NIH Institutional Biosafety Committee Minutes
Location: Bethesda Main Campus
January 14, 2026
2:00 PM – 5:00 PM
Virtual via Microsoft Teams

Members present: (10)
Quorum met: Yes

Harry Malech, Chair, clinician	**Stephen Denny, animal research expert**	**Robert Craigie, Molecular**
Richard Baumann, BSO	**Clevetta Drew, unaffiliated member**	**Michael Kujawa, ABSO**
Emily Lee, recombinant and molecular techniques	**Steve Whitehead recombinant and molecular techniques, virology**	**Stephanie Goff, Clinician***
Jeanne Billioux, Clinician		

- absent members: Alicia Alexion
*Provided comments *in absentia* for select reviews

Guests present (4)

Althea Treacy (DS)	Madison Cahill (DS)	Kaitlyn Connors (NBBTP)
Grace Markley (NBBTP)		

Announcements & Call to Order

The meeting was called to order by Dr. Malech at 2:00 PM.

Review of the Past IBC Meeting Minutes

07 December 2025 Minutes

a. Comments on minutes, as applicable- to be submitted
b. The minutes were unanimously approved with minor modifications and formatting corrections by 01/21/26.

New Committee Business

I. BSO preliminary registration approvals since the previous meeting

a. Pathogen registrations (13 total): 25-BMC-216, 219-227; 26-BMC-011-013
b. rDNA and rDNA/pathogen registrations (IBC review constitutes dormal approval): 25-BMC-217 (Clore), III-E-1- Expression of E. coli MinD, E. coli MinE, RfaH, and SH3 by NMR spectroscopy; 25-BMC-218 (Clore), III-E-1- Membrane Regulation of β1-Adrenergic Receptor (β1AR) Oligomerization and Signaling in Lipid Nanodiscs; 26-BMC-001 (Falgairolle), III-D-3-a/III-D-4-a- The identification and study of neural circuits in mice using AAV vectors. This registration is an administrative update and replaces the previously approved registrations RD-14-II-08, 6081, and 7919; 26-BMC-002 (Usdin), III-E-1- Understanding the molecular basis of Repeat Expansion Disorders including the FMR1 disorders, Friedreich ataxia, Huntington Disease and Glutaminase deficiency disorder. (using CRISPR techniques to modify human cell lines); 26-BMC-003 (Samelson), III-E-1 - Expressing fluorescently tagged T-cell receptor signaling molecules in primary T-cell and Jurkat cell lines; 26-BMC-004 (Friedman), III-D-2-a / III-D-4-a (appendix B-V) Baculovirus Driven Expression of Myosin Motor Proteins in Insect Cell Lines. This registration updates and replaces registration RD-10-III-02. This is an administrative replacement with no significant changes from prior approval; 26-BMC-005 (Dever), III-E-3- Deletion of creatine-sensing upstream open reading frame (uORF) in mouse SLC6A8 gene; 26-BMC-006 (Li), III-D-3-a/ III-D-4-a- Disease mechanisms and therapies in mouse models of retinal degeneration. This

registration updates and replaces registrations RD-10-VIII-13 and 5230, with no significant changes from prior approval; 26-BMC-007 (Lipkowitz)III-E-1/III-D-4-a- Molecular characterization of resistance against cell cycle targeting drugs in preclinical murine models of ovarian cancer. This registration updates and replaces registrations RD-20-V-04 and 7189, with no significant changes from prior approval; 26-BMC-008 (Swaroop), III-D-3-a/ III-D-4- Expression of retina-expressed genes in human and mouse cells using Lentivirus vectors. This registration updates and administratively replaces the previously approved registrations RD-12-IX-04 and 5751, with no significant changes from prior approvals; 26-BMC-009 (McBride), III-D-2-a/ III-D-3-a- The study of papillomaviruses in cell culture systems. This registration updates and replaces registrations RD-11-IX-09 and 5497 with no significant changes from prior approval; 26-BMC-010 (Jensen), III-E-1- Pharmacology, Molecular pharmacology/ signaling / growth effects of gastrointestinal (GI) hormones/growth factors (GF) on normal/ cancer cells; 26-BMC-014 (Colbert), III-D-3-a/III-D-4-a- Spondyloarthritis pathogenesis. This registration administratively updates and replaces previous registrations: 5176, 5219, 8712, and RD-10-VI-08 with no significant changes over prior approvals.no significant changes from prior approval.

