INSTITUTIONAL BIOSAFETY COMMITTEE

UNIVERSITY of WASHINGTON

Meeting Minutes

Date: Wednesday, October 18, 2017
Time: 10:00 AM – 12:00 PM

Location: Foege N-130A

Members Present:
1. Garry Hamilton (*Community Member*)
2. Kevin Hybiske, Allergy and Infectious Diseases
3. David Koelle, Allergy and Infectious Diseases
4. Stephen Libby, Laboratory Medicine (*IBC Chair*)
5. Scott Meschke, Environmental & Occupational Health Sciences
6. Matthew R. Parsek, Microbiology
7. Jason Smith, Microbiology (*IBC Vice Chair*)
8. Paul Swenson, Seattle-King Co. Dept. of Public Health (*Community Member*)

Commonly Used Abbreviations
IBC: Institutional Biosafety Committee
BSO: Biological Safety Officer
BUA: Biological Use Authorization
BSL: biosafety level
PI: Principal Investigator
IACUC: Institutional Animal Care and Use Committee
NIH: National Institutes of Health
DURC: Dual Use Research of Concern
SOP: standard operating procedure

1. **CALL TO ORDER:** The Institutional Biosafety Committee (IBC) Chair called the meeting to order at 10:01 am. A quorum was present.

2. **REMINDER:** The IBC Chair reminded attendees that any notes that they retain are subject to public disclosure. A statement was also made about conflict of interest and voting on research proposals as described in the IBC Charter. This includes sharing a grant or a familial relationship.

3. **APPROVAL OF MINUTES:**
   - The IBC Chair sought a motion to approve the minutes from the September 20, 2017 meeting.
   - A member made a motion to approve the September 20, 2017 minutes. Another member seconded the motion.
   - The committee voted unanimously to approve the September 20, 2017 meeting minutes.

4. **BIOSAFETY OFFICER (BSO) REPORT***:* The Biosafety Officer Report includes (1) projects involving recombinant or synthetic nucleic acids covered under section III-E and III-F of the *NIH Guidelines,* (2) proposals involving non-recombinant biohazardous agents requiring BSL-1 and BSL-2 containment, and (3) administrative updates, such as room additions.

   a. Biosafety Officer Report
      - Dr. Doty renewed a project involving transgenic plants and the microbes living within plants.
      - Dr. Fuller added two rooms to her approval letter.
      - Dr. Loeb renewed a BUA involving plasmid DNA and human cell lines.
      - Dr. Varani and Dr. Risques each renewed a BUA involving human cell lines.
      - The IBC Chair sought a motion to approve this month's Biosafety Officer Report.
      - A member made a motion to approve this month's Biosafety Officer Report. Another member seconded the motion.
      - The Committee unanimously voted to approve this month's Biosafety Officer Report.

5. **OLD BUSINESS:**
   - At the April meeting, Dr. Hybiske's BUA was approved pending receipt of NIH approval for Chlamydia strains falling under section III-A of the NIH guidelines. The NIH approval was received. Dr. Hybiske needs to submit some SOPs and confirm that he has set up additional practices as required by the NIH.
   - At the August IBC meeting, Dr. Davis's project was approved pending the biosafety officer's review of the IACUC amendment. The IACUC amendment has not yet been submitted.
   - At the August IBC meeting, Dr. Hyde's project was approved pending the completion of the medical management plan, vaccine recommendations, and an occupational health consultation. This is still pending.

6. **DURC REPORT**
   - The DURC IRE (Dual Use Research of Concern Institutional Review Entity reviewed an application for Dr. West, whose BUA change will be discussed later at this meeting.
   - The agent involved is *Francisella tularensis*. The overall goals of the research are to test whether novel compounds called drugamers, which target specific lung cells such as the alveolar macrophage and release antibiotics in a tuneable fashion, are effective in treating wild type *F. tularensis* infections. The drugamers release antibiotics that are expected to

kill the bacteria without rendering it more resistant or more stable, transmissible, or more easily disseminated. No effect on the host or tropism is expected by these drugamers that release antibiotic to kill bacteria.

- The DURC IRE determined that none of the experimental effects of concern apply to this research, that the research does not meet the DURC definition, and that a risk mitigation plan is not warranted. A quorum of members voted to approve the application.
- The IBC Chair sought a motion to endorse the DURC IRE's recommendation to approve the DURC application.
- A member made a motion to approve the DURC application. Another member seconded the motion.
- The committee voted unanimously to approve the DURC application for Dr. West.

