Boston University
Institutional Biosafety Committee (IBC)
May 17, 2022 Meeting Minutes
Location: Zoom and/or by phone
Start time: 12:02 PM End time: 2:57 PM

Members Present:	R. Ingalls, B. Slack, E. Muhlberger, R. Davey, X. Brown, P. Liu (joined 12:07 PM, (left 2:35 PM), R. Morales (left 2:34 PM), C. Thurman, J. Keeney, R. Timmerman, V. Britton, J. Barton (left 2:32 PM), S. Ghosh
Guests Present:	M. Fitzgerald, P. Richmond, S. Benjamin, J. Wood, A. Ahmad, J. Davis, N. Dey
Staff Present:	S. Ghosh, L. Campbell, C. McGoff

I. Review of April 26, 2022 IBC Meeting Minutes

One minor change was requested. This will be administratively corrected.
Motion: Approve
For: 13; Against: 0; Abstain: 0; Absent: 0

II. New Business:

A. SQAP Report:

i. Review of the IBC Charter
No questions or comments were voiced.
Motion: Approve IBC Charter pending member review of revisions
For: 13; Against: 0; Abstain: 0; Absent: 0

B. Review of Research Occupational Health Program (ROHP) & Environmental Health and Safety (EHS) Incident Report
There were no incidents to report.

III. Training Session: Review of the Recombinant DNA section of the IBC application
The following topics were highlighted:

- The IBC is tasked with the responsibility of ensuring the NIH guidelines are followed in addressing biosafety issues in approving any protocols involving work with rDNA .
- Certain physical and biological containment guidelines would need to be implemented.
- Prokaryotic experiments be performed in minimally-restricted containment facilities.
- Eukaryotic experiments must be performed in much more restricted containment facilities with case-by-case consideration.
- Viral vectors need to be replication incompetent so as not to multiply and cause any harm to humans.
- IBC approval would be required for animal experiments with transgenic animals treated with lentiviral, retroviral, or adenoviral vectors, or if the animals are fed with something that has been recombinantly-modified.
- IBC approval is not required for animal experiments if the transgenic animals have been purchased from commercial sources and no recombinant DNA or any biohazardous materials have been added to those animals.
- Brief description of each question in that section of the application.

It was suggested during discussion that RIMS administrators edit the rDNA section of the application to include a free text drop down box where researcher could specify if their work would involve recombinant replication competent viruses. The Chair informed members that didactic training sessions have been reinstituted during the meetings for members. Members were asked to forward any suggested topics to S. Ghosh. A future discussion of what defines an oncogene was suggested specifically clarity on the NIH's stance on cloning and moving oncogenes into transgenic animals.

IV. Protocol Review

1. Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2548		Inactivation of SARS-CoV-2 using ultraviolet light	3	N/A	BUMC

Primary Reviewer: Elke Muhlberger	Secondary Reviewer: Shannon Benjamin

Applicable NIH Guidelines: N/A

Layman's Description: Our overarching goals are to understand evaluate the capacity of ultraviolet light to inactivate SARS-CoV-2 present in aerosols. The data generated will inform design of tools to inactivate viruses in heating, ventilation, and air conditioning systems (HVAC). This is a critical step in ameliorating the impact of airborne viruses.

This IBC protocol was inadvertently left on the agenda but was not discussed and will be re-added to the June 2022 agenda.

