

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

September 27, 2018

1 PM, Plant Biotechnology Bldg., Room 410

MEMBERS PRESENT: Vice Chair, Elizabeth Fozo; Marc Caldwell, Lori Cole, Doris D'Souza, Paul Dalhaimer, George Dizikes, Reza Hajimorad, Brittany Isabell, Jun Lin, Deidra Mountain

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

MEMBERS ABSENT: Chair, David White; Tamara Chavez-Lindell, Melissa Kennedy, Reggie Millwood, Jae Park, Ling Zhao

OTHERS PRESENT:

Opening:

The Vice Chair called the meeting to order at 1:01 PM. The minutes of August 15, 2018, were reviewed and approved as written. There was one abstention.

IBC Applications:

#IBC-12-396-1 (Elizabeth Howell) Recombinant DNA, III-E, 3-year rewrite

Dr. Howell's registration covers her research on chromosomal dihydrofolate reductase (DHFR) vs. R-plasmid-encoded DHFR (R67 DHFR). The registration proposes site-directed mutagenesis of the 2 DHFRs and the resulting effects on their ability to catalyze folate synthesis. Additionally, osmotic stress assays will be used to test tolerance of various accessory enzymes involved in the folate pathway. All recombinant proteins are produced in *E. coli* BL-21. Containment was set at BSL-1. The committee approved the registration as written.

#IBC-15-431-1 (Alison Buchan) Recombinant DNA, III-E, 3-year rewrite

Dr. Buchan's research involves the study of the pKNOCK-plasmid, which will be used to disrupt specific genes within selected strains of the marine bacteria (Roseobacters) that are studied in her lab. These strains are non-pathogenic and only grow in the presence of seawater. Dr. Buchan plans to disrupt genes that are involved in cell-to-cell communication amongst bacterial members of the same species as well as genes encoding for degradation of plant-derived aromatic compounds. Containment was set at BSL-1. The committee approved the registration pending an update to autoclave information and bleach contact time.

#IBC-17-450-2 (Cong Trinh) Recombinant DNA & Infectious Agents, III-D-1-a, amendment

Dr. Trinh's registration proposes the development of a virulent pathogen resistance (ViPaRe)

technology to inactivate pathogens using CRISPR genome editing. 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 risk group 2 pathogens of interest. His amendment included the modification of human cell lines using third generation lentiviral vectors. The committee voted to defer the review pending the submission of a new registration detailing the use of lentiviral vectors and human cell lines; the addition of Dr. Steven Ripp as co-investigator to the new registration; and the completion of hepatitis B vaccination and neutralizing antibody confirmation for all personnel working within the laboratory.

#IBC-18-527-2 (Deidra Mountain) Human Derived Materials, Nanoparticles, New Registration, DMR

Dr. Mountain's research covers the optimization of liposome development for peripheral vascular therapeutics and theranostics via lipid surface modifications for co-localization to vascular injury and design a cell selective nanocarrier system capable of differentially targeting vascular cell types in order to simultaneously deliver molecular therapeutics with opposing modes of actions. The committee reviewed this registration via Designated Member Review (DMR) and approved the registration as written on 9/4/2018.

Old Business:

Administrative Report

i. Contingencies

Following up on August 15, 2018, IBC meeting, Dr. Barry Rouse's registration (#06-280-2) was edited to include a clarification of procedures cited in his IACUC protocols; updates to the spill response plan; updates to the biosafety cabinet certification date; and updates to autoclave validation dates. Dr. Guoxun Chen's registration (#06-292-2) was updated to correct typographical errors; include updated laboratory information, spill response, and PPE cleaning procedures; and he has completed the Biohazardous Sharp Waste section. Dr. Elias Fernandez's registration (#12-385-1) was updated to include volumes and a statement indicating that culture vessels would not exceed 10 liters in volume. He also added a clarification about waste treatment and disposal, updated his facility information and the spill response. Dr. Oudessa Kerro Dego's registration (#15-430-2) was updated to include a clarification that challenge studies will be contingent upon IACUC approval; updated the laboratory location in ETREC Little River Dairy; and clarified that *S. aureus* strain would be used for mastitis challenges. The Biosafety Officer added the stipulation in the approval letter that all *M. bovis* work would be at the discretion and approval of the IACUC and ETREC LRD management. Dr. Ahmed Bettaieb's registration (#15-432-2) was updated to include a spill response. Dr. Subimal Datta's registration (#15-433-1) was administratively suspended pending approval that he may resume work.