c. Registration amendments: **Approved RD amendments ('amend 260114') for the Minutes**: RD-19-VIII-08- (amend-Allen), RD-19-X-03 (amend-Allen), RD-14-XII-16 (amend-Larochelle), RD-14-I-03 (amend-Larochelle), RD-20-I-03 (amend-Larochelle), RD-18-I-12 (amend-Larochelle), 24-BMC-232 (amend-Thomas), RD-23-III-12 (amend-Larochelle), RD-18-I-05 (amend-Larochelle), 24-BMC-170 (amend-Koretsky), RD-19-X-01 (amend-Becerra), RD-23-I-01 (amend-Haase), 25-BMC-096 (amend-Ho), 25-BMC-094 (amend-Ho), 25-BMC-079 (amend-Ho), RD-18-III-11 (amend-Pierson), RD-19-II-07 (amend-Chudasama), RD-22-V-09 (amend-Chudasama), RD-23-IV-08 (amend-Chudasama), RD-20-VI-20 (amend-Chudasama), RD-20-II-13 (amend-Jiang), RD-14-IX-27 (amend-Ho), RD-18-II-14 (amend-Li), 24-BMC-172 (amend-Joseph), RD-22-I-02 (amend-Joseph), RD-18-XII-06 (amend-Samelson), RD-22-III-02 (amend-Ferre), RD-12-II-11 (amend-Cao), RD-11-IV-04 (amend-Cao), 24-BMC-075 (amend-Lifson), RD-20-IX-03 (amend-Swaroop), 24-BMC-248 (amend-Yang), RD-21-XII-07 (amend-Kochenderfer), 25-BMC-213 (amend-Kochenderfer), RD-23-III-03 (amend-Wakefield), 25-BMC-066 (amend-Ho), 25-BMC-077 (amend-Schuck), RD-18-V-17 (amend-Yang), RD-23-VII-01 (amend-Eichner), RD-19-VI-01 (amend-Kanekiyo), RD-21-IV-01 (amend-Kerosuo-Pahlberg), RD-20-VI-12 (amend-Sun), RD-20-I-12 (amend-Farrell), 24-BMC-066 (amend-Lifson), 24-BMC-172 (amend-Joseph), RD-22-XII-04 (amend-Simpson), RD-18-II-01 (amend-Quezado), 24-BMC-060 (amend-Hafner)

d. Committee discussion: No committee members voiced comments or concerns.

e. After providing descriptions, the BSO asked if there were any questions or concerns with the preliminary approvals. Hearing none and following the formal review and discussion at the meeting, the IBC concurs unanimously with and formally approves the registrations and registration amendments.

II. Registrations and other submissions for Committee Review

a. Clinical trial reviews - None

b. Special reviews-

26-BMC-019, Gunjan Arora

i. Reviewers: Billioux, Whitehead

ii. Review summary: The investigators are proposing work with avian influenza virus (H5N1). The purpose is to assist investigators at NIAID and other ICs to conduct their research projects related to infection with highly pathogenic avian influenza (HPAI) A(H5N1) viruses and other influenza viruses. This registration is for work with highly pathogenic avian influenza virus in BSL-3 and other lower pathogenicity influenza strains in BSL-2. They will propagate and produce influenza virus copies for work with cell lines in BSL-3 and track inventory. They also will use A (H5N1) virus strains provided by collaborators at NIH to detect the presence of infectious virus particles in human and animal cell lines, to isolate virus from cells and for quantification and/or sequencing.

They will also use cell supernatants to assess the viral titer and perform molecular, cellular, and immunological studies related to HPAI A(H5N1) to study virus biology, disease pathogenesis and transmission in humans and animals. The rational of these studies is to ensure that America's food supply remains safe and gain scientific knowledge that leads to development of new treatments, vaccines, and diagnostics.

iii. Committee Discussion:

- This group does not describe work with lower pathogenicity influenzae. Does not seem they are using recombinant viruses. They are isolating viruses in human cells. Work in eukaryotes is a YES.
- Work is well explained for what will be performed at BSL-3, however some strain information should best be elaborated on for the proposed 'basic virology' work.
- There were no dual use research of concern (DURC) related issues.

iv. Training and PPE requirements as established with BSL-3 to be in line with a BSL-3 laboratory, to include laboratory safety training and BBP training for individuals handling any human materials. PPE standards include protective lab coat, gloves and eyewear.

v. Animal studies proposed: Not described here.

vi. The committee discussed the dual-use and ePPP potential of these experiments. All answers were 'no'. The committee agreed that there were no dual-use or ePPP concerns with the proposal.

vii. There were no additional public comments.

viii. Work is approved at: No prokaryotic work is described; eukaryotic work is approved at BSL-3. If prokaryotic work is performed, it may be approved at BSL-1. No animal work is proposed by this investigator.

ix. Relevant sections of the NIH Guidelines: Eukaryotic work is proposed but no recombinant work, eukaryotic work is approved under III-D-3-a.

x. The committee unanimously approved the registration, pending IRE review.

xi. There were no conflicts of interest cited.

c. Registrations for committee review

26-BMC-015, Arya

i. Reviewers: Craigie, Goff

ii. Review summary: The purpose of the proposal is to study the connection between immune cells and brain cells. The investigators propose to use lentiviral vectors for expression of genes (CD39, CD73, IFNg, TNF, IL-10, and TGFb) in the brain of mice. They aim to elucidate the mechanism and consequences of crosstalk between immune cells and brain cells, and to do so they wish to upregulate or downregulate expression of the listed genes using lentiviral vectors. They will express cDNA or siRNA to express or block expression of CD39, CD73, IFNg, TNF, IL-10, and TGFb. Expression constructs for the above noted genes or their blocking siRNA/shRNA will be purchased from commercial companies and cloned into commercial designated vectors for the use in mice. Lentiviral vectors will be delivered into the brain of mice via intracranial injection. A number of cells are described, and work was previously approved at BSL-2/3. The group plans to use viral vectors that are now third generation lentiviral vectors.

iii. Committee Discussion:

- Pretty straightforward, well-written protocol. Secondary reviewer provided no additional comments. However, not the most complete information for lentiviral packaging plasmids.
- There was a question about adeno-associated virus injection being described in the animal work is a mistake. Perhaps this should it say lentiviral injection instead. The committee believes this to be a copy/paste error and will clarify.