7. INDIVIDUAL PROJECT REVIEWS

1. Keel, Sioban, renewal, *Mechanism of Anemia*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a renewal. The lab researches the clinical, genetic, and molecular characterization of adult patients with inherited predisposition to hematologic malignancies and inherited bone marrow failure syndromes.
- Only ecotropic gammaretroviral vectors with oncogenic inserts are used. No amphotropic gammaretroviral vectors are used.
- The lab inspection was completed. The biosafety officer is waiting for the PI to respond to some questions about which autoclave is used to disinfect waste.
- All of the required trainings have been completed.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Keel.
- The Committee voted unanimously to approve the draft BUA for Dr. Keel, pending resolution of the autoclave questions.

2. Smith, Jason, change, *Antiviral Mechanisms of Defensins*

- One member declared a conflict of interest.
- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a change request. The investigator wants to add recombinant human and mouse polyomaviruses.
- In vitro work with the mouse polyomaviruses is performed at BSL-1 containment. No animal work is proposed at this time. The mouse polyomaviruses are mouse pathogens, so animal work (if proposed) would be conducted at ABSL-2.
- No lab inspection was required for this change, because the lab has recently been inspected. All of the required trainings have been completed.
- The IBC member who declared a conflict of interest left the room.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Smith.
- The Committee voted unanimously, with one abstention, to approve the draft BUA for Dr. Smith.

3. Fang, Ferric, change, *Salmonella Pathogenesis and Immunity*

- One member declared a conflict of interest.
- The assigned IBC Primary Reviewer presented the Primary Review.

- This is a change request to add third generation lentiviral vectors. The investigator will utilize CRISPR/Cas9 technology to target genes involved in iron metabolism.
- No lab inspection was required for this change, because the lab has recently been inspected. All of the required trainings have been completed.
- The IBC member who declared a conflict of interest left the room.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Fang.
- The Committee voted unanimously, with one abstention, to approve the draft BUA for Dr. Fang.

4. Zheng, Ying, renewal, *Microfluidic control of vascular growth and remodeling*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a renewal. The investigator seeks to recreate microvascularized tissue in vitro for regenerative medicine.
- Human induced pluripotent stem cells (iPS cells) and second generation lentiviral vectors will be used on the project.
- The investigator lists both second and third generation lentiviral vectors on the BUA application. They are using second generation lentiviral vectors. The references to third generation lentiviral vectors will be removed from the BUA.
- The lab was inspected and there were no deficiencies found. All of the required trainings have been completed.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Zheng.
- The Committee voted unanimously to approve the draft BUA for Dr. Zheng, contingent upon correction of the BUA application to remove references to third generation lentiviral vectors.

5. Childers, Martin, renewal, *Gene Therapy in Canine Myotubular Myopathy*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a renewal. The overall goal of the research is to develop and test viral vector gene therapy methods to treat neuromuscular diseases in canine models.
- Adeno-associated viral vectors (AAV) and human embryonic stem cells are used in canines.
- The human cells have been tested and confirmed to be negative for bloodborne pathogens including HIV, hepatitis B, and LCMV. Administration of the human cells is done at BSL-2 containment, and the dogs are then housed at ABSL-1 containment. ABSL-2 practices are followed regarding waste disposal.
- The lab was inspected and no deficiencies were noted. All of the required trainings have been completed.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Childers.
- The Committee voted unanimously to approve the draft BUA for Dr. Childers.

6. Clark, Edward, renewal, *Testing CD180-Based Hepatitis B Virus Vaccine in Macaques*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a renewal. The researchers use synthetic oligonucleotides as an adjuvant for the new vaccine technologies used in the lab. The vaccine also contains recombinant proteins containing hepatitis B virus antigens.

- Macaques are used on the project, at ABSL-2 containment.
- An inspection was not needed for this project, because the rooms were already inspected under the Washington National Primate Research Center (WaNPRC) core BUA.
- All of the required trainings have been completed.
- The IACUC protocol renewal has not yet been submitted. The biosafety officer will need to review the IACUC renewal once it is submitted.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Clark.
- The Committee voted unanimously to approve the draft BUA for Dr. Clark, pending submission of the IACUC protocol.

7. Curnow, Eliza, renewal, *Reproductive Biology and Stem Cell Program*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a renewal. The goal of the research is to utilize gene editing techniques to develop nonhuman primate models of human disorders.
- Transgenic macaque embryos are used on the project. AAV, TALEN, and CRISPR reagents are used to edit macaque embryos and pluripotent stem cells.
- The lab was inspected and all deficiencies (relating to out-of-date signs) were corrected. The required trainings have all been completed.
- The IACUC protocol renewal has not yet been submitted. The biosafety officer will need to review the IACUC renewal once it is submitted.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Curnow.
- The Committee voted unanimously to approve the draft BUA for Dr. Curnow, pending submission of the IACUC protocol.

