



INSTITUTIONAL BIOSAFETY COMMITTEE

UNIVERSITY *of* WASHINGTON

Meeting Minutes

Date: Wednesday, March 18, 2015

Time: 10:00 AM – 12:00 PM

Location: Health Sciences Building T-269

- Members Present:**
1. Michael Agy, Washington National Primate Research Center
 2. Thea Brabb, Comparative Medicine (*Animal Containment Expert*)
 3. H.D. "Toby" Bradshaw, Biology (*Plant Expert*)
 4. Lesley Colby, Comparative Medicine (*Animal Containment Expert*)
 5. Elizabeth Corwin (*Human Gene Transfer Expert; IBC Vice Chair*)
 6. William Glover, Washington State Public Health Laboratories (*Community Member*)
 7. Jean Haulman, UW Travel Clinic
 8. David Koelle, Allergy and Infectious Diseases
 9. Jeanot Muster, Pharmacology
 10. Matthew R. Parsek, Microbiology
 11. Eric Stefansson, Environmental Health & Safety (*Biosafety Officer*)
 12. Paul Swenson, Seattle-King Co. Dept. of Public Health (*Community Member*)

1. **CALL TO ORDER:** The Institutional Biosafety Committee (IBC) Vice Chair called the meeting to order at 10:02 am. A quorum was present.
2. **REMINDER:** The IBC Vice 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 Vice Chair sought a motion to approve the minutes from the February 18th, 2015 minutes meeting.
 - A member made a motion to approve the February 18th, 2015 minutes. Another member seconded the motion.
 - The committee voted unanimously to approve the February 18th, 2015 meeting minutes.
4. **BIOSAFETY OFFICER (BSO) REPORT:** The BSO report is for project reviews involving infectious agents and for projects falling under Section III-E and III-F of the *NIH Guidelines*.
 - a. Biosafety Officer Report
 - Dr. Di Stilio, Dr. Liu, Dr. Cross, Dr. Stamatoyannopoulos, Dr. Kiem, and Dr. Seelig each added new space for work with previously approved agents.
 - Dr. Reed and Dr. Van Gelder each renewed a BUA involving work with human source material.
 - Dr. Wataha and Dr. Yu each received a new BUA approval for work with human source material.
 - Dr. Mougous received approval for three new agents for in-vitro use, *Haemophilus influenza*, *Listeria innocua*, and *Listeria monocytogenes*. This project was presented at last month's IBC meeting as a III-D amendment and should not have appeared on this biosafety officer report.
 - Dr. Bradshaw renewed a BUA approval for the Botany Greenhouse. This is a core facility. Each principal investigator who uses transgenic plants falling under section III-E or III-D of the NIH Guidelines in the Botany Greenhouse will have their own BUA approval.
 - Dr. Holmes added a new risk group 2 agent, *Trichomonas vaginalis*, to his BUA approval.
 - Dr. Rieke renewed a BUA involving work with non-human primate source material, including eye tissue from non-human primates previously experimentally exposed to *Chlamydia trachomatis*.
 - Dr. Merrikh renewed a BUA involving work with *Bacillus cereus* and *Bacillus thuringiensis* used in vitro and in insects.
 - Dr. Klatt received a new BUA approval for work with non-recombinant simian immunodeficiency virus (SIV) and non-human primate source material. A question was raised about why this appears on the biosafety officer report. It is on the biosafety officer report because the SIV is not recombinant.
 - Dr. Naish added the use of *Vibrio anguillarum* for use in salmon and in vitro.
 - Dr. Eichler renewed a BUA involving work with human cells (including induced pluripotent stem cells) and non-human primate blood and cell lines.
 - Dr. Hauschka received a new BUA approval for human and non-human primate source material and plasmid DNA.

- The IBC Vice Chair sought a motion to approve this month's Biosafety Officer Report.
- One member declared a conflict of interest.
- A member made a motion to approve this month's Biosafety Officer Report. Another member seconded the motion.
- The Committee unanimously voted, with one recusal, to approve this month's Biosafety Officer Report.