ii. Administrative Approvals

Dr. Feng Chen's amendment to his registration (#05-238-2) was approved administratively by the Biosafety Officer to include the addition of terpene synthase and methyltransferase genes isolated from potatoes and poplars. Dr. Ling Zhao's amendment to her registration (#09-344-2) was approved administratively by the Biosafety Officer to include updated

Mossman facility information. Dr. Cong Trinh's amendment to his registration (#11-364-1) was approved administratively by the Biosafety Officer to include the addition of *Escherichia coli* vectors pcrRNA.ind (AddGene), pcrRNA.con (AddGene), pT18mobsacB (AddGene), pdCas9 (AddGene), pCSW21 (AddGene); *Saccharomyces cerevisiae* vectors pcDNA4-TO-Hygromycin-sfGFP-MAP (AddGene), p415-Gall-Cas9-CYC1t (AddGene), pMCSG7-Wt-NmeCas9 (AddGene), BPK2101 (AddGene), p2CT-His-MBP-Ppr_Cas13a_WT (AddGene), p2CT-His-MBP-Lbu_C2c2_WT (AddGene), PX404 (AddGene); *Yarrowia lipolytica* vectors pCRISPRyl (AddGene), p2CT-His-MBP-Lbu_C2c2_WT (AddGene), p2CT-His-MBP-Ppr_Cas13a_WT (AddGene); *Bacillus subtilis* vectors pJMP1 (AddGene), pJMP2 (AddGene), pJMP3 (AddGene). Dr. Elizabeth Lennon's amendment to her registration (#16-436-2) was approved administratively by the Biosafety Officer to include the addition of Human IgE from Myeloma. Dr. Cong Trinh's amendment to his registration (#17-450-2) was approved administratively by the Biosafety Officer pending an update to his registration to include the addition of pCRISPRa_VPR_yl (AddGene); *Staphylococcus aureus* vectors BPK2101 (AddGene).

iii. *Administrative Terminations*

Dr. Deidra Mountain terminated registration (#12-390-2) and has made arrangements to securely store, transfer or destroy the registered biological hazards. Dr. Robert Craft terminated registration (#13-402-2) and has made arrangements to securely store, transfer or destroy the registered biological hazards.

iv. *Administrative Exemptions:*

None.

v. *Accidents, Injuries/Exposures:*

None.

vi. *Laboratory Report (Hamilton)*

Linda Hamilton updated the committee on the new Biosafety refresher training options.

vii. *iMedRIS Update, Manual Reviews, & System Orientation (Woofter)*

None.

Charter Revision Update

Brian provided the committee with drafts to the Registration, Reporting, Review, & Recordkeeping SOP; Charter Bylaws; Audit SOP; Roles & Responsibilities; Event Escalation SOP; and Training SOP. He asked that the committee review the SOPs and guidelines and send comments by the end of the week.

WLS and JHB Lab Moves to the New Mossman Bldg. Update

Brian reported to the committee that animals would be temporarily housed in the Walter Life Sciences Animal Facility until issues with the Mossman Animal Facility could be remediated.

Bob Emery Peer Review Recommendations

Brian provided the committee with the summary of findings from the recent University of Tennessee Safety Program peer review.

New Business:

Annual Report

Brian provided the committee with a final draft of the FY2018 Annual Report.

BIORAFt Discussion

Brian notified the committee that several modules for BIORAFt have been purchased including the training, audit, and chemical inventory modules. The IBC module would not be purchased.

The meeting was adjourned at 2:45 PM. The next meeting is tentatively scheduled for October 25, 2018, in the Plant Biotechnology Building, Room 410 at 11 AM.