

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

May 18, 2022

3:00 PM, Zoom Meeting

MEMBERS PRESENT: Chair- Elizabeth Fozo, Feng Chen, Lori Cole, Paul Dalhaimer, Lezlee Dice, Doris D'Souza, Brittany Isabell, Deidra Mountain, Jae Park, Jessica Vélez, Ling Zhao

Ex-Officio – Caleb Cummings, Linda Hamilton, Sarah Pruett, Brian Ranger, Daniel Thomas, Jessica Woofert

MEMBERS ABSENT: Vice Chair-Stephen Kania, Marc Caldwell, George Dizikes, Jun Lin

OTHERS PRESENT: Heidi Goodrich-Blair, Jeremiah Johnson, Sarah Kauffmann

Opening:

The IBC Chair called the meeting to order at 3:04 PM. The April 20, 2022 minutes were reviewed and approved as written.

Full Member Review IBC Registrations:

#IBC-16-441-2 (Jeremiah Johnson) Human Derived Materials, Infectious Agents, Recombinant DNA, III-D-1-a, 3-year rewrite

Dr. Johnson was present to discuss their research investigating the factors that affect *Campylobacter jejuni* colonization in natural chicken hosts. They will use wild-type and genetically modified strains of *C. jejuni* to identify and characterize the genes/proteins involved in colonization. Additionally, wild-type *C. jejuni* will be used in animal models to determine the effects of persistent infection on gut health. Briefly, genes of interest (e.g., heme-utilization genes) will be knocked out via homologous recombination with insertion/deletion constructs (based on pGEM T-Easy). Complementation constructs will be used to restore the deleted gene/function. Finally, genes of interest will be subcloned and expressed in *E. coli* hosts for recombinant protein production (to be used in various downstream assays). Recombinant strains will be used to study heme utilization and mechanisms of resistance to bacteriostatic compounds. *Listeria monocytogenes*, *Salmonella enterica Typhimurium*, *Campylobacter coli*, and *Klebsiella pneumoniae* will be used as controls in several comparative assays. The committee approved the registration pending the removal of IACUC numbers 2812 and 2917 from Question 6.6; the addition of *Helicobacter pylori* to the Infectious Agents table; correction of minor typographical errors in the Technical Summary; and the addition of Animal Facility location.

#IBC-16-442-2 (Heidi Goodrich-Blair) Infectious Agents & Recombinant DNA Registration, III-D-4-a, 3-year rewrite

Sarah Kauffman was present to discuss Dr. Goodrich-Blair's research investigating the naturally occurring tripartite interaction between invertebrate nematodes in the genus *Steinernema*, their mutually beneficial bacterial symbionts in the genus *Xenorhabdus*, and the larval stage invertebrate insects these pairs of organisms infect. Using standard bacterial genetic, molecular, and biochemical techniques, bacterial genes, and gene products that play a role in the beneficial or pathogenic host interactions are identified and characterized. Briefly, transposon or site-directed mutagenesis generates mutants and recombinant strains of *Xenorhabdus* spp. The desired genetic alteration is typically obtained using selectable markers (e.g., antibiotic resistance genes). Mutants are assayed for their ability to associate with the nematode host (mutualism) or

suppress immunity and kill an insect host. *Salmonella typhimurium* and *Enterococcus faecalis* are used for controls in various assays. The committee voted to approve the registration pending the addition of *Candida albicans* and *Candida glabrata* on the host list; and the addition of a statement clarifying what is being done with the *Candida* species and *Acinetobacter baumannii*.