8. Fuller, Deborah, renewal, *Immunogenicity and efficacy of universal influenza DNA vaccine in nonhuman primates*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a renewal. The Fuller lab is trying to develop DNA vaccines against influenza A virus. They deliver DNA in complex with gold particles via gene gun into the skin. The DNA encodes viral antigens as well as adjuvants. Macaques are immunized with this experimental vaccine and then challenged with contemporary circulating strains of influenza virus.
- The BUA application references historical non-circulating strains. The Fuller lab is only planning to use contemporary circulating strains, and so the references to historical non-circulating strains should be removed.
- The committee discussed the term “historical non-circulating strains.” When PIs are using historical non-circulating strains, they should clarify that these strains do not include former pandemic strains such as H2N2 and 1918 H1N1. These exclusions should also be listed on the BUA letter. The Fuller BUA letter does not need to be modified, because only contemporary circulating strains are used.
- A question was raised about whether the use of a gene gun constitutes enhanced gene delivery. The IBC has not considered this enhanced gene delivery because it uses a physical mechanism to deliver genes rather than being inherently enhanced.
- The lab was inspected and no deficiencies were noted. All of the required trainings have been completed.

- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Fuller.
- The Committee voted unanimously to approve the draft BUA for Dr. Fuller, pending removing references to historical non-circulating strains on the BUA application.

9. Gale, Michael, change, *The Host Response to Virus Infection*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a change request to add wild-type rhinovirus A strains for in vivo use in mice. The rhinovirus strains are mouse adapted, but not created with recombinant DNA technology.
- This work falls under section III-D because the wildtype virus is used in a transgenic mouse model.
- No inspection was required for this change because the rooms have been recently inspected. All of the required trainings are up-to-date.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Gale.
- The Committee voted unanimously to approve the draft BUA for Dr. Gale.

10. Gordon, Sharona, renewal, *Mechanisms of TRP Channel Modulation*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a 3-year renewal. The lab studies the physiology and the role of channels involved in sensations such as pain, hot, cold, pressure, and vision.
- A second-generation lentiviral vector will be used on the project. No oncogenic inserts are part of the vector. No animals are used on the project.
- The lab was inspected and no deficiencies were noted. All of the required trainings have been completed.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Gordon.
- The Committee voted unanimously to approve the draft BUA for Dr. Gordon.

11. Hellstrom, Karl, renewal, *Tumor Vaccines*

- The assigned IBC Primary Reviewer presented the Primary Review.
- The overall goal of the research is to develop more effective immunotherapy for cancer, focusing on immunomodulatory monoclonal antibodies and therapeutic vaccines for tumors.
- Ecotropic gammaretroviral vectors, adenoviral vectors, and third generation lentiviral vectors are used on the project. Human cells, blood, and urine are also used.
- The lab was inspected and no deficiencies were noted. All of the required trainings have been completed.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Hellstrom.
- The Committee voted unanimously to approve the draft BUA for Dr. Hellstrom.

12. Murphy, Sean, change, *Immunity to malaria infection*

- The assigned IBC Primary Reviewer presented the Primary Review.

- This is a change request to add an adeno-associated viral vector, to be used in vitro and in mice. The AAV vector will contain genes encoding parasite antigens. Mice will be vaccinated and then challenged with malaria infection (malaria is already approved on the Murphy protocol).
- A lab inspection was not required because the rooms have recently been previously inspected. All of the required trainings have been completed.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Murphy.
- The Committee voted unanimously to approve the draft BUA for Dr. Murphy.

13. Pepper, Marion, renewal, *The Differentiation and Protective Function of CD4+ memory T cells*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a renewal. The lab seeks to understand how cells of the adaptive immune system develop to either prevent disease or cause allergic responses. Both wildtype and transgenic mice are used on the project.
- Many different Risk Group 2 pathogens are used on the project, including *Listeria monocytogenes*, Lymphocytic choriomeningitis virus, *Toxoplasma gondii, Plasmodium falciparum*, influenza virus, and respiratory syncytial virus. Several Risk Group 1 mouse *Plasmodium* species are also used.
- The lab was inspected and all deficiencies were corrected. All of the required trainings have been completed.
- The IACUC protocol renewal has not yet been submitted. The biosafety officer will need to review the IACUC renewal once it is submitted.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Pepper.
- The Committee voted unanimously to approve the draft BUA for Dr. Pepper, pending submission of the IACUC protocol.

SUBCOMMITTEE REPORTS:

14. Gale, Michael, change, *Host Response to BSL-3 Pathogens*

- Four members of the IBC served as the Subcommittee Reviewers. One of the Subcommittee Reviewers presented the Subcommittee Report.
- This is a change request to add two old-world Hantavirus strains for use in mice, Hantaan strain HNTV76-118 and Seoul strain SR-11.
- The PI will be using *Mus musculus*, which is not the natural host for either of these strains. The PI has literature references that suggest that certain mouse strains are susceptible to infection. The route of administration will be IP injection.
- A discussion occurred about autoclaving of cages. The cages are double bagged and then autoclaved, and the waste is incinerated after it is autoclaved.
- The committee discussed PPE doffing procedures.
- The committee discussed puncture-resistant gloves and whether to explore this as an option. The gloves are thick enough that dexterity would be impaired, and thus puncture-resistant gloves would probably not enhance safety. The committee discussed forceps handling as an alternative method to minimize needlestick and bite risk.
- The Gale lab will try different PPE strategies and will stay in contact with the biosafety officer and Comp Med to optimize safety procedures.

