

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

March 1, 2023

Zoom Meeting

MEMBERS PRESENT: *Chair:* Elizabeth Fozo, *Vice Chair:* Deidra Mountain, Marc Caldwell, Feng Chen, Lori Cole, Paul Dalhaimer, Lezlee Dice, Doris D'Souza, George Dizikes, Reza Hajimorad, Brittany Isabell, Jun Lin, Joseph Jackson, Jae Park,

Ex-Officio: Bryan Cranmore, Carolina Dolislager, Linda Hamilton, Sandra Prior, Brian Ranger, Daniel Thomas, Jessica Woofter

MEMBERS ABSENT: Jessica Vélez, Ling Zhao

OTHERS PRESENT: Dallas Donohoe, Alessandro Occhialini, Chunlei Su

Opening:

The IBC Vice Chair called the meeting to order at 10:00 AM. The minutes for February 1, 2023, IBC Meeting were reviewed and approved pending correction of the opening statement.

Full Member Review IBC Registrations:

#IBC-05-207-1 (Reza Hajimorad) Infectious Agents & Recombinant DNA Registration, III-E-2-b-(2), 3- year rewrite

Dr. Hajimorad was present to discuss their research on the molecular basis of the soybean mosaic virus (SMV) in a soybean model. Specifically, Dr. Hajimorad is investigating phenotypes of soybean plants infected with recombinant and/or chimeric SMV, how the virus induces natural plant defenses and the movement of the virus within plant tissues. The latter is performed using β -glucuronidase-expressing SMV or clover yellow vein virus modified to express SMV genes transiently in soybean plants. Containment was set at BSL-1. The committee approved the registration as written.

#IBC-05-232-2 (Chunlei Su) Infectious Agents & Human Derived Materials Registration, 3-year rewrite

Dr. Chunlei Su was present to discuss their research covering the epidemiology and population genetics of *Toxoplasma gondii*. Procedures aim to identify gene expression networks that influence host resistances, determine the efficacy of *T. gondii* strains in acute and chronic infected mice, and investigate the consequences of co-infection and sequential infection of different genotypes of *T. gondii*. Containment was set at ABSL-2. The committee approved the registration pending the removal of the vaccine development statement, clarification about the type of environmental samples used, clarification about serology testing, the addition of the biosafety cabinet certification date, clarification about lab coating laundering and autoclaving, the addition of goggle disinfection, the correction of the bleach disinfection time from 5 to 10 minutes, and clarification about the use of unpowdered latex or nitrile gloves.

#IBC-13-410-2 (Donohoe Dallas) Human Derived Materials, Infectious Agents, and Recombinant DNA Registration, III-F, 3-year rewrite

Dr. Donohoe was present to discuss their registration covering the study of diets high in fiber that is thought to inhibit ulcerative colitis. Preliminary data suggests that an inflammatory molecule, interleukin-1 β , causes a decrease in butyrate utilization in the colon cells, which can

be reversed by blocking a receptor called p38. The hypothesis is that the capacity of colonocytes to oxidize butyrate is a factor in the response of a butyrate-enhancing diet toward the colonic repair process in ulcerative colitis. This research will lead to therapeutic strategies to restore butyrate utilization in the colonocyte and ultimately treat the disease. It will also enhance our understanding of how a high-fiber diet impacts colonic health and disease during inflammatory states. Containment was set at BSL-2. The committee approved the registration pending the correction of typographical errors in the nontechnical summary; the addition of language in the technical summary indicating where the mice are obtained from and that they are for breeding purposes, and that no rDNA work will be done; an update to the IACUC protocol number; the correction of the bleach contact time to 10 minutes; clarification of how liquid waste is disposed of; and unchecking the autoclaves listed for Mossman and checking medical contractor (Advantra) in the solid/non-sharp waste section.

#IBC-16-447-2 (Mohamed Abouelkhair) Infectious Agents & Recombinant DNA Registration, III-D-1-a, 3- year rewrite

Dr. Abouelkhair's research covers the continuation of Dr. Stephen Kania's previous work on developing a new vaccine to prevent skin infections and other diseases caused by *Staphylococcal pseudintermedius*. This study aims to produce inactive forms of the proteins and determine their immunogenicity and ability to produce a protective immune response in a mouse model. The genes in this study will be derived from clinical isolates of *Staphylococcus pseudintermedius* by PCR, and/or synthetic genes will be obtained commercially. The latter will be based on sequences from this organism and optimized for expression in *E. coli*. Genes from both sources are to be used. The genes will be cloned in and expressed in *E. coli* BL21 under the control of the lac promoter. Recombinant protein will be isolated using HIS (nickel resin) affinity chromatography. Containment was set at BSL-2. The committee reviewed and tabled the registration pending clarification of the process for evaluating immunogenicity; the removal of all information not related to this registration; clarification of the main aim of the research; removal of vaccine development references; clarification that the purpose of this study is to identify vaccine candidates against *S. pseudintermedius*; and clarification about the use of lentiviral plasmids.

