

## INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

May 18, 2016

12:30 PM, 410 Plant Biotechnology Building

MEMBERS PRESENT: Patti Coan, Vice-Chair; Seung Baek, David Bemis, Tamara Chavez-Lindell, Doris D'Souza, Elizabeth Fozo, Reza Hajimorad, Al Iannacone, Brittany Isabell, Reggie Millwood, Jae Park

Ex-Officio – Linda Hamilton, Robert Nobles, Brian Ranger, Jessica Woofter

MEMBERS ABSENT: Paul Dalhaimer, Melissa Kennedy, Jun Lin, Deidra Mountain, Ling Zhao

OTHERS PRESENT: None

### Opening:

The meeting was called to order by the Vice Chair, Patti Coan at 12:34 PM. The minutes of April 20, 2016 were reviewed and approved pending correction of the meeting date.

### IBC Applications:

#### **#299-16 (David Golden) Infectious Agent Registration, 3-year rewrite**

Dr. Golden's registration covers his research involving foodborne pathogens to: determine the efficacy of food spoilage prevention strategies; evaluate the molecular basis of resistance to antimicrobial treatments; improve methods of detection; and investigate the effects of stress and microbial ecology on the growth and survival of foodborne microorganisms. Organisms include *Listeria monocytogenes*, *Salmonella enterica* (excluding *typhi*), *E. coli* (toxigenic strains including O157:H7), and *Shigella spp.* The biosafety level was established at BSL-2. The committee approved the registration contingent upon completion of refresher training and correction of minor typographical errors.

#### **#315-16 (Jae Park) Recombinant DNA Registration, III-D-4-a, 3-year rewrite**

Dr. Park's research proposes the generation of transgenic *Drosophila melanogaster* for the purpose of understanding programmed cell death and associated gene functions in the *Drosophila* central nervous system. To produce transgenic *Drosophila*, genome editing will be facilitated by a CRISPR/Cas9 system. Briefly, flanking sequences from target genes will be cloned into a plasmid carrying a reporter gene (TagRFP), and target sequences selected for Cas9 cleavage will be cloned into a guide RNA-expressing plasmid construct. Both plasmids will be amplified in *E. coli* DH5- $\alpha$ , purified, and injected into fly embryos to induce homologous recombination; i.e. replacement of target gene with reporter gene. Surviving flies will then be screened for the fluorescent marker and confirmed by PCR. The containment level was established at BSL-1. The committee voted to approve the registration as written.

#### **#398-16 (Tarek Hewezi) Recombinant DNA, III-E, 3-year rewrite**

Dr. Hewezi's registration covers plant-parasitic nematodes that negatively impact plant growth development. His study will include transgenic Arabidopsis, tobacco and soybean to study the genetic control of plant responses to biotic and abiotic stresses. Constructs include nematode effector genes as well as modified genes of the host (e.g. overexpression constructs of native Arabidopsis genes). Traditional plant transformation techniques (e.g. Agrobacterium-mediated gene transfer) will be used to generate the transgenic plants. Containment was set at BSL-1/BL-1-P. The committee approved the registration as written.

### **#399-16 (Faith Critzer) Infectious Agents, 3-year rewrite**

Dr. Critzer registration covers novel antimicrobial coating systems used to improve the safety and quality of cantaloupes and other produce. She proposes to use plant-based food antimicrobials, essential oils, to develop systems that can overcome barriers to diffuse to cavities on cantaloupe surfaces and continuously release antimicrobials therein. The registration also covered novel washing techniques to reduce pathogen burden on harvested fruits and vegetables (e.g. lettuce, carrots, and cantaloupe). Traditional plating techniques such as spread plating, pour plating, and spiral plating will be utilized for enumeration of foodborne pathogens. In addition, molecular techniques such as PCR and reverse-transcriptase PCR (RT-PCR) may be utilized for quantifying pathogens or detecting genetic markers. Challenge organisms will include *Salmonella enterica* (excluding *typhi*), *Listeria monocytogenes*, and *E. coli* (toxigenic strains including O157:H7). The committee approved the registration as written pending correction of typos, clarification of essential oil types and volumes, and verification of training dates and completion of refresher training (as applicable) for listed personnel. The biosafety level was set at BSL-2.

### **Old Business:**

#### Administrative Report

Brian Ranger provided the Committee with the administrative report. Following up on April 20, 2016, IBC meeting, Dr. Mariano Labrador's registration (#291-16) was corrected administratively for typographical errors. Dr. Daniel Robert's registration (#302-16) was corrected to include the addition of research goals and clarification that *Agrobacterium rhizogenes* is being used as a transformation agent for medicago. Dr. Colleen Jonsson's registration (#434) was updated to include BSL-3 training information and included the provision that the use of the BSL-3 facility for hantavirus work would be prohibited until deemed functional and congruent with BSL-3 standards. Dr. Robert Craft's registration (#402-16) was administratively approved for the use of human and canine blood in thromboelastograph (TEG) coagulation assays performed for ongoing UTMCK GSM and CVM studies. Dr. Sarah Werner's registration (#414) was administratively amended to include the addition of pUC/pENTR-based plasmids carrying fluorescent markers and Risk Group 1 soil microbe hosts. Dr. Kellie Fecteau's registration (#439) was administratively amended to include the use of NCI-H295R cells (human adrenocortical carcinoma) to test *in vitro* effects of various drugs used to treat endocrine disorders. Brian Ranger notified the committee that the administrative report will now include sections on laboratory audit findings/concerns and accidents/injuries/exposures. A minor sharps injury was reported by the Forensic Anthropology Center. The response procedure was in accordance with the BBP exposure control plan. Brian will be meeting with the FAC staff to review sharps handling and safety procedures on June 6, 2016.

#### BSL-3 Updates & Discussion of Facility Management Plan

The committee reviewed and approved the emergency management plan for the BSL-3 facility as written.

#### iMedRIS Update

Jessica Woofter gave the committee a brief update on iMedRIS. The submission and routing forms have been corrected and are ready for testing by the Biosafety Office staff.

#### IBC Self-Audit/Charter Revision Update

Drs. Baek, Dalhaimer, and Mountain volunteered to review the charter for revisions.

**New Business:**

June Meeting Date

Brian notified the committee that the June 15<sup>th</sup> meeting date overlaps with the American Society for Microbiology (ASM) conference. The committee agreed to move the meeting to June 22, 2016.

The meeting was adjourned at 1:13 PM. The next meeting has been tentatively scheduled for June 22, 2016 at 3 pm.