Motion: Not Discussed	For: 0	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

2. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
875		Genetics of Host Resistance & Susceptibility to Tuberculosis.	3	3	BUMC

Primary Reviewer: Rob Davey	Secondary Reviewer: Steve Niemi Colleen Thurman, Shannon Benjamin

Applicable NIH Guidelines: Sections III-D-1-a, III-D-1-b, III-D-2-a, III-E-1; Appendix B-III-A, G-II-C

Meeting Comments: The work is focused on dissecting tuberculosis pathogenesis using the mouse model of infection. To identify major determinants of host resistance and susceptibility, host genes that significantly contribute to the outcomes of experimental tuberculosis infection are identified using genetic linkage analysis and positional cloning. Live imaging methods using *in vivo* luminescence detection with IVIS Spectrum and computerized tomography are used. Here nanoparticles will be used as a tracer reagent for imaging work of macrophages *in vitro*. Later animals will be used with these but this amendment will be submitted later. In this 3-year renewal a new lab safety coordinator is added, who has worked in PI's lab over the past 3 years. PI has a high level of experience and training with Mycobacterium bovis, marinum, tuberculosis and avium and related bacterial strains that will be used in the protocol. All associate members have appropriate training for the ongoing work.
Cores will be used but will not deviate from procedures. Avirulent strains of Mycobacterium and *F. tularensis* LVS will be used in these facilities. Work with avirulent strains of mycobacteria will be at BSL2 using a BSC. Work with virulent mycobacteria will be at BSL3 using an N95 or PAPR to protect workers from aerosol exposure. Animal work is well described and performed at ABSL3. Animals are housed in HEPA filtered cages to prevent aerosol escape which is an appropriate precaution. Nanoparticle work will be performed to target macrophages. This will be done at BSL2 which will protect workers. Section 7 describes waste disposal procedures. Indicated that EHS approved method will be used. Vesphene II at 1% with 20 minute contact time is used as disinfectant. A 1:128 working dilution is listed as bactericidal for *M. tuberculosis* and similar bacteria, so is appropriate (vesphene II may be replaced with III). Cidecon is also indicated for use at 1:128, which is listed as effective against *M. tuberculosis* by the manufacturer.
Recombinant work with bacteria expressing GFP will be done and handled as recombinant agents at BSL2 or BSL3, which is appropriate and has no greater risk than wild type bacteria. Overall, protocol is appropriately mitigating the identified risks.

BUA Site Assessment: Biosafety cabinets are all duly certified but the certification date needs to be updated in the application.

Motion: Approve	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

3. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2375		Evaluation of treatments for high containment viruses using rodents	4	4	BUMC

Primary Reviewer: Elke Muhlberger	Secondary Reviewer: Steve Niemi/ Colleen Thurman, Guillermo Madico

Applicable NIH Guidelines: Section III-D-4-a.

Meeting Comments: The PI proposes to test treatments for hemorrhagic fever viruses and coronaviruses in mouse and guinea pig models of infection. They are actively working on identifying small molecule inhibitors and antibodies in another IBC protocol from the PI. Those will be evaluated in animal models in this protocol. Materials derived from infected mice including blood cells and tissue will undergo inactivation procedures approved by EHS, IBC, BPHC and will follow the regulations of the Federal Select Agent Program. Inactivated materials will be handled at BSL-2 for RNA extraction and other testing. The protocol is very well written. It describes all the procedures in detail and all risk mitigating aspects including safe handling of animals and the use of sharps are appropriately described. PI and the listed members of the protocol are highly experienced in the procedures to be followed in the protocol. The following will be communicated to the PI:

- For clarification, please add in the inactivation section:
  1) All animal infected materials will be Inactivated following procedures validated in house for haemorrhagic fever viruses (this include all materials infected with corona viruses).
  2) Animal material infected with SARS-CoV will not be removed from the ABSL-4 until in-house procedure to inactivate genomic SARS-CoV material is approved by EHS, IBC, and BPHC and the removal of this material is approved by the Federal Select Agent Program in our NEIDL registration.
- Check “Animal handling, cage changing”.
- The BSL4 liquid waste SOP has been updated. Incubation time for tips and pipettes in Micro-Chem Plus is now significantly shorter. Updating the liquid waste section appropriately is recommended.
- The PI could remove “Nipah and Hendra complex viruses” from the Hazardous Biological Agents list. Both viruses are listed separately.

