MINUTES OF THE INSTITUTIONAL BIOSAFETY COMMITTEE MEETING
July 19, 2013
1:00 PM, 410 Plant Biotechnology Building

MEMBERS PRESENT:	Jun Lin, Vice-Chair; Seung Baek, David Bemis, Tamara Chavez-Lindell, Doris D'Souza, Al Iannacone, Melissa Kennedy, Dan Kestler, Jae Park, Ling Zhao
	Ex-Officio –Brian Ranger, Jonathan Phipps, Mark Smith
MEMBERS ABSENT:	Chunlei Su, Chair; Patti Coan, Paul Dalhaimer, Reggie Millwood, Bonnie Ownley
OTHERS PRESENT:	Dr. Michael Karlstad, Jessica Woofter

Opening:

The meeting was called to order by Vice Chair, Jun Lin at 1:00 PM.

Minutes of May 15, 2013 were reviewed and approved as written.

IBC Applications:

#313-13 (Elena Shpak) Recombinant DNA Registration, III-E-2-a, 3-year rewrite
Dr. Shpak's research proposes to generate transgenic *Arabidopsis thaliana* plants expressing various proteins in order to better understand mechanisms regulating plant size and shape. *Agrobacterium* strains carrying genes of interest on a binary vector are grown overnight, suspended and then above-ground parts of plants are dipped in *Agrobacterium* solution and plants are environmentally controlled for 16-24 hours. Seeds are later harvested and selected for transformants using antibiotic or herbicide selectable marker. Following analysis, seeds are autoclaved for disposal. The containment level was established at BSL-1/BL-1-P. The committee approved the registration pending clarification of the genes listed.

#315-13 (Jae Park) Recombinant DNA Registration, III-D-4-a, 3-year rewrite
Dr. Park's research proposes the generation of transgenic *Drosophila melanogaster* for the purpose of understanding gene functions in the Drosophila central nervous system. To produce transgenic *Drosophila*, target DNAs will be isolated and cloned into a conventional cloning vector using standard recombinant DNA techniques. Once DNA is confirmed through sequencing, it will be transferred to a P-element vector and injected into the fly embryos to establish fly stocks for manipulation of gene activity and evaluation through phenotyping. The containment level was established at BSL-1. The committee voted to approve the registration as written.

#348-13 (Valerie Berthelier) Recombinant DNA and Human Derived Materials Registration, III-E, 3-year rewrite
Dr. Berthelier's research investigates the structures and functions of intrinsically disordered proteins (IDPs), such as CREB binding protein (CBP), which are known to cause transcriptional dysregulation. Ultimately, these largely unstructured but highly functional proteins play a role in various degenerative diseases (e.g. Huntington's disease). Dr. Berthelier will generate recombinant proteins for structural analysis. Specifically, *E. coli* DH5-alpha and/or BL21 (DE3) LysS will be used for CREB binding protein (CBP) fragment gene insertion/expression, or *Pichia pastoris* will be used for alpha-1 anti-trypsin gene insertion/expression. Protein conformation changes resulting from alpha-1-antitrypsin gene mutations will also be studied. The committee voted to approve the registration pending correction of the Risk Group level

for human cells to 2 and minor typographical errors.

#349-13 (Michael Karlstad) Infectious Agent Registration, 3-year rewrite
Dr. Karlstad's research proposes to examine the effect of atmospheric plasma treatment on wound healing of splinted excisional wounds in biofilm challenged SWR/J (normal) and TallyHo/JngJ (diabetic) mice. Surgical incisions will be performed and inoculation will follow with routine isolates of *E. coli* (nontoxigenic), *Pseudomonas aeruginosa*, and *Staphylococcus aureus* (methicillin-sensitive and resistant) and then analyzed to determine the effect of the atmospheric plasma on the rate of surgical site infection. In addition they propose to use the horse as a model of study because wounds of horses have a propensity to develop exuberant granulation tissue, especially in response to chronic infection. This portion of the study will apply a common wound pathogen of horses, methicillin sensitive *Staphylococcus aureus* to create a chronically infected wound through the formation of biofilm. Following inoculation, wounds will be exposed to ionized gas from the device and wound healing will be observed. For mice, cage changes, disease challenges and necropsy are all to be performed in the BSC using BSL-2 practices. The containment level was established at (A)BSL-2. The committee approved the registration as written pending addition of the most recent IACUC-approved Animal Hazard Control Forms.

