This meeting is open to the public.

Members Present: R. Ingalls (Vice-Chair), K. Tuohey (Left 2:00 PM), J. Barton (Arrived 12:22 PM), P. R. Varada (by phone: 12:09 PM – 2:42 PM), E. Muhlberger, R. Morales, R. Timmerman, E. Sawyer, T. Winters, C. Sulis, I. Afasizheva (Arrived 12:42 PM- Left 2:00 PM), J. Keeney, B. Slack, E. Loechler (by phone: 12:36 PM- 2:03 PM), X. Brown (by phone), V. Britton, R. Davey

Guests Present: P. Urick, M. Auerbach, N. Yun, N. Dey, S. Benjamin, N. Bhadelia, R. Corley, J. Davis

Staff Present: S. Ghosh, J. Hutchinson, C. McGoff

Members Absent: C. Abraham, R. Georgiadis

Confidentiality: Members are required to maintain the confidentiality of all non-public information entrusted to them. Members may not disclose any confidential information except as authorized by an appropriate institutional officer or as required by law. They may not use any confidential information except to carry out their obligations as committee members. No information may be used by committee members for their own benefit.

Conflict of Interest: The NIH Guidelines state that no IBC member may “be involved (except to provide information requested by the Institutional Biosafety Committee) in the review or approval of a project in which he/she has been or expects to be engaged or has a direct financial interest.” The Chair must be notified of the conflict and the member must recuse themselves from the review and vote on the protocol.

I. Review of November 2018 Meeting Minutes (R. Ingalls)

   Motion: Approve
   For: 11
   Against: 0
   Abstain: 2

II. New Business

A. Safety Committees Report

   Update of 2018 October IBC Meeting Minutes
   The committee was informed that for the amendment to protocol 1888 (reviewed at the October 2018 IBC meeting), the PI indicated that she will obtain all plasmids from her approved BSL2 protocol (1409), and therefore Section III-D-2-a of the NIH Guidelines does not apply to work conducted under 1888. This explanation was reviewed by the primary reviewer of the amendment who concurred with her explanation. Section III-D-1-a is listed in the protocol.

   Listing of Attachments in Protocol pdf.
   Members were informed that the pdf of a protocol now indicates on the last page what attachments are available in RIMS for the particular protocol.

   Approved Applications/Amendments
   Since the November 2018 IBC meeting 5 new protocols, 7 three-year renewals, 14 amendments and 14 annual renewals have been approved.

   Review of BSL-3 and BSL-4 Personnel Amendments
   The Executive Director, Research Integrity proposed that personnel amendments to BSL-3 or BSL-4 protocols be reviewed by the BSL-3 or BSL-4 Biological Safety Officers (depending on the biosafety level of the protocol), and that these amendments not be sent to the full committee for review unless requested by one of the reviewers. If the Biological Safety Officer approves the change, the amendment
would be approved administratively. In their absence the amendment would be reviewed by the NEIDL’s Scientific Safety Officer. A member proposed that the review of room changes also be handled this way, as these reviewers are in the best position to evaluate this information. No concerns were voiced, it was noted that these reviewers have the knowledge to determine if individuals are trained and qualified before being approved on a protocol.

Motion: Simple personnel changes and room number changes for NEIDL BSL-3 and BSL-4 protocols not go to the full committee unless recommended by the BSL-3 or BSL-4 Biological Safety Officers.
For: 15
Against: 0
Abstain: 0

Emerging Pathogens
Members discussed the process for determining the appropriate biosafety level for emerging pathogens. In consultation with the Executive Director, Research Compliance the Executive Director, Research Integrity proposed that when there is no established consensus on the appropriate biosafety level for a pathogen, the PI should work in coordination with the BSL-2, BSL-3, and BSL-4 Biological Safety Officers to make a recommendation to the committee. The NEIDL’s Scientific Safety Officer would coordinate with the PI if the BSL-3 or BSL-4 Biological Safety Officer is not available. It was noted that ultimately it is the IBC’s responsibility to determine what biosafety level the agent can be safely handled at, consulting resources such as the BMBL. Members discussed that certain information is needed in the protocol on emerging pathogens such as virus name and family, biosafety level, route of transmission, disease symptoms in humans, and potential impact on livestock. It was noted that if upon review of a protocol reviewers determine that insufficient information has been provided, that additional information should be requested from the PI prior to full committee review. No concerns were voiced regarding the above stated approach.

