INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
August 18, 2021
3:00 PM, Zoom Meeting

MEMBERS PRESENT:	Chair - Elizabeth Fozo, Vice Chair-Stephen Kania, Feng Chen, Paul Dalhaimer, Lezlee Dice, George Dizikes, Doris D'Souza, Reza Hajimorad, Jun Lin, Jae Park, Ling Zhao Ex-Officio – Bryan Cranmore, Linda Hamilton, Ahmad Mitoubsi, Brian Ranger, Jessica Woofter
MEMBERS ABSENT:	Marc Caldwell, Lori Cole, Brittany Isabell, Deidra Mountain
OTHERS PRESENT:	Desmond Coates, Shigetoshi Eda, Reggie Millwood

Opening:

The IBC Chair called the meeting to order at 3:00 PM. The minutes of July 20, 2021, were reviewed and approved as written.

Full Member Review IBC Registrations:

#IBC-06-276-2 (Shigetoshi Eda) Infectious Agents and Human-derived Materials, 3-year rewrite
Dr. Shigetoshi Eda's registration covers two novel detection technologies for diagnosing Johne's disease (JD) caused by *Mycobacterium avium* subsp. *paratuberculosis* (MAP). Dr. Eda's research also hopes to develop rapid diagnostics for other diseases like Crohn's disease, bovine tuberculosis, mastitis, malaria, and Lyme disease. This registration covers approximately 20 Risk Group 2 infectious agents for specificity and sensitivity controls for the detection assays in development. Containment was set at BSL-2. The committee voted to approve the registration pending the addition of procedures and outcome measures to the non-technical summary; checking "on-campus collection/researcher" for the Tulane virus, Hepatitis A virus, and murine norovirus; correction of typographical errors; checking "yes" to indicate centrifugation; clarification regarding *E. coli* and Tulane virus usage; clarification in the technical summary about needle and slide usage; the addition of the **uprose** and aims of the project to the technical summary; a brief description of all methods needs to be added; clarification about type of serological test is being developed; addition of the methods beings used for *S. uberis* detection; correction of IACUC information; correction of the source for the calicivirus; the addition of the methods for HAV and MNV assay development; the addition of a SOP for work involving CWD; correction of the biosafety cabinet information; inclusion of the disposal method of CWD waste; and the correction of the OHP nurse information.

#IBC-09-342-2 (Jonathan Wall) Recombinant DNA & Human Derived Materials, III-D-4-a & III-E, 3-year rewrite
Dr. Wall's registration includes using a commercial phage library system to generate random

peptides or antibody fragments (scFv), specifically those that bind ligands of interest. One of them is amyloid or heparan sulfate, a sugar molecule found in amyloid deposits such as those that form in the brains of patients with Alzheimer's disease. Secondly, the study will involve isolation of RNA from patient tissues or cells, generation of cDNA by reverse transcription (primed for genes encoding amyloidogenic proteins, including immunoglobulin light chains, ODAM, apolipoprotein, and galactin-7), and cloning into a bacterial expression system (pET27B) for *E. coli*-based protein expression and isolation. Ultimately, these proteins are used to study cancer and amyloidosis and design new effective diagnosis and treatment methods. Thirdly, the study will involve expressing proteins of interest isolated from patient samples or synthetic genes commercially produced in human cells (e.g., HEK, MCF7, HeLa, and A375). Recombinant cell lines will then be xenografted into mice to generate tumors and study the effects of expressed proteins. These studies will lead to a better understanding of the disease (cancer and amyloidosis) and provide test beds for developing new therapies. Lastly, the study involves extracting human amyloid or light-chain proteins from donated organs obtained at autopsy or urine. This material will be used in laboratory studies and injected into mice to generate mouse models of the disease. Work with scFv and recombinant *E. coli* was approved at BSL-1; procedures involving human-derived materials, human cells lines, and xenografted mice were approved at BSL-2. The committee voted to approve the registration pending correction of minor typographical issues; clarification of what tissues in humans will the cDNA be isolated from, what are the "proteins of interest," mouse response to injection of human proteins, and whether SCID mice are used; clarification about the source of the nanoparticles, how is siRNA coated with the nanoparticles; clarification of how is siRNA not getting degraded in the vasculature of the mice; and clarification of "200 | NP/siRNA" in the technical summary.