iv. Training and PPE requirements as established with BSL to be in line with a BSL-2 laboratory, to include laboratory safety training and BBP training for individuals handling any human materials. PPE standards include protective lab coat, gloves and eyewear.
v. Animal studies proposed: Yes, into mice by subcutaneous and intraperitoneal injection ABSL-2→1.
vi. The committee discussed the dual-use and ePPP potential of these experiments. All answers were 'no'. The committee agreed that there were no dual-use or ePPP concerns with the proposal.
vii. There were no additional public comments.
viii. Prokaryotic work is not described but if performed, may be approved at BSL-1. Eukaryotic work is approved at BSL-2. Animal work is approved at ABSL-2→1 after injection assuming no weeping.
ix. Relevant sections of the NIH Guidelines: Prokaryotic work is at III-D-2-a, eukaryotic work is approved under III-D-3-a animal work is approved at III-D-4-a.
x. The committee unanimously approved the registration.
xi. There were no conflicts of interest identified.

26-BMC-016, McGuire

i. Reviewers: Whitehead, Craigie
ii. Review summary: The group studies mitochondrial diseases and would like to generate gene knockdowns in human and mouse cell lines. Specific gene targets will be knocked down using shRNA delivered by lentiviruses or other non-replicative recombinant delivery systems, although the former is not described well. They have provided a list of over 200 minor genes to be knocked down. These include genes from the Oxfast family, mitochondrial DNA replication, repair transcription and RNA processing, family mitochondrial translation machinery, genes metabolism, Q10 bio synthesis, genes dynamics, QC transport and membrane remodeling, and organization genes.

iii. Committee Discussion:
- The investigators provide a list of over 200 genes in various families, machinery, metabolism, and transport. Genes of interest will be knocked down in animal and human cell lines. There is a pLV and two other plasmids such as pENTR vector (shRNA expression vectors, transfer plasmid) that are not lentiviral transfer plasmids. The packaging system should be identified. Second-generation packaging is assumed unless third-generation packaging is demonstrated. They list commercial companies and provide no prokaryotic work. Eukaryotic work is provided in one sentence.
- There is a need for more information about the cell lines they are using.
- Secondary reviewer had no additional comments.

iv. Training and PPE requirements as established with the BSL-2 and BBP training for those working with human materials.
v. Animal studies proposed: No.
vi. There were no dual-use and ePPP potential of these experiments, all answers were 'no'. The committee agreed that there were no dual-use or ePPP concerns with the proposal.
vii. There were no additional public comments.
viii. Work is approved at: Eukaryotic work at BSL-2 with BSL-3 practices or BSL-2 depending on the packaging system being used.
ix. Relevant sections of the NIH Guidelines: III-D-3-a for eukaryotic work.
x. The committee unanimously approved as written.
xi. No conflicts of interest were identified.

26-BMC-017, Samelson (first)

i. Reviewers: Goff, Lee

ii. Review summary: The goal is to add CRSPR/Cas9 to their work and they already use lentiviral vectors. Over time they have developed chimeric antigen proteins that function similarly to chimeric antigen receptors. They propose to investigate the effect of downstream chimeric antigen proteins signaling by altering some of the tyrosine kinases in the SRC family. Specifically, the Lck and the Fyn. The group developed GUIDE RNAs and the Crispr/Cas9 system.

iii. Committee Discussion:

- They want to see if they can affect the downstream signaling of the proteins they study. They will be using shRNAs to abrogate the function of the tyrosine kinases. Commercial packaging information provided. All DURC questions are appropriately answered no.
- No significant discussion after protocol presentation by primary reviewer.

iv. Training as standard, including Laboratory Safety Training (LST) and BBP training for individuals working with human materials (as applicable).

v. Animal studies proposed: yes, in mice at ABSL-2→1.

vi. The committee discussed the dual-use and ePPP potential of these experiments. The committee agreed that there were no dual-use or ePPP concerns with the proposal. All dual-use answers were no.

vii. No additional public comments were given.

viii. No prokaryotic work. Eukaryotic work is approved at BSL-2.

ix. Relevant sections of the NIH Guidelines: III-D-2-a for prokaryotic and eukaryotic work at BSL-2. Animal work is approved at ABSL-2→1 (assuming no weeping) under section III-D-4-a.

x. The committee unanimously approved this protocol as written.

xi. No conflicts of interest were identified.

26-BMC-018, Samelson (second)

i. Reviewers: Denny, Lee

ii. Review summary: The registration is linked to #7812 and RD-18-XII-06 and they would like to continue testing their peripheral blood mononuclear cells (PBMCs) in vitro and in vivo (mice). and mirroring models to further characterize the function of their caps. The in vivo models will help create a more accurate preclinical model for human therapy, making it easier to study the mechanisms of the chimeric antigen protein (CAP) transduced T cells in the living organism. Their data has shown that human PBMCs expressing these caps can exert cytotoxicity against B cell tumor lines. Nalm6 B cells precursor leukemia cell line derived from a lymphoblastic leukemia patient. CAPs represent chimeric antigen protein, which is assembly of several key molecules to form the chimeric structure, and the CAPs design to send positive signals to T cells in an effective, efficient manner without being vulnerable to inhibitory signals, which in the previous discussed registration was what they were going to use.

iii. Committee Discussion:

- CAPs or chimeric antigen proteins are discussed and are designed to effectively transmit signals without being inhibited. As the group is knocking out genes downstream, they will analyze the signal transduction pathways. Use of in vivo murine models to administer transduced cells into animals for their study. One such model injects the CAP expressing T cells into the knockouts, followed by injection of a target B cell tumor line such as the NALM 6. This will be using a lentiviral third generation system. Constructs were shown and LV vectors will be used to infect primary T-cells and Jurkat cells. And they will evaluate the ability of these T cells expressing the caps for cytotoxicity against tumor carrier lines such as Raji, Nalm-6, Hep3B and IRM5 with manipulations include cell sorting, centrifuging, pipetting containment and contaminant centrifuge and BSC cabinet. Dual use answers were all no.
    - Secondary reviewer had no additional comments.

iv. Training and PPE requirements as established with BSL-2, to include laboratory safety training, and minimal PPE requirements including protective lab coat and eyewear. HBP training for those handling human cells.
v. Animal studies proposed: Yes, approved at ABSL-2.
vi. The committee discussed and agreed that there were no dual-use or ePPP concerns with the proposal.
vii. No additional public comments were given.
viii. Work is approved at: No prokaryotic work is being proposed. Eukaryotic work at BSL-2. Animal work approved at ABSL-2→1 after injection assuming no weeping from the injection site.
ix. Relevant sections of the NIH Guidelines: Eukaryotic work at III-D-3-a using in house established system with 293T cells. Animal work is approved under III-D-4-a.
x. The committee unanimously approved as written.
xi. No conflicts of interest were identified.

26-BMC-020, Larson

i. Reviewers: Lee, Billioux
ii. Review summary: The title is construction of a series of expression vectors to study effect of different genes or regions of genes to study gene expression in vivo. Dr. Larson's group notes that they're going to be generating a series of expression vectors, which include ATP5B, a component of the mitochondrial ATP synthesis, HSPD1, a mitochondrial chaperone, U2AF1, a human slicing splicing factor, and then another human splicing factor U2AF2. They note that the expressed variants will be used to study the effect of various gene sequences on transcription, splicing, and translation, and to develop a model system to study gene expression in vivo. No in vivo work is proposed here, and the current proposal is limited to cloning here and expression in eukaryotic cells.

iii. Committee Discussion.
- Dr. Larson proposes generating variants to develop a model system to study gene expression. Protocol is limited to cloning and expression in eukaryotic cells. Proteins will be expressed with some fluorescent proteins. They also note that the human proteins will be expressed with a fused fluorescent protein, and then they also are going to be using expression vectors that contain bacterial and phage sequences to engineer sequences with RNA hairpins. They list 3 recombinant vectors and provide plasmid maps including the third-generation maps from the commercial vendor. Four different human proteins will be expressed, and none were oncogenic except some mutants of U2AF-1. If they only express wildtype the risk is lower. If they overexpress U2AF-1 mutants then BSL-2/3 would be suitable. All Dual use questions are answered ‘no’ which is appropriate.
- Prokaryotic work is involved for the cloning portion of the work.

iv. Training and PPE requirements as established, including LST and BBP training for those handling human cells.
v. Animal studies proposed: None.
vi. The committee discussed the dual-use and ePPP potential of these experiments. The committee agreed that there were no dual-use or ePPP concerns with the proposal.
vii. No additional public comments were received.
viii. Work is approved at: Prokaryotic work is proposed at BSL-1, and this is fine, eukaryotic work is approved at BSL-2.
ix. Relevant sections of the NIH Guidelines for eukaryotic work: Section III-D-2-a.
x. The committee unanimously approved as written.
xi. No conflicts of interest were identified.

26-BMC-021, Harvey

i. Reviewers: Whitehead, Billioux

ii. Review summary: The investigators want to characterize the nature of protein trafficking and ion compositions inside a variety of sub cellular compartments under stress induced by drugs of abuse. They will use commercial cell-like products to visualize sub-cellular compartments in live or in fixed cells. These cell-like products are comprised of a recombinant baculovirus encoding fluorophores such as GFP, which is fused to a targeting domain. This facilitates localization of the fluorescent label to any one of a variety of intracellular targets, such as the ER, the Golgi or lysosomes. The DNA encoding these target GFP fusion constructs are packaged into baculoviruses. Baculoviruses can enter but do not replicate in the human cells they are using, they only replicate in insect cells. For prokaryotic work, nothing is proposed. The baculoviruses are used in eukaryotic work where HEK293 cells will be infected with three common bacteria viruses.

iii. Committee Discussion:

- Using recombinant baculovirus with fluorophores. To target intracellular targets. These viruses infect but do not replicate in human cells. These will be purchased commercially. They will apply either a vehicle control or a biological stressor such as Thapsigargin (TG) or methamphetamine to these cells. TG is an ER calcium stress inducer and over a given period prevents flow from one compartment to another; the cells will be examined for the condition of their subcellular compartments.
- For this work, they propose BSL-2 which is appropriate. NIH guidelines section III-D-3-a, and no animal work is proposed. DURC questions are all answered 'no' which is appropriate.
- No concerns from secondary reviewer

iv. Training and PPE requirements include laboratory safety training and BBP training for individuals working with human cell lines.

v. Animal studies proposed: None.

vi. The committee discussed the dual-use and ePPP potential of these experiments. The committee agreed that there were no dual-use or ePPP concerns with the proposal.

vii. There were no additional public comments.

viii. Work is approved at: Eukaryotic work will be approved at BSL-2.

ix. Relevant sections of the NIH Guidelines: Eukaryotic work at III-D-3-a.

x. The committee unanimously approved the proposal as written.

xi. There were no conflicts of interest identified.