B. Research Occupational Health Program Report

On 11/15/18, a senior research scientist on the BUMC sustained a needle stick injury. The injury occurred when the researcher placed an old capped needle on a syringe, and then had trouble getting the cap off. The needle had been exposed to human plasma from a single dialysis patient. That person’s plasma had been pre-screened for infectious diseases, and no evidence of infection was found. The researcher washed the wound and called her lab safety officer, who advised that she report the exposure to ROHP. She reported the injury to a doctor through the ROHP after-hours line and based on the information about the pre-screening, the doctor advised that the incident may be considered "no exposure to blood-borne pathogens". ROHP reported that the researcher has been cleaning and re-using needles in the lab and that in this case, the same needle was used for a sample from the same donor one month earlier and 6 months earlier. The researcher reported having 20 of these needles which are being re-used for samples from different donors and that she uses this particular type of needle because it works well. ROHP discussed alternatives to needle re-use. The researcher reports that she plans to start a system that doesn’t involve the use of sharps. This incident was reported to the BPHC because it involved an exposure with a contaminated needle; however, this is not being considered a blood-borne pathogen exposure because the donor samples were so thoroughly pre-screened. This event was not deemed reportable to BPHC or the CDC.

On 11/26/18, ROHP was informed that by biosafety officers at the NEIDL that a veterinary research assistant noticed his BSL4 suit zipper was slightly open two minutes into being in the BSL4 animal room. There were no animals or active work with agents occurring in the room, and the veterinary research assistant exited without incident. In consultation with the biosafety officers, it was determined there was no concern for exposure. It was noted at the meeting that the zipper was open approximately two
inches. A member voiced concern that the zipper was open and questioned how many training hours the individual had completed. The BSL4 Biological Safety Officer noted that the individual is in the beginning stages of training and that she went through the procedures with him, emphasizing the importance of following the buddy system to check zippers.

On 11/27/18, a lab technician cut her finger on a scalpel that had been used on a mouse which had been injected with AAV. The lab technician reported that she was wearing one pair of gloves while sharpening a wooden stick she planned to use to apply glue to a lens implant in the mouse’s brain. The laboratory technician was evaluated at BU’s Occupational Health Center and provided first aid, a Tdap vaccination and wound guidance. She was seen for follow-up on 11/29/2018. A report was sent to BPHC.

C. Environmental Health & Safety Report

For the 11/15/18 incident, EHS staff reviewed the blood borne pathogen standard as well as the labs adopted exposure control plan. It was emphasized that recapping needles is strongly discouraged and leads to a high probability of needle stick. The root cause of the incident was inadequate procedure. To prevent recurrence, the researcher and PI will change the SOP for the needle work where all needle work will be with one time use needles with no recapping.

For the 11/26/18 incident, upon exit from the ABSL-4 lab, the research assistant stayed on air until Microchem Plus was sprayed liberally on the area that was exposed through the zipper of the suit, doffed the suit, and then took a body shower. EHS contacted ROHP to discuss the incident and perform the risk assessment. The animal space is not registered with the CDC for work with Select Agents (SA), therefore, the risk of exposure to select agents is very negligible. All BSL-4 systems performed as designed. Since the risk of exposure to the SA was negligible, the decision was made to monitor the health condition of the researcher and notify ROHP of any changes. To prevent recurrence, EHS reminded the research assistant to use the buddy system in the BSL4 and to always check each other’s suits before entering the lab and when in the BSL4 lab. In response to a member question, the BSL4 Biological Safety Officer indicated that the individual was in the room as part of their training. A member noted that this is a “hot lab” and that these kinds of incidents cannot occur.

For the 11/27/18 incident, EHS met with the lab tech and the lab manager. The lab tech was trying to sharpen a wooden stick with a scalpel which was previously used (on the same day of the incident) to open the scalp of a non-transgenic mouse. The mouse was intracranially injected with GCaMP-AAV (a genetically encoded calcium indicator) 2 weeks prior to the incident. The root cause of this incident was failure to follow standard operating procedures for disinfecting reusable surgical instruments and improper use of equipment. The researcher was retrained on disinfecting reusable surgical instruments following their intended use and the proper use of equipment. It was noted that this incident is reportable to the NIH OSP and that ORI staff will submit the report. A member questioned if the mouse was alive and if the glue was sterile. EHS staff noted that the mouse was alive and that there was just one mouse involved. It was noted that the incident was reported to the IACUC.

III. Protocol Review:

A. Amendments & Annual Renewals for Committee Review

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<tr>
<td>2172</td>
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<td>Storage, Propagation and Distribution of BSL-2 Emerging Pathogens</td>
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<td>BUMC/NEIDL</td>
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Primary Reviewer: Tom Winters
Secondary Reviewer: Elke Muhlberger

Applicable NIH Guidelines: N/A
Protocol Expires: 1/29/2020
Proposed Modification: Addition of eight new viruses, six of which are new to BU.