#IBC-23-586-1 (Alessandro Occhialini) Recombinant DNA Registration, III-E-2-a, New registration

Dr. Occhialini was present to discuss their research on improving crop traits through the genetic engineering of the chloroplast genome using conventional transformation vectors and novel state-of-the-art tools. DNA constructs will be assembled using modular cloning and delivered into leaf chloroplasts using a biolistic particle delivery system. Transplastomic plants will be produced in tissue culture. After genotyping and molecular characterization of novel transgenes installed in chloroplasts, the plant material will be characterized in controlled environments, and seeds or tubers will be collected for long-term storage. Containment was set at BSL-1. The committee approved the registration pending the addition of a brief protocol for pollen collection and RNAseq in the technical summary; the addition of more detail regarding soil work; the addition of genes of interest for the proposed work for photosynthesis, defense against pathogens, and biofortification; clarification about how *Nicotiana benthamiana*, *Arabidopsis thaliana*, and *Physcomitra patens* will be used; clarification about what "heterologous pathway" means; correction of "13 GOI" to read "14 GOI" in the technical summary; and the removal of unnecessary details for Golden-gate cloning.

Old Business:

Administrative Report

i. Contingencies

None.

ii. Administrative Approvals

The Biosafety Officer administratively approved Dr. Richard Gerhold's amendment to registration (#13-397-2) to include updates to personnel, the addition of wildlife trapping and sample collection for research on various pathogens, updates to the biosafety cabinet certification date, and updates to the biological spill response and health surveillance sections. The Biosafety Officer administratively approved Dr. Rachel McCord's amendment to registration (#16-437-2) to include updates to personnel, biosafety cabinets and their certification dates, the addition of MCF7 breast cancer, U2-OS pBAB-AsiSI, and LUHMES (Lund Mesencephalic) cell lines. Dr. Hameeda Sultana's amendment to registrations (#21-555-2 & #21-562-2) was administratively approved by the Biosafety Officer to include updates to the biosafety cabinet certification dates. Dr. Girish Neelakanta's amendment to registrations (#21-599-2 & #21-560-2) was administratively approved by the Biosafety Officer to include updates to personnel, removal of A329 and A329A, updates to the biosafety cabinet certification dates, and updates to storage room areas (A307, A315, and A315A).

iii. Administrative Terminations

None.

iv. Administrative Exemptions:

None.

v. Accidents, Injuries/Exposures:

Brian notified the committee that there was one recent injury at the Forensic Anthropology Center. The student scratched their finger with a dental instrument used to extract mummified tissue. Linda is scheduled to perform a follow-up with the department.

vi. Laboratory Report:

Linda notified the committee that LSS is performing preliminary audits and meetings with department heads and laboratory safety advocates in March.

vii. iMedRIS Update, Manual Reviews, & System Orientation:

None.

IBC Registration Form (Section 6)

Jessica notified the committee that this form section would be tabled for the next meeting as additional time is needed to evaluate and draft the recombinant DNA section of the IBC form.

IBC Draft Charter and Bylaws

Brian briefly discussed changes in the IBC Charter Bylaws regarding Stakeholder Roles & Responsibilities. The Designated Official was removed from the Office of Research. The Biosafety Officer would serve that role and is responsible for contacting the Chancellor regarding biological safety concerns or incidents. The IBC voted on the realignment and changes to the charter. The requirement for a two-thirds majority vote was met, and the vote on the charter change was approved as written.

New Business:

Lab Safety Awareness Week

Carolina notified the committee that LSS launched Lab Safety Awareness Week, which consisted of six events across campus sponsored by CSHEMA to foster lab safety awareness. LSS went to several buildings on campus and provided refreshments and held a raffle. They also provided educational materials provided by CSHEMA. These events allowed the campus community to voice concerns, needs, or questions to the LSS in person. Thermo Fischer and VWR were also able to attend to give away some PPE and advertise their products. The outreach event was an overall success.

Safety Stratus

Brian notified the committee that EHS was approved to move forward with utilizing Safety Stratus for the management of safety data. One module included in this software system includes a Biosafety module that would meet the needs of the committee and serve as a replacement for iMedRIS.

The meeting adjourned at 11:59 AM. The next meeting scheduled is for April 5, 2023, via Zoom.