

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

June 21, 2017

3 PM, Plant Biotechnology Building, Room 410

MEMBERS PRESENT: Chair, Jun Lin; David Bemis, Tamara Chavez-Lindell, Lori Cole, Doris D'Souza, Paul Dalhaimer, Elizabeth Fozo, Albert Iannacone, Brittany Isabell, Jae Park, Ling Zhao

Ex-Officio – Linda Hamilton, Scott Moser, Dr. Robert Nobles, Brian Ranger, Jessica Woofter

MEMBERS ABSENT: Reza Hajimorad, Melissa Kennedy, Reginald Millwood, Deidra Mountain

OTHERS PRESENT: Dr. Tom Masi, Dr. David White

Opening:

The meeting was called to order by the Chair, Jun Lin at 3:01 PM. The minutes of May 24, 2017 were reviewed and approved as written with two abstentions.

IBC Applications:

#115-17 (HCR Wang) Recombinant DNA & Human Derived Materials, III-D-4-b, 3-year rewrite

Dr. Wang's research aims to understand the role(s) of genes implicated in cancer formation for development of cancer prevention/therapeutic strategies. Specifically, he will be using commercially available, traditional transfection and replication-incompetent retroviral systems to deliver genes of interest (e.g. transcription factor genes, stress-related genes) into mouse and human cell lines for expression. Some transformed cell lines will be xenografted into an animal model for *in vivo* studies. Dr. Wang The containment level was established at BSL-2. The committee voted to approve the registration contingent upon all personnel completing annual refresher training.

#364-17 (Cong Trinh) Recombinant DNA, III-E, 3-year rewrite

One area of Dr. Trinh's research is to engineer cellular metabolisms to create microbial biocatalysts that are capable of producing biofuels and biochemicals from lignocellulosic biomass or organic wastes. Heterologous (non-toxin) genes will be inserted into microbes using standard molecular cloning techniques to create new strains that can perform novel biotransformation. These engineered strains will be characterized for production of chemicals such as alcohols, acids, and esters in 1mL-1L reactor scales. The committee tabled the registration pending clarification of project scope, recombinant hosts to be used, and scale/volume of engineered systems.

#422-17 (Jiangang Chen) Infectious Agents, 3-year rewrite

Dr. Chen's registration covered his research on gut microbiota and their symbiotic relationship with their hosts contributing to intestinal health and the onset of disease. The proposed study will investigate the effects of triclocarbon (TCC) on the proliferation of *Clostridium difficile* *in vitro*. Techniques will include: growth curve determination, minimal inhibitory concentration (MIC) assays, and determination of the growth and toxin production of *C. difficile* in TCC-exposed fecal samples. The containment level was set at BSL-2. The committee voted to approve the registration pending addition of procedural objectives and other minor revisions to the technical summary.

#423-17 (Stacy Stephenson) Recombinant DNA, Infectious Agents, & Human Derived Materials,

III-D-2/4-b, 3-year rewrite

Dr. Tom Masi was present to discuss Dr. Stephenson's research on mesenchymal stem cells as a source for tissue engineering. The study aims to incorporate pLUX into a lentiviral vector, optimize the transduction of mesenchymal stem cells, evaluate stem cell growth rates, and verify long term constitutive expression of bioluminescence of mesenchymal stem cells transduced with pLUX. The containment level was set at BSL-2. The committee voted to approve the registration pending inclusion of Dr. Stephenson's IACUC approved protocol references and IRB approval for the collection of primary adipose-derived mesenchymal stem cells.

#450 (Cong Trinh) Recombinant DNA & Infectious Agents, III-D-1-a, New registration

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) will be designed to specifically disrupt vital machinery of the pathogen (e.g. *Staphylococcus aureus*). The committee tabled the registration pending details on specific species/strains that will be used, specific genes that will be targeted, sgRNA design, and procedural details.