26-BMC-022, Le Pichon

i. Reviewers: Denny, Goff

ii. Review summary: This registration is entitled "Modeling TDP-43 proteinopathy by injection of protein into mouse brain". TDP-43 proteinopathy in humans is characterized by the accumulation of TDP-43 protein in the brain, the spinal cord playing a significant role in various neurogenic diseases (such as ALS and frontotemporal lobar degeneration). This DNA binding protein is crucial for many cellular functions, including RNA metabolism, mRNA transport and stress granule formation. Under normal conditions, TDP-43 is predominantly located in the nucleus, but it can shuttle between the nucleus and the cytoplasm. Dr. Le Pichon's Lab will establish a new model of TDP-43 proteinopathy by injecting protein fibril seeds directly into mouse brain, then allow time for the seeds to spread and induce aggregation of endogenous TDP-43 protein. This is expected to drive the formation of cytoplasmic protein aggregates composed of TDP-43 and other proteins, drive the loss of TDP 43 from the nucleus, and result in dysfunction. The phenotype may be subtle and detectable only by imaging, histology, or biomarkers so they will conduct a full course for this model by testing at 1, 3, 7 days and 1, 2, 3, 6, and 12 months following injections of these fibrils into mice. The registration does not describe prokaryotic or eukaryotic work at NIH. They are receiving their materials from collaborators outside NIH. Risk to NIH researchers is lower as preparation is elsewhere.

iii. Committee Discussion:

- Dr. Denny mentioned the diseases they are looking at under the registration. The laboratory will establish a new model of studying the brain by inducing protein aggregates into the brain to cause disfunction. The effects may be subtle so they will analyze at many different timepoints. The unstructured part will be fused to a marker protein for visualization.
- Recombinant molecules are being obtained from a collaborator from an infected brain from a patient. Cloning will be done elsewhere. However, a vector will be created to produce the recombinant protein. Collaborator studying best inactivation means and bleach is a good disinfectant.
- Maps are included as well as a fibril protocol preparation protocol. Using mice to inject the protein by intracerebral injection, stereotaxic injection consistent with ABSL-2 practices and containment under guideline III-D-4-a. Dual use questions were all appropriately answered 'no'.
- Secondary reviewer had no additional comments. There was an additional comment about the prion aspect to these kinds of proteins that can form aggregates. To hear the suggested experiments at ABSL-2 is good as well as that bleach is effective in disinfection in this case.

iv. Training and PPE requirements to include laboratory safety training and BBT training for individuals working with human cell lines.

v. Animal studies proposed: Yes, in mice.

vi. The committee discussed the dual-use and ePPP potential of these experiments. The committee agreed that there were no dual-use or ePPP concerns with the proposal.

vii. There were no additional public comments.

viii. Animal work is approved at ABSL-2 and ABSL-2 practices (recommended by outside collaborator).

ix. Relevant sections of the NIH Guidelines: No prokaryotic or eukaryotic work is described in this registration. Animal work at III-D-4-a.

x. The committee unanimously approved with minor modifications.

xi. There were no conflicts of interest identified.

26-BMC-023, Shchelochkov

i. Reviewers: Lee, Denny

ii. Review summary: This protocol is titled "Studies of Purine and Pyrimidine Metabolism Disorders Using Zebrafish". PI explains that disorders of enzymes involved in purine and pyrimidine metabolism (DPPM) in humans are associated with significant morbidity and mortality, and current attempts to generate murine or other models of these disorders are often complicated because of association with early embryonic mortality. The investigator notes that they can bypass these challenges by modeling DPPM in zebrafish and use this to understand disease mechanisms as well as to pursue drug screening. They utilize zebrafish mutants and transgenic lines to identify targets for drug screening because of the well-defined embryonic stages, external development, and the high optical clarity of zebrafish.

iii. Committee Discussion:

- Using modeling in zebrafish to understand disease. They are proposing to include both 8 mutant alleles generated already under previously approved work as well as the creation of new transgenic constructs and zebrafish lines. They then list a series of mutants that have been partially characterized, and they note that they will use these mutations as well as other mutant and transgenic models generated to elucidate the differences in phenotypic severity between the different mean patients. Techniques to be used include microinjection of morpholinos (commercial) for transient expression, nucleic acids, mRNA plasmid DNAs, hybridization and CRISPR knock-out and knock-in etc.
- Reporter genes like GFP are listed and the cloning system is known. Committee asked what other genes are being targeted and expressed when nucleic acid pathways are generally listed. Animal study proposal lists PFAS and PFIC mutant lines. No infectious agents are

being used. The registration should be okay as proposed, and the secondary reviewer agrees. If they produce new lines, they should amend.

- They have established transgenic lines they are going to use and will generate more. They do injections into the (zebrafish) embryos. Committee asked how long they were going to keep the embryos alive for subsequent testing. They do define they are looking at these purine/pyrimidine pathways. The chair is okay with identifying that as far as the description of the gene types they are looking at.

iv. Training and PPE requirements to include laboratory safety training and any possible animal facility training regarding working with fish.

v. Animal studies proposed: Yes, in zebrafish, ABSL-1 under III-D-4-a.

vi. The committee discussed the dual-use and ePPP potential of these experiments. The committee agreed that there were no dual-use or ePPP concerns with the proposal.

vii. There were no additional public comments.

viii. Prokaryotic work is approved at BSL-1. Eukaryotic work is approved at BSL-2, animal work at ABSL-2.

ix. Relevant sections of the NIH Guidelines: III-D-2-a for prokaryotic work (at BSL-1) and BSL-2 for eukaryotic work. Animal work at III-D-4-a for animal work at ABSL-1 practices and containment.

x. The committee unanimously approved with minor modifications.

xi. There were no conflicts of interest identified.

