



Boston University
Institutional Biosafety Committee (IBC)
August 17, 2021 Meeting Minutes
Location: Zoom and/or by phone
Start time: 12:05 PM End time: 1:53 PM

Members Present: C. Abraham, R. Ingalls (Joined 12:06 PM), B. Slack, E. Muhlberger, R. Davey, X. Brown (Joined 12:10 PM), P. Liu, R. Morales, T. Winters, J. Keeney, R. Timmerman (Joined 12:05 PM), J. Barton
Guests Present: M. Fitzgerald, P. Richmond, S. Benjamin, A. Ahmad, J. Davis, J. Presedo
Staff Present: S. Ghosh, L. Campbell, C. McGoff

I. Review of July 20, 2021 IBC Meeting Minutes

No comments or questions were voiced.

Motion: Approve

For: 11; Abstain: 0; Absent: 1

II. New Business

A. Review of Training Requirement and SOPs for laboratories using BSL2 with BSL3 practices:

The Director of Research Safety reported on EHS efforts to standardize guidelines for all labs approved for BSL2 with BSL3 practices (also known as 2+) and offered members the opportunity to discuss these efforts. Members requested that an email be sent out to members and guests of the committee requesting additional suggestions, questions, or comments be forwarded directly to A. Ahmed in EHS. The document will be revised to include relevant suggestions and returned to the IBC for further comments at the next meeting, if ready for review.

B. Safety & Quality Assurance Program (SQAP) Report:

It was reported that S. Ghosh has been appointed as a voting member of the IBC.

Members were informed of recent news of a Prion research moratorium in France as a result of concerns stemming from serious safety issues in work with Prions. SQAP staff noted that EHS and SQAP staff will be inspecting two BU labs currently working on Prion research to ensure the labs are working safely with this material.

C. Research Occupational Health Program (ROHP) & Environmental Health and Safety (EHS) Report:

ROHP and EHS provided information on the following incidents:

- On 7-27-21, a PhD student sustained an injury to his finger on the non-cutting edge of a microtome blade used to cut fixed monkey brain tissue. It was noted that this was deemed a non-exposure. EHS provided information on the root cause of the injury stating that the injury occurred because the student was non-conscientious and did not remove the blade from the microtome before making the adjustment to the paw of the instrument. Corrective actions include retraining, PPE enhancements, and increased supervision.
- On 7-27-21, a Research Technician experienced BBP exposure and laceration from a razor blade. She was evaluated and advised by ROHP. ROHP screened and will monitor this researcher for blood borne pathogens. No additional information was provided.
- On 7-28-21, a PI experienced was bitten by a mouse in an ABSL1 animal facility room. The mouse was non-transgenic and did not receive any biologics yet at the time of the incident. No additional information was provided.

- On 7-29-21, a PhD researcher working in a BSL4 suite had a pin hole in her (left) suit glove. This was deemed a non-exposure.
 - Action item:* Recommendation was made that a message be sent to the student that three pairs of gloves be worn. Two pairs of glove should be worn below the suit-attached glove which minimizes the risk of exposure. This is a standard practice in most BSL4 labs.
- On 7-30-21, a Veterinary Research Support Assistant working in a BSL 3 lab experienced a near miss exposure to SARS-CoV-2 because he did not have a HEPA filter on his PAPR, this was deemed a non-exposure. No additional information was provided.
- On 8-2-21, a student experienced a splash of Trizol to the eyes. She further received follow-up medical care at ROHP and Ophthalmology. No additional information was provided.
- On 8-7-2021, a NEIDL Research Assistant experienced two outer and one inner glove tear from a loose wire of basket that contained sterilized devices from the BSL 3 Lab in the NEIDL. This was deemed a non-exposure. No additional information provided.

All incidents requiring communication to BPHC were reported.

It was noted that there will be changes to the incidents reporting process at future meetings.