Meeting Comments:
This protocol covers storage of a number of emerging viruses that are pathogenic or are biologically related to emerging viruses. This protocol serves as a repository of these viruses with the goal of quickly providing them to investigators with IBC approved protocols, accelerating BU’s ability to do research on emerging pathogens. This amendment allows quantification of the new viruses. Three methods will be used: Plaque assay, TCID 50 assay and focus-forming unit assays. The methods are described in applications specific to the virus structure. To validate identification of viral stocks received, they are inactivated using Trizol and sent for sequence analysis. A total of eight viruses, all BSL-2, are added in this amendment, which include six Orthobunyaviruses/Bunyaviruses that have never been used in Boston University:

- Batai virus
- Inkoo virus
- Jamestown Canyon Virus
- Tahyna virus
- Bunyamwera virus
- Keystone virus
- Other viruses:
  - Influenza virus type A
  - Influenza virus type B

Batai virus is an orthobunya virus detected in anopheline and colicine mosquitoes with seroprevalence in ruminants, birds and causes encephalitis in seals. Isolated from mosquitoes in Sudan and Uganda during malaria outbreaks. Reassortment occurs in E. Africa between Batai and Ngari viruses. Low risk as human pathogen.

Inkoo, is an orthobunyavirus endemic in N. Europe. It is transmitted by Aedes mosquito. There is seroprevalence of nearly 50% in Finland and Sweden in humans. It causes a mild febrile illness in humans with rare encephalitis cases.

Jamestown Canyon is an orthobunyavirus transmitted by Culex, Aedes, and Culiseta mosquitoes. It has caused acute febrile illnesses in humans including meningoencephalitis in 35 % of cases from a review in Midwest US. Low death rate and high hospitalization rate.

Tahyna is a Bunyavirus is a mosquito borne infection in high plateau of Tibet, China, and Eastern and Western Europe. It causes flu like illness including arthralgias, meningoencephalitis. Seroprevalence up to 60-80 % in endemic areas.

Keystone virus is an orthobunyavirus, mosquito borne illness occurring in Chesapeake Bay, Florida and Texas. It causes a mild febrile illness with a rash that resolves in a few days. Seroprevalence in endemic areas up to 20 %.

Bunyamwera virus is an Orthobunyavirus, mosquito borne infection occurring in Kenya. The virus is present in birds and livestock. It can cause human disease but not hemorrhagic fever.

These viruses cause mild flu-like illness, sometimes with rash, rare meningoencephalitis or subclinical disease in humans.
Influenza viruses A and B strains added to the protocol were not highly pathogenic.

The secondary reviewer indicated that per the BMBL and BEI, all viruses are listed as BSL2. It was noted that a site assessment was not conducted by EHS, members discussed whether one should be done, it was noted that since all agents are BSL2, that one is not needed. A member questioned what procedures are in place if the freezer breaks down and whether the freezer is monitored or alarmed. The PI indicated that all agents are listed in FreezerPro, where a master list is maintained. Per earlier discussion in the meeting regarding emerging pathogens, the PI agreed that this information should be provided for agents via an excel sheet. Members discussed that a template excel sheet should be created for investigators to provide this information in cases when the agent is not listed in the BMBL. A member indicated that this information should also be provided for all storage protocols and that members should feel empowered to request additional information from the PI when needed.

**Changes/Clarifications Required:**

Research Project Description:

Q3- List all newly added viruses in the laboratory procedure section and provide the following information:

- Virus name and virus family
- Biosafety level according to BMBL, BEI, ATCC etc. If biosafety level has not been officially determined, contact IBC.
- Route of transmission
- Disease symptoms in humans.
- Potential impact on livestock.

Indicate the personnel responsible for handling influenza viruses and state his/her experience in handling aerosol transmitted viruses (or who will train the individual).

Indicate safety measures in place for freezer failure.

PPE and SE:

VIII.5. Update the BSC certification date.

**Biosafety Training:** All required training for the PI and laboratory staff are complete and current

**BUA Site Assessment:** Not required for amendments.

**Motion:** Conditional Approval (Administrative Review)

*For:* 14
*Against:* 0
*Abstain:* 1

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Primary Reviewer: Shannon Benjamin
Secondary Reviewer: None

Applicable NIH Guidelines: N/A

Protocol Expires: 1/29/2018

Proposed Modification: Annual renewal of a BSL3 protocol. No changes proposed.
Meeting Comments:
This protocol covers storage, propagation and distribution of BSL3 viruses. The protocol also stores clinical samples infected with Zika virus. This is an annual renewal of the protocol with no proposed changes.