26-BMC-024, Webster-Cyriaque

i. Reviewers: Billioux, Lee

ii. Review summary: The title of this NIDCR project is “Lytic reactivation of EBV from EBV positive 293 cells” and the purpose of this proposal is to use 293 cells harboring latent Epstein Barr virus genomes to produce an infectious extracellular EBV particle. These cells will be obtained from collaborators outside NIH, and these cells can be induced to produce infectious EBV after induction with expression plasmids and coding two different viral genes, BZLF 1 and BALF 4 gene products. The extracellular EBV will be used to infect human cells such as primary gingival cells in a tissue culture system to analyze viral and cellular gene expression during the initial phases of an EBV infection, and inhibitors of virus gene expression and replication will be assessed in this system.

iii. Committee Discussion:

- EBV is associated with human pathologies in the oral cavity, as well as cancers like lymphoma, nasopharyngeal cancer, and gastric cancer, and oral pathogens such as Fusobacterium nucleatum and Porphyromonas gingivalis have been shown to induce lytic cycle EBV gene expression in cancer cells containing the virus. Understanding these mechanisms involved in oral pathogen induced EBV expression replication will provide targets for the development of inhibitors. Genes (GP110) expressed in 293 cells with EBV plasmids obtained from collaborator as noted and expressed with EBV B98-8 strain of EBV. All DURC responses are ‘no’, which is appropriate. EBV Z protein is a transactivator that induces EBV lytic gene expression required for viral DNA replication and production of EBV particles. GP 110 is a viral protein found on the surface of extra viral particles and is required for production of infectious EBV. Two plasmids from collaborators as discussed will be introduced into HEK293 cells, and risk is low to workers. Close to 95% infected with EBV by adolescence.
- Secondary reviewer had no other input.

iv. Training and PPE requirements to include laboratory safety training and BBT training for individuals working with human cell lines.

v. Animal studies proposed: No

vi. The committee discussed the dual-use and ePPP potential of these experiments. The committee agreed that there were no dual-use or ePPP concerns with the proposal.
vii. There were no additional public comments.
viii. Prokaryotic work is approved at BSL-1. Eukaryotic work is approved at BSL-2.
ix. Relevant sections of the NIH Guidelines: Prokaryotic work is approved at III-D-2-a at BSL-1. Eukaryotic work at III-D-3-a and BSL-2.
x. The committee unanimously approved with minor modifications.
xi. There were no conflicts of interest identified.

26-BMC-025, Boehm

i. Reviewers: Goff, Craigie
ii. Review summary: This proposal is entitled "Generation and investigation of human Induced pluripotent stem cells". The purpose of our proposal is to generate induced pluripotent stem cells (iPSCs) by directly reprogramming PBMCs and/or fibroblasts from healthy donors and rare disease patients using Sendai virus-mediated expression of the transcription factors Oct4, Sox2, Klf4, and c-Myc. The laboratory will then differentiate these iPSC lines into various organoid models to investigate disease mechanisms. Patient-derived induced pluripotent stem cells (iPSCs) offer a renewable and genetically relevant system to overcome the limitations of tissue availability and the issue of traditional models failing to reflect human biology. Using non-integrating, Sendai virus-based reprogramming helps preserve genomic integrity and supports the development of high-quality iPSC lines. Differentiating these lines into organoid models provides a human-relevant platform to investigate disease mechanisms that cannot be readily examined in patients.

iii. Committee Discussion:
- This group will use Sendai virus and expression factors to turn cells into iPS cells. No prokaryotic work is described. One thing the group has been able to accomplish is to create vascular organoids by taking fibroblast and human PBMCs back through an induced pluripotent stem cell pathway. Eukaryotic work will go into PBMCs at BSL-2 (with level 3 practices until they are screened), then once derived they are put into NSG-SGM3 mice. Administration of iPSCs originating from patients with germline vascular diseases and healthy volunteers at ABSL-2 (injection) practices down to ABSL-1 containment. III-D-2-a for eukaryotic work, III-D-4-a for animal work.

- There was a question about the vector maps uploaded and associated images; the safety representatives should get more information about all the vectors being used. It was unclear what the diagram on the submitted figure means, which looks like a Sendai viral vector. The virus is lost eventually by growth of the iPS cells. Usually, people will include a statement about checking for virus to ensure there is no more present. All seems okay considering the nature of the system.

iv. Training and PPE requirements as established with BSL to be in line with a BSL-2 laboratory, to include laboratory safety training and BBP training for individuals handling any human materials. PPE standards include protective lab coat, gloves and eyewear.
v. Animal studies proposed: Yes, mice at BSL-2 → 1, assuming no weeping from injection site.
vi. The committee discussed the dual-use and ePPP potential of these experiments. All answers were 'no'. The committee agreed that there were no dual-use or ePPP concerns with the proposal.
vii. There were no additional public comments.
viii. Work is approved at: Prokaryotic work is not described; eukaryotic work is approved at BSL-2/3 until screening is performed then BSL-2. Animal work approved at ABSL-2 (injection)→1 housing.
ix. Relevant sections of the NIH Guidelines: Eukaryotic work is approved under III-D-3-a, animal work is approved under Section III-D-4-a.

x. The committee unanimously approved the registration.
xi. There were no conflicts of interest identified.