III. Protocol Review

1. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
1888		Host Response to Filovirus and Henipavirus Infections	4	N/A	BUMC
Primary Reviewer: Robert Davey			Secondary Reviewer: Nadya Yun		
Applicable NIH Guidelines: Section III-D-1-c, III-D-1-a					
<p>Meeting Comments: The aim of this project is to study how cells react to Filovirus and Henipavirus infection and which cellular antiviral defense pathways are blocked or activated by these viruses during infection. Recombinant viruses that have been made to encode markers of infection, such as GFP, are also used. These are likely to result in no change in replication or will be less efficient in replication. To find parts of the virus responsible for pathogenesis, they will also swap genes from ebola virus that is non-pathogenic to humans and put these into other ebola viruses. It is expected that these changes will either have no effect or reduced pathogenicity of the virus. All work is performed in BSC within BSL4 laboratory by personnel wearing BSL4 suits. All centrifugation steps are performed using buckets and rotors equipped with sealed covers. Glass slides are used but handled with forceps to prevent contact with gloves. A 5% Microchem Plus is used for disinfectant. This is approved for this class of viruses. Personnel training is well described and appropriate. No new changes in procedures are added in this renewal. All amendments has been already approved and incorporated in the procedure section. No concerns were noted.</p>					
<p>BUA Site Assessment: All personnel listed in the protocol is up to date with their training. Biosafety cabinets are duly certified.</p>					
<i>PI was recused from the voting.</i>					
Motion: Approve			For: 11	Recuse: 1	Against: 0
			Abstain: 0	Absent: 0	

2. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
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2332	Investigations of negative-strand virus and alphaherpesvirus biology	2	N/A	BUMC
Primary Reviewer: Robin Ingalls		Secondary Reviewers: Rob Davey		
Applicable NIH Guidelines: III-D-1-a, III-D-2-a, III-E-1, III-F-1, Appendix B-II-D and G-II-B				
<p>Meeting Comments: This protocol studies herpes viruses (HSV, herpes B), filoviruses (Ebola, Marburg, etc.), and more recently coronaviruses. This protocol covers PI's BSL2 work only. The goal of this study is to identify the role of microRNAs in herpes virus latency. They also study replication and transcription of filoviruses and coronaviruses and how the viruses change during growth through spontaneous mutation. Biohazards in the protocol include: human cell lines, primary lung cells, non-human primate (NHP) cell lines, RG2 viruses; VSV viral vector; blood products from non-human primates. Replicon and minigenome systems are utilized to study virus replication and transcription, but no virus particles are generated as part of this protocol. Relevant laboratory procedures for the BSL2 work includes: cell culture to support the viral work and transfection/electroporation of DNA including plasmids, minigenomes and siRNA into eukaryotic cells. Inactivation of filoviruses are carried out before moved into BSL2 space using Trizol, Trizol LS, heat, formalin or paraformaldehyde, according to the approved SOPs. Work involves recombinant DNA and also Includes synthetic DNA from the RG4 pathogens mentioned earlier. The PPE (lab coat, gloves, eye protection) and engineering controls used are all standard for BSL2 work. Final concentration of 10% fresh bleach is used for disinfection with a 30 minutes contact time. This is approved for this type of work. Sharps are disposed of appropriately in sharp container. No concerns with waste stream. Only minor issues with the name of the coronavirus was noted. The following will be communicated to the PI:</p> <ul style="list-style-type: none">● Please remove the abbreviation of “HP and AP” from the name of the coronavirus in the hazardous biological agent list. Since Coronavirus OC43 is a specific coronavirus, it should be mentioned such (not as a strain). If other RG2 coronaviruses are to be used, add their name in the “Specific Name” section. Names may also be typed out directly in this field in Section A in the RIMS. <p>BUA Site Assessment: Lab has access to biosafety manual and chemical hygiene plan. Safety Training and ROHP clearances are current for all members. Biosafety cabinets are duly certified.</p>				
Motion: Conditional Approval (Administrative Review)		For: 12	Recuse: 0	Against: 0
		Abstain: 0	Absent: 0	

3. Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2336		Biomechanics of Spine Fractures	2	N/A	CRC
Primary Reviewer: Pinghua Liu			Secondary Reviewer: Bob Timmerman		
Applicable NIH Guidelines: N/A					
<p>Meeting Comments: The project investigates the relationship between spine fracture and degenerative disc diseases. Specimen preparation involves cutting of tissue using a bandsaw, low speed cut-off saw, autopsy (vibrating) saw, and scalpels. While performing these cutting manipulations, personnel wear personal protective apparel (PPA) consisting of latex or nitrile gloves, tyvek coveralls, tyvek aprons, shoe covers, face masks, bouffant caps, safety glasses and face shields. During mechanical testing and radiographic imaging, personnel wear lab coats, latex or nitrile gloves, and safety glasses. The testing and imaging will both occur within a sealed chamber, so there is no risk of large amounts of splash during these tasks. Decontamination will be performed using 10% bleach solution. Countertops, equipment, and other items that cannot be submerged will be sprayed with 10% fresh bleach solution, and after 10 minutes, this solution will be washed away with water. The floor in the designated tissue preparation area will be mopped with 10% fresh bleach solution. The following will be communicated to the PI:</p> <ul style="list-style-type: none">● Please complete lab safety training for Dr. Morgan.● ROHP clearances need to be updated for Frings, Gutierrez Marty and Morgan.● Mention a contact time for bleach treatment for liquid wastes.● BUA inspection indicated that biosafety cabinet (BSC) is available for work but the application does not indicate that BSC is used in this protocol. Please clarify.					

- For Liquid wastes, please indicate that the final concentration of bleach is 10%.

BUA Site Assessment: The lab has exposure control plan in place. Biosafety cabinet is duly certified. Trainings are current but ROHP clearance of few members need update.

Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 0	Against: 0	Abstain: 0	Absent: 0
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4. Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
901		Engineering vascularized tissues	2	1	CRC
Primary Reviewer: Barbara Slack			Secondary Reviewer: Colleen Thurman		
Applicable NIH Guidelines: N/A					
Meeting Comments: The goal of this study is to engineer vascularized adipose and breast tissue to use in reconstruction and as models of breast cancer, respectively. They are using rat tissue using standard tissue culture or explant procedures. They are also looking at human blood vessel and lymphatic cell lines, human breast cancer cell lines as well as mouse pre-adipocytes and rat endothelial cells. They are conducting animal experiments where they either remove explants for growth and culture or they implant rat tissues into rat and perform an anastomosis to the rat femoral circulation. Human tissues will not be introduced in to the animals. There is no recombinant DNA work involved in the protocol but IACUC approval detail is provided. The following minor comments will be communicated to the PI:					
<ul style="list-style-type: none">● Section I.2- Please remove all statement from the Summary of Changes box (those are for amendment applications only).● Section III.<ul style="list-style-type: none">○ Only the PI is listed as performing animal experiments and covered on the IBC submission. Is this accurate? The IACUC protocol also lists another animal user (Neil Parikh).○ ROHP clearance not listed for Kelly/Obenreder and out of date for Seibel, Tien.● Section VIII.1- Please check animal handling; animal inoculations (e.g. tissue implants) and culture stirrers/shakers if those are used in tissue culture methods.● Section VIII.3- Please check surgical mask (re: Covid protocols).● Section VIII.6- Specify how sharps containers are disposed of when full (for example: placed in biohazard boxes?).● Section VIII.7- Please specify that liquids will be disinfected in a final concentration of 10% bleach and allowed to sit for 30 minutes before disposal.● Section A.<ul style="list-style-type: none">○ Mouse and rat cells do not have to be listed here; they are not classified as "non-human primate" cells.○ IACUC 16-018 is now PROTO201800590, approved until 9/23/2022. The 17-007 protocol is not active unless the PI or Name has been changed.					
BUA Site Assessment: All trainings are current. Some members need update on their ROHP clearance and they are working on it. Biosafety cabinet and fume hood are duly certified.					
Motion: Conditional Approval (Administrative Review)			For: 12	Recuse: 0	Against: 0
			Abstain: 0	Absent: 0	

5. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
1035		Novel LSF-targeted Small Molecules for Cancer Chemotherapeutics; Transcription Factor LSF: Regulation of Cell Cycle Progression	2	N/A	CRC
Primary Reviewer: Carmela Abraham			Secondary Reviewer: Jim Keeney		
Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-E-1, III-F-8; Appendix C-I, C-II					

Meeting Comments: This proposal seeks to understand how the LSF pathway controls cell growth and promotes development of primary liver cancer, colorectal cancer, and potentially other cancer types. They will determine how this pathway becomes dysregulated in human cancer, develop compounds that inhibit this pathway and reduce oncogenic properties in cell culture models and ultimately inhibit tumor growth in animal models. Various expression plasmids as well as replication incompetent 3rd generation lentivirus vectors will be used in their experiments, which will all be done in biosafety cabinet donning appropriate PPE. Western blotting, CHIP assays, flow cytometry, immunofluorescence and related techniques will be used to analyze the results. The *in vivo* animal experiments planned will all be done by collaborators or by 3rd party vendors. It was noted that this was a nicely written protocol with clear description of work plan, laboratory procedures and risk management. The following minor comments will be communicated to the PI:

- VIII. 7A. Liquid waste should be disinfected with 10% bleach final concentration.
- VIII. 7A. Contact time for disinfection with bleach should be 30 minutes instead of 15-30 minutes.

BUA Site Assessment: The lab is working on updating the ROHP clearance for all members. Safety training for all members are current and their biosafety cabinet is duly certified.

Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 0	Against: 0	Abstain: 0	Absent: 0
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6. Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2468		Biomechanics of the Proximal Femur	2	N/A	CRC
Primary Reviewer: Carmela Abraham			Secondary Reviewer: Tom Winters		
Applicable NIH Guidelines: N/A					
Meeting Comments: The goal of this project is to define how Osteoarthritis (OA)-related changes of bone density and microstructure near the joint may be used as potential markers for future OA progression and targets for treatment. Femoral heads and femoral necks are recruited from patients undergoing total hip surgery due to OA, and cadaveric femora serves as controls. Data-driven computational anatomy will be used to generate 3-D maps of the distribution of bone density and microstructure. The following will be communicated to the PI: <ul style="list-style-type: none">• PI must be included in the personnel list.• Please complete lab safety training for Dr. Morgan.• ROHP clearances need to be updated for Auger and Dr. Morgan.• Please define abbreviations and expressions such as PMMA potting.• The liquid waste needs to be inactivated with bleach to a 10% final concentration for 30 minutes.					
BUA Site Assessment: The lab has exposure control plan in place. Biosafety cabinet is duly certified. Trainings are current but ROHP clearance of few members need update.					
Motion: Conditional Approval (Administrative Review)			For: 12	Recuse: 0	Against: 0
			Abstain: 0	Absent: 0	

7. rDNA/Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2522		Uncovering mechanisms of gene expression control	2	N/A	CRC
Primary Reviewer: Elke Muhlberger			Secondary Reviewer: Robin Ingalls		
Applicable NIH Guidelines: Section III-D-1-a, III-D-4-a, III-F-1 and III-F-2					
Meeting Comments: This project aims to understand how information about developmental gene expression program is encoded in the genome and to understand how changes in the genome sequence affect the patterns of gene expression. Transgenic flies will be created to study the role of regulatory DNA. In addition to number of RG1 bacteria, some RG2 bacteria that are listed in the hazardous biological agent list and are genetically engineered to be bioluminescent, will be also be used for fly infection experiment. Protocol provided nice explanation of the research					

objective and work plan. Only minor concerns on details of the fly infection work were noted. PI is a new faculty in BU and the BUA site inspection is still pending. The following will be communicated to the PI:

- The committee considered the Layman's description a bit long and somewhat technical. Removal of last three lines or appropriate modifications may be considered.
- Please provide full name, strain information, if available (e.g. ATCC information), and biosafety level of all bacteria and fungi mentioned in the research description.
- Briefly describe how the transgenic and/or infected flies are contained to assure that they cannot escape.
- Please describe in a little more detail exactly what is being done with the bacteria – plating/inoculating, any procedures that could create aerosols, etc. so that it can be determined if those procedures should be done on open bench or in biosafety cabinet (BSC).
- Will the work involving BSL2 pathogens be performed in a BSC? If not, where will the fly inoculations be done?
- If fly inoculations are done on the bench and not BSC, consider adding face mask to the PPE.
- In the biohazard list, please remove "HP" from the name *Serratia marcescens*.