Changes/Clarifications Required:
Personnel Information: Please remove G. Madico from all tables and replace with Aditi Broos-Caldwell.
Research Facility Information: Please remove J. Sharon from the table. All agents have been moved to the 609 suite for storage.
Research Project Description:
Q3- G. Madico is described as the lab manager performing submaster maintenance duties. Also described as performing duties under the Zika virus section. Change the responsible party to A. Broos-Caldwell.
Hazardous Biological Agents (Section A): Please indicate if IRB approval for clinical samples containing Zika virus has been obtained.

Biosafety Training: All required training for the PI and laboratory staff are complete and current
BUA Site Assessment: Not done for annual renewals
The PI was not present for the vote.
Motion: Conditional Approval (Administrative Review)
For: 15
Against: 0
Abstain: 0

3. rDNA/Bhz

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Primary Reviewer: Shannon Benjamin
Secondary Reviewer: Ron Morales

Applicable NIH Guidelines: Sections III-D-1 and III-D-2
Protocol Expires: 3/7/2021

Proposed Modification: To add arbovirus work in mosquitos in the NEIDL insectary.

Meeting Comments:
This protocol seeks to identify interactions between arboviruses and host cells and to determine what role these cellular and viral proteins and other factors play during infection. The original protocol includes studies on several RG3 viruses in in vitro cell culture. This amendment proposes to study the viruses in one of their natural hosts, mosquitos. The BSL-3 Biological Safety Officer indicated that the PI wants to infect mosquitos with Zika which will require arthropod containment at ACL3. She indicated that she walked through the insectary with the PI and that the use of disinfectant needs to be clarified. Members discussed that the PI wants to use these insect hosts to study Zika virus as well as other arboviruses that she is already approved to work with. The BSL-3 Biological Safety Officer noted that agent specific training will need to be completed prior to virus work and that she did not see a record of this training in BioRAFT. The Director of ROHP indicated that all personnel have been trained and to follow-up with ROHP regarding the training record. The Vice Chair noted that members always have the option to bring the revised protocol back to the full committee for review.

Changes/Clarifications Required:
Personnel Information: Describe for F. Feistosa as it relates to the work being proposed.
Research Project Description: Describe method of mosquito inoculation and disposal. In the section that describes the amendment, please modify the first sentence to state that “insectary work stated below has already been approved by the IBC in protocol #2274”.
Indicate the composition of the flasks and cages used for pupae, e.g. glass, plastic, etc.
PPE and SE: Q2- In the ‘other’ section, list the primary and secondary housing cages for infected mosquitoes.
Q7- Add a description for the use of bleach (mentioned in amendment description). Be sure to indicate the concentration and contact time to be used.
Q8- Include fresh bleach with concentration and contact time.
Q11- Add applicable room numbers.

Biosafety Training: All required training for the PI and laboratory staff are complete and current
BUA Site Assessment: Not required for amendments.
Motion: Conditional Approval (Primary and Secondary Member Review)
For: 16
Against: 0
Abstain: 0

4. rDNA/Bhz

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Primary Reviewer: Ron Morales
Secondary Reviewer: Shannon Benjamin

Applicable NIH Guidelines: Section III-D-2, Appendix B-II-D, G-II-B
Protocol Expires: 6/6/2019

Proposed Modification: Addition of two personnel, one will test binding of nanoparticles in macrophages with the goal of using it as a drug delivery vehicle and the other will be working with BSL-3 agents.

Meeting Comments:
This research protocol is an ongoing study of the anti-tuberculosis host defense mechanisms important to the lungs. Genes that play roles during TB infections are identified and analyzed for their functions during the infection process and how they might be controlled as a potential for treatment of the disease. To this end, the lab had focused on using mouse model TB infections for these studies and have mapped multiple susceptible/resistant loci and continue to study other genes for their roles in the disease. Other arms of their experiments include approved work for TB in BSL3 containment; mouse challenges with TB in the ABSL3; necropsies and organ harvest of challenged animals for analysis; immunization of mice with BCG under ABSL2; and work with avirulent TB strains under BSL2 and ABSL2. For this amendment, the lab is seeking approval for addition of new personnel and studies to analyze interactions of specialized nanoparticles with macrophages. Nanoparticles targeting macrophages will be developed and used to deliver therapeutics to TB granulomas. The primary reviewer recommended that the person’s qualifications and training be fully vetted by the BSL-3 Biological Safety Officer, it was noted that the individual has experience working with infectious diseases but it is unclear if this includes TB. A member questioned whether nanoparticles are being mixed with TB. The primary reviewer indicated that they are not mixed. He noted that for transport, individuals must be properly trained and agents be properly labeled for transport between campuses.