- Medical management plans are in place for Hantavirus. The Gale lab has SOPs in place that have been reviewed by the biosafety officer. The BSL-3 facility is regularly inspected.
- All of the required trainings have been completed.
- The draft BUA letter was shown.
- A member made a motion to approve the draft BUA letter for Dr. Gale. Another member seconded the motion.
- The Committee voted unanimously to approve the draft BUA for Dr. Gale.

15. Gale, Michael, change, *Host Response to BSL-3 Pathogens*

- Four members of the IBC served as the Subcommittee Reviewers. One of the Subcommittee Reviewers presented the Subcommittee Report.
- This is a change request to add four strains of highly pathogenic H5N1 avian influenza (HPAI) for use in a mouse model. These strains are already approved for in vitro use.
- The committee discussed the issue of oseltamivir sensitivity. The UW HPAI medical management plan is contingent upon all of the strains being sensitive to oseltamivir (Tamiflu). Therefore, it is important to determine if the strains requested by the Gale lab are sensitive. A single amino acid change can confer oseltamivir resistance. The committee decided that the strains should be genotyped and the Sanger sequencing report as well as the sequence resistance score for each batch should be analyzed by an internal expert prior to shipment, to confirm that the strains do not show evidence of oseltamivir resistance.
- The committee discussed aspects of the medical surveillance plan. Researchers working on this project take their temperature every morning and report the thermometer reading to the occupational health physician. The medical management plan is followed at any sign of a fever.
- Contemporary circulating strains (or any other flu virus) are not used at the same time as HPAI.
- The Gale lab has SOPs in place that have been reviewed by the biosafety officer. The BSL-3 facility is regularly inspected.
- All of the required trainings have been completed.
- The draft BUA letter was shown.
- A member made a motion to approve the draft BUA letter for Dr. Gale. Another member seconded the motion.
- The Committee voted unanimously to approve the draft BUA for Dr. Gale.

16. West, Timothy Eoin, change, *Host genetics and response to infection*

- Four members of the IBC served as the Subcommittee Reviewers. One of the Subcommittee Reviewers presented the Subcommittee Report.
- This is a change request to add wild-type *Francisella tularensis*, a Risk Group 3 agent requiring BSL-3 containment, for use in vitro and in a mouse model. *Francisella novicida*, a Risk Group 2 agent requiring BSL-2 containment, will also be used. The West lab will be practicing their procedures with *Francisella novicida* before they conduct *Francisella tularensis* experiments.
- The committee discussed the endotracheal procedure used to infect mice and the very low infectious dose of *F. tularensis*. Respiratory protection, a standard feature of BSL-3 containment, will be used.

- *Francisella tularensis* appears on the list of DURC agents (Dual Use Research of Concern) and the DURC IRE also reviewed this work. The committee determined that Dr. West's experiments do not constitute DURC.
- The West lab has SOPs in place that have been reviewed by the biosafety officer. The BSL-3 facility is regularly inspected.
- All of the required trainings have been completed.
- The draft BUA letter was shown.
- A member made a motion to approve the draft BUA letter for Dr. West. Another member seconded the motion.
- The Committee voted unanimously to approve the draft BUA for Dr. West.

17. Hawn, Thomas, change, *Innate Immunity and Susceptibility to Infectious Disease*

- Two members of the IBC served as the Subcommittee Reviewers. One of the Subcommittee Reviewers presented the Subcommittee Report.
- This is a change to add a new strain of *Mycobacterium tuberculosis*. Many other strains have been previously approved on this BUA. This strain was reviewed by the IBC subcommittee reviewers and the occupational health physician. The precautions and SOPs that the Hawn lab already has in place are sufficient for this new strain.
- A lab inspection was not required because the lab has been recently inspected.
- All of the required trainings have been completed.
- The draft BUA letter was shown.
- A member made a motion to approve the draft BUA letter for Dr. Hawn. Another member seconded the motion.
- The Committee voted unanimously to approve the draft BUA for Dr. Hawn.

FOR YOUR INFORMATION:

- October is National Biosafety Month. EH&S Biosafety is focusing on sharps safety outreach. A new poster has been developed and is being distributed to labs.

ISSUES FROM THE FLOOR & PUBLIC COMMENTS:

There were no issues from the floor, and no public comments.

MEETING ADJOURNED AT APPROXIMATELY 12:00 p.m.