BUA Site Assessment: Not Done.

Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 0	Against: 0	Abstain: 0	Absent: 0
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8. rDNA/Bhz – New Protocol

BUA	(PI)	Title	BSL	ABSL	Campus
2523		Study of Selective Neuronal Vulnerability in Alzheimer's Disease	2	1	BUMC

Primary Reviewer: Xin Brown

Secondary Reviewer: Rao Varada

Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-D-4-a, III-E-1; Appendix C-I, C-II

Meeting Comments: The objective of this new project is to decipher pathological cascade that leads to neurodegeneration. It proposes to differentiate human iPS cells and manipulate gene expression of these cells using lentiviruses. They also will breed animals representing different Alzheimer transgenic mouse models to identify mouse with maximum pathology. Stereotaxic injection will be performed on these mice with adeno-associated virus vectors to investigate subsequent pathology using biochemical and histological methods. The protocol indicates use of flow cytometry core facility for the analysis of human postmortem brain tissues. However, no detail of the proposed work or source is indicated. Further, additional information on laboratory safety procedures on handling human brain tissues need to be provided. Because the PI is moving to BU from another institute, several information such as biosafety cabinet detail, IACUC application information, IRB information, are still not available to the PI. The following will be communicated to the PI:

- Please coordinate with the EHS to complete your lab inspection. This is necessary for the approval of the IBC protocol.
- Use of flow cytometry core facility for analysis of postmortem brain tissues and tissue grinding is listed under lab manipulations. Please provide description of the work plan with human brain tissue. What is the source of human iPS cells?
- Provide description of additional PPE use (such as face shield, surgical mask, shoe cover, etc.) during homogenization of human brain samples and for further processing. Indicate specifically how brain sample wastes are decontaminated and disposed of.
- Provide brief description of the stereotaxic injection procedure emphasizing possible risks to the laboratory personnel and the mitigation plan.
- Details of sterilization of surgical tools and devices used during injections etc., are needed.
- In the hazardous biological agent list please check that NWTC11.G3-WT - TENM3 E741K mutant is not a virus, rather a cell line.
- For Lentivirus, it is stated that it will not be used in animals but some incorrect statement appears to include inappropriate text. Please remove the text.

- For the animal work with AAV vector, please indicate the pending IACUC application number PROTO202100000007.

BUA Site Assessment: Not Done.

Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 0	Against: 0	Abstain: 0	Absent: 0
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9. Bhz – Amendment

BUA	(PI)	Title	BSL	ABSL	Campus
2487		Exosomes in IBD	2	1	BUMC
Primary Reviewer: Barbara Slack			Secondary Reviewer: Ron Morales		
Applicable NIH Guidelines: N/A					
<p>Meeting Comments: The goal of the original protocol has been to collect and quantify exosome in fecal samples from patients with Crohn’s Disease and also to collect intestinal tissue biopsies from same group of patients and analyze protein and genetic material and look for disease biomarkers. In this amendment they are adding three new personnel and transmission electron microscopic examination of exosome using uranyl acetate (UA). They provided laboratory procedure and safe handling practices for the use of UA, which appears to be appropriate. Research Safety Director clarified that even though PI listed UA as a high hazard chemical (HHC), it is not listed so in BU’s HHC list. Committee also noted that approval from the Radiation Protection Office is necessary to obtain UA and PI’s group already has appropriate approval in place. The following will be communicated to the PI:</p> <ul style="list-style-type: none">● Section III.3- ROHP clearance dates needed for two new personnel.● Section VIII.5- Please provide recent BSC certification date.● Section VIII.6- Please specify how sharps containers will be disposed of once full.					
Motion: Conditional Approval (Administrative Review)			For: 12	Recuse: 0	Against: 0
			Abstain: 0	Absent: 0	