#370 & #371 (Amy LeBlanc) Recombinant DNA and Infectious Agent Registration, III-D-1-a/4-b, Amendment
Dr. LeBlanc's amendment to registrations #370 and #371 requests permission to conduct clinical trials on dogs with various cancers using oncolytic vesicular stomatitis virus, Indiana-1 (hereafter VSV). This study is in collaboration with Dr. Stephen Russell, MD, PhD, Mayo Clinic. The VSV has been genetically modified to contain a either the human or canine interferon beta gene (hIFNB or cIFNB) as well as a sodium iodide symporter (NIS) gene. The earlier phase of this study focused on dogs taken from research colonies held by the University of Tennessee, College of Veterinary Medicine, or from contractor provided research animals. In the current amendment, Dr. LeBlanc has proposed to expand her project to include client owned animals. This larger subject base has been approved by USDA-APHIS prior to having been brought to the IBC. The committee voted to approve the amendment contingent upon IACUC approval, and that Dr. LeBlanc notifies the IBC and Biosafety Office prior to using the virus.

#404 (Steve Wilhelm) Recombinant DNA Registration, III-D-2-a, New Registration
Dr. Wilhelm's registration covers his research using insertion of a gene cassette encoding the cyanobacterial toxin, microcystin (from *Microcystis aeruginosa*), to *E. coli* Nissle1917 (B-strain) as well as the cyanobacterium *Synechococcus* PCC 7942 to examine the effects of heterologous expression in cells that do not make this toxin. Experiments involving potentially infectious and toxin producing agents will be conducted in a BSC using BSL-2 precautions and procedures. The committee voted to approve the registration pending the update of training dates. The committee was also informed that the final approved registration would be submitted to NIH OBA per *NIH Guidelines*, Appendix F requirements.

Old Business:

<u>Administrative Report</u>
Brian Ranger provided the committee with the administrative report. Following up on the May 21, 2013 IBC meeting, Dr. David Golden's registration (#299-13) was corrected administratively for minor typos and all personnel have completed refresher training. Dr. Tarek Hewezi's registration (#398) was corrected administratively for minor typos. Dr. Faith Critzer's registration (#399) was corrected to include a clarification that all produce would be inoculated through immersion and not spraying. Dr. Critzer also confirmed that a biohazard-labeled secondary container would be used for storing inoculated samples during incubation, and a spill response was provided in her BSL-2 notebook. Dr. Jun Lin's amendment to registration #265-12 was administratively approved for the use

of a human cell line (HEK293) for verifying gene expression in eukaryotic host cells. Dr. Sara Frazier's registration (#403) was administratively approved for the use of human transitional cell carcinomas (bladder), which will be used to determine responses to antidiabetic and chemotherapeutic drugs. Dr. Reba Umberger's registration (#405) was administratively approved for the use of primary human plasma samples to be used in cytokine detecting ELISAs. Three registrations were terminated administratively (Dr. Seung Baek's #311-10, Dr. Shigetoshi Eda's #312-10, and Dr. Jon Wall's #314-10; projects concluded or no longer subject to *NIH Guidelines*).

IBC Charter Rewrite

Brian Ranger informed the committee that the subcommittee for charter review met on May 21, 2013. Comments and suggestions for clarification/improvement were collected from the subcommittee. A draft of the charter rewrite should be submitted to the full committee for review around mid-September.

IBC Member/Appointments

Brian Ranger notified the committee that the IBC membership had no changes and would remain the same for the new fiscal year.

Spring BSL-2 Inspections

Dr. Jon Phipps notified the committee that Spring BSL-2 inspections have been completed and a few issues, particularly lab security, have been resolved.

New Business:

Adoption of Animals Containing/Challenged with rDNA

Brian Ranger notified the committee that the FDA was unable to provide him with an answer concerning the adoption of research animals containing or challenged with recombinant DNA. Though FDA regulations cover animals with altered germlines, all other applications currently fall under a nonbinding guidance. Brian indicated he would continue the discussion with the FDA, and he recommended that the IBC consider developing a policy for institutional use.

Lab Injury Involving Biosafety Cabinet

Brian Ranger notified the committee that an undergraduate had been injured while using a biosafety cabinet. The student had lifted the sash too high and accidently flipped the switch for the UV light. He suffered from 2nd degree burns and corneal damage. Brian is working with Environmental Health & Safety and Radiation Safety on collecting information (number, location) of BSCs with germicidal lamps but lacking safety interlocks.

Completion of the Biosafety Database

Jessica Woofter presented the committee with a brief overview of the new Biosafety database. The new data management system will help the Biosafety Office track training information, registrations, etc.

Principles/Practices of Biosafety Training Course

Brian Ranger notified the committee that Dr. Jon Phipps would be attending a Principles and Practices of Biosafety training in Portland, Oregon.

The next meeting has been tentatively scheduled for August 21, 2013.

The meeting was adjourned at 2:35 PM.