Changes/Clarifications Required:
Personnel Information: S. Yabaji will need to receive training in both BSL3 and ABSL3 containment practices and procedures. Please indicate if those are complete.
**Research Project Description:** Nanomaterial wastes should be disposed as hazardous chemicals and labeled appropriately. Provide details on how the lab will inactivate the cell culture media with nanomaterials and dispose of the nanomaterial wastes appropriately.

**Biosafety Training:** All required training for the PI and laboratory staff are complete and current

**BUA Site Assessment:** Not required for amendment.

**Motion:** Conditional Approval (Primary and Secondary Member Review)

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**5. rDNA/Bhz**

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Primary Reviewer: Nadya Yun
Secondary Reviewer: None

Applicable NIH Guidelines: siRNA will be used. These are NIH guideline exempt under Section III-F-1 as they do not possess an origin of replication, integrate into the host DNA or interact with host DNA or RNA polymerases. Generation of plasmids in *E.coli* K12 from RG2 origin (human genes) is covered under III-D-2-a and is recommended for BSL2 conditions. Plasmids transfected into RG2 cells (human cell lines and primary cells) are III-D-1-a and are recommended to be conducted at BSL2. Plasmids encoding non-RG2/3/4 genes in origin (fluorescent proteins or antibody epitopes) expressed in tissue culture are exempt under section III-F-8, appendix C-I, Recombinant or Synthetic Nucleic Acid Molecules in Tissue Culture.

**Protocol Expires:** New Application

**Proposed Modification:** Addition of one personnel.

**Meeting Comments:**
The PI is proposing to add one person to this protocol. The BSL-4 Biosafety Officer and primary reviewer indicated that the individual is current on training and is currently undergoing NEIDL specific training. She also noted experience working in other BSL-4 labs and indicated that she has no concerns with respect to this individual working under this protocol.

**Changes/Clarifications Required:**
None.

**Biosafety Training:** All required training for the PI and laboratory staff are complete and current

**BUA Site Assessment:** Not required for amendments.

*The PI recused himself for the vote.*

**Motion:** Approve

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*Recused: 1*
6. Bhz

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Primary Reviewer: Nadya Yun
Secondary Reviewer: None

Applicable NIH Guidelines: N/A
Protocol Expires: 4/6/2021

Proposed Modification: Addition of seven personnel who are already listed on other BSL4 protocols.

**Meeting Comments:**
Seven new personnel are being added to the protocol. The BSL-4 Biological Safety Officer noted that everyone has up-to-date training in BioRAFT and are undergoing training at the NEIDL. No concerns were noted.

It was noted that the BBC will now meet quarterly, with the first meeting scheduled for January. The Executive Director, Research Compliance indicated he will inquire with BPHC whether BBC review is needed.

**Changes/Clarifications Required:**
None.

**Biosafety Training:** All required training for the PI and laboratory staff are complete and current

**BUA Site Assessment:** Not required for amendments.

The PI recused herself for the vote.

**Motion:** Approve

*For:* 16  
*Against:* 0  
*Abstain:* 0  
*Recused:* 1

B. 3-Year Renewals

7. rDNA/Bhz

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<td>Pathogenesis of muscular dystrophies</td>
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Primary Reviewer: Inna Afasizheva
Secondary Reviewer: Bob Timmerman

Applicable NIH Guidelines: Section III-D-1-a, Section III-D-2-a, III-E-1
Protocol Expires: 1/4/2019

**Meeting Comments:**
This protocol focuses on the pathogenic properties of DUX4 transcription factor in the development of facioscapulo humeral muscular dystrophy (FSHD). FSHD is a slowly progressive but devastating myopathy caused by loss of repression of the transcription factor DUX4. Loss of the epigenetic silencing of DUX4 gene induces aberrant gene expression and cellular pathology, including cell death. The research proposes to use human myogenic cells from established biobanks, human immortalized cell lines, human muscle cells and
muscle tissue biopsies, as well as mouse cell culture to test how overexpression of DUX4 induces FSHD-specific molecular events.

Changes/Clarifications Required:
PPE and SE: Q5- Update BSC certification date.
Materials Used in Research: select the highest animal biosafety level for your work (should be N/A).
Recombinant DNA (Section H): The PI will receive lentivirus and adenovirus vector plasmids from collaborators and both vectors are replication incompetent. Provide the Addgene lentivirus vector name in the “Vector Packaging System” box.
Synthetically derived nucleic acid molecules box is checked in Section IX. Please fill in questions 9-12 in section H.
Q17- Since the response to this question is ‘No’, uncheck the button “obtained from other source”.

