

# INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

September 14<sup>th</sup>, 2023

Zoom Meeting

MEMBERS PRESENT: *Chair:* Deidra Mountain *Vice Chair:* Absent, Reza Hajimorad, Paul Dalhaimer, Lezlee Dice, Doris D'Souza, Brittany Isabell, Jun Lin, Reza Hajimorad, Jessica Velez, Joseph Jackson, Jae Park, Ashley Carroll, Ling Zhao, Lori Cole

*Ex-Officio:* Carolina Dolislager, Linda Hamilton, Jessica Woofter, Bailey Tutor, Brian Ranger, Daniel Thomas

MEMBERS ABSENT: Marc Caldwell, Feng Chen, Tarek Hewezi, Elizabeth Fozo, Andi Lear

OTHERS PRESENT: David Anderson

## Opening:

The IBC Chair called the meeting to order at 9:00 AM. The minutes for August 10 , 2023, IBC Meeting were reviewed and approved as written.

## Full Member Review IBC Registrations:

### **#IBC-23-592-2 (David Anderson) Infectious Agents, New Registration**

Dr. Anderson's research covers the use of fabricated polymer composite materials, created through 3D printing, as implants for in vitro experiments to reduce potential for infection in individuals with medical implants. The composites being created as potential implants will be exposed to different scenarios replicating potential contaminations from orthopedic surgeries. The composites will then be rinsed and have the samples cultured to assess for indications of bacterial growth. The committee approved this registration pending DMR after the following corrections are made: Ensure that section 6.5 is correctly marked to reflect the use of sharps in the study, clarification regarding the laundering of the lab coats, and a rewrite of the technical summary with more detail.

### **#IBC-5-240-1 (Albrecht Von Arnim) Recombinant DNA Registration, 3<sup>rd</sup>-year Rewrite**

Dr. von Arnim's research covers the use of transgenic *Arabidopsis thaliana* to study the mode of action of plant genes involved in light signal transduction, development, protein translation, and regulation. His work consists of standard cloning hosts (*E. coli* and nonpathogenic yeasts) and *Agrobacterium*-mediated DNA transfer. The committee approved the registration pending clarification of the storage of the mature seeds. Containment for this project is BSL-2. The committee approved the registration pending the following administrative corrections: that the registration specifies the use of peas as a host as there is no detail regarding its purpose and detail regarding the precautions being taken with regard to the transportation of the plants. A statement that gives information about the potential risks, if any, and how said risks would be addressed in the potential event.

### **#IBC-11-364-1 (Cong Trinh) Recombinant DNA Registration, 3<sup>rd</sup>-year Rewrite**

Dr. Trinh's research covers the use of *Escherichia coli* BL21, nonpathogenic yeasts (e.g., *S.*

cerevisiae), and other low-risk bacterial hosts (e.g., *Clostridium butyricum*, *Bacillus subtilis*) as hosts for creating recombinant biosynthetic pathways, primarily for ethanol production. His research aims to generate biocatalysts that produce biofuels and biochemicals from renewable and sustainable lignocellulosic biomass. The containment level is BSL-1. The committee approved the registration pending the following administrative corrections: a cleaning up of the technical summary with the addition of a statement specifying that the organisms being used are low risk / common and an update to the biosafety cabinet certification date.

### **#IBC-17-450-2 (Cong Trinh) Nanoparticles, Infectious Agents & Recombinant DNA, 3<sup>rd</sup>-year Rewrite**

Dr. Trinh's registration covered his research on the development of ViPaRe (Virulent Pathogen Resistance) technology to inactivate pathogens using the CRISPR genome editing method. Briefly, the ViPaRe system expressing guide RNAs and heterologous Cas nuclease (especially when a target pathogen does not possess it) is designed to disrupt the pathogen's vital machinery (e.g., *Staphylococcus aureus*). The Biosafety containment was set at BSL-2. The committee approved the registration pending DMR after the following corrections are made: a rewrite of the nontechnical summary to use less specific language, removal of the redundant entry on section 6.2, ensure that section 7.1 reflects all of the species named throughout the registration, ensure that nanoparticles is checked in section 5.2, a rewrite of the technical summary to explicitly describe the procedure being performed, ensure that all species being used are explicitly named and provide more detail regarding the plan on how to manage *Candida Albicans*, provide an update to the date on the biosafety cabinet certification date, an update to the department head's name, and an update to section 16.1 to indicate PI's training responsibilities.

