INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
November 15, 2017
3 PM, Plant Biotechnology Building, Room 410

MEMBERS PRESENT: Vice-Chair, Elizabeth Fozo; Marc Caldwell, Tamara Chavez-Lindell, Lori Cole, Doris D'Souza, Reza Hajimorad, Brittany Isabell, Jun Lin, Reginald Millwood, Deidra Mountain, Jae Park

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

MEMBERS ABSENT: Paul Dalhaimer, George Dizikes, Melissa Kennedy, David White, Ling Zhao

OTHERS PRESENT:

Opening:

The meeting was called to order by the Vice-Chair, Dr. Liz Fozo at 3:02 PM. The minutes of October 18, 2017, were reviewed and approved as written pending correction of the meeting attendance. There were 3 abstentions.

IBC Applications:

#IBC-05-265-2 (Jun Lin) Recombinant DNA, Infectious Agent, & Human Derived Materials, III-D-1-a/4-b, 3-year rewrite
Dr. Lin was present to discuss his registration covering his research on the molecular mechanisms of colonization and antibiotic resistance in *Campylobacter* species (*C. jejuni*, *C. coli*). Specifically, transposon mutagenesis/complementation studies, as well as transcriptional studies, will be used to elucidate which genes/gene promoters are essential for campylobacter colonization and persistence. Additionally, wild-type and recombinant strains will be studied *in vivo* in chickens. Recombinant plasmids will be either introduced to USDA-approved salmonella vaccine strains for oral administration or introduced directly as DNA vaccines via intranasal route. Additionally, Dr. Lin would like to begin research on colistin-resistant *E. coli* strains isolated from agricultural animals (swine). Studies would involve both *in vitro* and *in vivo* experiments to examine transmission, persistence and ecological fitness of *mcr-1* gene in response to non-colistin factors that present in agricultural ecosystems. Briefly, the gene will be subcloned into *E. coli* K-12 derivatives (e.g. DH5-alpha, MG1655, etc.) as well as BL-21 for molecular characterization. Conjugations experiments to determine natural transmissibility of the gene will also be conducted using *E. coli* MG1655 as a putative recipient strain. The committee requested clarification on the applicability of Section III-A of the *NIH Guidelines* (major action) and necessity of NIH review/approval. Resultantly, they requested removal of the colistin-resistant *E. coli* and recombinant *mcr-1* gene studies pending a ruling from NIH Office of Science Policy. The *Campylobacter spp.* and respective recombinant studies were approved pending correction of the IACUC approval numbers, , the addition of an eyewash in the JARTU study suite, and clarification of the lab coat laundering. Containment was set at BSL-2/ABSL-2.

#IBC-06-274-2 (Steven Ripp) Recombinant DNA & Human Derived Materials, III-D-4-b, 3-year rewrite
Dr. Ripp's registration covers the development of bioluminescent bioreporter mammalian cell lines responsive to estrogens and androgens. The bioreporter will be derived from codon-optimized *lux*-containing cassettes. Both traditional transfection and lentiviral vector transduction will be used to

transform target cells. The resultant recombinant cell lines will then be used for xenografting (mouse model) so that tumor formation and treatments can be visualized *in vivo* (bioreporter expression induced by exposure to estrogens and androgens). Containment was set at BSL-2 for work with lentiviral vectors and human cell lines. The committee voted to approve the registration pending the correction of the waste contractor, correction of the biosafety cabinet certification date, and inclusion of human genes in the nontechnical summary.

#IBC-10-330-2 (Eric Boder) Human-Derived Materials & Recombinant DNA Registration, III-D-2-a, 3-year rewrite

Dr. Boder's research proposes to apply directed evolution of mammalian cell lines by engineering novel cell adhesion proteins, protein-ligating enzymes, antigen-presenting proteins, and membrane fusion proteins using standard molecular techniques. Ultimately these studies are intended to elucidate the functional properties of these types/classes of proteins in order to identify new phenotypes of interest for applications in drug delivery, biosensing, and vaccine design. Proteins of interest will be expressed and purified for studies of biochemical properties and function. Recombinant proteins will be displayed on the surface of yeast (*Saccharomyces cerevisiae* or *Pichia pastoris*) to screen for mutant proteins with special binding properties. The containment level was set at BSL-2 since human cell lines and retroviral vectors (replication incompetent ectopic MMLV-based vectors) will be used during the study. The committee approved the registration pending the removal of the Dougherty teaching lab reference from the technical summary, update of the autoclave validation dates, correction of the waste contractor information, and an update of the biosafety cabinet certification date.

