INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
March 26, 2019
12 PM, Brehm Animal Science Bldg., Room 264

MEMBERS PRESENT: Chair, David White; Vice Chair, Elizabeth Fozo; Lori Cole, Paul Dalhaimer, George Dizikes, Doris D'Souza, Jun Lin, Deidra Mountain, Ling Zhao

Ex-Officio – Brian Ranger, Jessica Woofter

MEMBERS ABSENT: Marc Caldwell, Tamara Chavez-Lindell, Reza Hajimorad, Brittany Isabell, Melissa Kennedy, Reggie Millwood, Jae Park

OTHERS PRESENT: Dr. Scott Lenaghan

Opening:

The IBC Chair called the meeting to order at 12:25 PM. The minutes of February 20, 2019 were reviewed and approved as written. There was one abstention.

Full Member Review IBC Registrations:

#IBC-06-291-1 (Mariano Labrador-San Jose) Human Derived Materials & Recombinant DNA Registration, III-D-4-a; 4-b, 3-year rewrite
Dr. Labrador's registration covers his research on gene expression, DNA repair, and cell cycle regulation by chromatin insulator proteins in Drosophila melanogaster. Briefly, transgenic flies are created by microinjecting constructs consisting of a Drosophila gene of interest (e.g. suppressor of hairy wing) in a commonly used vector (Drosophila pUST). Similar constructs are also prepared for in vitro studies in Drosophila S2 cells. Containment was set at BSL-1. The committee approved the registration pending an update to autoclave validation dates.

#IBC-06-296-1 (Zong-Ming Cheng) Recombinant DNA, III-E-2-a, 3-year rewrite
Dr. Cheng is studying soybean genes involved in fitness and drought resistance. Briefly, drought tolerance genes of interest will be cloned under the control of either endogenous promoters or cauliflower mosaic virus 35 S promoter, CaMV35S, in plant binary vectors. Constructs will then be transformed into soybean host plants via standard *Agrobacterium*-mediated techniques. Plants will be grown in the lab or approved greenhouse under BSL-1 or BL-1-P containment, respectively. The committee voted to approve registration pending the addition of the known function for the calicineurin B-like protein-interacting protein kinase genes (CIPK) to the end of the first sentence and the expected plant phenotype.

#IBC-13-397-2 (Richard Gerhold) Infectious Agents, 3-year rewrite
Dr. Gerhold's registration covers his research on molecular parasitology experiments to determine the epidemiology of infections by comparing the DNA sequences of the various parasites including: Trichomonas spp. and Histomonas spp. in wild bird; Elaeophora spp. and Parelaphostrongylus spp. from wildlife (primarily ruminants). Procedures will include DNA

extraction and PCR testing using commercial testing kits. In addition various animal parasites will be cultured in the lab (in vitro) to perform a battery of experiments to understand the factors associated with infection and disease progression. Further work will include examining potential in vitro chemotherapeutic control options to control parasite infection. The committee voted to table this registration for clarification of pathogens and their proposed uses in the Nontechnical and Technical Summaries; addition of characteristics of *T. gondii*; an update to biosafety cabinet certification dates; clarification of storage and work locations; a revision of the health surveillance; and the correction of typographical errors.

#IBC-16-436-2 (Stephen Kania & Elizabeth Lennon) Human Derived Materials & Infectious Agents, 3-year rewrite

Dr. Elizabeth Lennon has left the University of Tennessee and is transferring her registration to Dr. Stephen Kania. Her research covered the of a mouse model of IBD, the IL10-/- mouse, as well as a double knockout (DKO) mouse that lacks both IL10 and mast cells (IL10-/-xKitWsh/Wsh), to determine the role mast cells are playing. Post-mortem samples will be obtained from mice that have developed IBD and healthy mice in order to determine how mast cells are impacting the disease. The proposed work will be important to discover new therapeutics or preventative strategies. Additionally, intestinal helminths have been shown to have a protective effect against immune-mediated diseases such as IBD. She will use the rat tapeworm, Hymenolepis diminutia, to study the effects of this parasite on immune function in the intestine using in vitro models with intestinal cell lines and mast cells (including human-derived cell lines). Containment was set at BSL-2. The committee approved the registration pending the correction of IACUC numbers listed in the registration.

