety Officer, covering the addition of human-derived cell lines HEK-293, HeLa, MCF-7, and A549. Additionally, Dr. Mountain included an update to the biosafety cabinet certification date and health surveillance statement. Dr. Rajeev's amendment to registration (#20-550-2) was administratively approved by the IBC Chair, covering the addition of diagnostic testing and surveillance studies incorporating culture and isolation, PCR and immunofluorescence, and sequencing of animal tissue samples.

iii. *Administrative Terminations*
None.

iv. *Administrative Exemptions:*
The Biosafety Officer administratively approved Dr. Bode Olukolu's registration (#18-525-E) on 4/19/2021.

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

vi. *Laboratory Report (Hamilton)*
None.

vii. *iMedRIS Update, Manual Reviews, & System Orientation (Woofter)*
Jessica notified the committee that the final draft was forwarded to Memphis OIT to incorporate in the iMedRIS training site (https://imedris-training.uthsc.edu/). Once the form is on the training site, committee members can access the form for testing.

BSL-3 IBC Drafts (Hamilton)
Brian asked for an update on the BSL-3 draft documents. Linda notified the committee that the documents are available through the Teams group. The documents include pre-reviewed SOPs (15 SOPs), the emergency response procedure, and the hazard communication documents for each of the Risk Group 3 organisms used in the lab. The documents still need review and comments from the committee. Brian notified the committee that the physical review of the BSL-3 space needs to be completed. There were some configuration changes, and the HVAC

needs to be reevaluated. The changes seem to have corrected directional airflow issues. There is one biosafety cabinet in the space that is out of service and needs some electronics replaced. The BSC is an older version, and some of the components parts are no longer being made. The BSL-3 will not be in use until mid-summer, but the written program review needs to be on the agenda by May or June. The committee agreed on a review deadline of May 10, 2021, for review at the May IBC meeting.

New Business:

BioWaste Basics Draft (Hamilton)

Linda notified the committee that the BioWaste Basics document was updated to address transgenic insect waste collection, termination, and disposal in accordance with NIH guidelines. The committee was asked to review the draft and provide feedback. Brian also asked to meet with Jessica and Linda to further review the Biohazardous Waste section on the website.

Devitalization of Transgenic Drosophila (Ranger)

Brian reached out to Kathryn Harris at NIH regarding the devitalization of transgenic *Drosophila melanogaster*. Kathryn stated the following: "All materials, including animals, containing recombinant or synthetic nucleic acid molecules should be disposed of in accordance with the requirements of the NIH Guidelines. The requirement is not only that recombinant or synthetic nucleic acid molecule-containing organisms are dead. Appendix G-II-A-1-c specifically states that at Biosafety Level 1 and higher, all contaminated liquid or solid wastes must be decontaminated before disposal. Appropriate mechanisms for the decontamination of solid waste, including recombinant animal waste, include, but are not limited to incineration or autoclaving. When reviewing research subject to the NIH Guidelines, the Institutional Biosafety Committee (IBC) should conduct a protocol-specific risk assessment to determine the appropriate methods of waste decontamination and disposal that meet the expectations of the NIH Guidelines."

Self-assessment Committee Formation (Fozo)

The NIH strongly recommends periodically performing a self-assessment of the IBC. It has been six years since the last evaluation. Dr. Fozo asked for four or five volunteers to form a self-assessment subcommittee and to please notify her via email if they are interested in serving on the subcommittee.

The meeting adjourned at 4:15 PM. The next meeting scheduled is for May 19, 2021, via Zoom.