#451 (Paul Dalhaimer) Recombinant DNA & Infectious Agents, III-E, New registration

Dr. Dalhaimer was present to discuss his research covering the ability of polystyrene nanoparticles to induce xenophagy in HeLa cells *in vitro*. Briefly, polystyrene nanoparticles bearing near-infrared dyes will be added with or without a streptolysin O protein attached to determine whether they are released from or retained in the endosome, and whether this plays a role in inducing xenophagy. *Streptococcus pyogenes* JRS-4, wild-type and a recombinant streptolysin O-negative mutant, will be used as controls. The committee voted to approve the registration pending minor modification of the technical summary. Containment was set at BSL-2.

Old Business:

Administrative Report

i. Contingencies

Following up on May 24, 2017, IBC meeting, Dr. Shawn Campagna's registration (#323-17) was corrected by the PI to include the addition of strain-specific identifiers and details (antibiotic resistance, toxin production, etc.). **The committee requires a reference and multi-drug descriptor. The Infectious Agent column titles will be modified to clarify the requested/required information.** Dr. Marc Caldwell's registration (#449) was administratively corrected to include the source of Zika virus and administered titer.

ii. Administrative Approvals

None.

iii. Administrative Terminations

Necropsy-related sharps injuries (x3) – Will initiate conversations with Necropsy to bolster sharps safety awareness and improve sharps handling techniques.

iv. Administrative Exemptions:

None.

v. Accidents, Injuries/Exposures:

None.

- vi. *Laboratory Report*
None.

iMedRIS Update, Manual Reviews, & System Orientation (Woofter)

Jessica Woofter gave a brief overview of the training manuals.

Committee Appointments – Term Expirations (July 1, 2017)

Brian notified the committee that Al Iannacone and Dr. David Bemis will be stepping off the committee at the end of June. Brian is still in the process of locating a non-affiliated representative and will reach out to Dr. Martha Buchanan, Director, Knox County Public Health Department.

New Business:

SharePoint Site Maintenance

Brian notified the committee that SharePoint sites will be maintained for a duration of 3 years, but no new information will be added to either the Biosafety or IBC sites as all documents will now be stored in iMedRIS.

Non-disclosure Concerns

Brian notified the committee that a revision will need to be made to the charter to include a non-disclosure statement concerns the review of proprietary information included in registrations.

Safety Training/Practical Laboratory

Brian notified the committee that the Biosafety Office has acquired a Class II biosafety cabinet. He also indicated that Biosafety, along with EHS and Radiation Safety, will be drafting a space request proposal for a hands-on training laboratory for faculty, staff and students. If granted, the BSC will be moved to the training lab.

Tentative Arrangements for the BSL-3 Laboratory

Brian notified the committee that tentative arrangements will need to be made regarding Dr. Colleen Jonsson's BSL-3 laboratory as she will be relocating to the UTHSC campus in Memphis, TN. Dr. Jonsson's post-doctoral research associate, Dr. Leonardo Valdivieso-Torres, will be continuing work until his ongoing projects are completed (6 months~1 year). As per departmental (Microbiology) arrangements, Dr. Heidi Goodrich-Blair, Professor and Department Head, will be assuming onsite responsibility for the BSL-3 lab (as allocated) and Dr. Valdivieso-Torres' research procedures.

NIH Symposium/Guidelines Update (July)

Brian notified the committee that he will be out of town at the NIH Symposium for the week of July 19th. The July meeting will need to be moved to the following week.

Celebration of Service for Dr. David Bemis & Al Iannacone

Dr. Jun Lin presented plaques to Dr. David Bemis and Al Iannacone for their years of service to the IBC. Dr. David Bemis served on the IBC for 13 years, and Al Iannacone served on the IBC for 9 years.

The meeting was adjourned at 4:45 PM. The next meeting is tentatively scheduled for July 19, 2017 in Plant Biotechnology Bldg., Room 410 at 3 pm.