### **#IBC-20-550-2 (Sreekumari Rajeev) Infectious Agents, 3<sup>rd</sup>-year Rewrite**

Dr. Rajeev's registration covers the study of Leptospirosis, which is one of the most widespread, life-threatening zoonotic diseases of global prevalence resulting in significant public health, animal health, and economic impact. Leptospirosis is caused by a spirochete bacteria belonging to *Leptospira*. Numerous strains of *Leptospira* are maintained in nature in the animal reservoirs and the environment. Dr. Rajeev is working on projects to advance knowledge of this bacteria's various aspects to develop better diagnostics for early detection and vaccines to prevent disease. For this purpose, they maintain cultures of live *Leptospira* in the laboratory. The live organisms are mainly used to detect host antibody response, characterization of the strains, and other potential future experimental studies. Containment for this project is BSL-2. The committee approved the registration pending DMR after the following corrections: a rewrite of the non-technical summary to reflect changes to the registration as a three-year rewrite, corrections to section 6.9 with the correct options checked, a rewrite of the technical summary included an explanation of the serum and animal tissues/urine being used and the number of samples being used, correction to section 12.2 specifying the animals uses, the inclusion of a statement in section 14.1 about immunocompromised individuals and a statement about the lab coat laundering process.

### **Designated Member Review IBC Registrations:**

### **#IBC-23-590-2 (Claire Hemingway) Venomous Animals, New Registration**

Dr. Hemingway's registration investigating pollination amongst bees was approved via DMR after the following correction is made: clarification on section 6.5 regarding who will be responsible for monitoring a person who is bitten during the 2.5 hours reaction and the following 12 hour period post incident.

## **#IBC-08-323-2 (Shawn Campagna) Human Derived Materials & Infectious Agents, New Registration**

Dr. Campagna's registration was sent to DMR following FMR in the August IBC meeting. The following changes were requested by IBC member Dr. Foza: the addition of personnel from the Forensics Anthropology Center and clarification as to whether lab members will be collecting post-mortem blood and tissue samples or not, clarification about storage locations, the addition of specific disinfectant and contact time information to the spill response, and confirmation that the storage location is in SERF, not Buehler, allowing for correction of question 9.3. These changes were accepted and closed on 9/5/23.

### **Old Business:**

#### **Administrative Report**

##### *i. Contingencies*

Follow up on the August 14<sup>th</sup>, 2023, meeting, Dr. Terry Hazen's registration (#20-549-2) clarified Sarah Mobley's role in the project, added the definition of "WBE" and correction of typographical errors in the Nontechnical Summary, checked the box for off-campus collection as well for the Infectious Agent section, updated the wastewater location in the Human Derived Material Section, and added clarification in the Technical Summary for sampling numbers, volumes collected, and handling of fungal pathogens in addition to correction of typographical errors. These corrections were closed on 9/14/23. Dr. Sarah Shelby's registration (#23-59-3) added biosafety certification date and was closed out on 8/28/23.