#IBC-22-578-2 (Daleniece Jones) Infectious Agents, New Registration

Dr. Jones' research covers the study of how contamination, survival, and transmission of certain pathogens occur in humans. The molecular characteristics of those pathogens will contribute significantly to understanding pathogen attribution, virulence, and resistance, resulting in preventative recommendations. The focus is on the microbial ecology of potential alternative sources of non-foodborne pathogen exposures. The study will be conducted in two phases. Phase 1 will include conducting abstraction and analyses of data from enteric disease case report forms of laboratory-confirmed pathogen infection cases in Tennessee, formulating supplementary questions as an addendum for confirmed cases, and conducting telephone interviews of selected cases. Phase 2 will include recruiting subjects for household environmental sample collection and performing in-house sample collection, conducting molecular microbiological analyses of environmental samples and clinical isolates. The committee approved the registration pending further clarification procedures, collection of pathogens, and if IRB approval is needed in the Non-technical Summary; the addition of *Listeria monocytogenes* serotype and *E. coli* O157:H7 and the antibiotic resistance profiles for Salmonella and *S. Enterica serovars* in the Infectious Agents section; clarification about routine identification, the addition of genus and species of pathogens, clarification of sample collection methods, and control group serotypes in the Technical Summary; the addition of bleach shelf life; clarification about transportation of high-risk and TDH samples; and the addition of statement indicating exposure risks to women when working with *Listeria monocytogenes*.

Old Business:

Administrative Report

i. Contingencies

Following up on April 20, 2022, IBC Meeting, Dr. Paul Dalhaimer's registration (#17-451-2) was corrected to include the addition of the source of transfected HeLa cells and JRS4 cells; the removal of nanoparticle references in the summaries; provide additional technical information regarding methods and handling of agents; provide clarification about plasma use, and the addition of a hepatitis B vaccine offer statement in the Health Surveillance section. Dr. Hameeda Sultana's registration (#22-579-2) was corrected to include the addition of specific information regarding CVM Room A333, Mossman as a backup location, CVM A227 autoclave information, and the addition of the most current autoclave validation date.

ii. Administrative Approvals

Dr. Jun Lin's registration (#05-265-2) was amended and approved by the Chair on 5/12/2022 to include updates to personnel, the addition of waxworm *Galleria mellonella*, and the addition of Mossman 631 (location of biosafety cabinet), 641D and 641D2 (insect incubators locations) rooms. Dr. Raul Almeida's registration (#19-537-2) was amended and approved by the Chair on 4/22/2022 to include the addition of Dr. Oudessa Kerro Dego as primary investigator and the inclusion of a statement that if the dose used for wild-type *M. bovis* does not cause clinical disease, the "extra" three animals he is approved for getting a dose 10-fold higher. Dr. Hameeda Sultana's registration (#21-562-2) was amended and approved by the Chair on 4/21/2022 to revert to the last approved state on 11/2/2021 (version 1.7), and previous changes were removed. Dr. Chunlei Su's registration (#21-566-2) was amended and

approved by the Biosafety Officer on 5/19/2022 to include updates to grant information, removed *Salmonella* spp., removal of VMC A307 and C121, removal of biosafety cabinet from VMC A307A, removal of storage units from VMC A307 and C121. Dr. Jill Maples' registration was amended and approved by the Biosafety Officer on 4/26/2022 to include the addition of human blood, UTMCK Medical Building B Room 206 (storage and lab), updates to the lab coat laundering and safety glasses disinfection procedures, removal of gowns and goggles, removal of sharps, and updates to the biological spill response.

iii. Administrative Terminations

Dr. Maria Prado's registration (#12-381-2) was terminated on 5/5/2022.

iv. Administrative Exemptions:

None.

v. Accidents, Injuries/Exposures:

Linda Hamilton reported to the committee an incident with repeated needlestick injuries during bleeds from challenged ducks.

vi. Laboratory Report:

None.

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

None.

New Business:

Toxoplasmosis Injuries and Exposures

Linda Hamilton and Brian Ranger notified the committee about the injuries that occurred during a bleeding procedure from challenged ducks for Dr. Richard Gerhold's study. The committee discussed changes to address pathogens exposure during animal procedures and how to streamline communication to ensure timely notification of all stakeholders when injury or exposure occurs.

The meeting adjourned at 4:46 PM. The next meeting scheduled is for June 15, 2022, from 12:00 pm – 2:00 pm EST at the Johnson Animal Research Unit (JARTU), Room A109, and via Zoom.