26-BMC-026, Fujii

i. Reviewers: Craigie, Whitehead
ii. Review summary: “Preventing cancer metastasis by understanding the role of inflammation”. Various types of inflammations (e.g., deep venous thrombosis, stroke, obesity) are known to damage blood vessels leading to the leakage of circulating cells including cancer cells into surrounding tissues and this can further remodel the environment close to blood vessels so that cancer cells can move into organs and survive there. The aims are to (1) identify time points and the quantity of cancer cells extravasating (or leaking out into the surrounding tissues) into distant organs such as lungs, brains, livers from blood vessels (2) identify contributing factors of metastasis including extravasation, and (3) to test the functions of identified preventive/therapeutic targets and (4) assess the survival outcomes by applying newly identified preventive/therapeutic strategies.

iii. Committee Discussion:

- The investigators will attempt to understand what is happening to blood vessels when cancer cells attach or penetrate through and how characterize the structural damage of blood vessels can be protected or reversed from this process and intervention or protection of vessels can prevent cancer cells from moving into organs out of blood vessels and surviving. To localize the cancer cells, cancer cells (4T1-BR5, E0771-BR5) will be tagged with EGFP and imaging will be used. No prokaryotic work is described. Eukaryotic work is approved at BSL-2/3 under III-D-3-a.

- There was a question about whether this was second-generation or third-generation packaging system by the second reviewer. Dr. Craigie thought it was a second-generation system as there was no obvious use of rev on a separate plasmid. One commenter explained in the absence of information we assume it is second generation system. Animal work in mice is approved at ABSL-2 under III-D-4-a.

iv. Training and PPE requirements as established with the ABSL-2 with level 3 practices and BBP training for those working with human materials.
v. Animal studies proposed: Yes, mice.
vi. There were no dual-use and ePPP potential of these experiments. The committee agreed that there were no dual-use or ePPP concerns with the proposal.
vii. There were no additional public comments.
viii. Work is approved at: No Prokaryotic work. Eukaryotic work at BSL-2 with 3 level practices unless a third-generation system is described at which BSL-2 will suffice. Animal work is approved at ABSL-1.
ix. Relevant sections of the NIH Guidelines: III-D-3-a eukaryotic work. Animal work approved under III-D-4-a.
x. The committee unanimously approved as written.
xi. No conflicts of interest were identified.

d. Registration amendments for committee review

24-BMC-051 amend 260114, Figg

i. Reviewers: Billioux, Craigie
ii. Review Summary: They investigators study prostate cancer (PCa) which is one of the most common malignancies and the second leading cause of cancer mortality in American men. The conventional first line treatment for primary PCa is androgen deprivation therapy (ADT), to which most patients eventually develop resistance and

acquire a highly aggressive variety of PCa known as metastatic castration-resistant prostate cancer (mCRPC) that carry a poor prognosis. The overarching goal of this study is to generate stable human derived organoids to study this cancer. The previous approval was just for HBBF and animal work, and now the laboratory is adding an overexpressed OATP1B3 cell line using a CRISPR approach to be tested in vitro and in vivo. OATP1B3 is a transporter important in prostate cancer involved in the transport of drug compounds including androgens. One of these drug compounds is docetaxel, a chemotherapy that is FDA approved for the treatment of prostate cancer. The laboratory would like to analyze OATP1B3 expression effect on the efficacy of docetaxel. Two compounds have been shown to accomplish this, abiraterone and chetomin. The group has been using a doxycycline inducible cell line to overexpress OATP1B3 in 22Rv1 prostate cancer cells. Increased docetaxel efficacy would demonstrate rationale for combination treatments in the future. The group would also like to see if the increase in OATP1B3 expression causes an increase in tumor growth due to androgen influx.

iii. Committee Discussion.
- Overexpressing protein (OATB1B3) and trying to understand rationale for future treatments in this study and for drug screening.
- Using CRISPR/Cas9 studies to edit genes, ASP is attached and looks complete. No DURC issues. III-D-4-a for animal work, and since they are using prostate cancer cells.

iv. Training and PPE requirements as already been established using standard precautions.

v. Animal studies proposed: Yes, ABSL-2 practices with ABSL-1 containment in mice.

vi. All dual-use answers were ‘no’ and the committee discussed the dual-use and ePPP potential of these experiments and found they were not of concern.

vii. No additional public comments were received.

viii. Work is approved at: Eukaryotic work is established at BSL-2, and animal work is approved at ABSL-2(injection)→1 housing.

ix. Relevant sections of the NIH Guidelines: Eukaryotic work at III-D-3-a for UV21 cell work. Animal work approved under III-D-4-a.

x. The committee unanimously approved as written.

xi. No conflicts of interest were identified.