Biosafety Training: All required training for the PI and laboratory staff are complete and current.
BUA Site Assessment: Approved.
Motion: Conditional Approval (Administrative Review)
For: 16
Against: 0
Abstain: 0

8. Bhz

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<td>832</td>
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Primary Reviewer: Edward Loechler
Secondary Reviewer: Rao Varada

Applicable NIH Guidelines: N/A
Protocol Expires: 12/9/2018

Meeting Comments:
The goal of this project is to determine if a physiologically relevant endothelial glycocalyx surface layer can be produced and maintained on the surface of a confluent monolayer of cultured endothelial cells. The significance of the endothelial surface layer (ESL) to inflammatory mediators, and adhesion molecules will be investigated, with a view to understanding microvascular resistance, leukocyte adhesion, inflammation, endothelial-cell migration in simulated disease conditions such as, atherosclerosis, diabetes, and ischemia/reperfusion injuries. Human umbilical vein endothelial cells (HUVECs) have been cultured inside collagen channels (120-160 microns in diameter) and perfused with fresh media to simulate flow conditions inside a blood vessel. The lab will use fluorescent microparticle image velocimetry (micro-PIV) to determine the presence of a physiologically relevant endothelial surface glycocalyx.

Changes/Clarifications Required:
Personnel Information: Provide additional detail of Selagamsetty’s experience as applicable to this protocol in the question “State how many years’ experience, when and where”, particularly the animal work experience. The PI’s BSL1/2, BBP, rDNA/IBC Policy are not up-to-date and all of Selagamsetty’s trainings have expired and must be updated.
Research Project Description: Q3- Handling of mice is not described. The relationship between in vitro and in vivo experiments is not described. Provide the appropriate IACUC approval number.
Human placental tissue is noted (Section B), but no experiments are explicitly described. Provide description of its use.
PPE and SE: Q1- “Plating, colony counting” is indicated. In what experiment(s) will this be done? Provide clarification.

Q11- Not clear what human cells will be received from Longwood Medical Area. Provide clarification.

Materials Used in Research: Contact hospital epidemiologist Dr. Carol Sulis (csulis@bu.edu) regarding safe handling and transportation of primary human material and indicate the date of contact with her.

Other Potentially Infectious Material (Section B): Provide IRB approval information for working with human placental tissue.

Biosafety Training: All required training for the PI and laboratory staff are complete and current

BUA Site Assessment: Approved.

Motion: Conditional Approval (Administrative Review). The Vice-Chair indicated that if work is being done with placental tissue that she would like to review the revised protocol.

For: 16
Against: 0
Abstain: 0

C. New Application

9. rDNA/Bhz

<table>
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<tr>
<th>BUA</th>
<th>Role of Fibroblasts in Disease</th>
<th>Title</th>
<th>BSL</th>
<th>ABSL</th>
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<tr>
<td>2295</td>
<td>Role of Fibroblasts in Disease</td>
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<td>BUMC</td>
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Primary Reviewer: Xin Brown
Secondary Reviewer: James Keeney

Applicable NIH Guidelines: April 2016; Section III-D-1-a, Section III-D-2-a, III-E-1; Appendix G-II-B and Appendix B-II

Protocol Expires: New Application

Meeting Comments:
This is a new protocol by Dr. Browning, however Dr. Browning has been working on similar projects under Dr. Robert Lafyatis and Dr. Maria Trojanowska’s protocols for many years. The PI is interested in understanding how changes in fibroblast contribute to scleroderma and lupus, more specifically when the activation of fibroblast occurs during disease progression and what triggers it. The PI wished to probe the signaling events that lead to phenotypic changes using cultured cells as a model. It was noted that shipping training is out of date and should be updated if the lab is shipping materials. EHS staff reported that during the site assessment it was noted that the BSC certification is updated (May 2019), that the lab doesn’t plan to ship materials and that the lab is updating their exposure control plan. EHS would like to see an enhanced description of occupational risk.

Changes/Clarifications Required:
Investigator Contact Information: Kathleen Furness is administrative staff, she should not be listed as associate principal investigator or sponsored personnel.

Research Project Description: Q3- It is noted that both 2nd and 3rd generation lentivirus vectors are being used in the protocol. The IBC recommends the use of 3rd generation lentivirus vectors unless scientific justification is provided for the use of 2nd generation vectors. Please address. If 2nd generation vectors are no longer used, remove them from this section as well as from the rDNA section (Section H).

Provide a brief description of your rDNA work (transformation in E. coli K12, plasmid cloning, plasmid extraction, etc. Technical detail of cloning work is not needed.

PPE and SE: Q1- Check Infectious liquid pipetting.
Q5- Update BSC certification date.
Q7B- The solid wastes contaminated with lentivirus should be treated with bleach first, then disposed of.
Q8- Check typo “bemused”.