#IBC-12-380-1 (Neal Stewart) Recombinant DNA, III-E-2-a, 3-year rewrite
Dr. Stewart's research involves functional analysis of several genes belonging to the ATP-binding (ABC) superfamily, including those related to herbicide resistance or bacterial pathogen resistance. Briefly, full-length cDNA of candidate genes are being cloned into plant expression vectors, which will be used to transform susceptible biotypes of horseweed, tobacco, and/or Arabidopsis plants. Plants will be transformed using *Agrobacterium*-mediated transformations to deliver individual vector constructs. Similarly, RNA interference (RNAi) and genome editing (CRISPR/Cas9) constructs will be designed to knock-out or inhibit ABC candidate gene expression in resistant biotypes. Plants will be grown in growth chambers and greenhouse (with pollen screens, pollen bags, or flower removal). Any field releases will be under the authority of a USDA APHIS BRS permit/notification. The proposed containment level is BL-1/BL-1-P. The committee voted to approve the registration pending an update to the title to reflect the project's scope; addition of information to the summaries regarding "other" listed genes; addition of a statement that work with plant pathogen resistance is inactive and that the committee will be notified upon work activation; and an update regarding off-campus collaborator information.

#IBC-12-382-1 (Neal Stewart) Recombinant DNA, III-E-2-a, 3-year rewrite
Dr. Stewart's research involves the development of new biotechnology for targeted genome modification in plants. Briefly, the research involves using genetically modified transcription activation-like effectors (TALEs) to target the promoter region of select plant genes, leading to activation of gene expression. Additionally, the TALE-specific activation domain will be replaced with an appropriate nuclease (TALENs) that could then be used for genome editing.

Containment was set at BSL-1/BL-1-P. The committee voted to approve the registration pending an update to the departmental approver; the addition of information in the technical summary regarding the AtPAP1 reporter gene; an update of the autoclave validation date; and correction of the medical contractor from Stericycle to Advantra.

#IBC-12-392-1 (Gladys Alexandre) Recombinant DNA, III-E, 3-year rewrite
Dr. Alexandre's research involves studying cell cycle genes (e.g., sep-1) and regulatory pathways that control genetic material and physical separation during cytokinesis. Dr. Alexandre will be using a well-established model, *Caenorhabditis elegans*, for hervstudies. Recombinant procedures will include RNAi introduction via *E. coli* "feeding" and biolistic transformation with fluorescent bioreporters (GFP fusions) to measure early gene expression. Containment was set at BSL-1. The committee voted to approve the registration pending confirmation of research and storage sites listed; removal of the autoclave and addition of the medical contractor, Advantra, to reflect the new waste procedures; and the completion of the biohazardous sharps waste section.

Old Business:

Administrative Report

i. *Contingencies*
Following up on August 18, 2021, IBC Meeting, Dr. Tim Sparer's registration (#06-277-2) was updated to include a clarification of UL146 and UL147 genes in the non-technical summary; the addition of coronavirus isolates in the infectious agents section; the inclusion of SARS work in the technical summary; revision of the contact time to at least 10 minutes up to overnight; the inclusion of language relating to immunosuppressed/compromised individuals as has been done for pregnant lab workers, i.e., contact OHS nurse for consultation and testing; and a statement about personnel getting SARS-CoV testing. Dr. Guoxun Chen's registration (#06-292-2) was updated to include the addition of hosts for the vectors and genes for each section; addition of the IACUC# for Zucker fatty rats; correction of minor typographical errors; an updated date for the biosafety cabinet certification; updated locations of the spill kits; identification of disinfectants and contact times in the spill response; and removal of the onsite autoclave and addition of the medical waste contractor, Advantra. Dr. Rebecca Trout Fryxell's registration (#12-384-1) was updated to include a statement regarding insect colonies and their purpose; replacement of IACUC# 2342 with 2192; update of the status of colonies for insects listed; clarification about mosquito colonies and whether they will be infected with the LaCrosse virus; and an update of the biosafety cabinet certification date. Dr. Ahmed Bettaieb's registration (#15-432-2) was updated to include the addition of Dr. Dalhaimer to the registration, clarification about cell proliferation and differentiation and the follow-up assay, and an update to the biosafety cabinet certification date.

ii. *Administrative Approvals*
None.

iii. *Administrative Terminations*
Dr. Jennifer DeBruyn's registration (#20-554-2) was terminated on 9/1/2021.

iv. *Administrative Exemptions:*
None.

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

vi. *Laboratory Report (Hamilton)*
None.

vii. *iMedRIS Update, Manual Reviews, & System Orientation (Woofter)*
Jessica, Brian, and Linda will meet at the end of August with the IBC Chairs to discuss the changes to the iMedRIS form.

New Business:

IBC Charter (Ranger)
Brian notified the committee that he updated the IBC Charter with NIH in July 2021. The changes included removing Dr. David White as ex-officio per his request, removing Dr. Melissa Kennedy due to her retirement, and the addition of Bryan Cranmore, the new OHP nurse, as an ex-officio member.

BSL-3 Commissioning (Ranger)
Brian requested that Dr. Kania notify him when Drs. Neelakanta and Sultana wish to commission the BSL-3 space. Dr. Kania agreed to contact them and get clarification about their research needs.

The meeting adjourned at 4:34 PM. The next meeting scheduled is for September 15, 2021, via Zoom.