

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
February 20, 2019
3 PM, Plant Biotechnology Bldg., Room 410

MEMBERS PRESENT: Chair, David White; Vice Chair, Elizabeth Fozo; Tamara Chavez-Lindell, Lori Cole, Paul Dalhaimer, Doris D'Souza, Brittany Isabell, Jun Lin, Deidra Mountain, Jae Park

Ex-Officio – Linda Hamilton, Scott Moser, Brian Ranger, Jessica Woofter

MEMBERS ABSENT: Marc Caldwell, George Dizikes, Reza Hajimorad, Melissa Kennedy, Reggie Millwood, Ling Zhao

OTHERS PRESENT: Ryan Stinnett

Opening:

The IBC Chair called the meeting to order at 3:00 PM. The minutes of December 19, 2018 were reviewed and approved as written. There were two abstentions.

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 calcineurin 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

Old Business:

Administrative Report

- i. *Contingencies*
Following up on December 19, 2018, IBC meeting, Dr. Jeffrey Becker's registration (#07-308-1) was updated to include the requested addition of centrifugation; IACUC protocols numbers 1083-1018; and the Walters Life Science vivarium. Dr. Cong Trinh's amendment to registration (#17-450-2) was amended to include a clarifying statement that Hepatitis B work would be staying in the Senter Hall location.
- 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 4:26 PM. The next meeting has been rescheduled for March 26, 2019 from 12 - 2 pm in the Brehm Animal Science Bldg., Room 264.