5. CATEGORY III-D AMENDMENTS (*Biological Use Authorization (BUA) letters attached*)

1. Chen, Eleanor, change, *Druggable pathways in rhabdomyosarcoma*
 - The biosafety officer presented the project.
 - This change adds stably transfected human cells for use in mice. These cells were already approved on the BUA letter, but for in vitro use only.
 - The assigned IBC member endorsed the biosafety officer's review.
 - The draft BUA letter was shown.
 - The assigned IBC member made a motion to approve the draft BUA for Dr. Chen. A second is not needed since he endorsed the review.
 - The Committee voted unanimously to approve the draft BUA for Dr. Chen.
2. Kean, Leslie, change, *Transplant Tolerance in Non-Human Primates*
 - The biosafety officer presented the project.
 - This change adds lentiviral vectors. Lentiviral vectors are already approved on another BUA letter for Dr. Kean.
 - The assigned IBC member endorsed the biosafety officer's review.
 - The draft BUA letter was shown.
 - The assigned IBC member made a motion to approve the draft BUA for Dr. Kean. A second is not needed since he endorsed the review.
 - The Committee voted unanimously to approve the draft BUA for Dr. Kean.

6. INDIVIDUAL PROJECT REVIEWS

3. Cookson, Brad, renewal, *Development of Reactive T-cells after Vaccination*
 - The assigned IBC Primary Reviewer presented the Primary Review.
 - The lab's research revolves around the idea that a greater understanding of immune responses will provide novel insights into host-pathogen interactions. Work is aimed at understanding the requirements for inducing a strong T cell response to foreign antigens.
 - Many species of risk group 2 bacteria are used on this project, including *Staphylococcus aureus*, *Listeria monocytogenes*, and *Francisella novicida*. Lentiviral, adenoviral, and gammaretroviral vectors are also used.
 - One of the rooms listed on the BUA application is the irradiator in the vivarium. However, on the animal protocol, Dr. Cookson indicates that no irradiation will be conducted on this project. Dr. Cookson should clarify whether or not he plans to irradiate any animals on this project.
 - Dr. Cookson indicates that the *Y. pestis* strains are exempt from the select agent regulations, and he has worked with the same exempt strains for several years.

However, the strains were not written on this BUA application. The exact strains should be added for clarity.

- Several biological toxins are used in this project. The investigator should clarify that the amounts of toxin used are within the permissible amounts and exempt from the select agent program.
- The investigator should also clarify that only cytokines not on the oncogene list will be used in adenoviral vectors.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Cookson. A second is not needed since she is the Primary Reviewer.
- The Committee voted unanimously to approve the draft BUA for Dr. Cookson, pending clarification of irradiation, cytokines, *Y. pestis* strains, and biotoxin amounts.
 - *Post meeting update: No irradiation of mice will occur. Yersinia pestis strains and biological toxins used on this project are exempt from select agent regulations. Only cytokines not on the oncogene list will be used in adenoviral vectors.*

4. Dhaka, Ajay, renewal, *Circuit Tracing Cool Sensation*

- The assigned IBC Primary Reviewer presented the Primary Review.
- The lab studies sensory neurons and seeks to identify the neuronal populations that are activated by cold temperatures and noxious heat.
- A herpes viral vector and wild-type herpes simplex virus type 1 are used on this project. AAV (adeno-associated viral vectors) and a rabies-based viral vector are also used.
- The rabies virus vector is avian pseudotyped. This means that it does not have the correct capsid gene to infect mammalian cells. The rabies virus vector is also missing the glycoprotein that would allow the virus to spread across synapses.
- If this rabies virus vector were to be accidentally injected into a human, no immune response or disease would occur because humans lack Cre recombinase.
- The vector is being used as a retrograde tracer. It will be bought from a vendor rather than made by the investigator.
- The draft BUA letter was shown.
- Certain drugs are not indicated in the event of an exposure event to the herpes simplex viral vector (HSV 129-TK-TT). The lab personnel and Employee Health Center are aware of this.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Dhaka. A second is not needed since she is the Primary Reviewer.
- The Committee voted unanimously to approve the draft BUA for Dr. Dhaka.