BUA Site Assessment: Biosafety Cabinets in the lab were re-certified on August 2022 during annual gas decontamination and PM. BSL-2 BSCs certifications are current (certification 5/31/22 has been schedule for re-certification). Certification for ABSL-4 BSCs are on file in NEIDL. A/BSL-4 was last inspected April 6, 2022.

PI recused himself from voting.

Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 1	Against: 0	Abstain: 0	Absent: 0

4. Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
1490		Courses in Biomedical Forensic Sciences Program	2	N/A	BUMC

Primary Reviewer: Robin Ingalls	Secondary Reviewers: Pinghua Liu

Applicable NIH Guidelines: N/A

Meeting Comments: This is a three-year renewal from a PI who teaches in the Master's Program in Biomedical Forensic Sciences. This course teaches students enrolled in the program how to conduct basic forensic science studies on biological samples that would typically be found in a crime scene. Lab personnel listed are the course instructors; students taking the course will vary based on enrollment. The professor will make stains from various body fluids including human blood, saliva, semen, urine, perspiration, fecal material, breast milk, and vaginal

secretions. Hair samples will also be analyzed. Students will be required to conduct chemical and DNA studies on either liquid samples or from scraped/cut out stains on fabric and other materials. Sharps use is limited as much as possible and supervised. Fluids from other animal species may also be used for comparison. Work includes DNA extraction but no recombinant DNA work is proposed. The PI has been teaching this course for many years and the instructors are experienced. Students will be appropriately trained and supervised. The committee discussed that although the program participant students complete safety training and receive medical clearance through the Student Health Service, paid students or volunteers in the lab must complete safety training through BioRAFT online training module and have received medical clearance through the ROHP. The following will be communicated to the PI:

- All paid or volunteer students who works in the lab or helps in setting the lab operation must be added in the IBC personnel list in section III and they must complete the LST, BSL1/2 and BBP training.
- PI must update the rDNA/IBC policy training in BioRAFT (it is valid for 3 years once completed).
- Adam Hall must complete LST, BSL1/2, BBP, Chem Safety training and update ROHP clearance.
- PI and Robin Cotton must update their ROHP clearance for working with any biological samples
- The protocol says that "…identify biological materials using chemical, microscopic, and immunological techniques…." Please clarify if any of the chemical reagents used in the study are hazardous.
- For decontamination of liquids, 10% bleach solution should read 10% bleach solution final concentration.

BUA Site Assessment: Emergency Control Plan needs to be adopted and uploaded in the BioRAFT, as is the chemical hygiene plan. PI and the other senior faculties must update ROHP clearances. Many other students who helps in general maintenance of the lab needs to be added to the protocol and must complete all required safety trainings and secure ROHP clearances. Biosafety cabinet is duly certified.

Motion: Conditional Approval (Administrative Review)	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

5. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
1750		Role of myo1c in adaptation in the inner ear	2	2	BUMC

Primary Reviewer: Barbara Slack	Secondary Reviewer: Steve Niemi/ Colleen Thurman

Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-D-4-a, and III-E-1.

Meeting Comments: This protocol studies a protein Myosin 1C (Myo1c), which is believed to be important in cell-cell contact and therefore might be involved in the structure of the inner ear as well as in wound healing. The studies use molecular biological and cell biological techniques to investigate the function of this protein. They transduce canine MDCK cells or HeLa cells with myosin 1C mutants or siRNA to look at the effect on cell-cell interactions, and E-cadherin trafficking. At times, 3rd generation lentiviral vectors or recombinant adenoviral vectors are also used for transduction to manipulate Myo1c expression. They use confocal and live microscopy, and radioactive amino acids for labeling experiments. An Cre-Lox inducible mice line is used to knock down myosin to understand the importance of Myo1C. Organs will be evaluated by immunohistochemistry. Role of Myo1C will also be evaluated in melanoma-cell line induced nude- or SCID-mouse xenograft tumors. Committee noted that N95 masks are not required for the use of or injection of Tamoxifen into the animals. The following will be communicated to the PI:

- Section IX- When the "Other potentially infectious material" box is checked, Section B must be completed. If no such material will be used, please uncheck this item in Section IX.
- Section G. Radiation- Please provide permit holder number.
- rDNA table: please specify the species of all donor DNA to be used. Please specify commercial source of vector packaging system used.
- Please update IACUC approval with correct expiration date (expires in 2024).