#IBC-08-334-1 (Gladys Alexandre) Recombinant DNA, III-E, 3-year rewrite

Dr. Alexandre's registration covered basic recombinant techniques to analyze the function of various genes involved in chemotaxis and associated signal transduction pathways in the bacterium *Azospirillum brasilense*. Several intermediate cloning and DNA manipulation steps will be performed in non-pathogenic *E. coli*. Procedures will be conducted at BSL-1. The committee approved the registration pending correction of typographical errors, an update of the autoclave validation dates, and a clarification of culture volumes.

Administrative Report

i. *Contingencies*

Following up on October 18, 2017, IBC meeting, Dr. Subimal Datta's registration (#17-503-1) was edited to include training checklist/verification provided by the Biosafety Officer on 11/1/2017.

ii. *Administrative Approvals*

Dr. Marc Caldwell's registration #17-449-2 amendment to include the addition of tissue harvesting procedures (e.g., conceptus, brain/CNS) was administratively approved by the Biosafety Officer. Dr. Jeremiah Johnson's registration #16-441-2 amendment to include the addition of *E. coli* shiga-toxin-producing strains (STEC) for purposes of identifying bacteriophage that are capable of infecting and killing these strains was administratively approved by the IBC Chair (no change in review category or laboratory biosafety level). Dr. Thomas Denes' registration #16-444-2 amendment to increase culture volumes up to 1 liter was administratively approved by the Biosafety Officer (no change in agents or procedural scope).

iii. *Administrative Terminations*

Dr. Raul Almeida's registration (#05-248-2) was administratively terminated on 10/9/2017 (all materials in secure storage). Dr. Hollie Raynor's registration (#14-426-2) was administratively terminated on 10/17/2017 (project never initiated; no biohazards generated).

iv. *Administrative Exemptions:*
Dr. Frank Loeffler was administratively exempted on 11/2/2017 (low-risk recombinant constructs in *E. coli* K-1; as per section III-F-8/Appendix C-II of *NIH Guidelines*).

v. *Accidents, Injuries/Exposures:*
None.

vi. *Laboratory Report (Hamilton)*
Linda Hamilton reported to the committee that she is checking autoclave validation dates for this fiscal year, and added the teaching laboratories to the audit schedule.

vii. *iMedRIS Update, Manual Reviews, & System Orientation (Woofter)*
None.

Charter Revision Update
Brian Ranger gave the committee an update on the charter revision. The core charter/bylaws and roles/responsibilities have been drafted (pending minor revisions).

Zika Trial Update
Dr. Caldwell gave the committee an update on his Zika trial project. There have been no biosafety or biocontainment concerns to date.

Proposed undergraduate project involving high-risk human blood samples
Dr. Liz Fozo reported to the committee that she met with Dr. Chunlei Su concerning the undergraduate project involving high-risk human blood samples. Dr. Su acknowledged and agreed to reevaluate the project.

Peer Review with Clemson University - Findings
Brian is tabling this discussion for the next meeting and will be working on a comparison table listing the findings from Clemson University.

New Business:

Laboratory Visits and Tours
Brian reported concerns about a high school student tour in the College of Veterinary Medicine, particularly in the parasitology diagnostic lab (BSL-2 laboratory). The committee suggested drafting a policy requiring written language about tours in a BSL-2 laboratory to make visitors aware of the risks and provide appropriate PPE. Dr. Amy Knowles and Brian will work with Dean Thompson and the CVM Executive Committee on an appropriate policy.

Aerosol-generating Procedures
Linda has found in several instances of aerosol-generating procedures that cannot be conducted in primary containment. Linda proposed a registration section for collecting information and safeguards for aerosol-generating procedures that may need to occur outside of a biosafety cabinet (primarily in BSL-2 labs).

Orphaned Materials/Abandoned Equipment
Dr. Fozo gave the committee an update on the orphaned materials and abandoned equipment in the Walters Science Building basement. There is currently a discussion amongst the department heads in Biochemistry & Cellular and Molecular Biology and Microbiology about how to handle remediation and disposal in this area.

Mandatory Training Concern

Brian notified the committee that a principal investigator has refused to complete the mandatory refresher training (to date; deadline is 12/1/17). He will provide an update on the status of the training after the December 1st due date.

The meeting adjourned at 4:54 pm. The next meeting has been tentatively scheduled for December 20, 2017, in the Plant Biotechnology Building, Room 410.