Boston University
Institutional Biosafety Committee (IBC)
October 17, 2023 Meeting Minutes
Location: Zoom and/or by phone
Start time: 12:04 PM End time: 12:57 PM

Members Present:	R. Ingalls, B. Slack, I. Afasizheva, R. Davey, W. Lu, V. Gouon-Evans, T. Winters, R. Morales, C. Thurman, R. Timmerman (joined 12:14 PM), V. Britton (joined 12:21 PM), N. Dey, S. Ghosh
Guests Present:	A. Ahmad, T. Killeen, J. Wood, P. Richmond
Staff Present:	C. McGoff, L. Campbell

I. Review of September 19, 2023, IBC Meeting Minutes

No concerns were voiced.

Motion: Approve

For: 11; Against: 0; Abstain: 1; Absent: 2

II. Chair's Report:

Members were provided a reminder of the Designated Member Review (DMR) Process. Members were asked to propose or volunteer topics for presentations at upcoming IBC meetings.

III. New Business:

A. IBC Office Updates: There were no updates.
B. Incident Report: One transgenic mouse bite incident was reported.
C. Review of Research Occupational Health Program (ROHP) Report: Members were reminded to get flu vaccinations.
D. Environmental Health and Safety (EHS) Report: Nothing to report.

IV. Protocol Review

1. Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2620	Colleen Thurman	ARS Support: Animal Projects in A/BSL4	4	4	BUMC

Primary Reviewer: Rob Davey	Secondary Reviewer: Robin Ingalls
Applicable NIH Guidelines: N/A	

Meeting Comments: This is a new protocol under NEIDL Clinical Veterinarian as the PI describing the work performed by Animal Sciences staff at the NEIDL for various PIs performing BSL4 animal studies, creating an Animal Sciences BSL4 Core. The protocol provides an overview of the work performed by this core with careful attention to the biosafety issues, specifically describing the use of PPE, disinfection, physical handling of infected NHP and rodents, sedation and anesthesia, and necropsy of infected animals. The purpose of this protocol is to cover situations where work is performed at ABSL4 by veterinary staff without staff from a specific investigator being involved in the animal manipulations The goal is to provide an umbrella protocol for animal support services of the Animal Research Service (ARS) to work within such that staff can be updated within one protocol and thereby to reduce burden of having to propagate training and administrative authorizations in protocols of PIs using the ARS team members. It also mentions the approvals required for ASC staff to be involved in the work, details the experience of the staff that are included on the protocol, and lists relevant SOPs. Finally, rDNA work is described as recombinant viruses are sometimes included. The committee discussed that any new ABSL-4 protocol or 3-year renewals or ABSL-4 protocol annual renewals could site this core protocol for all basic animal procedures and associated risk mitigation plans without describing all the details.

BUA Site Assessment: All associated labs are under regular NEIDL EHS inspection. All biosafety cabinets are duly certified and all engineering controls are in optimal working condition.					
Motion: Approve	For: 14	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

2. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2446	John Connor	SARS-CoV-2 and MPOX research. Diagnostic development and evaluation, antiviral testing, host response evaluation, and in vitro model development	3	N/A	BUMC

Primary Reviewer: Robin Ingalls	Secondary Reviewers: Guillermo Madico Additional Reviewer: Aditi Broos-Caldwell
Applicable NIH Guidelines: Section III-D-1-a	
Meeting Comments: This 3-year renewal of BSL-3/rDNA protocol involves study of SARS-CoV-2 and MPox (West African clade) viruses, including development of diagnostics, testing of small molecule antiviral agents, and studies of the host response to infection. The biohazards include these two BSL3 viruses, human samples from infected individuals, human cells and human cell lines. The procedures are well described, including details of decontamination and references documenting the viral inactivation procedures. The laboratory experiments will include: virus propagation, RNA extraction, infection of human cells and cell lines under static and flow conditions (96-well microfluidic model) to study viral gene expression and the host response. The rDNA work includes use of fluorescent viruses, and expression of potential viral receptors in eukaryotic cells. No concerns with the protocol. BUA Site Inspection: All required safety protocols are followed properly. All biosafety training and BSL3 training and ROHP clearances for all personnel are current. Biosafety cabinets are duly certified.	

Motion: Approve	For: 14	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

3. rDNA/Bhz – Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
892	Joseph Mizgerd	Molecular mechanisms of pulmonary inflammation	2	2	BUMC

