MINUTES OF THE INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
December 16, 2015
3:00 PM, 410 Plant Biotechnology Building

MEMBERS PRESENT:	Jun Lin, Chair; Patti Coan, Vice-Chair; David Bemis, Tamara Chavez-Lindell, Elizabeth Fozo, Al Iannacone, Brittany Isabell, Reggie Millwood, Jae Park, Ling Zhao Ex-Officio – Linda Hamilton, Brian Ranger, Jessica Woofter
MEMBERS ABSENT:	Seung Baek, Paul Dalhaimer, Doris D'Souza, Reza Hajimorad, Melissa Kennedy, Deidra Mountain
OTHERS PRESENT:	Dr. Marc Caldwell, Lezlee Dice, Dr. Gillian Eastwood, Dr. Colleen Jonsson, Dr. Andi Lear, Dr. Leonardo Valdivieso-Torres

Opening:

The meeting was called to order by the Chair, Jun Lin at 3:02 PM. Minutes of October 21, 2015, were reviewed and approved as written with one abstention.

IBC Applications:

#298-15 (Doris D'Souza) Infectious Agents, 3-year rewrite
Lezlee Dice gave an overview of Dr. D'Souza's registration which covers methodologies for the detection and inactivation of multiple foodborne pathogen isolates, development of mitigation strategies to control microbes in ready-to-eat products, and methods to study stress responses and gene expression of various Risk Group 2 bacterial (e.g. EHEC, *Salmonella spp., Listeria spp., Shigella spp.*) and viral (e.g. noroviruses, caliciviruses, hepatitis A virus) pathogens. The committee called attention to the use of various nonhuman primate cell lines for propagating virus, including rhesus macaque cells (FrhK-4 and LLC-MK-2). They inquired about the need/status of awareness training for cercopithecine herpesvirus-1 and use of standard precautions while handling nonhuman primate cells. Brian Ranger indicated that he had provided this awareness training to Dr. D'Souza's group on previous occasions and can refresh this training as necessary. Containment was set at BSL-2. The committee approved the registration as written.

#344-15 (Ling Zhao) Human Derived Materials, Nanoparticles, & Recombinant DNA, III-D-3, 3-year rewrite
Dr. Zhao summarized her registration covering: (1) identification and characterization of environmental chemicals that contribute to obesity (i.e., obesogenic) and (2) identification and characterization of dietary factors, encapsulated in nanoparticles or not, that have potential to prevent and/or treat obesity. Two types of cellular models of adipogenesis will be used: white adipocyte and brown adipocyte. The effects of environmental chemicals or dietary factors in promoting or inhibiting conversion of precursor cells into mature white adipocytes and/or mature brown adipocytes will be assessed. Lentiviral vector systems will be use to either overexpress or knock down (shRNA) endogenous genes of interest, primarily those related to glucocorticoid signaling and transcriptional regulation. Briefly, replication incompetent lentiviral vector constructs will be packaged in HEK293 cells, purified and used for various

in vitro assays on primary human stromal cells. Similarly, adenoviral vectors will be used to introduce dominant negative forms of signaling molecules (e.g. IkB) to demonstrate the consequences of blocking a specific signaling pathway. Finally, pGL3-luciferase reporter constructs will be use to study the transcriptional response to various dietary and environmental stimuli. The safety practices and containment were set at BSL-2. The committee approved the registration as written with one abstention.

#393-15 (Neal Stewart) Recombinant DNA, III-E-2-a, 3-year rewrite

Reggie Millwood summarized Dr. Stewart's registration covering gene flow quantification and bioconfinement in transgenic plant models (e.g. Arabidopsis, rice, tobacco, canola, and switchgrass). Transgenic plants will be created using traditional Agrobacterium-mediated gene transfer and microprojectile bombardment. Insert genes include commonly used resistance (antibiotic, herbicide or insect) and fluorescent (e.g. red fluorescent protein) markers as well as various inducible restriction endonucleases or recombinases involved in conditional pollen ablation or transgene removal (bioconfinement). Plants will be grown in environmental growth chambers and under greenhounse conditions with pollen screens/bags. Containment was set as BSL-1/BL-1-P. Environmental release/movement permits have been (or will be) obtained from USDA APHIS BRS for all field procedures. The committee approved the registration as written with one abstention.