Materials Used in Research: Protocol states that foreskin samples may be obtained from hospital sources. Contact hospital epidemiologist Dr. Carol Sulis (csulis@bu.edu) to clarify safe handling and transport of human clinical samples and indicate the date of such communication.

Hazardous Biological Agent (Section A): Human cell line HT1080 should be used at BSL2 containment. IRB approval not required for the dermal fibroblast you make yourself but is required for human foreskin samples.

Other Potentially Infectious Material (Section B): Primary human dermal fibroblasts have been obtained from either fresh skin biopsies from patients or donated foreskins. The IRB approval number is H-34515. What is the expiration date?

Recombinant DNA (Section H): Respond to the question regarding use of 2nd generation lentivirus vectors as stated above.

**Biosafety Training:** All required training for the PI and laboratory staff are complete and current.

**BUA Site Assessment:** Approved.

**Motion:** Conditional Approval (Administrative Review)

**For:** 13
**Against:** 0
**Abstain:** 0

B. 3-Year Renewals

10. rDNA/Bhz

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<th>BUA</th>
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<tr>
<td>527</td>
<td></td>
<td>Propagation and characterization of viruses</td>
<td>2</td>
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Primary Reviewer: Barbara Slack
Secondary Reviewer: Rao Varada

Applicable NIH Guidelines: Section III-D-1-a, Section III-D-2-a; Appendix G-II-B and Appendix B-II
Protocol Expires: 1/6/2019

**Meeting Comments:**
The PI wishes to renew this protocol for the purpose of storing materials. No experiments will be conducted such as histological staining of tissue or use of animals or cell lines.

**Changes/Clarifications Required:**

Overview and Grant Funding Information: Remove text from the summarize changes box. This is only for amendments and annual renewals.

PPE and SE: Q4- Uncheck all animal handling PPE.
Q6- Check "Yes" to indicate that sharps (slides) are being stored. Delete the part about needles and surgical instruments being used to homogenize and dissect mouse tissues (no mice in current protocol). Retain the text about storage and potential disposal of slides (sharps), and disposal of solid waste (in the event that some tissue blocks etc are discarded).

Recombinant DNA (Section H): Recombinant DNA is checked and the rDNA table lists human cell lines in the eukaryotic experiments section. To be consistent with the ‘storage of slides and plasmids only’ nature of this protocol, remove lists of cell lines (some of which are human lines) and E. coli strains from the sections on prokaryotic and eukaryotic experiments, and retain information about the vectors and donor DNA being stored.

**Biosafety Training:** The PI is current with applicable safety trainings.


**BUA Site Assessment:** Approved.

**Motion:** Conditional Approval (Administrative Review)

**For:** 14

**Against:** 0

**Abstain:** 0

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### 11. rDNA/Bhz

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<tr>
<th>BUA</th>
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<td>1697</td>
<td></td>
<td>Translational control in virus-infected cells</td>
<td>2</td>
<td>N/A</td>
<td>BUMC/NEIDL</td>
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**Primary Reviewer:** Elke Muhlberger  
**Secondary Reviewer:** Robert Davey

**Applicable NIH Guidelines:** Section III-D-1-a, Section III-D-2-a; Section III-D-3-a., Section III-E-1; Appendix B-II-D and Appendix G-II-B  
**Protocol Expires:** 1/4/2019

**Meeting Comments:**  
The PI is interested in understanding how viruses force the cells that they infect to alter the protein synthesis program. Although in most cases viruses force cells to make only virus protein, there is evidence that cells also launch antiviral programs to counter virus-mediated usurpation of cellular processes. The laboratory uses a variety of RNA viruses including Vesicular Stomatitis Virus (VSV), the majority of which are non-pathogenic to humans and some DNA viruses including Vaccinia viruses that are only mildly pathogenic to humans. They manipulate viral genes to modify virus replication and translation and analyze the effect by various virological and molecular biological techniques. It was noted that inactivation is well described. The primary reviewer noted that the DURC committee should review this work, particularly the VSV work. It was noted that personnel should receive agent specific training for Polio, the Director of ROHP indicated that ROHP can provide this training and that all personnel are vaccinated for vaccinia.

**Changes/Clarifications Required:**  
**Dual Use Research of Concern:** Include the A51R work in questions 5 and 6 as it alters host range and enhances susceptibility of a host population.