Primary Reviewer: Barbara Slack	Secondary Reviewer: Colleen Thurman
Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-D-4-a, III-E-1; Appendix B-II-D, G-II-B	
Meeting Comments: The goal of this protocol is to determine factors that affect lung infection resistance and susceptibility in hopes of designing new treatments for pneumonia. As experimental models they will use inbred, knockout or transgenic mice, human or mouse cell lines as well as primary lung tissues and human primary cells. These cells or animals will be infected with mouse adapted influenza virus, RSV, Rhinovirus or endemic coronaviruses obtained from various collaborators. In some experiments infections will also be done with *S. pneumoniae, K. pneumonia*, and antibiotic susceptible *S. aureus*. The *in vivo* infections are with mice, performed with ABSL2 precautions. The *in vitro* infections are in murine primary cells, murine cell lines, or human cells or cell lines, performed with BSL2 precautions. All experiments that involve primary human tissues and cells will be performed with BSL2 precautions, regardless of whether microbes are added in the experiment itself. In addition, they will analyze some cellular extracts from animals that were infected in the laboratory of NEIDL collaborator, all of which will be inactivated prior to receiving them in PI's lab. Samples will be processed for histological analysis, cellular analyses (such as immunofluorescence, cell or colony counting,) and molecular analyses (qRT-PCT, western blot, etc.). Protocol also involves significant rDNA work for manipulating expression of various cellular factors before exposing them to viruses or bacteria. Further, 32P is used for autoradiography and irradiation to destroy mouse bone marrow. Additional safety measures for tissue homogenization, surface decontamination are clearly described. Infected cells and human primary tissues are kept in designated incubators marked with biohazard labels and labeled according to	

contents. N95s are used for animal handling in ABSL2 facility. Reference for appropriated IRB and IACUC approvals are provided.. The following will be communicated to the PI:

- Training updates required for:
  - [redacted] – BBP, Chem Safety)
  - [redacted] – LST and rDNA/IBC policy training)
  - [redacted] – BBP, Chem Safety)
  - [redacted] – BBP and rDNA/IBC policy
  - [redacted] – all (LST, BSL1/2, BBP, Chem Safety and rDNA/IBC policy training)
- III. 3. ROHP clearance update required for [redacted], [redacted], [redacted].
- VII. 3. Please describe briefly what are the "BSL2 and ABSL2 precautions".
- VIII. 4. Are N95s used for ABSL2 rodents in ASC? Please clarify.
- Section A. Table should include human cell lines.
- Recombinant DNA Section H. Update IACUC approval through 2/22/2025.

BUA Site Assessment: The location of the lab can be [redacted] as room [redacted]5 is interconnected to room [redacted]. The lentiviruses to be used are 3rd generation. At the time of site assessment, cut resistant gloves were not available in the lab. Wescodyne is not available in the lab. It was noted that the lab is not using it anyways.

Motion: Conditional Approval (Administrative Review)	For: 14	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

4. rDNA/Bhz – Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
1505	Mikel Garcia-Marcos	G protein signaling circuits in health and disease	2	2	BUMC

Primary Reviewer: Barbara Slack	Secondary Reviewer: Steve Niemi

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

Meeting Comments: The goal of this study is to characterize the role of a new family of atypical G protein regulators in health and in diseases such as cancer, cardiovascular disease, inflammation and diabetes. The group have previously discovered that in addition to G-protein-coupled receptors (GPCRs), other accessory proteins also control the activity of G-proteins. Here in this study they will determine the protein-protein interaction of this atypical regulator with the G-proteins and investigate the functional consequences of these interactions. The cDNA or shRNA-sequences for proteins of interest will be amplified in *E. coli* K12 derivatives and used for stable and transient transfection of mammalian cells using standard transfection methods as well as by use of attenuated viral vectors (retroviral, lentiviral or AAV). The genes to be studied include various GPCR regulators or associated members. Cell lines to be used include mouse, rat, dog, monkey and human cancer cell lines of different tissue origin, as well as other non-transformed cell lines (like NIH 3T3 or COS7). In some experiments they will use primary cells from transgenic mice. Assays in the protocol include proliferation, migration, colony formation in soft agar, 3D growth in Matrigel, immunoblotting, immunoprecipitation, and immunofluorescence. They will also express rDNA in *E. coli* BL21 strain to purify recombinant protein with GST or hexahistidine-tags proteins. Some enzymatic assays will require use of radioactive isotopes (P-32, P-33, S-35, H-3, and C-14) with appropriate PPE including screens and double gloves. Xenograft tumor formation assays in SCID mice human breast cancer cell lines will also be done. They will try to minimize aerosols by pipetting instead of suction and will use lids on rotors in centrifuge. Other precautions appear appropriate. The following will be communicated to the PI:

- Section III.2- Some rDNA training may need to be updated.
- Some ROHP clearance dates need to be updated.
- Section VII. 1. Layman's Terms – please replace "signaling pathway" and "G protein" with something comprehensible to lay readers.

- Section H. Please specify which lentiviral packaging system and the commercial source that will be used.

BUA Site Assessment: Third generation lentiviral vectors are being used in the lab. They will be purchased from Addgene and are replication deficient. The lab is not using retroviral vectors for a long time and they anticipate that they are not going to use these vectors in next three years. All viral vector work is done in a BSC. Three BSCs - certified till 11/2023. The BSC with expired certification date is currently not in use.

Motion: Conditional Approval (Administrative Review)	For: 14	Recuse: 0	Against: 0	Abstain: 0	Absent: 0