- Section H.17- please check yes for transgenic animals (for using Cre/Lox mice) and provide source. If transgenic animals are no longer used or will not be used, update the laboratory procedure section (Section VII.3) appropriately.
- Section H.19- Modify the applicable NIH Guidelines section to also include "Section III-D-4-a".

BUA Site Assessment: The exposure control plan (ECP) needs to be adopted and uploaded. Chemical hygiene plan needs to be uploaded. PPE use is appropriate. Training is current for all but several members need ROHP update. Tamoxifen is not being used at this time. Viral vectors are also not being used at this time but likely will be used in the future.

Motion: Conditional Approval (Administrative Review)	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

6. rDNA/Bhz – Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
648		Role of ACLP in Vascular Smooth Muscle Biology; Regulation of fibroblast and myofibroblast transitions	2	2	BUMC

Primary Reviewer: Rob Davey	Secondary Reviewer: Steve Niemi Colleen Thurman

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

Meeting Comments: This is a carefully described protocol to study the role of aortic carboxypeptidase like protein in controlling muscle function in smooth muscle as well as heart health in relation to fibroproliferative diseases (such as organ fibrosis, metabolic disease, vascular disease). Work involves expression of recombinant proteins in human and mouse cells as well as in mice. Recombinant work will use plasmid transfection and transduction of cells with replication defective virus vectors (adeno, ecotropic murine retrovirus and 3rd generaton lentivirus). Genes to be expressed are related to ACLP and collagen expression regulation that interact with the basal transcriptional apparatus. This analysis will be done in cells of both human and rodent origin. Disinfectant is 10% bleach solutions. However, no contact time is given. A 70% Ethanol is also listed to clean surfaces. The detergent 'Conflikt' is also used. The manufacturer indicates this is effective against many virus types that include HIV and parvovirus (implying that it would also be active against adenovirus). Tamoxifen is being used at 75 mg/kg in mice to activate Cre-recombinase. PPE and precautions for handling this substance are well described. Radioactive isotopes are being removed from the protocol as they are no longer being used. New personnel are being trained by the PI and experienced lab staff. The following will be communicated to the PI:

- Please make sure that the personnel list is current and information is updated.
- Please contact ROHP to update medical clearance of all members in the list.
- It is stated that liquid wastes will be treated with bleach at a final concentration of 10%. Please indicate the contact time (usually 30 minutes).

BUA Site Assessment: The lab needs to upload biosafety manual, chemical hygiene plan and also need to update the exposure control plan. Some members need to update ROHP clearance. BSC is duly certified.

Motion: Conditional Approval (Administrative Review)	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

7. Bhz – Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2387		Cathepsin B dependent trypsin activation in a preclinical model of pancreatitis	2	1	BUMC

Primary Reviewer: Ron Morales	Secondary Reviewer: Colleen Thurman

Applicable NIH Guidelines: N/A

Meeting Comments: This protocol investigates the mechanism that causes acute and chronic pancreatitis. Trypsinogen is normally produced in the pancreas and is a precursor form of trypsin which is a digestive enzyme that aids in the digestion of proteins. In this protocol, the lab will study the premature activation of trypsinogen by cathepsin B causing pancreatitis. In cases where trypsinogen is prematurely activated, it can result into the autodigestion of the pancreas which is an initial event that leads to pancreatitis. To understand the role of the autoactivation of trypsinogen, novel mouse strains designed to study the role of cathepsin B-mediated trypsinogen activation in the initiation, progression and severity of pancreatitis were created. In this protocol, the lab will perform RT/PCR and Western Blot analysis to determine the levels of trypsinogen in both mutant and wild-type mice. They will inject mutant and wild-type mice with caerulein to study the effects of induced intrapancreatic trypsin activation. Caerulein is an oligopeptide that stimulates the GI smooth muscle and pancreatic gastric and gastric secretions. Injections will be administered intraperitoneally and subsequently euthanized. Animal samples will be collected and obtained for analysis. The lab will conduct repeated caerulein injections with different regiments over a period of 10 week. Committee noted that no materials listed in the protocol require BSL2 containment. The following will be communicated to the PI:

- Please clarify if any human or non-human primate cell lines are being used or have plan to use them in future.
- Check Animal Inoculations in Section VIII.1
- Please clarify if the researchers use scalpels with disposable blade. Use of scalpels is mentioned in question VIII.6. Use of bare blade to scrape off stains is not recommended.
- The lab did not mention how they are disposing their mice after pathology work. They only mentioned how they dispose dissected mouse pancreas.

BUA Site Assessment: This lab has recently acquired a space in . Biosafety Manual and chemical hygiene plan need to be uploaded into the BioRAFT profile. Safety training for most members needs update. Biosafety cabinet is duly certified.

Motion: Conditional Approval (Administrative Review)	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

8. rDNA/Bhz – Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
1781		NIH R01 AI138960-01A1, Henderson (PI) Signals that Establish and Maintain HIV Latency NIH/NIDA R61/R33 R61 DA047032 MPI: Henderson and Cheng Effect of Opioid Use Disorder on HIV Latent Reservoirs and Immune Dysfunction Assessed by Single-Cell Transcriptomics R01 DA055488 MPI Henderson and Gummuluru Persistent HIV-1 expression and microglia dysfunction	2+	N/A	BUMC

Primary Reviewer: Robin Ingalls	Secondary Reviewer: Jim Keeney

Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a; Appendix B-III-D and G-II-C-2

Meeting Comments: PI's lab is interested in understanding HIV transcription, including investigations into entry, gene regulation, latency and how these steps lead to disease. They use a combination of replication deficient reporter viruses and replication competent laboratory strains of HIV. Virus is used to infect human monocytic or lymphoid primary cells and cell lines. Additional studies involve the use of HEK293 cells, human microglia, and neurons derived from inducible pluripotent stem cells generated by the CReM. Finally, the study uses blood samples from HIV infected and uninfected individuals. CRISPR-Cas9, siRNA and shRNA are used to disrupt signaling pathways in the eukaryotic host cells. Expression is achieved using commercial lentiviral systems. HIV work although performed in

the BSL2 facility will be handled with BSL-3 practices including double gloving and the wearing of disposal gowns. Virus stocks and spent media will be treated with 10% fresh bleach solution and autoclaved before disposal. Tissue culture plasticware used for HIV work will be autoclaved prior to removal from the EBRC tissue culture facility for disposal. The PI is experienced in this work and the protocol is detailed in the safety measures being taken for HIV work. No biosafety concerns. Committee discussed why BioRAFT BSL3 training is not required for this group. The BioRAFT training focuses on engineering control in a BSL3 containment, whereas work in this protocol is done in BSL2 lab with additional safety measures and stricter PPE use. Committee also discussed how best the PI be alerted to upload chemical hygiene plan or exposure control plan in to the BioRAFT profile as those issues often come up during the discussion of site assessment report. The following will be communicated to the PI:

- There is mention of materials being transported between and labs. Please update the location of the lab from to the
- Please clarify what work is being done off site in in the CRC Life Sciences Building, which is listed in the Research Facility section as an off-site location. Dos this involve any transportation of biohazardous materials? If this work is no longer being pursued, please remove it from the laboratory procedure section.

BUA Site Assessment: Chemical hygiene plan and exposure control plan needs to be uploaded in BioRAFT. Biosafety cabinets are duly certified. Training for a few members need update. Off-site work in CRC is not being done currently.