#IBC-16-437-2 (Rachel McCord) Human Derived Materials & Infectious Agents, 3-year rewrite

Dr. McCord's is researching linear genome sequence functions in a three dimensional context as chromosomes are folded and packaged into the cell nucleus. Three dimensional folding has implications for the proper expression, replication, and repair of genes, and misfolding can lead to disease. This research will use a combination of microscopy and molecular biology techniques to investigate the three dimensional structure of the mammalian genome. A complementary imaging approach will be to target a fluorescent protein to certain chromosomal regions using the new CRISPR approach in human and mouse cell lines so that the position of that genomic region can be monitored in live cells. Specifically, these techniques will be used to identify changes in 3D genome structure in the following systems: 1) B16-F1 mouse melanoma cell line cells migrating through small pores, 2) nuclei isolated from GM12878 human lymphoblast cell line subjected to artificial physical perturbations, and 3) human K562 cell line cells expressing a mutant protein progerin that mimics the cellular effects of the premature aging disorder Hutchinson Guilford Progeria Syndrome. Finally, the registration outlined SOPs for use of a lentiviral vector delivery of the CRISPR/Cas 9 in the event that transient transfections do not work. Containment was set at BSL-2. The committee voted to approve the registration as written pending the addition of the cell line information to the registration from the Excel file and the update of autoclave validation dates.

Designated Member Review IBC Registrations: None

<u>Old Business:</u>

Administrative Report

i. *Contingencies*
Following up on February 20, 2019, IBC meeting, Dr. Mariano Labrador-San Jose's registration (#06-291-1) was administratively edited to include updates to the autoclave validation dates. Dr. Zong-Ming Cheng's registration (#06-296-1) was updated by the PI to include the addition of the known function for the calicineurin B-like protein-interacting protein kinase genes (CIPK) to the end of the first sentence and the expected plant phenotype. Dr. Richard Gerhold's registration (#13-397-2) was updated to include clarifications of pathogens and their proposed uses in the nontechnical and technical summaries; the characteristics for T. gondii in the infectious agent table; updates of biosafety cabinet and autoclave verification dates; and clarification of work and storage areas in the technical summary. Drs. Stephen Kania & Elizabeth Lennon's registration (#16-436-2) was updated administratively to include new IACUC protocol numbers. Dr. Rachel McCord's registration (#16-437-2) was administratively updated to include cell line information provided in Excel format and updates to the autoclave validation dates.

ii. *Administrative Approvals*
Dr. Jun Lin's amendment to his registration (#05-265-2) was approved administratively by the IBC Chair to include the addition of *Avibacterium paragallinarum*.

iii. *Administrative Terminations*
Dr. Steven Ripp's registration (#05-260-2) has been administratively terminated and has made arrangements to securely store, transfer or destroy the registered biological hazards.

iv. *Administrative Exemptions:*
None.

v. *Accidents, Injuries/Exposures:*
There was one reported needle stick injury for Walters Life Sciences.

vi. *Laboratory Report (Hamilton)*
None.

vii. *iMedRIS Update, Manual Reviews, & System Orientation (Woofter)*
Jessica provided the committee with a brief overview of the new platform GUI.

Charter Revision Update
Ryan Stinnett from the University of Tennessee Legal Counsel Office was present to discuss with the IBC about its purview and legal obligations in accordance with institutional policies and NIH guidelines.

Mossman Bldg. Update
Brian gave the committee a brief update of the progress regarding Mossman building issues.

New Business:

Biosafety Program Development Request

Brian notified the committee that compliance offices will be using BioRaft for inspection, chemical inventories, equipment, and training. The Biosafety Office will be also looking at altering the current IBC form to account for some of these changes by taking the validation date verification for autoclaves and biosafety cabinets out of the current form. The Biosafety Office will manage the review of these dates via BioRaft.

The meeting was adjourned at 1:38 PM. The next meeting has been rescheduled for April 17, 2019 from 3-5 pm in the Plant Biotechnology Bldg., Room 410.