##### *ii. Administrative Approvals*

The following updates were approved administratively by the Biosafety Officer: Dr. Ellias Fernandez's registration (#12-385-1) submitted an annual update with a note that Advantra would be used in the spill response approved by the BSO on 8/28/23; Dr. Steven Wilhelm's registration (#13-404-1) updated personnel, added *Microcystis aeruginosa* 298; Stellar(TM) competent *E. coli*; *S. cerevisiae* VL6-48N hosts, added pectate lyase gene from AaV insert genes, updated the Technical Summary language to read, "In parallel with this we are now reconstructing the AaV genome as a yeast artificial chromosome so we can more rapidly prepare genomic material. Effectively, the protocol involves a series of long PCR reactions and ligations: we will follow the step-by-step approach outlined in Labroussaa et al., 2021, and replace their ASWV genome with the AaV genome. Labroussaa et al., STAR Protocols 2, 100803 September 17, 2021 2021 The Authors. <https://doi.org/10.1016/j.xpro.2021.100803>," added the inclusion of single use lab coats for PPE, and added a statement in the health surveillance section that all personnel either received or will receive flu and COVID-19 vaccinations as a precaution. All changes pending the biosafety cabinet certification; Dr. Marc Caldwell's registration (14-418-2) submitted an annual update pending biosafety cabinet certification and an update to the spill response indicating specific disinfectants and contact times. These corrections are pending submission from the PI; Dr. Vermont Dia's registration (#15-429-2) submitted a 3<sup>rd</sup>-year renewal for the use of human derived materials approved by the BSO on 9/5/23; Dr. Dawnie Steadman's registration (16-446-2) submitted an annual update

with changes to personnel, an update to the source testing language for human derived materials to read, “Per FAC policy, the donors are verifying the absence of BBP's, including HIV, HBV, HCV, and Mtb. Donors diagnosed with microbial infections resistant to antibiotics (e.g., MRSA), and Covid-19 are eliminated from consideration as well. We ask medical personnel at the time of death if there are any infectious diseases (above),” removed goggles for PPE, and removed goggles from reusable PPE procedures with approval waiting on the PI; Dr. Madhu Dhar’s registration (#18-532-2) submitted an annual update with changes to personnel, facility locations listed in the Technical Summary, biosafety cabinet certification dates, the addition of disinfectant and contact times to the biological spill response, and contact times listed in the Liquid Waste section approved by the BSO on 9/5/23; Dr. Jennifer DeBruyn submitted an Annual Update with no additional changes, but we need her to update biosafety cabinet date and contact time for ethyl/isopropyl alcohol in the spill response section so the update is waiting on PI submission.

*iii. Administrative Terminations*

There were two administrative terminations over the past month: Dr. Guoxun Chen’s registration (#06-292-2) titled “Determine the roles of vitamin A in glucose and lipid homeostasis” was closed on 8/30/23 approved by the BSO and Dr. Jill Murren Maples’s registration (#21-569-2) titled “Metabolism, Physical Activity, and Human Health” was closed on 9/12/23 approved by the BSO.

*iv. Administrative Exemptions:*

None

*v. Accidents, Injuries/Exposures:*

None

*vi. Laboratory Report:*

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

Access to Safety Stratus Test Site

Jessica gave a brief tour of the current build of the Safety Stratus Test Site allowing for IBC members to view how the registration submission process will flow. Members were given the opportunity to ask questions and raise concerns about the current status of the website. The overall reaction was positive with a few minor concerns raised. IBC members were also given a sign in and password prior to the meeting to allow them to explore the process on their own. Any comments or concerns regarding the site are due back to EHS within the coming week as the planned launch date remains early October.

**New Business:**

UTCVM – a diagnostic services for Kord Animal Disease Diagnostic Laboratory

Linda informed the committee that there are currently audits being conducted as well as implementing meetings with department heads at the ad campus. Linda reported that Dean Thomas has been working with the Kord lab to create a satellite facility at UTK to do testing with CWD

(chronic wasting disease), PCR for avian influenza, and PCR for Newcastle disease. This will be a long process to officially get the implementation pending multiple steps.

Jessica will send out a poll to the committee to confirm quorum for the October meeting following UTK's fall break.

The IBC Chair adjourned the meeting at 10:52am. The next meeting is tentatively scheduled for October 12<sup>th</sup>, 2023, from 9:00 am – 11:00 pm via Zoom.