**Research Project Description:**  
**Q2- Add research objectives for virus detection systems (influenza, enteroviruses) and for work with bunyaviruses (Snowshoe hare, Gouleako, Herbert, and Kibale).**

**Q3-**  
- Move IRIS imaging of poliovirus and EV-D68 to section E.
- Work with EV-D68 and polio: Will there be training records for EV-D68 and polio training?
- Radioactive work is indicated in section IX.G but not described. Add a brief description of radioactive work to the Laboratory Procedures section.
- RSV is listed as a hazardous agent. Describe work with RSV in the laboratory procedures section.
- Is the vaccinia protein, A51R a pathogenicity factor? A short description of the biological role of this protein should be included as it will be transferred to VSV to extend its host range in insect hosts.
- Dengue virus is listed in the hazardous agents but use is not described.
- Identify if genes E3L, K3L, C7L from vaccinia encode pathogenicity factors? If not, then they are not of concern.

PPE and SE: Q5- Update the BSC certification date.

**Hazardous Biological Agent (Section A):** Add poliovirus and EV-D68 to the hazardous biological agents list.
Add Vero, CV-1 and COS cells to the hazardous biological agents list. These cell lines are mentioned in section H (rDNA).

Recombinant DNA (Section H): Add La Crosse virus clones and plasmids to the tables in section H.1.

Vector Packaging Systems: Add that recombinant VSV will be generated.

**Biosafety Training:** All required safety trainings for the PI and laboratory staff are current.

**BUA Site Assessment:** Approved.

**Motion:** Conditional Approval (Administrative Review)

- **For:** 13
- **Against:** 0
- **Abstain:** 0

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**12. rDNA/Bhz**

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<td>1728</td>
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<td>New strategies to control hemorrhagic fever virus infection</td>
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Primary Reviewer: Robin Ingalls
Secondary Reviewer: Erin Sawyer


Protocol Expires: 1/6/2019

**Meeting Comments:**
This project focuses on the development of the most effective vaccine platform as well as small molecule drugs for preventing virus infection or the spread of the virus. There is currently no effective small molecule therapeutic or vaccination for the Ebola hemorrhagic fever virus. The PI’s lab will engineer Vesicular Stomatitis Virus (VSV)-based vectors to express ebolavirus (EBOV) surface glycoproteins as well as glycoproteins from other hemorrhagic fever viruses. In the second part of the protocol the lab will establish a non-infectious EBOV replication system on which they will be able to test inhibitory drugs and their higher efficient second generation varieties. They hope that this research will advance the scientific knowledge towards formulating better therapeutic strategies for preventing sickness and death from EBOV. There were no comments and approval was recommended.

**Changes/Clarifications Required:**
None.

**Biosafety Training:** All required safety trainings for the PI and laboratory staff are current.

**BUA Site Assessment:** Approved.

**Motion:** Approve

- **For:** 13
- **Against:** 0
- **Abstain:** 0

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**IV. Approved Expedited Amendments & Annual Renewals (Administrative Review)**

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<td>Down-regulation of Bone Lysyl Oxidase in Diabetes; Lysyl oxidase-2 Inhibition in Oral Cancer; Inhibited Bone</td>
<td>2</td>
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<td>To add one and remove one personnel</td>
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<td>Vascularization NIH R01 HL73305 Stiffness, Cadherins, Integrins, and</td>
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<td>1697</td>
<td>Translational control in virus-infected cells</td>
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<td>To obtain discarded clinical samples</td>
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<td>600</td>
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<td>1583</td>
<td>Pathway-Focused Real-time PCR Arrays, Metabolic Arrays, and Protein/cytokine</td>
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<td>To update the procedures section to include the use of human samples for core services</td>
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<td>Microchip to detect HIV viral RNA in whole-blood samples using branched-DNA hybridization</td>
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| 1160   | Ikaros Regulates T-cell Fate Decisions and Leukemogenesis
Generation of an Ikaros Conditional Knockout Mouse | 2   | 2    | To add two and remove one personnel and to update grant funding and project title |
| 979    | Caveolae and adipocyte lipid metabolism                               | 2   | N/A  | To remove one personnel and change room location information |
| 1166   | IPCP-HTM and Seminal HIV-1 Shedding and Drug Resistance in HIV-1/HSV-2 Coinfected Men on HAART | 2+  | 2    | To remove one personnel and update grant funding      |
| 1173   | Vaginal/Cervical tissue models: endocrine effects and susceptibility to infection | 2+  | N/A  | To remove one personnel and update grant funding      |
| 1880   | Corneal epithelial adhesion:morphology and biochemistry;
Role of purinoreceptors in diabetes, role of purinoreceptors and EGFR in corneal scarring | 2   | 1    | To add two and remove one personnel, to add ion channel proteins to project description and |
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<td>2259</td>
<td>Metabolism and regeneration in primary neurons</td>
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<td>Genetic analysis of stomatal patterning in Arabidopsis thaliana</td>
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<td>783</td>
<td>Structure and Function of Bacterial Adhesion Pili</td>
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<td>To update PI contact information</td>
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