Motion: Conditional Approval (Administrative Review)	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

9. rDNA/Bhz – Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2386		High-level control of low level motor circuits	1	1	CRC

Primary Reviewer: Xin Brown	Secondary Reviewer: Colleen Thurman

Applicable NIH Guidelines: Section III-D-4-a; Appendix B-I

Meeting Comments: The long-term goal of the project is to determine the contribution of the motor cortex to the production of flexible, voluntary movements. The activity of neurons in the cortex and other motor centers in the brain will be measured while mice performing movements spontaneously and when the same movements are coupled to a decision making task that requires the motor cortex. Adeno-associated viral (AAV) vectors will be used to express proteins in the brains of live mice. AAV vectors will be obtained from commercial sources. Infection will be achieved by injecting small quantities of virus through a small craniotomy in the skulls of mice using a tapered glass pipette during aseptic surgeries under inhalation anesthesia. Any excess virus will be inactivated with Virkon S or 10% bleach, and all materials contacting the virus will be disinfected. Following physiological experimentation, mice will be transcardially perfused with paraformaldehyde and fixed tissues will be processed using standard histochemical procedures. Overall this project poses low level risk to the lab personnel or the environment. Committee noted that PI just described how the recombinant AAVs are made in vector cores, but they do not do any plasmid transfection in HEK 293 cells. It was also noted that even though injections in animals are done in a BSC in animal house, some of the brain stereotactic injection are done outside of the BSC to avoid vibration during precision injection. The following will be communicated to the PI:

- Lab safety training update and BSL1/2 training update needed for PI and .
- ROHP clearance needs to be secured for and and updated for , and to add IBC protocol number.
- In Section VIII.1, animal handling and cage changing need to checked.
- Pipetting infectious liquid should be checked.
- Page 14, “Will BSC be used for this work?” the answer should be yes if HEK cells are to be passaged and transfected in the lab.

- For solid waste disposal, what is the concentration of Vercon S used? (1% solution is generally used to clean surfaces.)
- In the rDNA animal experiments section, IACUC approval date needs to be updated.

BUA Site Assessment: The is a BSL1 lab with no use of any biosafety cabinets. PI does not work with any human cell lines. Safety training for two members needs update. Two persons need to apply for ROHP clearance and two others need to update their ROHP clearance.

Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

10. Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2550		Development of non-invasive biomarker assays for cancer monitoring	2	N/A	CRC

Primary Reviewer: Barbara Slack	Secondary Reviewer: Bob Timmerman

Applicable NIH Guidelines: N/A

Meeting Comments: The goal of this protocol is to develop new methods for detecting and monitoring cancer at its earliest stages (liquid biopsy). They will use controlled mixtures of commercially available genomic reference standards and sheared cell-line derived DNA to create standards with mutations and total DNA content typical to what is seen in early-stage cancer patients. Design synthetic peptide reporters to characterize epigenetic enzymes. These reporters are cell penetrating, tagged peptides with specific enzyme recognition sequences. The biohazards in this protocol include human cancer cell lines in culture: colon LoVo, pancreas PANC-1/MIAPaCa-2/BxPC3, breast (MDA-MB-231) and lymphoma (K562). They will isolate DNA and sonicate and will use them to make reference samples and analyze using PCR. They will also synthesize 15 to 20-mer reporter peptides with enzyme-specific recognition sequence, with a tag used for isolating, and additional sequence that allows them to enter cells. Lyse cells, sonicate, analyze by ELISA. Additionally they will synthesis artificial peptide reporters using a commercial synthesizer that couples Fmoc protected amino acids. The process include cleaving from resin, precipitation in ice-cold diethyl ether within a chemical fume hood followed by purification and characterize by reverse-phase HPLC-MS and dilution in PBS and freezing. The following will be communicated to the PI:

- Please make sure to update the personnel as you hire new personnel to work in the protocol.
- Please work with ROHP to get medical clearance for yourself and new members that you plan to hire.
- Section VIII.2 and 3 and lab procedures section indicates that KN95 masks will be used to reduce inhalation risk when using chemicals. N95 or KN95 masks are not appropriate for protection against chemicals. Fume hoods must be used for the protection against chemicals. Please remove the sentence that states KN95s may be used for protection against chemicals.
- Section VIII.5-Certification date of BSC-please update.
- The lab inspection must be complete when all materials are available to start the proposed work. Please contact EHS to have the inspection completed.

BUA Assessment: This is a new lab and no work has started yet. New personnel are being hired. The BioRAFT profile needs to be updated with chemical hygiene plan, exposure control plan.

Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

11. rDNA/Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2551		Connecting Cardiovascular and Neurodevelopmental Defects in Rare Diseases with Epigenetic Basis	2	2	BUMC

Primary Reviewer: Sajal Ghosh	Secondary Reviewer: Colleen Thurman

Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-D-4-a, III-E-1, III-F-8; Appendix B-II-D, C-II, G-II-B					
Meeting Comments: The overall goal of this protocol is to understand how epigenetic modifiers (that modulates chromatin structure) regulate endothelial/vascular and neuronal differentiation during development. They use children with Kabuki Syndrome as a pathophysiological link to their study. Their study mostly is centered around a histone methyl-transferase enzyme KMT2D which in these Kabuki Syndrome children have a mutation on. Their goal is to study the relationship between KMT2D and endothelial and neuronal differentiation. They use two laboratory models for their study; 1) zebra fish and 2) iPS cells. In both these two systems they make extensive genetic manipulations using Tol2 transposable element-mediated mutagenesis and CRISPR/Cas9 technology. Effect of KMT2D mutations on the zebrafish development or on the behavior of differentiated neuroepithelial or endothelial cells will be investigated. They indicate that none of the experiments would present an environmental hazard, since zebrafish are a tropical fish species and could not survive in our climate outside of a laboratory. Experiment will be carried out in chemical fume hood away from main fish room. Fluorescent microscopy on live fish or fixed fishes will be done. Euthanization will be done dipping fishes in pre-chilled water (4°C) or cold 1:5 bleach water. Biohazards in the protocol include human cell line, primary human cells and lentivirus vectors. Sharps will be disposed of in approved sharp container and disposable single-use needle will be used. Liquid waste will be treated with bleach at 10% final concentration and surface decontamination will be done using freshly made 10% bleach or 70% ethanol. IACUC approval is still due but the work appears to be standard practice for genetic manipulation of zebrafish embryos at the 2-cell stage then following their development. The following will be communicated to the PI: ● Although basic construction of pluripotent stem and zebrafish mutagenesis work has been has been described in great detail how those will be applied to carry out the objectives of the this protocol is not described in the laboratory procedure section. Please state briefly what manipulations will be done for your work and how you will analyze your experiments, emphasizing any biohazard risk involved in the process ● Some of the description in the scientific objective description (from section VIII.2) may be moved to the laboratory procedure section. ● Change the statement “These constructs have been created by myself while performing postdoctoral studies in the laboratory of ” as appropriate with your own experiences. ● Check Animal handling/cage changing in section VIII.1 since adult and fry fish must be manipulated for study and euthanasia. ● Please modify the applicable NIH Guidelines section to state “Sections III-D-1-a, III-D-2-a, III-D-4-a, III-E-1, III-F-8; Appendix B-II-D, C-II, G-II-B.” BUA Site Assessment: This is a new Lab within the CReM facility and things are still being organized. . Biohazardous stickers are yet to be put on required equipment. PI has already received ROHP clearance. The biosafety cabinet and fume hoods are duly certified.					
Motion: Conditional Approval (Administrative Review)	For: 12	Recuse: 0	Against: 0	Abstain: 0	Absent: 0