#434 (Colleen Jonsson) Human Derived Materials, Infectious Agents, & Recombinant DNA, III-D-2, New registration

Dr. Jonsson was available to summarize her registration covering research on Old and New World hantaviruses, specifically the study of how the viruses interact with the host cell during entry, replication, and assembly. Comparative studies will primarily involve isolation, propagation and amplification (10^5-10^6 pfu/ml) of Old/New World hantaviruses on rat/mouse primary cells, nonhuman primate cells (Vero E6), and human epithelial and endothelial cells. Total RNA will then be isolated for downstream molecular biology assays (i.e. sequencing). Dr. Jonsson's registration also covered expression of recombinant hantavirus proteins (nucleocapsid and glycoproteins) in *E. coli* hosts for protein purification and assay (IFA, ELISA) purposes. The committee asked several questions and had concerns regarding the respiratory protection assessment, personal protective equipment selection, location and sequence of donning/doffing procedures, security/emergency response planning (communication mechanisms), and disparate experience/proficiency level of the listed personnel. The committee tabled the discussion pending: 1) verification testing of the renovated BSL-3 lab; 2) verification/revision of the PPE requirements (including respiratory protection); 3) establishment of a secondary communication system if personnel would be working alone in the lab; 4) additional edits of the BSL-3 biosafety manual, and completion of practical training exercise. In consideration of the latter, the committee agreed to separately review/approve a procedural narrative allowing the use of Risk Group 2 hantavirus (Prospect Hill) in tissue culture for the purpose of hands-on training. Risk Group 3 virotypes and associated procedures were not approved.

#435 (Marc Caldwell) Infectious Agents, New registration

Dr. Caldwell described his research on evaluating inflammatory response in calves associated with experimentally induced respiratory disease defined by white blood cell concentration and differential using a point of care analyzer (QScout, AAD). Briefly, claves will be inoculated with wild-type bovine viral diarrhea virus (BVDV), *Mannheimia haemolytica*, or saline sham. Blood will be drawn during the trial period and screened for dynamic changes in the white blood cell populations in response to the controlled experimental infection. After trial completion, calves will be treated with appropriate antimicrobials, monitored for clinical disease, and confirmed to be cleared of infection by PCR prior to

release. The committee voted to approve the registration pending updates to training and receipt of a USDA APHIS VS 16-6 permit for interstate transfer/use of BVDV as required. BSL-2 containment measures (isolation rooms) and practices will be used for the study.

Old Business:

Administrative Report

Brian Ranger provided the committee with the administrative report. Following up on October 21, 2015 IBC meeting, Dr. Deidra Mountain's registration (#390-15) was corrected administratively to add Dr. Tim Sparer to the list of personnel on the study. Dr. Ahmed Bettaieb's registration (#432) was corrected administratively to include IACUC protocol (#2373) approval and all personnel had completed biosafety training (final BSL-2 lab set-up still pending BSC certification, scheduled for last week of December). The IBC Chair administratively approved the following amendments: Dr. Guoxun Chen's registration (#292-15) was approved to include the addition of constructs encoding wild-type and mutant autotaxin (phospholipase D activity). There was no change to review category (III-D-3) or containment (BSL-2). Dr. Mark Radosevich's registration (#301-13) was approved to include cloning of phage endolysin into soil bacterium, *Gluconacetobacter diazotrphicus*. There was no change to review category (III-E) or containment (BSL-1). Dr. Jae Park's registration (#315-13) was approved to include CRISPR-mediated genome editing to replace *D. melanogaster* genes with fluorescent bioreport to examine endogenous expression patterns. There was no change to review category (III-D-4-a) or containment level (BSL-1). The Biosafety Officer administratively approved the following Human Derived Materials registrations: Dr. Wei He's registration (#394-15) was approved for the use of human epithelial cells (astrocytes) to assess how changes in biomaterials properties, both bulk and surface, will influence astrocyte cell adhesion, proliferation, and activation. Dr. Maria Cekanova's registration (#395-15) was approved to include use of various human cell lines (e.g. lung, breast, colorectal carcinoma cells) to evaluate novel imaging and therapeutic agents for detection and treament of tumors *in vitro*. Dr. Stephen Kennel's registration (#295-12) was administratively terminated and recombinant constructs/procedures (scFv phage display) are now covered under the auspices of Dr. Jon Wall's registration (#342-15).

Other

Brian informed the committee that Dr. P. Michael Davidson, Food Science & Technology, will be retiring at the end of December. Dr. Davidson had requested a 6-month extension for his infectious agent registration (#300-13), as written, to cover any experiments that are pending completion. The committee approved the extension through June 30, 2016.

All other business was tabled until the next meeting. The meeting was adjourned at 4:54 PM.

The next meeting has been tentatively scheduled for January 20, 2016.