5. Hauschka, Stephen, change, *New Regulatory Cassettes for Treating Diseased Muscle Tissues*

- The assigned IBC Primary Reviewer presented the Primary Review.
- The laboratory designs and tests regulatory cassettes to be used in gene therapy treatment strategies for cardiac and skeletal muscle diseases. They also assist the UW Institute for Protein Design by producing properly post-translationally modified, folded & secreted proteins in human cell culture that are designed for a wide variety of disease treatment strategies.
- This is a change to an existing protocol. The investigator wishes to add AAV and lentiviral vectors for in-vitro use.

- The investigator listed oncogenic inserts in the gene delivery of the application. However, section 7 wasn't filled out. The investigator should complete section 7.
 - The draft BUA letter was shown.
 - The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Hauschka. A second is not needed since he is the Primary Reviewer.
 - The Committee voted unanimously to approve the draft BUA for Dr. Hauschka, pending completion of the application by the investigator.
6. Kiem, Hans-Peter, change, *Targeted Modification of Host and Proviral DNA to Treat Latent HIV Infection*
- The assigned IBC Primary Reviewer presented the Primary Review.
 - This is a change to an existing protocol. The investigator wants to add adenoviral vectors for use in macaques.
 - Part 6 and 7 of the application should be completed.
 - The lab was recently inspected, and so it didn't need to be re-inspected for this change.
 - The draft BUA letter was shown.
 - The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Kiem. A second is not needed since she is the Primary Reviewer.
 - The Committee voted unanimously to approve the draft BUA for Dr. Kiem, pending completion of the application.
7. Kim, Deok-Ho, renewal, *Micro- and nanoengineering of the cell microenvironment for stem cell therapy and tissue engineering*
- The assigned IBC Primary Reviewer presented the Primary Review.
 - The lab researches the development of novel stem cell therapeutic strategies for cardiovascular repair and regeneration, specifically by using novel scaffold and drug delivery technologies that will address issues in current tissue engineering and drug delivery approaches.
 - The investigator uses human induced pluripotent stem cells and embryonic stem cells.
 - The draft BUA letter was shown.
 - The lab inspection has been completed and training records are in place.
 - The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Kim. A second is not needed since she is the Primary Reviewer.
 - The Committee voted unanimously to approve the draft BUA for Dr. Kim.
8. Kim, Jeansok, change, *Using molecular biological approaches to understand fear-related behavior in predator-prey interactions*
- The assigned IBC Primary Reviewer presented the Primary Review.
 - This is a change to an existing protocol. The investigator wants to add canine adenovirus for use in rats.
 - The draft BUA letter was shown.
 - A discussion occurred regarding which sections of the application the PI should fill out. Parts six and seven of the application are required when the investigator is using new gene inserts. However, the same gene inserts will be used (in a different vector system). The committee decided that the parts of the application that were filled out were correct.

- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Kim. A second is not needed since he is the Primary Reviewer.
- The Committee voted unanimously to approve the draft BUA for Dr. Kim.

9. Ladiges, Warren, renewal, *Mouse Genomics Program*

- The assigned IBC Primary Reviewer presented the Primary Review.
- The overall goals of the research are to investigate the mechanisms of aging and age-related diseases and determine how intervention and treatment strategies can be developed and applied.
- Adeno-associated viral vectors are used in mice and in vitro. Exempt non-pathogenic *E. coli* strains are also used.
- There are some minor corrections that need to be made on the BUA application. Question 22 should be completed, and III-F should be marked on question 54.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Ladiges. A second is not needed since he is the Primary Reviewer.
- The Committee voted unanimously to approve the draft BUA for Dr. Ladiges, contingent upon correcting the BUA application.