RD-18-IX-04 amend 260114, Franchini

i. Reviewers: Whitehead, Craigie

ii. Review Summary: This group studies HTLV 1 pathogenesis and immunosuppression in animal models and are experts in HTLV animal models and HTLV 1A and HTLV 1C subtypes. These subtypes are different in their 3’ region, which encompasses ORF1 and ORF2 that have been shown to be important for viral persistence. To further study the role of these genes, chimeric viruses have already been generated by substituting the 3’ end of 1A with that from 1C to generate the HTLV1 A/C chimera. They currently wish to amend their registration to include two ASPs for the purpose of testing the ability of the chimeric virus to infect non-human primates (NHPs) by mucosal exposure. NHPs will be intravaginally exposed to the chimeric virus and followed to determine the development of systemic infection and disease, especially at the lung site. The committee is considering whether this project should be sent for further DURC-IRE review. The committee asked what is known about the pathogenic difference. Between HTLV 1A and HTLV 1C the registration lacks information, however, their 2025 Nature communications publication of their work in NHP revealed several important points. HTLV 1A is the most common type worldwide while HTLV 1C is the most divergent type and is found among aboriginal populations in Australia. HTLV 1A rarely causes lung disease in humans, however, HTLV 1C is more frequently associated with respiratory failure and premature cell death. Because samples from aboriginal people were not available for virus isolation and export of a chimeric virus, HTLV A/C was created to study the genetic basis of the HTLV 1C morbidity.

1A and one A/C chimeric viruses are equally infectious in rhesus monkeys, and in this model these monkeys are triple depleted of monocyte CD8T cells and NK cells then exposed intravenously to gamma irradiated 1A or one A/C virus infected B cells. This is the laboratory model. However, viral expression in the lungs was significantly higher in the chimeric infection and lung damage occurred by 10 months, but not in the wildtype 1A infected animals. The hypothesis is that the P16C fusion protein of 1C may contribute to lung morbidity by shielding T cells from clearance via an apoptotic pathway. In the current amendment, monkeys will be exposed to the chimeric virus intravaginally and followed for a systemic infection and disease in the lungs. In the cell paper, it appears that chimerization increased the pathogenicity of HTLV 1A, thus mutating the common 1A type into a type associated with lung damage in monkeys (similar to HTLC 1C), and respiratory failure and premature death in humans as observed in HTLV 1C.

iii. Committee Discussion.

- HTLV-1 and HTLV-3 are quite different at their 3' end. HTLV-1A is the most common type. HTLV-3 causes lung disease in humans and is more associated with respiratory failure. The 1A and the 1A/C chimeric viruses are equally infectious; however, viral expression in the lungs is different. The p16C fusion protein of 1C may contribute to lung morbidity. These studies are essential; it is excellent work; however, there are certain dual-use issues that need to be reviewed. Their ASPs are attached and cover different aspects of the proposed work.
- Monkeys will be intravaginally exposed to study the infection and animals tracked especially to look at the lungs. Really mutating the 1A type here to be that associated with the HTLV-1C. This study is essential to figure out the pathogenicity, and it is great work; however, there are important DURC related considerations and the amendment can be approved however it will need further DURC review. The following should be YES on the DURC screening page. "Yes" for enhances virulence (of the 1A), and for the increase of transmissibility they have now created a virus that inhibits clearance of those infected cells.
- All committee members also agreed and asked if 1A is more transmissible than 1C. There is a large part of the population that is asymptomatic, perhaps 95%. It is possible chimeric viruses are attenuated, and the new data supports the new need for oversight.
- The ASP (also uploaded) also needs improvement for clarity; section K2 will need to be amended for clarity.

iv. Training and PPE requirements as established.

v. Animal studies proposed: Yes, via Intravaginal exposure in NHP.

vi. The committee discussed the dual-use and ePPP potential of these experiments and agreed this should be reviewed by the NIH DURC-IRE. The sentiment of the committee is this virus is not concerning its primary mechanism of transmission, but the creation of such chimeras is something that should be reviewed and monitored by the DURC-IRE.

vii. No additional public comments were received regarding this protocol.

viii. Animal work is approved at the established level of ABSL-2 practices and containment and following the standard procedures for working with NHP as established in NIH MC 3044-2.

ix. Relevant sections of the NIH Guidelines: Animal work at III-D-4-a

x. The committee unanimously approved as written, pending IRE review.

xi. No conflicts of interest were identified.

III. Committee Review of Inactivation Procedures

IV. Standard Operating Procedures/Plans: None

V. Serious Adverse Events in Clinical Trials reviewed by the Committee: None

Reports

I. Biosafety Officer Report: Due to the government shutdown, reporting of research related incidents to the IBC was paused for the 2 meetings missed in October and November. At the December 2025 meeting, we reported incidents for August 2025, and for this meeting we are reporting incidents for both September and October 2025. For these two months, there were 34 research-related incidents. none apparently involved work with rDNA, 11 sharps-related incidents, 12 related to work with NHPs, 17 involving research with other animals (mostly rodent bites), 0 apparent exposures to HBBF for research related incidents (not related to patient care), and 1 involved potential exposure to “other” human pathogens.

The BSO reminded everyone that the preliminarily approved registrations and registration amendments have been reviewed and asked again if there were any other concerns or questions about those approvals. In the absence of any further comments, these registrations and registration amendments are formally approved.

Other reports: None

Around the Room/Committee Discussion

- The February meeting will take place February 4th as typically scheduled
- A reminder the OSP has mandated that all IBC minutes will be publicly posted in a streamlined format. Please review the minutes in our new template and it is expected that IBC members must recuse themselves from discussions where they have conflicts of interest (as they have always done).
- The BSOs are always available prior to the meeting for any questions or concerns on reviews.

Adjournment

The meeting was adjourned by Dr. Malech at 3:35 PM.

Next meeting: February 4, 2026