10. Martins, Timothy, renewal, *High Throughput Screening*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This project is a three year renewal for the High Throughput Screening Core within the Institute for Stem Cell and Regenerative Medicine (ISCRM). The core serves as a service provider, performing high throughput functional genomics and small molecule, such as siRNA and drug, screening for UW investigators, external investigators from academic institutions, and for-profit biotech and pharmaceutical organizations. The core utilizes laboratory automation equipment, including automated liquid handling robotics and automated microscopy and plate readers.
- Investigators who use the core will have their own BUA approvals.
- The draft BUA letter was shown.
- One member declared a conflict of interest.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Martins. A second is not needed since she is the Primary Reviewer.
- The Committee voted unanimously, with one recusal, to approve the draft BUA for Dr. Martins.

11. Nghiem, Paul, change, *Skin Cancer Studies*

- One member declared a conflict of interest.
- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a change to an existing protocol. The investigator is adding amphotropic gammaretroviral vectors for in vitro use.
- This investigator is currently studying the T cell receptor (TCR) repertoire present in Merkel cell carcinoma patients. This work involves use of various viral transduction methods to transfer TCR genes into human cell lines and primary cells in vitro to assess correlates of T cell immunity associated with particular TCRs.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Nghiem. A second is not needed since she is the Primary Reviewer.

- The Committee voted unanimously, with one recusal, to approve the draft BUA for Dr. Nghiem.

12. Paragas, Neal, new, *Host and Bacterial Factors Affecting the Outcome of Urinary Tract Infections*

- The assigned IBC Primary Reviewer presented the Primary Review.
- This is a new project. The investigator is interested in measuring the host response to urinary tract infections caused by *E. coli*. Pathogenic strains of *E. coli* will be used.
- Question 3 on the BUA application was not answered.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Paragas. A second is not needed since he is the Primary Reviewer.
- The Committee voted unanimously to approve the draft BUA for Dr. Paragas, pending completion of question 3 on the BUA application.

13. Raskind, Wendy, renewal, *Genetic Contributions to Endophenotypes of Dyslexia; Gene Discovery in Neurogenetic Disorders; Spinocerebellar-Ataxia Type 14: Animal models of human disease; Raising Healthy Children; Genetics of Autism; Genetics of Human Diseases*

- The assigned IBC Primary Reviewer presented the Primary Review.
- The lab studies inherited human diseases to identify the genes that cause them. The effect of mutations on the function of genes is also studied.
- Agents used on this project include Epstein-Barr virus, lentiviral vectors, and human and non-human primate source material.
- The draft BUA letter was shown.
- A discussion occurred regarding *C. elegans*. Transgenic *C. elegans* are worms, and the NIH Guidelines clearly include both vertebrate and invertebrate animals. The committee decided that the *C. elegans* used in the lab should be included on the letter.
- There is still one room that needs to be inspected.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Raskind. A second is not needed since she is the Primary Reviewer.
- The Committee voted unanimously to approve the draft BUA for Dr. Raskind, contingent upon adding *C. elegans* to the BUA letter and inspecting one room.

14. Thomas, Wendy, renewal, *Biological Adhesion in Flow and under Force*

- The assigned IBC Primary Reviewer presented the Primary Review.
- The lab studies the regulation of adhesive proteins, the molecules that help blood cells and pathogens bind to tissue.
- Agents used on this project include pathogenic strains of *E. coli*, *Streptococcus* and *Staphylococcus* species, and human blood.
- The draft BUA letter was shown.
- The IBC Primary Reviewer made a motion to approve the draft BUA for Dr. Thomas. A second is not needed since he is the Primary Reviewer.
- The Committee voted unanimously to approve the draft BUA for Dr. Thomas.

SUBCOMMITTEE REPORTS:

15. Katze, Michael, renewal, *Analysis of Cellular Gene Expression upon Infection with SARS-CoV*

- Two members of the IBC served as the Subcommittee Reviewers. One of the Subcommittee Reviewers presented the Subcommittee Report.
- This is a renewal of a project initiated in 2008 involving non-infectious full genomic RNA of SARS-CoV (severe acute respiratory syndrome – associated coronavirus). SARS-CoV, including full genomic RNA, has been regulated as a Select Agent since 2013.
- The goal of the project is to determine the host transcriptional response to SARS-CoV infections using microarrays, PCR, and next-generation sequencing.
- The Katze lab receives TRIzol treated homogenates from mouse organs or cell lysates from human or mouse cells previously infected with SARS-CoV. TRIzol is a phenol guanidine isothiocyanate solution that rapidly deprotonates and inactivates biological material. RNA is isolated from these homogenates and analyzed. Probes are generated for PCR and microarray transcriptomic analysis.
- The Katze lab is enrolled in the select agent program and is included on the UW’s registration.
- The draft BUA letter was shown.
- A member made a motion to approve the draft BUA letter for Dr. Katze. Another member seconded the motion.
- The Committee voted unanimously to approve the draft BUA for Dr. Katze.

16. Infectious Waste Plan

- The UW Biohazard Waste Management Plan has been updated. The sharps definition, contact information, and waste flow charts were updated. References to the biohazard waste contractor and Department of Transportation training were also added. The plan has been reviewed and includes feedback by the UW infectious Waste Committee.
- An IBC subcommittee was formed to review the draft Biohazardous Waste Management Plan and make a recommendation regarding the handling of ABSL-3 waste and carcasses. The current plan requires that ABSL-3 waste is both steam sterilized and incinerated.
 - None of the applicable federal, state, or local regulations require both steam sterilization and incineration of ABSL-3 waste and carcasses. Other institutions queried on their methods use a combination of procedures, some only steam sterilizing, and others performing both sterilization and incineration of ABSL-3 waste and carcasses.
 - The subcommittee reviewed applicable regulations, including the NIH Guidelines, the City of Seattle Municipal Code, and the federal Select Agent Program.
 - The subcommittee recommends to maintain the current draft proposal to sterilize and incinerate ABSL-3 waste and carcasses.
- The subcommittee also has some feedback relating to other parts of the proposal.
 - The subcommittee recommended that on the table on page 9 of the document, “ABSL-2 and ABSL-3 Animal Tissue/Carcasses/Bedding” should be changed to “ABSL-2 Animal Tissue/Carcasses/Bedding.” ABSL-3 waste is addressed in the previous row and so this row should refer only to ABSL-2 waste.
 - The subcommittee recommended that “Large Animal Carcasses” should be added to the table on page 9 of the document, with “Off-site Incineration” as the treatment. This recommendation was made because steam sterilization alone may not be sufficient for large animals.
 - The committee discussed this recommendation. There is no standard definition for ‘large animal.’

- The committee decided that rather than attempting to provide a definition of 'large animal,' wording about how on-site sterilization is appropriate only "when known to be effective" should be added to the document.
 - The subcommittee recommended that wording about leak-proof secondary containers should be added in section VIII, part E.
 - The subcommittee recommended that instructions should be added about properly closing bags (loosely tying them) prior to steam sterilization.
 - The committee discussed the definition of steam sterilization. This is already included in the document under section VII, part A: "Steam sterilization (i.e., autoclaving) must be a minimum temperature of two hundred fifty degrees Fahrenheit (250oF) or (121oC) for at least one-half (1/2) hour or longer, depending on quantity and compaction of the load, in order to achieve sterilization of the entire load. Greater time and/or temperatures may be necessary to effectively sterilize a load.
- A member made a motion to approve the draft UW Biohazardous Waste Management Plan after four changes are made:
 - (1) On page 9, change "ABSL-2 and ABSL-3 Animal Tissue/Carcasses/Bedding" to "ABSL-2 Animal Tissue/Carcasses/Bedding.
 - (2) On page 9, add wording about how steam sterilization is appropriate only when known to be effective.
 - (3) Add wording about leak-proof secondary containers in section VIII, part E.
 - (4) Add instructions about properly tying bags loosely prior to steam sterilization.
- Another member seconded the motion.
- The Committee voted unanimously to approve the draft UW Biohazardous Waste Management Plan, contingent upon the above four changes.

ISSUES FROM THE FLOOR & PUBLIC COMMENTS:

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

MEETING ADJOURNED AT APPROXIMATELY 11:45 am.